Asset Maintenance: The Impact of the Underfinancing of Recurrent Costs

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The Australian Government's
Overseas Aid Program

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PREFACE

The team which undertook this assignment was led by Dr Satish Chandra, PIA Section, AusAID. He was assisted by John Kerr-Stevens as lead consultant and Colin Mellor as consultant economist. Research support was provided by Lynn Vassalo and Margaret Johnson. Material and commentary relating to Samoa was prepared by Kolone Vaai.

The team would like to note the extensive support provided by the AusAID library and by AusAID staff and Posts. The assistance provided by consultancy firms and NGOs is also appreciated, as is that from the DAC and the World Bank.

Additional commentary was sought through independent, and external to AusAID, peer reviewers with expertise regarding the issue and our region. Valuable contributions were received from Dr Alak Bose, Dr Wolfgang Buch, Dr Hugh Coulter, Roger Dickson, David Ferris, Dr Colin Gannon, Dr Terry Hull, Margaret Johnson, Toni Mayo, Dr Dennis Notley, Deborah Rhodes, Dr Graeme Thompson and Dr June Verrier.

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ABBREVIATIONS AND ACRONYMS

AMS	Activity Management System
AsDB	Asian Development Bank
ASEAN	Association of South East Asian Nations
AusAID	Australian Agency for International Development
CASP	Commodities Assistance Support Program
CIDA	Canadian International Development Agency
DAC	Development Assistance Committee (of the OECD)
DFID	Department for International Development
DIFF	Development Import Finance Facility
DOTW	Department of Transport and Works
ELDIS	Electronic Development and Environment Information System
GDP	Gross Domestic Product
GoPNG	Government of Papua New Guinea
GoI	Government of Indonesia
GoS	Government of Samoa
GoT	Government of Tonga
GNP	Gross National Product
HEW	Health, Education and Welfare
HLC	High Level Consultations
HRD	Human Resource Development
IT	Information Technology
LCF	Local Cost Financing
IBRD	International Bank for Reconstruction and Development
IFC	International Finance Corporation
IMF	International Monetary Fund

NEDA	National Economic and Development Authority
MoU	Memorandum of Understanding
NGOs	Non Government Organisations
NCDS	National Centre for Development Studies
ODI	Overseas Development Institute
OECD	Organisation for Economic Co-operation and Development
O&M	Operations and Maintenance
PNG	Papua New Guinea
R&D	Research and Development
RCF	Recurrent Cost Financing
RER	Regional Economic Report
SIP	Sector Investment Program
SPICs	South Pacific Island Countries
UNCTAD	United Nations Commission for Trade and Development
UNDP	United Nations Development Programme
US	United States of America
WDR	World Development Report

$ are Australian unless otherwise specified.

EXECUTIVE SUMMARY

Australia's best recognised national symbol is the Sydney Harbour Bridge. Every day, 365 days a year, a maintenance crew is painting the bridge and undertaking necessary repairs. Since its construction in 1932, funds have been budgeted to maintain this national asset. Yet the care of public assets that is commonplace in donor countries is not apparent with regard to assets provided as aid. Why is this so? Similarly, finance is provided for the operating costs of the Sydney Opera House, an equally arresting landmark. However, ensuring funding of operating costs after project completion is also often overlooked in the provision of aid assets. If aid assets are not maintained and operated efficiently then aid funds are not being used effectively.

Asset maintenance is not a revolutionary concept. In various guises, it has been on the aid agenda for many years. The issue is vital to Australia given its focus on low-income and small island countries which face the most severe recurrent cost financing (RCF) problems. This report suggests realistic ways to address an increasingly critical problem that faces all donors.

Australia provides $1.5 billion annually to support the development efforts of our neighbours. Initially aid was provided for infrastructure development and technical assistance. Recently, the trend has been to support institutional development projects which also involve the transfer of assets, particularly through the upgrading of human resources.

An increasing concern is that many of these assets are not adequately maintained, either in terms of the physical infrastructure itself or when there are just not the teachers, nurses or supplies available. In short, aid funds are not being utilised as efficiently or effectively as they could be: a fact relating to the fundamental development concepts of *absorptive capacity and sustainability.* This report draws together issues from existing literature, anecdotal evidence, and fieldwork in order to point to ways in which assets can be better maintained to the benefit of both donor and recipient.

- This report uses the phrases 'Recurrent Cost Financing' and 'Operations and Maintenance' almost interchangeably in relation to asset maintenance. These are the most commonly used terms in connection with the subject of this report, the maintenance of assets provided through development assistance.

The report questions whether the standards for maintenance expected by donors are always appropriate to recipients. Sophisticated concepts of best practice such as in the areas of social justice and environmental management can impose high costs and affect project sustainability. It is therefore emphasised that policies to ensure adequate asset maintenance - both management and financial - can vary between projects, sectors and countries.

Problems affecting asset maintenance can arise because of poor governance. These include deficiencies in budget allocation mechanisms and prioritisation between new and existing investments; poor design of projects and programs including lack of participant involvement; and, in some countries, sheer lack of resources. Changes to development thinking are required, including:

- improvements in governance to make Operations and Maintenance (O&M) considerations a priority in economic and budgetary planning processes;
- recognition by donors of the high economic returns and development impact of O&M expenditure compared to new investments; and
- consideration by donors of direct, recurrent cost contributions to O&M expenditures for budget-constrained countries.

Aid theory has always stressed the importance of recipient financial commitment to individual aid projects. In reality, this doctrine has failed both in theory and in practice - largely because of a simple lack of funds. If the desire to provide sustainable development is genuine, then a new approach is required by bilateral grant donors. Donors may have to be prepared to finance i) a larger proportion of project costs during the investment stage; and ii) subsequent aspects of recipients' asset maintenance and related governance improvement programs, provided that:

- the level of funding is justified by the country's budget constraints;
- the government is committed to improving governance; and
- projects and programs are prepared with a high level of beneficiary participation.

The report emphasises the governance issues of i) public sector management and reform; and ii) better donor co-ordination (essential to avoid projects that will impose onerous operating costs on limited budgets). Australia should emphasise these points in donor/recipient co-ordination groups and advocate a changed balance between new investment and O&M.

Analysis of the RCF/asset maintenance issue commenced more than three decades ago. Guidelines on Local Cost Financing were first issued by the DAC in 1977. The frontrunners in research since then have been the World Bank and IMF which have commented that:

- '… O&M expenditures often have a low priority in government budgets as they are less appealing and visible than new investment projects. … Moreover, donors have facilitated the efforts of countries to mount ambitious investment projects while providing little support for recurrent costs … higher growth depends as much on efforts to reduce the inefficient utilisation of the existing capital stock as on the creation of new capacity.' In relation to the South Pacific: 'Lack of attention to the problem of recurrent cost funding is detrimental to efficient aid

use; it wastes donor money, drains administrative resources, and undermines the ultimate return from the aid project. … donors may have to make an explicit provision for recurrent cost financing.'

- More recently, the World Bank has issued a seminal study on *'Assessing Aid[1]'*. While the study focuses on overall issues of aid effectiveness, the discussion of these is complementary to several of the more specific issues raised in this report, in particular those relating to governance and to economic and aid policy (Box 1 refers).

There are three sets of assets: physical infrastructure; plant and equipment; and human and intellectual capital. Each has O&M considerations covering a range of categories but often dominated by payments for salaries and basic supplies. However, runways cannot have potholes; machines must be lubricated; and people must keep their skills up-to-date. Maintenance must be ongoing and preventative for all sets of assets. In practice there are standards and goals that set a baseline for *operations* expenditures although the level of necessary *maintenance* expenditures is more difficult to determine. Where there are shortfalls in O&M funding, measures can be taken in three areas.

- *financial:* increasing taxes; borrowing or capitalising donor funds; and shifting priorities away from new capital investment.
- *institutional:* improving cash flow management; strengthening planning capacity; hypothecation of revenues (the pledging of revenues to the area in which they were raised i.e. road tax to road maintenance); and cost recovery and commercialisation.
- *technical:* increasing the efficiency of O&M expenditures through better project design.

1 Assessing Aid: World Bank, 1998 Washington.

Box 1: Assessing Aid. What Works, What Doesn't, and Why

This study, by the World Bank, is one of the most fundamental critiques of aid undertaken in recent years. It discusses the relationship between aid and growth; the differences in aid performance as between countries with good economic policies and those where improvement is needed; and the relationship between finance and other aspects of assistance.

The study finds that more aid does not *necessarily* mean more growth - the key to reducing poverty. It notes the vast improvements that have come about as a result of foreign aid such as through agricultural innovations, and through health and literacy programs. However, it also notes that at times foreign aid has been an unmitigated failure leaving not a trace of progress, sometimes through incompetence and corruption but also through misguided policies: the example of the road network in Tanzania is quoted where, *for lack of maintenance*, roads often deteriorated faster than they could be built.

However, on balance the study finds that money (aid) can have a large impact but only in those countries with good economic policies. Its findings are that:

- financial aid works in a good policy environment;
- improvements in economic institutions and policies are the key to poverty reduction;
- effective aid complements private investment;
- the value of development projects is to strengthen institutions and policies so that services can be effectively delivered;
- an active civil society improves public services; and
- aid can nurture reform even in the most distorted environments

Five policy reforms are seen as essential to making aid more effective. These are: targeting aid more effectively to countries with sound economic management; providing policy based-aid to demonstrated performers; tailoring the mix of aid to country and sector conditions; focusing projects on creating and transmitting knowledge; and developing alternative approaches to assist highly distorted countries.

The study goes on to highlight many of the issues referred to in this report such as: fungibility; co-ordination; the use of budget support; conditionality and additionality; aspects of project design related to strengthening institutional capacity; and country and sector programming. Overall, the report's message is that effective aid requires the right timing (i.e. when the policy or institutional basis has been set in place, well-timed aid can make the difference between success and failure); and that it requires the right mix of money and ideas (a focus on systemic reform rather than just on projects).

The major difference between the Bank study and this report arises from the fact that the Bank's study is based on a sample of fifty-six countries which does not include any of the small island states of the South Pacific (or PNG). The nature of the Bank's analysis does not therefore take into account the special circumstances of these micro-economies, and which it is argued in this report may require different solutions than those appropriate to larger economies.

Commentary on the issue from AusAID staff, consultants and NGOs focused on the facts that:

- generally recipient revenue estimates are unrealistic and financial systems unsophisticated;
- O&M is always the first area of expenditure to be cut in times of budgetary stringency. This is particularly relevant in East Asia at the present time;
- the ready availability of donor funding can lead to over-design of projects to a level greater than recipient needs merit;
- due to the severity of the problem in the South Pacific and PNG, there is a preference to let assets run down and then rebuild (expensive for donors); and
- the lack of donor-funded maintenance for major infrastructure in the South Pacific is a false saving since, inevitably, full replacement costs have to be funded.

Comments were also made on project design procedures, for example: the need to address preventive maintenance; cost recovery and revenue considerations; ineffective conditionality; and unrealistic expectations regarding institutional capacity.

The review team consulted several major development agencies and recipients. All were concerned at the current shift in investment priorities which is resulting in greater demands on recipient revenues to maintain social sector projects and programs. Three needs were identified: to design and implement development assistance programs over longer time periods; to build local ownership and community involvement to enhance sustainability; and to pay greater attention to RCF issues in project design.

- Indonesian, Philippine and Fijian authorities recognise the need to maintain infrastructure stock rather than seek new capital investment. In PNG, the lack of RCF is reaching crisis proportions. Inefficiencies in the national budgeting process are now critical: shortfalls in O&M funding mean that even the existing capital stock cannot be maintained.
- The World Bank is advocating, *inter alia*, improved donor co-ordination; that when donors finance uneconomic projects, they must be prepared to finance consequent RCF; in some cases, hypothecation of revenues (this may not be the case in small island countries); privatisation and a transparent approach to equity measures such as cross-subsidies; and the need to revamp entrenched policy rigidities.

Project design by AusAID concentrates on project outputs and implied outcomes rather than longer-term impact. A weakness in policy analysis often results in projects that are too ambitious and complex. AusAID, in its main bilateral programs, should focus on fewer, larger and slower disbursing projects - which include provision for current and subsequent RCF - to increase impact and allow longer-term interventions to improve

sustainability. Attention is also drawn to the need to use appropriate levels of technology even if they deliver standards of service below those of developed countries. Some specifics include:

- *Timeframe*. The need, in some areas, to commit to longer term inputs (often 10 or more years) to better institutionalise projects and thus increase prospects of sustainability: currently, time-frames are too short. Longer-term involvement would reap significant development benefits and allow more time for line agencies to institutionalise projects.
- *Project goals*. Project designs are often too ambitious, putting in place systems that governments are unable to sustain. A more gradual approach to project development is necessary, building up capacity to the level of services required and affordable, and using appropriate technology.
- *Ownership*. Greater emphasis has to be placed on factors affecting project ownership and participation by beneficiaries and recipient governments. The lack of ownership adversely affects levels of O&M support both by communities and government: effective participation is also a prerequisite for any consideration of RCF support by donors.
- *Finance*. A simple lack of funds can preclude O&M support.

Several **key areas** need to be addressed.

- The problem of *'moral hazard'* must be examined: donors and recipients too often prefer new, prestigious projects when instead making existing projects work would be a better use of funds.
- The *design and selection* process for projects needs to be re-examined with emphasis on O&M and project rehabilitation.
- *Governance* issues (including improved *donor co-ordination*), as broadly defined in the Simons Report ('One Clear Objective') prepared for the Australian Government, need to take into account the development of appropriate policies and commitment to them by recipients. Asset maintenance must be placed firmly on the agenda of all consultative, consortium and round-table meetings.
- The need to *differentiate in approaches* to asset maintenance as between countries and, in the smallest (island) countries, sectors and projects is essential.
- There is an *equity paradox* in that predominantly subsistence or poor communities cannot pay for the level of amenities considered as necessary by donors and required by national governments.
- There is a need for *specific interventions* to address RCF concerns such as establishment of earmarked funds for specific sectors.

While development of appropriate domestic economic policies to encourage growth must be encouraged, the infrastructure necessary to ensure a reasonable quality of life in many countries cannot at this stage be financed through taxation and cost recovery. For there to be efficient asset maintenance, different approaches are required in low-income and small island countries. At the same time, advice and assistance is necessary for larger countries that have not developed suitable policy frameworks.

There is thus a *dichotomy* in the nature of the problem as between i) those countries that do not and may never have the financial resources to maintain essential infrastructure; and ii) those countries that have the potential to do so but as yet lack appropriate budgetary and institutional mechanisms. In small island countries the problem of asset maintenance is more at the *project or sector* specific level: these are economies with a GDP often less than that of an Australian suburb. Interventions must therefore be pragmatic and achievable. For small island countries, the IBRD has discussed some options. Summarised, these are:

- Trust funds, the income of which is specifically dedicated to maintenance and recurrent costs associated with aid-funded projects.
- Funding a higher level of project financing costs so that, combined with a longer project implementation period, recipients can assume full responsibility for O&M.
- Direct budgetary support in the Health, Education and Public Works sectors, additional and not fungible, and which supports existing standards of infrastructure, subject to appropriate policy development review and sunset clauses.

The above options are some that can be considered for small island countries where Australia has a singular capacity to contribute at both the financial and policy levels. In larger countries, Australia can assist through supporting the efforts of the Banks with the offer of policy and financial support.

Dominating Australia's aid program is the *special case of PNG*. By South Pacific standards, a giant resource-rich economy, it faces severe development problems. While the move away from budget support was necessary, its replacement by project-specific aid has exacerbated O&M problems. Special measures are now required to address its severe O&M problems.

Conclusions. There is an understandable reluctance on the part of donors to move towards funding long-term recurrent cost costs, especially in view of the need for recipients to make practical commitments as to their responsibility for ultimately recouping these. However, Australia's position is unique as a major donor to many small island economies which are, realistically, unable to generate the funds necessary to service existing infrastructure: at the same time it provides assistance to larger economies in need of policy support. The report suggests five areas where Australia can make a difference.

Project and program design. A shift in approach to project design and selection is essential to address the issues of time-frame, project size, O&M capacity, and rehabilitation of previous aid interventions vis-à-vis new investment. The outcome for Australia's aid program might be fewer, larger and longer-term aid projects.

Donor Co-ordination in the South Pacific. With the active support of the Banks and the UNDP, improved donor co-ordination and the avoidance of donor competition is a realistic possibility - even if it means a marginal reduction in levels of aid. Australia should support the strengthening of the South Pacific Forum to achieve this goal.

Recurrent Cost Financing. Some contribution towards recurrent budgets in key sectors - Health, Education and Public Works - must be considered for the smaller island countries. Resources provided should be clearly seen as additional and not fungible.

Governance. Australia can contribute in larger countries: it has the skills to advise on financial, economic and planning issues as they affect the use of investment resources. The offer to provide such advice should be made in liaison with the Banks and the IMF.

PNG. Australia is in a unique position to assist PNG. It should provide further policy assistance to the PNG Treasury; press the issue of donor co-ordination; and liaise more directly with PNG authorities to address RCF issues in the provision of new assistance. Also, it should examine whether the move to full project aid is financially and economically appropriate and whether some margin of funding should be retained for RCF support in key sectors.

In the short term, AusAID needs to take some specific actions as regards project design, internal policy dissemination and in policy dialogue. The costs of these are minor, yet the benefits to the Australian taxpayer and to recipients are likely to be substantial.

Summary. Most development models assume that there is little in the way of a financing constraint to asset management, that with proper governance and good project design the costs of projects are capable of being captured by user charges or taxes as incomes (and benefits) rise. They also assume, more generally, that such costs are supportable within the general budget in countries where aid projects represent a low proportion of government investment. This is not so for most of Australia's aid recipients: put simply, many of these countries do not have the revenue base to maintain a basic level of infrastructure: those that do, do not often possess the policy base to adequately address O&M considerations. Thus asset maintenance is a major problem for donors and recipients alike.

> ***And if we're interested in sustainability, it's no good saying it's 'their' responsibility now, and that we've done our bit. That's not so.***
>
> *Comment from an Australian aid official.*

1. INTRODUCTION

Development assistance is one of the largest businesses in the world: it is carried out by over twenty donor countries and a large number of international organisations. Over US$47 billion dollars was provided in 1997, in the form of bilateral grants and subsidised loans, for the purposes of technical co-operation and training as well as for infrastructure development. Australia alone provides approximately $1.5 billion, its bilateral assistance concentrated in its immediate region.

Aid has been provided since the 1930's, its volume expanding significantly in the 1950's and 1960's as the pace of decolonisation accelerated. In recent years, however, global aid levels have declined. Nevertheless, it still represents a considerable infusion of 'assets' to developing countries.

The issue of asset maintenance has been addressed in various guises since the era of aid expansion, although little action has been taken to resolve or address this straightforward though fundamental issue. To take the business analogy further, no private business can survive if it does not ensure that its assets are maintained efficiently.

As those countries with strong economies have graduated from the need for development assistance, the asset maintenance issue is becoming more acute for small and low-income economies. For Australia, the need to address this problem is increasingly urgent since its aid is focused on small island and low-income countries, many of whose prospects for graduation are slim, at least in the short-term.

One of the first papers to address the asset maintenance problem was prepared for UNCTAD in 1974 on *absorptive capacity*. This seminal paper set out the issue as it affected efficient utilisation of aid funds. The OECD.DAC, as it developed its research capacity, issued guidelines on *local cost financing* in 1977. In Australia, the 1984 Jackson Report specifically mentioned *local and recurrent cost financing*, and in 1997 the Simons Report focused on issues of *design and governance*. Increasingly, attention has been focused on *operations and maintenance* issues as they affect project sustainability, most notably by the World Bank, while the term *asset maintenance* has been increasingly used to define the overall issue. To an extent these terms can be, and in this report are, often used interchangeably since they cover aspects of what is essentially the same issue: ensuring that taxpayers get the best value for the tax dollar and that recipients get the best value from the aid dollar.

This report analyses the issue with a focus on Recurrent Cost Financing. It is descriptive in nature: economic and evaluative analysis were not cost-effective for the purposes of this study. However, the level of research undertaken and the variety of sources consulted validates existing concerns regarding asset maintenance and also proffers some possible ways forward for Australia given its (and New Zealand's) unique donor position in relation to PNG and Pacific Island countries.

The Issue

This report provides an overview of the conceptual issues related to AusAID's assessment of recipient experience in the maintenance of project assets, with particular focus on problems of recurrent cost financing. These issues are primarily generic in character, and applicable to most, if not all, AusAID project activities. The country-specific references are intended to be illustrative, rather than aiming to highlight problems in any single country.

It is useful to distinguish at least three classes of asset, namely:

- physical infrastructure, such as roads and bridges: typically fixed assets;
- plant and equipment, such as motorised vehicles and machinery: typically movable assets; and
- human capital and various forms of intellectual assets, such as technically qualified and experienced staff, as well as information and management systems: typically highly movable assets, frequently of an intangible nature that cannot necessarily be retained in a specific project environment.

Detailed consideration of maintenance issues is different for each asset class.

Physical infrastructure normally has a long design life span, of up to 20 years, with maintenance concerns revolving around adequate regular routine maintenance and more substantial periodic replacement maintenance as required. For example, a sealed road requires regular routine maintenance (to repair potholes, clear drains, etc) as well as significant periodic resurfacing (say each ten years): airport runways are in a similar class[2].

Plant and equipment assets typically have a shorter life span than physical assets, from five to ten years, due to the nature of their usage as well as being more susceptible to technological change. A particular case is information technology equipment which is subject to rapid changes in industry standards. While the general concepts of routine and periodic maintenance still apply, proper maintenance planning for plant and equipment may include a sizeable component of preventative maintenance. For highly specialised and major equipment items (such as power generating equipment), detailed maintenance planning can include highly sophisticated risk analysis procedures, in particular to minimise the cost of inventory stocks of replacement parts.

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2 The World Bank Pacific Islands Transport Sector Study, 1993, discusses many of these issues in detail as does the 1981 OECD.DAC synthesis of evaluations. Current papers in preparation by the IBRD regarding transport issues in PNG should also be consulted.

For **human capital and other forms of intellectual assets**, concepts of maintenance are different to those relating to physical infrastructure and to plant and equipment. Nevertheless, it is clear that there are RCF issues involved in 'maintaining' human capital (such as the need for ongoing training/update courses during implementation; the retention of trained counterpart staff on project completion; and ensuring that levels of expertise remain up-to-date). A problem is that many projects where this concept of assets applies have only been recently implemented and evaluation assessments are not yet available.

Operations and Maintenance expenditures

Usually, problems associated with the longevity of AusAID-supplied project assets are linked with the perceived adequacy (or otherwise) of related O&M expenditures. It may be useful to focus on the different characteristics of these two expenditure components.

Operations expenditures refer to a broad range of financial outlays related to the normal provision of various services (such as education and health facilities). These relate to a wide range of categories, but which are frequently dominated by payments for salaries (for example to teachers). The potential range of items in operations expenditures might include:

- personal emoluments (salaries, etc);
- office materials and supplies;
- operational materials and supplies;
- travel and subsistence expenses;
- utilities, transport and fuel; and
- rental of property, as well as various other administrative and operational expenses.

Operations expenditure is related to a regular annual cycle and hence might be considered to be reasonably predictable. Nevertheless, such expenditures may also be subject to peaks and troughs caused by special events, public health epidemics, natural disasters, etc.

The level of 'optimum' operations expenditures for a sector may be difficult to identify or not even exist. While it may be possible (at least in theory) to identify an optimum operations expenditure using marginal cost and benefit concepts, normally this is not a practical proposition. For example, in health expenditures, it is difficult to equate the marginal value of an extra life saved with the marginal operations expenditure of a health service.

In practical terms, there are certain minimum standards to provide a baseline for operations expenditures (such as maximum desired student-teacher ratios in education facilities, or desired minimum ratio of qualified medical staff to total population for

health services). Equally there may exist certain goals for provision of services (such as target levels of service of various facilities, such as schools and health centres). In practice, there is normally considerable flexibility in these areas, and in some respects the demand for certain services may be virtually unlimited. That is, it is almost always possible to spend more money to provide enhanced services to the population of a country (such as in education and in health). It is therefore essential to decide on an appropriate level of service that can be realistically maintained: performance indicators can then be used to monitor the levels of service which are delivered in these sectors.

By contrast, the absolute level of necessary **maintenance expenditures** can be more difficult to predict than operations expenditure as it can include various 'emergency' maintenance needs from time to time (such as after cyclones). A typical categorisation of maintenance expenditures is:

- Emergency Repairs and Maintenance;
- Routine Regular Maintenance and Preventative Maintenance;
- Cyclical Major Maintenance; and
- Replacement Maintenance

It is more difficult to identify actual levels of expenditure on maintenance for a range of reasons. For example, some maintenance items may be considered as recurrent expenditure, while others (such as cyclical major maintenance and replacement maintenance) may be classified as capital expenditure. Hence, they may be totally separate in accounting terms, possibly managed by different agencies, and difficult to reconcile and consolidate.

Practical estimates for routine regular maintenance may not include all costs incurred in this category. For example, staffing for overhead management and even for some day-to-day activities may be accounted for separately. Similarly, some operational materials and supplies and other similar expenditures related to routine maintenance may be accounted for separately. A third difficulty in practice can be the dispersion of financial responsibility for maintenance between different levels of government.

- For example, maintenance of roads in Papua New Guinea is undertaken by the National Government, as well as a large number of Provincial and Local Level Governments. In addition to the broad classifications of maintenance expenditures outlined above, different agencies have a range of internal classifications for maintenance expenditures: e.g. the National Government Department of Transport and Works uses seven categories of road maintenance expenditure for internal planning and budgeting purposes.

As for operations expenditures, varying expenditures on maintenance can deliver different levels of service to users. For example, in the case of unsealed roads, a quarterly regrading program will be less expensive than a monthly regrading program but may be

expected to impose higher costs on road users. It is nevertheless possible to estimate 'optimum' levels of maintenance expenditure when total transport costs (the sum of road user costs and agency maintenance costs) are minimised.

It is also often difficult, if not impossible, to define 'optimum' maintenance conditions due to a combination of lack of information and budget constraints. Clearly 'over maintenance' is also possible. In practice, this is an unlikely distraction in most countries (both developing and developed). Rather, lack of information and budget constraints can both contribute to significant 'under-maintenance'. Furthermore, as has been frequently shown in the case of roads, the consequences of long term under-maintenance can be extremely severe (and occasionally catastrophic). Inadequate road maintenance leading to the need to completely reconstruct a road is considerably more expensive in total than over-maintenance (such as pavement strengthening) ahead of optimum time.[3]

- In many developing countries, the level of O&M has to find its own level: Australian standards are not necessarily applicable.

Shortfalls in funding

The above illustrates some of the practical complexities in pinpointing actual shortfalls in O&M funding. That is, it can be difficult to identify the precise level of financial resources devoted to O&M and to identify the desired 'optimum' expenditure in any specific context.

A further practical difficulty is the phenomenon of 'abandoned' projects, plant and equipment etc. In many of these circumstances, it could appear that these projects have 'failed' due to inadequate recipient expenditure on project O&M. However, it is frequently the case that such projects have failed for some other reason (such as a technical design fault) and that further O&M expenditure has consequently not been forthcoming. In these circumstances, inadequate O&M expenditures are a symptom, not a cause, of project failures.

The above should not be confused with the 'moral hazard' problem, the argument that international development assistance has an inbuilt capital aid bias. As a consequence, it is argued that some aid recipients may choose (rationally) not to incur necessary O&M expenditures, but rather allow capital goods to deteriorate in the expectation that further international donor aid will be forthcoming to substitute for the diminished assets.[4]

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3 The synthesis of sector evaluations undertaken by the OECD.DAC in 1981 includes comprehensive discussion on the economics of road maintenance vis-à-vis replacement.

4 It is also possible that if aid flows continue to decline and economic circumstances in our region continue to deteriorate, then there may be a greater commitment to O&M: this would of course assume marked change in policy approaches on the part of aid recipients.

Addressing RCF shortfalls

Where shortfalls in O&M funding are perceived to exist, there are three broad avenues for addressing the issue:

- Financial shortfalls
- Institutional arrangements
- Technical considerations

Financial shortfalls. Budget pressures are a global phenomenon and there are universal concerns regarding the fiscal capacity of governments to obtain adequate resources. Various measures applicable to developing countries include:

- increasing tax take, by better collection procedures and establishing a wider tax base;
- mobilising international donors to contribute to the recurrent budget;
- allocating donor contributions to the development budget so as to capitalise traditional O&M expenditures (as has occurred in PNG, where road maintenance expenditure by the National Government has been moved from the recurrent to the development budget); and
- reallocating priorities within given budgets to shift attention to ongoing O&M expenditure rather than new capital investment and/or deletion of some established expenditures (such as on defence): investment in maintenance expenditures can be shown to yield high economic rates of return.

Institutional arrangements. There is a host of measures which might be adopted to address RCF shortfalls, such as:

- improving cash flow management to strengthen implementation capacity of agencies: for example, in PNG an environment of uncertainty exists for public sector agencies with respect to receipt of funds - this creates major problems for orderly expenditure planning and encourages erratic allocation of resources;
- clarifying institutional overlaps which generate uncertainty as to precise responsibilities for O&M issues, such as currently experienced in PNG by the ongoing provincial and local level government reform process: other administrative and management reforms can improve the overall delivery of government services;
- hypothecating public revenues so as to dedicate specific financial revenues to specific areas (e.g. fuel tax revenue being solely applied to maintenance of the transport network);
- developing user-pay arrangements, and commercialisation, corporatisation and privatisation of public sector activities to remove the funding responsibilities for

O&M from government receipts (and enhance incentives to properly maintain facilities held in private ownership). Similarly, outsourcing appropriate O&M activities can improve the effectiveness of expenditures in these areas - new projects might be of a Build-Own-Operate character, or Build-Operate-Transfer, or both; and

- improving efficiency of delivery

Technical considerations. There is scope to increase the efficiency of O&M expenditures by various means such as:

- developing more sophisticated techniques to optimise performance (and minimise outlays on O&M) including detailed risk analysis;
- increasing attention to relevant technical issues in the design of project investments to lessen O&M requirements; and
- establishing maintenance arrangements that can be 'built in' to capital expenditures, such as by extended warranty periods for major equipment, and ongoing maintenance components for major capital works contracts.

It is evident from the above overview that there is no single RCF problem. Rather, in assessing recipient experience in the maintenance of project assets, there are likely to be many different types of experience with different categories of assets. Similarly, the problem of shortfalls in O&M expenditures has many facets, and 'optimum' expenditure levels may be difficult to define.

Study Method

Process

The method adopted for this study was simple yet comprehensive in scope. Within the resource and practical limits of the exercise, several sets of data were obtained on which the discussion is based. A premium was placed on anecdotal evidence, particularly relating to Australia's aid interests in the South Pacific where the issue of asset maintenance is crucial.

- A questionnaire (appendix two), was distributed to senior AusAID staff overseas and in Canberra and to a sample of other AusAID staff with overseas experience. It aimed to elicit a qualitative assessment of past project performance, emerging problems, and the budgetary commitment and performance of recipient governments. No analysis of quantitative data was required. The questionnaire was also distributed to several ex-AusAID staff and others associated with the aid program.
- AusAID records were examined covering the period 1985-1998, initially through the AMS database by keyword search and then, where possible, through files. This provided only thirty-seven specific references to RCF in an estimated

minimum of 4,000 AusAID-funded activities conducted over the period. Based on comments from AusAID staff, a number of other project files were also examined however a full file search was beyond the scope of this exercise.

- An international and domestic literature search was also conducted.
- A field mission was undertaken focusing on the largest recipients of Australian aid (PNG, Indonesia and the Philippines) and discussions with the World and Asian Development Banks.
- A small-island desk study was undertaken in Samoa.

The results of the above were then examined by external peer reviewers, independent of AusAID, with experience across sectors and regions.

Within the scope of this exercise it was not possible to conduct ex-post project evaluation on RCF. The resources necessary to conduct such analysis are beyond those available to most donors and realistically can only be undertaken by the World Bank. However, given the well-recognised nature of this issue, written and anecdotal evidence is considered acceptable for the purposes of this study as defined in the TOR.

Results and report structure

The response to the questionnaire was disappointing in terms of the number of replies from AusAID staff. Fewer than 20% responded although those that did had a long record of overseas experience and their comments were extremely useful. A number of nil-responses were received which raised the overall response rate to 25%. All consultants, contractors and NGOs contacted provided views, as did several overseas sources. Overall, the level of response is considered statistically sufficient from which to draw *general* conclusions given the nature of the questionnaire.

Overseas discussions revealed substantial interest in the issue, the field mission proving a lucrative source of information. The level of interest in this exercise clearly demonstrates donor and recipient concerns with the issue. The OECD.DAC was helpful in providing background information as were the World Bank and IFC.

Only a relatively small amount of material was obtained from the literature analysis of AusAID documents and international reports. Major libraries in Australia were referenced, with the assistance of AusAID library staff, as were Internet sources, while the field mission also obtained additional literature from the International Financial Institutions. The analysis of AusAID files did not reveal any substantial information: it is doubtful whether a more exhaustive file search would provide additional information. In summary, in most of the literature on development assistance, the issue is not addressed directly but rather as a component issue of general aid practice.

The weaknesses in the above method are clear. Lack of project economic analysis, sampling technique, and the size of the sample itself. Additional donor contacts in Europe would have been useful for purposes of comparison. However, these are evaluation concerns rather than common-sense ones and are not considered to be such as to affect the conclusions reached. The results are organised as undertaken: desk analysis; field mission; overview; and conclusions: this is reflected in the chapter structure. While to an extent repetitious, this does bolster the validity of the points made.

Box 2: The OECD.DAC

Australia subscribes to international guidelines issued by the OECD.DAC. In 1977 guidelines were issued on local cost financing. These advocate local cost financing in specific circumstances for ongoing projects. Project design factors were emphasised as were overall economic and budgetary support considerations. A short section was devoted to RCF which included the statement that 'Present policies with regard to RCF should therefore be reviewed in the light of new directions for development co-operation.' The DAC continued to work on the issue and issued several papers on maintenance strongly emphasising the need for appropriate levels of asset maintenance involving RCF and donor co-ordination.

At an OECD.DAC meeting in May 1998, which discussed the issue of infrastructure needs into the 21st century, the DAC concluded that, inter alia, regulation via project-by-project intervention is inefficient and that greater attention to issues of planning, governance and capacity building is required. The increased role of the private sector and the need for government support for this was also alluded to. In specific findings, the DAC commented that:

- Maintenance/rehabilitation investment - along with proper pricing - is crucial for sustainability and delivering expected broad benefits. Institutional financial incentives, including performance standards, can help to meet these deficits. Long-term cost recovery and sustainability, including provisions for maintenance, must be taken into account in project evaluation.

and that there is a specific need for:

- systemic approaches to planning and managing infrastructure provision;
- integrated approaches to address simultaneously the different policy areas and capacity building needs affecting infrastructure;
- continuous dialogue between public and private sector and donor agencies, and donor co-ordination to ensure consistency of advice as the complexity of project financing packages increases.

2. DESK ANALYSIS

The desk analysis involved a literature and file search, expanded to cover material from other sources referenced by the field mission; a questionnaire distributed to AusAID staff which also formed the basis for interviews with consultants, NGOs and contractors; and reference to AusAID's 'Lessons Learned Database' as well as to similar international sources.

Literature Research

Overall, there was a marked consistency in the literature consulted both as to the factors affecting the maintenance of assets and as to solutions. The literature tends to focus, unsurprisingly, on overall macro-economic considerations with the more specific problems of the small island countries receiving less attention. The documents referred to below are those that are considered either seminal and/or most relevant to this report. Sources consulted included the World Bank; Australian Libraries and the NCDS; AusAID; the AsDB; and Internet catalogues of libraries such as ELDIS and ODI. Donor sources were consulted both through the Internet and DAC references but these did not prove fruitful. A bibliography is attached at appendix one.

A convenient starting point for the literature was the article by Pincus[5] on absorptive capacity. It sets out much of the original discussion on development theory and outlines the theory and concept of absorptive capacity. He points out that 'Effective management, moreover, of specific aid operations contributes to enhancing the positive benefits associated with the flow of foreign assistance.' He details a number of factors that can limit absorptive capacity, including *inter alia*, inadequate funds, poor financial and economic policies, inadequate skills, lack of management capacity, institutional limitations, insufficient infrastructure, cultural and social constraints, and inappropriate donor policies; he then goes on to note that the ability to fund the continuing costs of existing projects such as hospitals and schools may impose very real limits on future absorptive capacity and that the type of assistance being offered by donors may not necessarily be in accord with recipient priorities.

In 1977, the DAC issued Guidelines on Local (and Recurrent Cost Financing)[6], followed up by further substantial analysis, while in 1984, the Jackson Committee devoted a section[7] of its report to the issue. Australia's position had until then been centred around the basic tenet that a recipient's willingness to meet local costs was an

5 Pincus: Staff paper, UNCTAD 1974

6 Contained in 'Development Co-operation', the 1977 DAC Chairman's Report, Paris.

7 The Jackson Report, pp 73/74: Commonwealth of Australia, 1984

indication of their commitment to the project. However, the report noted that there had been gradual changes in this position and that the fungibility of capital flows gave recipients 'ample room to manoeuvre'; it also stated that 'For effective aid delivery, however, it may be necessary on occasion for the donor to meet local costs'. The report, rehearsing many of the arguments used by Pincus, detailed the broad range of measures then being used by Australia to finance local costs (the inclusion of fuel, oil and lubricant costs; Accountable Cash Grants; the 50% rule in ASEAN etc.) The report went on to recommend more generous treatment of local cost financing and then addressed the problem of recurrent costs. Setting out the factors that affect asset maintenance, the report recommended that '… recurrent cost funding should only be considered in very special cases.'

There had been considerable work carried out in the 1970's and 1980's in the UN institutions, as well as under the auspices of the Commonwealth Secretariat, on the problems of island smallness with a focus on their absorptive capacity. However, the first major international focus on the RCF problem in the South Pacific was within the context of the World Bank's initial Regional Economic Report[8] issued in 1991. In direct terms, it noted that 'Lack of attention to the problem of recurrent cost funding is detrimental to efficient aid use; it wastes donor money, drains administrative resources, and undermines the ultimate return from the aid project. … donors may have to make an explicit provision for recurrent cost financing.'

This Bank study led it to make several recommendations regarding the management of RCF in the South Pacific: these were later discussed at a meeting of donors and recipients in Singapore in 1990. A specific outcome of this meeting was a joint Australia-New Zealand study of RCF issues in the South Pacific. In summary, the report[9] recommended the provision of RCF to SPICs where its provision improved the long-term sustainability of development activities; for O&M costs for new projects and programs; and for rehabilitation of assets that had deteriorated due to previous lack of recurrent expenditure.

In 1991, Heller followed up a 1977 article on 'The Underfinancing of Recurrent Costs'[10] with a chapter in the IMF Public Expenditure Handbook[11], widely regarded as the key text summarising O&M issues (see Box 3).

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8 Pacific Island Economies pp81/82: World Bank, 1991.

9 Australia/New Zealand Study on Recurrent Cost Funding in the South Pacific: AusAID/MERT, 1991.

10 Finance and Development #16, IMF 1979.

11 Public Expenditure Handbook: A Guide to Public Policy Issues in Developing Countries: ed Chu & Hemming, IMF, 1991: pp52-59.

Discussion of the issue, gradually redefined as maintenance of assets and O&M rather than RCF, has increased substantially since 1991 with the World Bank being the clear forerunner in research. The Bank's major annual publication, the World Development Report (WDR), focused on infrastructure in 1994[12] and led to a number of staff papers being developed relating to the efficiency of public spending, involving *inter alia*, O&M costs. The literature focuses on infrastructure (roads, airports, water supply, agricultural systems etc.) and pays far less attention to RCF issues in sectors such as health and education. In part this may be due to the fact of the relatively recent change of emphasis in aid (i.e. away from infrastructure towards health, education and capacity building etc.); and in part to an inherent view, only slowly changing amongst bilateral donors, of the nature of O&M costs in non-infrastructure sectors.

The volume of specific literature on RCF was not as large as expected, although the recent volume of World Bank research is substantial. In many cases, articles and major reports appear to take the issue for granted: this may not be surprising since *absorptive capacity*, per se, was the subject of considerable analysis in the 1960's (one source pointed out that discussion of this issue had commenced in the mid-nineteenth century). Donor literature sources were also examined. What is lacking, from Australia's point of view, is clear analysis of the impact of the RCF issue on the countries of our region and of ways in which it can be addressed.

The results of the literature search show a consistency in argument on the issue over three decades, albeit heavily criticised in early years by conservative analysts[13]. The *basics* of the issue have been noted above and are set out further in the discussion below.

Staff Views

Questions asked of staff were designed to elicit views rather than quantitative assessments. As with other areas of this review, there is an overlap of themes as well as in responses to individual questions. The comments below represent a collation of written and oral responses. As noted above, project and country examples are illustrative.

12 World Development Report, Infrastructure for Development: World Bank, 1994.

13 See, for example, Bauer, Dissent on Development, 1971.

Box 3: Public Spending

In 1979, **Heller** contributed an article to *Finance and Development* on the Underfinancing of Recurrent Costs which stated that 'While most governments concentrate their efforts on new development investments, they often fail to provide adequately for the recurrent operational and maintenance costs of previous development projects.' Subsequently, in his contribution to the IMF's *Public Expenditure Handbook* (1991), he differentiates between RCF impacts on capital infrastructure and more service-oriented projects such as in health and education. In summary comments, he analyses the causes of the problem, pointing to the fact that:

> '…O&M expenditures often have a low priority in government budgets as they are less appealing and visible than new investment projects. In addition, since poor maintenance and inadequate operations have delayed consequences or less obvious effects, expenditure on these items tends to get postponed. Moreover, external donors have facilitated the efforts of countries to mount ambitious investment projects while providing little support for recurrent costs, thus creating the basis for subsequent O&M problems. Inadequate understanding of the costly downstream consequences of neglecting maintenance, lack of local expertise, and unclearly delegated responsibilities and accountability also contribute to the problem of …'

In observations on the consequences of inadequate O&M outlays, Heller notes that while inadequate O&M expenditure has micro-economic consequences in the form of deteriorated infrastructure, it has serious macro-economic consequences as well: 'higher growth depends as much on efforts to reduce the inefficient utilisation of the existing capital stock as on the creation of new capacity.'

Pradhan's *1996 World Bank Discussion Paper* (#323) on evaluating public spending noted weaknesses in recipient financial management and in the manner in which donor assistance is provided both at policy and project levels. Analysis of these is quintessential to the issue of asset maintenance. Comments are made on the limited guidance available from then current academic literature and the lack of a systematic framework for public expenditure analysis.

Specific conclusions include: '…the input mix, or the allocations for capital and recurrent expenditures, should be analysed in an integrated manner within programs and sectors to address the shortcomings of traditional capital-led budgeting with unsustainable cost requirements and the crowding-out of non-wage operations and maintenance by wage expenditures. This requires weeding out capital and recurrent expenditures of undesirable programs, and within the major remaining programs, assessing the recurrent costs of existing and new investments, the non-wage O&M requirements, the extent of civil service overstaffing, and the adequacy of civil service pay. … More broadly, budgetary institutions should be analysed and reformed to ensure that incentives, formal and informal rules and capacities contribute to the control of aggregate spending, prioritisation … to achieve allocative efficiency and equity, and technical efficiency in the use of budgeted resources.'

The paper analyses public expenditure across a range of sectors, including health and education. Conclusions relating to donor assistance incentives, pp108-109, trenchantly demonstrate the problem of donor-led, inherently expansionary, capital investment programs that are undertaken irrespective of whether existing investments receive adequate resources or whether the new investments can be appropriately maintained in the future.

Question one concerned the viability and effectiveness of projects in the light of the level of RCF funding.

Some respondents noted that relatively few projects had suffered through lack of O&M funding. Examples of projects in which government support ensured continuing project effectiveness included the:

- Philippines Agriculture and Technical and Vocational Education Project;
- Samoa Livestock Training Project; and
- the Fiji-Australia Teacher Education Project.

However, most respondents held the view that O&M was a problem, pointing out that in times of budgetary stringency - virtually ongoing - this is the first area of expenditure to be cut, even down to the level of office supplies. Several pointed to the severity of the problem in the South Pacific, differentiating between Polynesia, Melanesia and PNG. In some countries, the availability of public finance is such that up to four-fifths of the budget goes on salaries which leaves little funding available for maintenance.

It was suggested that, due to the ready availability of donor funding, projects were often designed to a higher, more sophisticated level than necessary thus requiring greater capital investment. Recipient O&M support for projects might then be insufficient since available resources were relative to a lower level of investment, one affordable by the recipient government. It was generally considered that there was an insufficient level of budget resources for O&M throughout all sectors and in all countries, certainly by donor standards.

Respondents noted that levels and availability of O&M funding were not always the deciding factor relating to asset maintenance. Even when funding was available, projects could still face severe problems because of a lack of trained operating personnel, a factor more evident in smaller and least-developed countries. At the same time, greater participation and ownership by the local community could compensate for lack of central funding, and in some cases personnel: this was seen as a pertinent design consideration.

- If an asset is seen as beneficial, and if recipients are involved in implementation, the asset will probably be maintained well. For example, irrigation channels and sluice gates at the Tam Phuong Irrigation Project in Vietnam were in excellent condition, maintained largely by the local population because of their direct interest in the project's success.

There will always be projects that deteriorate due to problems of asset maintenance as donors cannot influence out-year budget decisions by recipients: projects are often not sustainable after the donor withdraws since realistic O&M considerations are not built into project design or, if they are, are not achievable.

- More complex projects, such as those involving IT, are more likely to fail after the donor withdraws support: the need for systems administrators, secure power supplies, anti-virus protection etc. is not often fully understood (or the capacity to provide such is not there) while trained staff are highly mobile.

There is a preference in some countries to avoid anything other than a basic commitment to O&M, the preference being to let assets run down or to rebuild as required. (It should be noted that this is a valid economic decision if recipients are confident that broken-down equipment/infrastructure will be replaced.) This was more the case in the Pacific where a five to seven year cycle of project replacement was often quoted as the 'norm'[14].

- For example, the Government of Tonga (GoT) makes no substantial budgetary allocation for maintenance - the question is why should it, given donor willingness to provide assistance? In any case does it have a realistic capacity to do so given the volume of donor-financed infrastructure that it has to support? Australian projects have aimed to develop a culture of maintenance in managing government assets[15], but departmental budgets do not necessarily reflect this. Currently, only the Ministry of Education has an assets register of buildings and equipment with a maintenance budget set at only $30,000 per annum (one of the largest in Tonga). GoT are addressing the overall RCF problem.

Even in major infrastructure projects (roads and airports), with their extended life-span, respondents considered that problems are emerging due to lack of maintenance funds: examples quoted included projects such as Zamboanga del Sur and Northern Samar[16] in the Philippines. Similar comments were made regarding infrastructure projects in the South Pacific, focusing on 'built to last' airports and roads.

- The lack of donor-funded maintenance for major infrastructure in the South Pacific is a false saving since, inevitably, full replacement costs will have to be funded by donors. The example of Fua'amoto airport in Tonga was quoted when, without reasonable levels of maintenance, the runway deteriorated to the extent that complete resurfacing was required[17]. Much infrastructure has remained viable only because of new inputs by donors: preventative maintenance, either by the government or by the donor is a rarity.

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14 Several consultants and staff also indicated that this was the case in some Asian countries.

15 Examples of this have been the PWD projects supported over many years in Samoa and Tonga.

16 Northern Samar was an example of a 'built to last' project carried out to high specifications.

17 The case of airports in the Pacific, their design and utilisation is covered in several documents, notably the IBRD's report on the Transport Sector in the Pacific Islands, 1993 and in AusAID evaluations.

Question two enquired whether Governments made general maintenance provisions and as to whether revenue expectations were realistic.

Revenue expectations were not regarded as realistic while financial systems were considered as unsophisticated. Expertise and/or equipment needed to undertake maintenance work is often unavailable as are the funds to support such work due to either inadequate budgetary provision or to weaknesses in the systems of public finance.

It was considered that while some RCF provision is made by most governments, generally it is insufficient to maintain most projects and that little attention, if any, is given to allocations for preventive maintenance - further compounding the overall asset maintenance problem. In some countries, officials noted that preventive maintenance was not carried out, a factor which led to over-engineering of projects by donors so as to avoid the need for early maintenance but which has an opportunity cost in terms of other aid interventions.

- An example of over-engineering to avoid early maintenance was quoted as the North-South Transmission Line in Vietnam. Over-engineering is not a new phenomenon, an earlier example was the North Sava'ii road in Samoa.
- In general comments, it was noted that in Indonesia the Government did not make adequate budgetary provision for projects even during the implementation-investment phase while similar comments on the weaknesses of the PNG financial system reflected those made in IBRD/IMF assessments.
- There are doubts as to whether high-technology equipment is maintained even when, as in the aviation sector, it is essential to operations. The PNG Civil Aviation Project supplied Distance Measuring Equipment necessary for the control of air traffic both within the country and for over-flying international traffic yet lack of funds and expertise have caused concern as to whether equipment will be maintained adequately.
- The performance of some donors in over-specifying projects and thus compounding O&M problems was frequently noted: expensive equipment is supplied which is often not needed and is too complex to operate and maintain within existing budget and staff resources.
- Projects are put in place in the belief that they will be maintained but after the project ceases donors have little influence over recurrent budgets. There is the option of conditionality in insisting on assets registers, maintenance plans etc.: whether in small countries or line agencies this will have any practical effect is doubtful.

Question three sought information on emerging RCF problems and the factors causing them.

Respondents viewed RCF problems as both budgetary and institutional, although the latter received more emphasis. Many national and local agencies appear to have difficulty in understanding the need to institutionalise O&M policies and procedures.

There is a clear difference between those countries that have a reasonable financial capacity and those that do not (Thailand versus Tuvalu). In other words, in small countries, no matter how much effort the Government or line agency puts into planning or cost recovery policies, there will always be RCF problems especially if projects are over-designed.

- Examples were provided of projects where, despite strong commitment by senior officials, future funding was in doubt because of a lack of institutional capacity to ensure that basic financial management and forecasting requirements were met; and secondly, that in any case finance was not available. Examples quoted included the PNG police training project and several agricultural projects in the South Pacific.

In the Pacific, major infrastructure projects were seen as being less of an asset maintenance problem in the short-term because of their simple longevity. However, this creates a problem further down the line if revenues do not increase sufficiently to accommodate replacement costs. Asset maintenance (and replacement) was seen as a more acute problem in higher technology projects and those requiring a constant supply of inputs (for example basic mechanical spares etc).

Question four sought information on factors affecting asset maintenance problems that might have been contributed to by Australian policies.

AusAID **design** performance can be improved. Over-specification of design was the area most quoted, especially in the South Pacific inclusive of Fiji and PNG, as were the issues of project ownership and participation.

- RCF was not considered as the only issue in terms of asset maintenance. The Tonga Desiccated Coconut Factory, design and O&M factors apart, was quoted as a project in which the principal failing was a lack of understanding that western working practices are not necessarily transferable to other social systems.
- Treaty pledges and annual spending targets were seen as being a critical factor affecting efficient expenditure of funds and inadequate attention to RCF.
- Reasonable conditionality has to be built into projects.
- Project design has to avoid unrealistic expectations apropos the institutional capacity of the recipient government or line agency. Greater focus has to be placed on capacity-building projects (which in itself could create another set of O&M problems).
- The time-frame in which projects are undertaken was seen as a major concern. Long-term involvement will reap development benefits, recognise O&M realities, and allow more time for line agencies to develop projects that can become self-financing and be incorporated properly into the budgetary process.

Respondents considered that the political imperative in donor-recipient relations had often led to 'prestige' projects being undertaken which were not cost-effective. Examples were provided of projects which were beyond the level appropriate to the country's economy[18] and thus on its ability to maintain them. While these are valid arguments, many such projects are essential[19] and therefore come down to a question of appropriate design.

Question five sought advice on possible solutions and offered suggestions including conditionality and direct provision of recurrent costs for consideration.

Respondents stated that there was a need for improved design and review structures, most favouring some moves towards enhanced conditionality offset by increased provision of RCF.

- On conditionality, most respondents supported increased conditionality while recognising that there are practical limitations to achieving this unless there is political will on the part of the donor. Conditionality was seen as project specific (usually in terms of institutional strengthening rather than financial penalties) and not as an intrusive exercise relating to overall economic management. On the other hand, political and aid treaty arrangements can build in expectations of continuing aid funding militating against attempts to introduce conditionality and reasonable levels of asset maintenance.

While increased conditionality was seen as a realistic avenue for improved aid effectiveness, it was recognised that enforcing it was generally beyond the capacity of a bilateral donor. In any case, in many countries, conditionality would not work because resources were simply not available. In these cases a realistic assessment of the need for RCF must be made and if necessary provided for. This applies not only to the South Pacific but also to those small economies of South-east Asia where, for example, it makes little sense to implement a primary health care project that immediately fails on completion because of lack of LCF/RCF.

Several respondents viewed the provision of RCF as being at odds with the concept of sustainability. On the other hand, a move towards longer-term projects, in which the donor meets a high proportion of all costs in the initial years was strongly advocated: this would allow the recipient a better chance of building the revenue-earning capacity and developing the institutional skills necessary to support the project after completion.

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18 An issue of some contention, it focuses on whether it is necessary to build facilities that are never likely to be used to their capacity; e.g. a 747-capable runway for 737's; surfaced rather than graded rural roads etc. On the other hand, some over-specification can result in long term savings although eventual replacements costs may be excessive.

19 This argument is focused on small island countries. These countries must have a port, an airport and a basic roads system. Health and education facilities must also be provided.

Many projects were seen as to too ambitious: the time-frame for their implementation too short for changes to take hold and the demands of maintaining them after the donor (Australia) withdraws too great. This was particularly so with projects which have limited or no 'financial returns' (e.g. in the health and education sectors). Respondents considered that the exit from projects should be less abrupt and allow (reducing levels of) support for an extended period: the tendency to undertake new projects means that Australia is not ensuring that existing projects are properly institutionalised and established before it exits.

Question six sought general comments on the issue.

Comments emphasised that the issue was not restricted to physical assets but also to projects in which capacity building was involved. Staff considered that there should be greater attention focused on asset maintenance, and that the problem was more widespread than perceived because of the inbuilt donor tendency to focus on new projects.

AusAID's project review process was not regarded as strong in promoting sustainability, although equally this was a problem in many recipient countries - the larger economies seen as being more interested in the concept.

Box 4: Staff Comments

The following are paraphrased comments made by staff

'…the two critical characteristics which must exist to make aid effective in the long haul are namely ownership and absorptive capacity/recurrent cost financing issues.'

'…RCF is perhaps the most frustrating issue to deal with. Rarely do you find a project where the counterpart contribution is anywhere near what was agreed at the time of project design. More often than not, what is allocated may arrive late in their financial year further decreasing its effectiveness.'

'…(a) need for recipient countries to build into their normal departmental budgets, financial provisions for not only maintaining assets, but for preserving the capacity created during the delivery of the project concerned.'

'Ultimately, Australia may need to accept that things need to be done slightly differently in small island/least developed countries. These are unable to meet counterpart contributions or RCF obligations that we demand of other larger or relatively richer countries. If we do not recognise this, we are setting ourselves up to implement unsustainable projects.'

'Proper provision for maintenance can be addressed through sensible design (and redesign where original designs overtax the local system), appropriate cost-sharing, sound public finance and other policies and programs which promote asset management.'

'Conditionality is a critical issue. Hitherto, Australia has not emphasised this to any realistic degree yet it is a viable, pragmatic and politically acceptable option.'

'And if we're interested in sustainability, it's no good saying it's 'their' responsibility now, and that we've done our bit. That's not so.'

Staff quoted several projects which had not achieved their objectives after the cessation of Australian support, including the Hissar projects in Haryana province in India, the Burma Silos project, the Tonga Desiccated Coconut Factory, the Mandalay Dairy Farm, and the Kashmir Apple project. Consistently respondents emphasised poor project design as an equally important factor as RCF. *On the other hand, staff also indicated a number of successful infrastructure projects including the Kalbar Roads and Sarawak Bridges projects. The Water Supply Project in Fiji is another example of a project that is being well maintained by the recipient government. Thus many taxpayer supplied assets are being maintained successfully: this report draws attention to ways in which the ratio can be increased.*

- Respondents emphasised the critical requirements needed to make aid effective in the long haul, namely ownership and the resolution of absorptive capacity/RCF issues.
- A recurring theme was the need to focus on RCF not only in project design but also in mid-term reviews and particularly in ex-post evaluations.
- The level of accountability versus the need to achieve aid effectiveness was questioned: over-emphasis on accountability could lead to over-design and the use of inappropriate technology.

Improved budgetary procedures and evidence of Ministry/Departmental commitment to a project were seen as important as was ensuring that appropriate cost recovery mechanisms were in place as well as continuing training of maintenance staff. This is as important for maintaining tangible assets as it is for maintaining and up-dating the skill base of the institutions which are the primary targets of assistance. *More attention must be paid to the realities of counterpart budgeting.*

File Analysis

As part of the first phase of this study, RCF references in the AusAID database were reviewed but few were found. Available project files were searched and references by staff to previous projects were also followed up to the extent that files were available. The results were few. Less than one per cent of activities on the database made any reference to RCF, most being cursory. There was however one key finding: the majority of the references concerned new projects in PNG and there is clearly concern that it does not have the budgetary capacity to provide for the extensive range of projects that Australia is now undertaking.

Comments by Contractors and NGOs

The questionnaire used for AusAID staff was also used as the basis for interview of a sample of Australian consultants, contractors and NGOs. This sample was estimated to have been responsible for the management of over seventy-five per cent of Australian bilateral aid since 1985. The consensus of views reflected those provided by staff.

Comments indicated that the availability of LCF was a concern throughout project implementation while there were few projects that had not been affected by a lack of O&M expenditure after completion. It was strongly suggested that major projects are designed to a higher level than appropriate to the needs and resource base of recipients.

Although it might be expected that the comments of NGOs and consulting organisations would differ markedly, the only major difference was that NGOs held that the smaller projects were more sustainable because of a much greater degree of participative design by communities and thus greater ownership - thus ameliorating the RCF problem.

Respondents generally considered that inadequate attention was focused on RCF requirements in project design and that expectations of recipient O&M capacity after completion were unrealistic. Recipient budgetary capacity is generally insufficient to provide the resources necessary for adequate maintenance yet there are projects where the recipient government makes considerable efforts to provide RCF support after completion. The reasons for this appear to be either a strong personal commitment by officials and politicians, or an explicit government commitment to the sector.

- Instances where adequate O&M capacity and funding have been provided tended to be concentrated in the health and education sectors: Kadavu Rural Health Project in Fiji was quoted as was the Hospital Management Improvement Project in PNG, now in its 8th year with the government still committed to the project and its goals. Institutionalising these projects was seen as an important factor in their success.

A major issue is that RCF is not - and may not be able to be - designed into projects which are not sustainable after the donor withdraws. Major infrastructure projects are seen as likely to incur early maintenance costs. (This seems to contrast with infrastructure built over a decade ago which is generally only beginning to incur costs now: 'built to last' projects in the South Pacific were also considered an exception.) The example of the Flores Water Supply and Sanitation Reconstruction and Development Project was provided where the GoI is already providing above 100% of the required commitment under the MoU. The PNG Highlands Highway was quoted as a project requiring constant attention: because of the cost of maintaining these roads, GoPNG cannot fund them in its recurrent budget, and so looks to multilateral sources for funding which can be used for maintenance (or expects bilateral grant funding to rebuild parts of the system after they deteriorate).

- Small-scale projects in the HEW sectors in Cambodia and Laos were quoted as being affected by lack of RCF availability. Australia has provided aid for several airports in the Pacific and it appears that it will have to return to rehabilitate the facilities. Similarly, with Public Works projects, it may be necessary to return on a 5-7 year cycle; as despite equipment and material being left behind, and maintenance training of local staff, project deterioration is rapid.

In contrast to staff views, consultants considered budgetary problems as of more concern than institutional factors since if funds were unavailable then nothing else could proceed. The inclusion or prescription of specific O&M expenditure in MoUs etc was seen as largely unrealistic in view of the limited budgetary capacity of developing countries and the ambitious nature of many projects: at the same time respondents noted that where real benefits were seen, efforts are made by recipients to fund O&M.

There was inferred criticism of AusAID's approach to bidding/value for money, especially as it affects projects in institutional sectors. By forcing bid prices down, the focus on price was seen as more of a development cost than a development investment. With one exception, all respondents advocated a move towards the two envelope system of bidding which they believed would increase project quality, effectiveness and impact - and *thus recipient commitment to maintaining assets.* The perception was that the concentration on project outputs rather than on project impact adversely affected O&M considerations.

It was claimed that project TOR were often driven by programming/political requirements. As such the private sector has to implement these irrespective of their appropriateness: the need to win contracts therefore acts adversely apropos project effectiveness and recipient O&M capability - insufficient avenues for recommending changes in design are available to bidders. A weakness in policy analysis by AusAID often results in projects that are too ambitious, or in the case of PNG perhaps being implemented too quickly in the light of available resources. All these factors were considered to be detrimental to asset maintenance.

The high staff turnover and loss of institutional memory in AusAID is seen as affecting design standards and thus O&M analysis. Consultants also noted that Commonwealth restrictions on participation in both design *and* implementation meant that AusAID sacrifices design expertise: design and implement was seen as a better approach.

Consultants advocated fewer, larger projects so as to increase impact and allow longer-term interventions to improve sustainability. Despite the advent of country programming, country strategies and high-level consultations, there was still a perception of inflexibility in the program with the expenditure imperative held responsible for an over-emphasis on large, fast disbursing projects - too large for the recipient to manage effectively from an O&M point of view. (This does not contradict the view that there should be fewer, larger projects undertaken on a properly sustainable basis).

Box 5: The case of Laos

Projects in Laos have generally achieved their objectives. This is despite the poverty of the country and the relatively low level of its government infrastructure (per capita GDP is US$300 and total GDP US$1.5 billion). RCF is a significant problem for the Lao Government.

Government resources are limited. Aid is equal to over 20% of GDP and almost 90% of its public investment program is funded by donors. In such an environment, its ability to meet O&M costs is almost non-existent. The budget is so limited, and salaries to government officials so low, that in many instances donors have to build in a small component for salary supplementation for key project counterparts. It is essential if projects are to work otherwise staff who earn a wage of US$20 p.m. will spend most of their time on other work or move to other projects.

Budget constraints are compounded by institutional problems. The Government agency managing aid co-ordination and the drafting of the public investment program is separate from the Ministry of Finance which prepares the budget. Consequently RCF implications for projects may be spelled out at the beginning of a project, incorporated into project memorandums, accepted by relevant agencies, but will not necessarily flow through to the Ministry of Finance when they prepare annual budgets.

Difficulties will only get worse over the next few years as the economic crisis worsens. Government tax receipts will get smaller and the obligations facing the Government (such as the need to bail out an insolvent banking system) increase.

The lack of RCF has affected some AusAID projects. For instance, maintenance of the Mekong bridge has not been optimum although by no means causing structural problems. But it does mean little problems such as traffic lights that are not fixed and toilets that do not work properly at the border control facilities. Similarly, ports along the Mekong constructed by AusAID are starting to run down. They remain functional but are not perhaps up to the operating standard as designed.

As greater emphasis is placed on education and health projects, RCF issues will become more important. These projects generally require large RCF components to pay for salaries and basic maintenance. Finding even small sums for primary health care projects poses significant problems for the Lao Government. One possible response to such issues is to build in cost recovery components, if feasible, but such revenues must stay with the project rather than be returned to consolidated revenue.

The need for a flexible approach and a longer term view has been recognised by other donors. SIDA has a forestry project in Laos that will run for 20 years. Similarly, while the World Bank is currently working to set up a road user fee regime to ensure that costs are available for future road maintenance, they are also preparing to fund a specific maintenance project in the interim.

The only way around the asset maintenance problem in a country as small and as poor as Laos is to consider much longer-term projects. Three years cannot generally leave sustainable structures in place. Most projects (especially in health and education) will require a much longer time-frame before the Government will be in a position to meet RCF obligations itself.

Some respondents noted that RCF appeared to be given a low priority as it is not essential to meeting short-term project needs or solving technical problems. The question was raised as to whether this was because we now emphasise institutional development projects where adverse results are less easy to see.

The lack of adequate, initial ownership by beneficiaries and host governments can lead to insufficient attention by them to adequate O&M. In addition, continuing availability of funds for 'new' project phases have often replaced the need for governments to address and plan for O&M costs.

Box 6 : Project Design - key consultant views

Considerable criticism was made of project design as it affects asset maintenance. Whether for multilateral or bilateral assistance, project design has often failed to incorporate the realities of the O&M situation, frequently being driven by non-development factors. Technical quality is not considered a problem as much as a lack of understanding of the broader picture: projects are too often seen in isolation from each other and from overall development assistance and domestic investment needs.

The lack of recipient RCF capacity was clearly identified as contributing to poor levels of asset maintenance whether through institutional, bureaucratic or financial factors. However, failings in design, conceptual approach and the use of appropriate technology were identified as leading to a less than effective use of taxpayer funds. Factors identified included the need for:

- a higher level of local ownership (participation);
- greater attention to local socio/cultural factors;
- greater attention to political and budgetary realities including the debt situation (IDA loans are precisely that - thus loans should not be encouraged in support of projects unless for production rather than consumption): fungibility of bilateral program aid is also a concern;
- commitment to longer term inputs (10 or more years) as the longer the term, the more chance of the project being institutionalised and recurrent costs allocated. This emphasises the need to change approaches to projects so that there is a reasonable period of phase out rather than project funding coming to an abrupt end; and
- the use of appropriate technology: whilst recipients may want the latest in technology, this is not always the most appropriate or sustainable in the long term, especially in terms of asset maintenance.

All respondents believed that the majority of AusAID project designs are overly ambitious, attempting to put in place systems generally beyond the current ability of governments to sustain. A more gradual approach to project development was advocated, gradually building up capacity to the level of services required and affordable. This is true for both infrastructure and institutional projects and leads to the conclusion that a longer time-frame for projects is desirable.

Whilst recipients may be fully committed to obtaining RCF, political constraints and financial priorities after project completion may simply preclude the availability of such funding. A longer time-frame with recipient government financial and managerial responsibility increasing over the life of the project - prior to exhaustion of donor funding - may have lasting results in terms of attitudes toward recurrent cost financing practices.

3. FIELD MISSION

The fieldwork for this study was undertaken in June/July 1998. Consultations were held by the review team with three major international development agencies (World Bank, CIDA, AsDB) and with four developing countries with which Australia has substantial development assistance programs (PNG, Indonesia, Philippines, Fiji).

Overview of Fieldwork

The issue of recurrent cost financing and related problems is recognised as a key concern within the international development assistance community. It is not a new problem: it can be viewed as an all-pervasive global problem, affecting both developing and developed countries alike.

International donors and recipient countries are developing and implementing new policies to address the issue. Donor agencies appear prepared to be flexible in designing assistance programs (such as the relatively new Sector Investment and Adjustable Programs Loans initiated by the World Bank). There is widespread interest in appropriate commercialisation/corporatisation/privatisation approaches to improve agency performance. New funding mechanisms are being explored (specifically hypothecation procedures to earmark public revenues for specific purposes) though this remains a contentious area. There is major attention to new modes of public sector organisation and operation (such as the so-called 'New Zealand' model[20]).

Within each of the international donor agencies consulted, there is significant ongoing research activity on the RCF issue. The World Bank group is active across a broad field of policy development areas related to RCF (see Box 7). CIDA has highlighted financial sustainability issues in its 'Framework of Results and Key Success Factors' used in its performance review system for evaluating bilateral projects. The AsDB is currently undertaking a major evaluation exercise covering O&M concerns related to its lending program in the roads sector throughout a wide range of its developing member countries.

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20 The New Zealand model emphasises formal contractual relationships, outputs and financial reforms. While this model can realise benefits for developed countries, it might not be appropriate to developing countries where 'laissez-faire' policies might still be more effective in promoting economic growth.

A concern for all donors is the effect of the global shift in development priority to the social sectors (health, education, rural development, social infrastructure) in line with poverty alleviation imperatives. The recurrent expenditure implications of social sector projects are significantly higher than for investment in physical infrastructure (such as roads, dams, airports and telecommunication facilities). Consequently, there is the medium-term prospect of the RCF problem worsening as the current shift in investment priorities results in even greater demands for recipient funding to sustain social sector projects and programs.

Three common themes emerged in the field consultations. First, there is growing recognition of the need to design and implement development assistance programs over **longer time periods.** Second, and often linked to the first theme, greater emphasis is warranted to ensure **more recipient involvement** in projects and programs, to build 'local ownership' and 'community involvement' (where applicable) to enhance sustainability. Third, greater attention to RCF issues is required at the **project design phase** of development assistance activities, to explore RCF implications, design conditionality arrangements (if appropriate), and to fully examine the technical options bearing on longer-term financial sustainability of projects and programs.

Box 7: World Bank Perspectives on the RCF problem

The World Bank is at the forefront of research and policy development concerning the recurrent cost financing problem in developing countries, encompassing a broad range of perspectives. The areas of its research may be broadly summarised under the following headings:

- *RCF in a macroeconomic context* - generation of local funds through domestic economic growth is a crucial factor.
- *Effectiveness of RCF expenditures* - promotion of efficiency in O&M planning and implementation, both technical and administrative.
- *RCF in the project design process* - enhanced quality of project planning to address financial sustainability concerns (both from donor and recipient perspectives).
- *RCF and the 'moral hazard problem'* - recognition of the tendency of capital component bias in bilateral and multilateral aid programs.
- *RCF and recipient budget planning* - addressing allocation of priorities to O&M in local budget formulation and transparent budgeting.
- *RCF in an institutional context* - strengthening central financial management agencies; creating performance incentives; combating corruption and incompetence.
- *RCF and the constraints of absorptive capacity* - designing development assistance which is sustainable and consistent with country growth limitations.
- *RCF and the 'equity paradox'* - recognition that a poverty alleviation focus may compound local financing constraints in the poorest regions.
- *Specific interventions to address RCF concerns* - earmarked, dedicated user charges for specific sectors; revenue generation in projects and programs; appropriate outsourcing of activities.
- *RCF and privatisation* - removal of O&M responsibilities from the public to the private sector.
- *RCF and donor/recipient operating policies* - formulation of more flexible operational approaches by both donors and recipients to address RCF concerns.
- *RCF and donor co-ordination* - the key element in effective and comprehensive approaches to the RCF issue.

Consultations: Findings

The World Bank and IFC

Bank management is now pushing for more innovative approaches to lending, increased client focus, and enhanced flexibility: all of these favour new approaches to RCF issues. The Bank has also been in the forefront of endeavours to analyse the public expenditure mix in developing countries. Its research has indicated that conventional distinctions between investment expenditures (seen as capital) and recurrent expenditures can be misleading. That is, in some circumstances, investment in adequate maintenance of existing capital stock can provide higher economic rates of return than new investment projects.

Consequently, Bank policy has moved from one of no support for RCF, to one of assisting in certain circumstances on a declining basis. Quasi-RCF support has been supplied by the Bank under various Structural Adjustment Loans and similar program and policy lending. An evolving lending modality is the Sector Investment Program (SIP) which typically includes:

- donor co-ordination at the sector level;
- comprehensive analysis of sector needs and allocation of niches as appropriate to relevant donors to overcome the project-specific analyses of some donors and recipients; and
- close recipient involvement with the SIP, possibly including sector-specific or SAL conditionalities.

In addition, where a recipient has the potential to develop fiscal capacity to sustain investment in the sector, appropriate RCF is provided on a declining basis so as to allow phase-in of full local provision of RCF within a realistic time-frame. This initiative is particularly relevant to the South Pacific.

The scope of research and policy initiatives by the World Bank with respect to RCF issues is extensive (see Boxes 7 and 8). A strong theme is the emphasis on donor co-ordination. The problem of donor-driven projects is acknowledged, with the logical inference that where donors continue to finance 'uneconomic' projects, then they must necessarily be prepared to countenance assistance for RCF related to these initial capital investments.

There is interest in the potential for commercialisation/corporatisation/privatisation of appropriate public sector activities, along with active support for 'user pays' arrangements. A key area under discussion is that user charges must be hypothecated to be effective, rather than simply contributing to general revenue.

Key advantages of privatisation are greater private sector incentive to properly operate and maintain assets; a transparent approach to equity measures such as cross-subsidies; and the opportunity to revamp entrenched rigidities (such as new design of tariff

schedules based on sound economic pricing principles). The IFC are regarded as having a higher rate of project success than the IBRD (noting that they have a totally different project portfolio). Elements of their 'private sector' approach to project analysis and risk could usefully be applied to (AusAID) bilateral projects especially as regards O&M considerations.

Canadian International Development Agency

Unlike AusAID, CIDA has had little experience with direct budget support. Nevertheless, the RCF problem is widely recognised in CIDA's activities as a general lack of financial (and institutional) resources in developing countries to sustain projects and programs. CIDA is currently facing major RCF problems in Indonesia where previous government commitments cannot be delivered due to massive devaluation of the local currency. CIDA has been flexible in such circumstances, including where genuine commitments to RCF have been subsequently overtaken by events (such as political changes in recipient states).

CIDA has considerable experience with a suite of policies to address RCF concerns while recognising there are no 'universal' solutions. Appropriate policies need to be tailored to specific countries, cultures and sectors. Such policy responses by CIDA have included:

- encouraging privatisation and outsourcing to increase efficiency;
- enhancing local ownership and commitment to projects by working at appropriate levels (typically lower, more decentralised) and taking more time during implementation. CIDA is prepared to countenance long-term scenarios (say 25 years) in project formulation, design and implementation;
- disbursing, where applicable, of CIDA grant aid as a loan from recipient central government to a quasi-commercial agency, in order to build local ownership perceptions;
- ensuring related policy issues in recipient environments are not primary causes of apparent RCF problems. For example, domestic price controls on agricultural produce may be the basic cause of neglect of farm capital (such as an irrigation system), not RCF shortfalls *per se;*
- building in medium term 'warranty' periods for equipment supplied; Canadian suppliers need to demonstrate an ability to deliver ongoing repairs and maintenance in recipient countries. Where appropriate, CIDA may apply moral 'suasian' to Canadian suppliers to enhance the effectiveness of capital aid delivery; and
- preparedness to adopt 'conditionality' approaches to aid delivery to enhance sustainability, while accepting the practical difficulties sometimes inherent in such circumstances.

Other institutional issues which can contribute to RCF difficulties were noted, including year-end spending imperatives which can increase the chances of delivering inappropriate aid and donor-recipient relationships which overlook more appropriate community level agencies.

Asian Development Bank

Current AsDB operating policy prohibits funding RCF. However, the AsDB has considerable experience with sector policy lending and program loans which effectively provide quasi-RCF. It is flexible in the funding of local currency costs during project implementation.

Box 8: RCF in the Macroeconomic Context

Conventional national income analysis highlights the fiscal deficit related to two gaps, namely the current account balance and the net balance of private savings and investment. However, recent World Bank research (Agbonyitor 1998) focuses on a third imbalance, namely the local financing gap (being the difference between government revenue and recurrent government expenditure). This focus on the local financing constraint yields new perspectives on issues of aid policy, fiscal reform and public expenditure management.

Key conclusions of the three-gap macroeconomic model of a developing economy are that:

- the budgeting process needs to address the inner local financing constraint on the development process - a mismatch between local funds availability and demand will jeopardise implementation of the development budget and observance of prudent fiscal and financial targets;
- in the three-gap model with a local financing constraint, conventional project aid may actually widen the local financing gap. For aid to directly address this gap, it has to be in the form of non-project aid that generates local currency counterpart funds;
- when local financing constrains absorption of project aid, this means that at the margin local currency resources are more valuable than project aid. Consequently, project screening and public expenditure reviews need to devote similar attention to the quality of projects financed fully by local funds, as those funded by aid;
- effective management of local funds requires a transparent data base to develop indicators and to monitor the allocation and utilisation of local financial resources;
- growth promotion and growth-oriented economic policies are of central importance for addressing local financing problems. Effective public investment screening processes are crucial so that development expenditures can generate high economic rates of return and overcome the local financing gap in a sustained manner; and
- in the longer term, the impact of project aid on the local financing gap lies in its contribution to economic growth and on its expanding the domestic base for tax revenues, expansion of the money supply, and borrowing. Growth is essential for sustainable borrowing, given inflation, real interest rates, and ratio of debt to GDP.

There is widespread support for privatisation efforts as a means to remove O&M issues from the public sector. However, there is only limited support for hypothecation proposals (such as 'earmarking' of fuel taxes for the roads sector). The AsDB is now looking at longer periods of project implementation with greater attention to O&M concerns through enhanced quality of project design and the adoption of new technologies in technical designs to reduce ongoing O&M needs in developing member countries (including the specific cases of PNG and the islands of the South Pacific region).

Papua New Guinea

PNG constitutes a special case for AusAID, given the history of direct budget support by Australia to the country (see Box 9) and its phasing down over the last few years. RCF difficulties are a crucial and fundamental issue for PNG, and one which is getting worse. For example, agencies report that their funding is now provided only on a month-to-month basis, compared to the previous system of quarterly funding periods. Consequently, the orderly planning of expenditures by agencies is difficult.

There is an overarching concern in PNG regarding the National Government budgeting process, which particularly impacts on RCF. This concern has three strands:

- shortfalls in the budget, i.e. amounts 'appropriated' to agencies are often never received;
- an environment of uncertainty i.e. agencies never know when funding will come through. Consequently, there are major inefficiencies in expenditure planning and erratic expenditure patterns. This uncertainty is compounded by the ongoing provincial and local level government reorganisation, with consequent lack of clarity as to financial responsibility for precise RCF outlays; and
- inefficiencies in the delivery of O&M expenditures. For example, in road maintenance expenditures, there is scope for considerable efficiency gains by outsourcing. Funds for maintenance activities are also split between different budget areas (recurrent and development), making integrated O&M planning more difficult.

PNG exhibits many of the difficulties associated with the RCF issue. Detailed attention to these issues is required at the project planning stage. It is agreed that project interventions need to be over longer time periods to bed down RCF concerns. There is evidence of problems related to inappropriate technical design, such as the high O&M costs at the new international airport at Port Moresby.

Donor co-ordination in PNG needs to be improved. There is evidence of some projects and programs being 'donor driven' with consequent lack of sustainability once donor funding is completed. User-pay arrangements are little developed and even where they do exist are typically not hypothecated but paid to general revenue. There is scope for

commercialisation/corporatisation/privatisation of a range of publicly funded activities. A proposal by the World Bank to establish a roads board with hypothecated revenue has mixed support, and cannot be seen as a firm proposition as yet.

The scale of O&M funding required to maintain even the existing capital stock in PNG cannot be estimated precisely but is substantial. For example, in the roads sector, current maintenance expenditure is substantially less than is needed; in the health sector, there is a major difficulty with lack of maintenance to plant and equipment while donor-supplied items are unable to be used without funding for O&M; for police, barrack conditions are unsatisfactory in several provinces.

With respect to equipment provided to PNG, a recent review of CASP focused attention on sustainability issues, including the need for training; service and maintenance contracts; effective monitoring; and measures to promote longer-term commitment by recipients to RCF. There is a special problem in the supply of computer systems and equipment, with evident examples of wastage and under-usage arising from inadequate project design, supplier-driven equipment provision, and technical and financial difficulties with maintaining installed systems.

Box 9: PNG

Since PNG's independence in 1975, Australia has provided substantial funding for direct budget support to PNG. By mutual agreement between the two countries, jointly programmed development aid is progressively replacing budget support which is scheduled to be phased out by the year 2000.

PNG is experiencing chronic difficulties with funding adequate RCF across many key sectors (such as roads, education, health). A prospective new aid modality is a Sector Investment Program as formulated by the World Bank, involving:

- donor co-ordination at sector level;
- comprehensive analysis of sector development needs;
- PNG commitment to agreed sector strategies; and
- donor assistance with RCF, on a declining basis consistent with growth of local fiscal capacity.

Australia as a key donor to PNG is in a strong position to encourage and lead, where appropriate, donor co-ordination at the sector level. In suitable circumstances traditional 'project' aid can be provided with a primary focus on O&M issues, in the form of maintenance and rehabilitation programs.

Indonesia

Indonesia is grappling with an ongoing socio-economic crisis arising from severe macro-economic and finance sector problems as a consequence of the massive devaluation of the local currency. Ministries (health, education, public works) are pre-occupied with the formulation of rescue packages and longer-term O&M funding issues are of less immediate concern. Nevertheless, the Indonesian Government planning agency (Bappenas) noted that the fiscal crisis highlights the need to properly maintain existing infrastructure stock, rather than continue with new capital investment.

Bappenas detailed an institutional difficulty for integrated O&M planning in Indonesia, namely the split in the government budget between two agencies. The Routine Budget is formulated by the Department of Finance, while the Development Budget is the responsibility of Bappenas. However, both budgets have significant RCF components related to O&M elements hence complicating effective and integrated maintenance planning.

Frequent references were made by donor representatives and recipient agencies for project designs to emphasise socio-economic aspects. For example, in rural development projects, components are needed to build ownership and commitment, rather than rely on a primary technical, engineering focus. There is also a need to assess the effectiveness of project and program interventions over longer time periods.

- On equipment supply, the Team examined a sizeable ($13 million) Australian-funded project to provide sophisticated electronic devices for blind students. The equipment was mostly out-of-service after three years of operation. Clearly, inadequate arrangements exist for after-sales service. This project was in fact funded by an Australian soft loan (DIFF) but still illustrates the need for attention to ongoing O&M issues.

Philippines

The Philippines central planning agency (NEDA) has a considerable focus on RCF concerns and the need to build project sustainability. There is clear recognition of the capital bias issue in aid programs while current fiscal constraints are encouraging a greater focus on maintaining existing capital stock: project design issues relating to O&M were emphasised.

- A substantial institutional problem in the Philippines arises from the ongoing decentralisation process in the country. International donors traditionally deal with the central agencies in designing projects and programs. However, the 'real' implementers of these interventions may be located elsewhere. Hence, there is the prospect for design errors and it is harder to build ownership and commitment by recipient agencies.

The Review Team was advised by some officials that despite a *desophistication* process, some equipment supplied by AusAID was inappropriate for the Philippines. There also appear to be problems arising from the relatively short-term nature of projects, with longer project periods preferred. Human resource training is seen as positive in the context of the whole economy even though staff mobility causes individual project problems.

Fiji

The Review Team consulted several government agencies (Finance, National Planning, Education, Health) and donor agencies including the UNDP. RCF is recognised as a significant issue with inherent absorptive capacity limitations given the small size of the country. In addition, there is presently a policy-imposed budget ceiling on recurrent expenditure so as to achieve a balanced budget by the year 2000. Since more flexibility exists with the development budget, the fungibility of recurrent expenditures and capital expenditures on the margin is recognised. Consequently, there is at least some inbuilt systemic bias towards more capital intensive projects and programs.

Nevertheless, the broad principle of recipient provision of RCF appears to be generally accepted, even though there are areas of difficulty in this regard. A particular institutional issue in Fiji relates to the aid co-ordination process. Despite preventative procedures being in place, individual government agencies still agree to aid projects with excessive RCF implications.

Fiji is proposing to embark on a major public sector financial management change process, broadly along the lines of the so-called 'New Zealand' model. There are some features of this model (such as 'capital charging' arrangements) which might arguably result in more effective management of RCF issues by the public sector. However, such gains are only likely to be achieved in the longer term (if at all), and the New Zealand model is certainly not an overnight panacea. Also researchers at the World Bank have seriously questioned the applicability of highly sophisticated public sector accounting and contracting models to small developing economies.

Other relevant themes emerging from the consultations in Fiji were:

- a clear preference for longer project implementation periods, to allow more time to enable projects and programs to become established; to possibly phase in RCF requirements; and to iron out ongoing maintenance arrangements for equipment supplied by donors;
- general agreement that RCF issues need specific consideration at the design stage of projects and programs, with the fullest possible involvement of government agencies to build commitment and lessen implementation difficulties. Fiji still experiences problems with inappropriate technical designs by donor agencies leading to high RCF requirements (such as excessive specification of air-conditioning in buildings, and generally unsuitable project detailing with respect to O&M needs in a tropical environment); and

- significant institutional impacts related to O&M cost effectiveness, such as traditional use of Public Works for maintenance by some agencies (where more flexible arrangements including outsourcing could lift performance).

A range of views exists in Fiji on the significance of the 'loss' of staff trained under development aid programs. Longer-term overseas training of staff is seen by some agencies as of dubious value, as students frequently may not return. This is a special problem for Fiji (and elsewhere in the South Pacific) due to limited career potential in small island economies. Where loss of overseas trained staff is a particular problem, steps to counter this include better screening of applicants; more in-country training; more attention to local career structures. In the broadest view, such moves by trained staff are not a real economic loss (from a global perspective) as typically they are moving to higher value-adding positions which may include other public sector or private sector positions.

There is broad interest in the potential for commercialisation/corporatisation/ privatisation of appropriate public sector activities, along with active support for 'user pay' arrangements. User charges must be hypothecated to be effective, rather than simply contributing to general revenue. Advantages of privatisation are seen to be greater private sector incentive to properly operate and maintain assets; a transparent approach to equity measures such as cross-subsidies; and the opportunity to revamp entrenched rigidities (such as new design of tariff schedules based on sound economic pricing principles).

4. OVERVIEW

Key Themes

In the above discussion, a number of key themes (researched by literature, field mission, and questionnaire) have been identified in relation to low levels of asset maintenance.

- The problem of *moral hazard* or political bias in donor programs to provide capital investments as evidence of assistance and of expenditure: similarly, recipients often prefer to see hard assets and they may sometimes be persuaded to accept overlarge or inappropriate investments by donors.
- The *design process* for projects needs to be re-examined. Issues of appropriate technology and design, sustainability-both financial and institutional, development and budget planning-to address these self-same sustainability concerns, RCF and the constraints of absorptive capacity; must be taken into account together with realistic country growth expectations. More specifically, the time-frame of projects also needs attention.
- *Governance* issues as broadly defined in the Simons Report[21]. This takes into account the development of appropriate policies and commitment to them by recipients: RCF and recipient budget planning-addressing allocation of priorities to O&M in local budget formulation and transparent budgeting of RCF in an institutional context-strengthening central financial management agencies; and combating corruption and incompetence.
- The need for *specific interventions* to address RCF concerns: establishment of earmarked (hypothecated) funds for specific sectors, cost recovery, revenue generation in projects and programs, and RCF and privatisation-removal of O&M responsibilities from the public to the private sector.
- There is a need to *differentiate approaches* to asset maintenance issues as between countries and, in the smallest (island) countries, sectors and projects.
- There is an *equity paradox* in that predominantly subsistence communities cannot pay for the level of amenities considered necessary by donors and required by national governments: the provision of these facilities compounds problems of asset maintenance. Cost recovery and tariff measures have to be examined carefully if they are to be realistic and efficient: the introduction of cost recovery in one sector in a small economy may impact adversely on other sectors.

21 The Simons Report; AusAID, 1997, 223-225

- There is a need for improved *donor co-ordination*. As a start, the issue of asset maintenance must be placed firmly on the agenda of all consultative, consortium and round-table meetings: both macro-economic and project-specific analysis must be undertaken. The range of issues to be discussed should be from cost recovery to direct RCF provision and must be analysed both in a developmental and macro-economic context: for example, it may be possible to recover and hypothecate road user charges in Thailand but the volume of road traffic in Northern Sava'ii is hardly likely to finance its all-weather highway.

Differences in Needs

Applying financial policies to developing countries that are the norm in OECD economies has to be placed in context and balanced against development needs and Australia's willingness to assist in meeting these needs. While the development and application of appropriate domestic economic policies to encourage growth must be encouraged, the above implies a basic recognition that the infrastructure necessary to ensure a reasonable quality of life in some countries cannot at this stage be financed through taxation and cost recovery. For there to be efficient asset maintenance, this then implies the need to consider different approaches to aid in least developed and small island countries; at the same time advice and assistance is also necessary for larger countries that have not developed suitable policy frameworks.

There is thus a clear dichotomy in the nature of the problem as between i) those countries that do not presently, and may never have, the financial resources to maintain their essential infrastructure at levels envisaged; and ii) those countries that have the potential to do so but as yet lack the budgetary and institutional mechanisms to ensure adequate O&M capacity.

- World Bank research has focused on macroeconomic policy, the allocation of resources across an entire economy to ensure that O&M concerns are addressed adequately. However, in small island countries the problem of asset maintenance is treated at a more project or sector specific level. These are economies with a GNP often less than the size of a small Australian city and in some cases a suburb. Because of their importance, individual projects (a road or airport) or sectors (health) rely on the overall capacity of the Ministry or Government to allocate funds or obtain new donor funds to provide O&M support for asset maintenance. In practice, this is no different from the situation of cities which in Australia rely on the availability of, respectively, state and federal recurrent funding to maintain hospitals, roads and education systems.

Possible courses of action, noting the very special case of PNG

It is unrealistic to consider that the problem can be solved all at once, or that Australia has the resources to do so. Interventions must be pragmatic and achievable. In the case

of small island countries, the World Bank outlined a range of options in its 1990 Regional Economic Report[22] and which were expanded on in a donor-recipient meeting in Singapore. These options are most appropriate to small island countries but aspects are also applicable to larger countries. Summarised, these are:

- Trust funds: donors could contribute to trust funds, the income of which is specifically dedicated to maintenance and recurrent costs associated with aid funded projects. Such trust funds would alleviate both constraints on new investment and current budgetary difficulties. (In the light of current discussion, an option to use such funds with hypothecated funding could also be considered.)
- Project funding: donors could be requested to provide 100% financing of project costs so that, after implementation, recipients were in a position to assume full responsibility for O&M.
- Budgetary support. A donor response could be to shift emphasis towards supporting past investment through O&M/project rehabilitation funding. This would be most applicable in the Health, Education and Public Works areas. The key factor in considering this is that any support must necessarily be *additional* to current RCF budgets and not fungible, focused strongly on enhanced support for existing standards of infrastructure, be provided conditional on appropriate policy development, and have review and sunset clauses.

The above options are some of those that can be considered for small island countries where Australia has a singular capacity to contribute at both the financial and policy levels. In larger countries, contributing directly to post-project RCF is not a realistic option for Australia given their capacity to plan and implement appropriate policies. It is however in this latter area that Australia could provide support for their efforts as regards asset maintenance, particularly by supporting both the research and practical efforts of the World and Asian Development Banks. It could also offer policy support under its aid programs to these countries. In the long term the provision of such bilateral governance assistance, at marginal cost, might provide greater development benefits (in terms of better and longer utilisation of assets) than the provision of more costly but minor infrastructure projects.

Dominating the aid program, as it has since its inception, is the special case of PNG. With, by South Pacific standards, a giant, resource-rich economy, the country faces a list of development problems which are severe by any standards. While there was a necessity to move away from the previous levels of budget support[23] and the manner in which it was

22 RER (Pacific Island Economies): drafted in 1990; published in 1991.

23 Budget support was provided for a considerable period after independence, more in volume and in time by any donor to any other of its previous dependencies or colonies. Major criticisms included the fungibility of funds and thus possible lack of development impact.

provided, its replacement by such a high level of long-term grant aid may have exacerbated O&M problems. Given Australia's position as such a large grant donor to a country which sits between the small island countries and the large Asian countries, approaches to the asset maintenance problem will require action on all the fronts noted above.

Box 10: Samoa - a small island state tries harder

SAMOA is a small island country in the Pacific with limited resources. It has a highly educated population, a sound social structure and an efficient bureaucracy. Over the last two decades, it has established a track record of adopting generally sound financial and economic management policies with the support and encouragement of its donor community. Australia provides substantial aid to Samoa with major projects having been undertaken across all sectors.

- The overall quality of roads improved significantly since most of them were reconstructed under the cyclone rehabilitation programs of the early 1990's. Although the roads have been well maintained to date, there is increasing concern on their future maintenance. While the Director of Works has noted that 'We are finalising a roads asset management system which should give us the relevant technical and financial information to effectively carry out our forward planning in our maintenance programs', it all depends on the availability of revenue to provide for that maintenance.
- There may be a risk that the potential benefits of the improved internal transportation systems will not be realised if Samoa does not rationalise some of its services. For example, district base hospitals and health centres were once appropriate but with good transportation access to the main centres on each island are now largely under-utilised and redundant. On the other hand, if a reduction in the number of base hospitals and health centres is made then it is essential that adequate O&M provision is made for the transportation system.
- There are difficulties in other areas of public infrastructure such as water supply since overall there is insufficient O&M funding. This is recognised by the GoS which has taken steps to address the problem: for example, it has corporatised the water authority and made a strong commitment to introducing water rates: it has also sought assistance in establishing financial and asset management systems in the sector. While such policies are appropriate to OECD countries, the question remains as to whether full cost recovery is in the short-term possible or appropriate in a least-developed country with a majority subsistence economy.

In other sectors, there are similar problems. In agriculture, technical assistance appears to have been effective but capital equipment has not always been well maintained. Educational facilities, rebuilt to cyclone-proof standards with donor assistance, are 'owned' by local communities and are well maintained at present as are recently built buildings at the USP campus: however, no substantial O&M costs have yet been incurred. In the health sector, there is continuing evidence of maintenance efforts at the School of Nursing and the High Dependency Unit (Intensive Care). These are very well maintained to date.

Box 10: Samoa - a small island state tries harder [continued]

The Samoa Treasury has moved towards systems such as performance budgeting which, when effectively implemented, will make it much more possible for Departments to get funds for maintenance. Further reform has focused on the Public Service Commission, which will give departments more flexibility to move money between staff and running cost allocations. Forward estimates will be integrated into the planning and budgeting systems. This will also help in budgeting for recurrent costs and give a more forward focus when the recurrent costs of capital items (either aid or government funded) are being considered.

Introduction of IT has the potential to significantly lift productivity through improved quality and timeliness of information systems for asset management programs. While impressed by the quality of computerised information his department has acquired, the Director-General of Health is concerned with the limited pool of skills available to maintain these comprehensive and recently introduced IT systems. 'Standardising systems and using private sector skills should be important components of any future strategy for management and maintenance of IT systems.' If the potentially significant development benefits from introduction of IT are not subjected to a disciplined and detailed planning process, there is a high risk of donors being drawn into supporting ambitious and inappropriate IT projects. Given the short life of computer equipment and software there is the potential for specialised systems to be developed which GoS won't be able to keep up to date or replace. It is expensive, especially when considered next to the cost of staff in a developing country. The ratio of computer cost to average government salary in Samoa is 0.3 yet in Australia it is about 0.03. The conclusion is that the productivity increase from introducing equivalent computerised processes in Samoa has to be 10 times what it would be in Australia.

The best approach in Samoa to solving these problems is to directly address them in its planning and budgeting processes so as to take account of recurrent costs. However, despite its relatively efficient administration, Samoa does not have the revenue to provide for adequate maintenance of its overall level of assets, much of which have been supplied by Australia.

5. CONCLUSIONS AND RECOMMENDATIONS

There is no doubt that an acute problem in the area of asset maintenance exists and that it is caused by problems of absorptive capacity and recurrent cost funding. This report validates the extent of a problem in the provision of foreign aid that was identified over three decades ago. It also points to several possible courses of action for Australia.

Research for this review was conducted in several discrete parts: the results from each of these have shown a remarkable consistency of analysis and opinion. There is uniform acceptance of the problem of asset maintenance both domestically and internationally. The fundamentals of the problem are well-recognised both from a project and macro-economic perspectives.

Australia's focus is different from many other donors in that it is a major donor to a number of small island economies which, realistically, are unable to generate the volume of funds necessary to service their existing infrastructure. As such, there is greater awareness on funding individual project/sector O&M costs in Australia than there is internationally where more attention is devoted to macro-economic factors. In addition, the level of our assistance to PNG also marks that country, and our role as a donor to it, as a special case.

Attention on RCF is focused on infrastructure although O&M is a problem throughout all sectors. Less attention has been paid by donors to the social sectors despite the need to retain and support trained resources, an equally important aspect of asset maintenance. The view that if you train someone, they add to the overall level of HRD may be correct in theory. However, it is not necessarily sound for those countries with limited and finite human resources, again emphasising the South Pacific where there is a strong likelihood of emigration of these resources.

Moreover, the transfer of these resources into the private sector in larger countries (for example doctors to private clinics in India) can mean that expensively acquired resources are not available to the poorer sections of the community, at least in the short- to middle-term (i.e. until supply eventually equates with demand). In addition, those (human) resources that remain are not cost-effective until the assets necessary to maintain these resources are planned and available (whether vaccines and elastoplast or whether salaries and electricity).

In Australia's case there is a geographical delineation of the problem between the small states of the South Pacific; between PNG; and between the larger countries in our region with considerable economic potential. The problem is severe: it has been and remains acute in the first two regions noted above (as well as in the small and poor countries of South and South-east Asia). With the advent of the recent economic crisis in our region, it is increasingly so for the larger countries: project sustainability will be a problem - as may be aspects of their overall economic system.

Any proposed action has to be realistic. Ultimately, responsibility for O&M is the responsibility of recipient governments. Donors can only support recipient efforts and, in most cases, that support must eventually be phased out. Within the context of this report, five areas are recommended in which it may be possible for Australia to take some realistic and practical measures to address the problem and make a difference.

I. **Project and program design.** A fundamental shift in approach to project design and project selection must be considered. This would need improved risk analysis concerning project time-frame, project size and O&M capacity, and the place of the project in the overall recipient investment plan: rehabilitation of previous project interventions should be considered rather than a concentration on new investment. Emphasis on ensuring commitment to O&M in MoUs must be given priority and donor-recipient dialogue should emphasise this. The outcome for Australia's aid program might be fewer, larger and longer-term aid projects.

II. **Donor Co-ordination in the South Pacific.** Despite the plethora of Consultative groups, RTMs, sectoral conferences etc, donor competition for projects continues as does a level of assistance that only aggravates the asset maintenance problem. Project level action by Australia on its own (as at I above) is unlikely to achieve significant results. However, with the support of the World and Asian Development Banks, donor co-ordination on this issue is realistically possible - even if it means a marginal reduction in the levels of aid by some donors. The strengthening of the South Pacific Forum with regard to this issue should be considered as should be support for the efforts of the World Bank. The issue should be also be raised at the South Pacific Finance Ministers Meeting.

III. **Recurrent Cost Financing.** For Australia, still a donor of last resort in the Pacific, the question of RCF/budget support has to be addressed. Adequate maintenance of assets is essential and will save taxpayer funds in the long run. Some contribution towards recurrent budgets in key sectors - Health, Education and Public Works, must be considered for the smaller island countries. Resources provided should be clearly seen as supplementary, with a degree of conditionality, and not fungible based on current budget allocations.

IV. **Governance.** Australia can contribute to the problem in larger countries but not financially. In common with other donors, Australia has the necessary skills to provide advice on financial, economic and planning issues as they affect the use of investment resources whether generated domestically or provided through international grants or loans. The offer to provide such advice should be made a priority for our assistance in program discussions. In addition, liaison with the Bank and IMF on this issue should be improved, and their advisory efforts supported perhaps with consultancy staff placed in key ministries.

V. **PNG.** Australia is the largest grant donor to PNG. No other donor has consistently provided a comparable proportion or volume of its aid to one single country. Australia is therefore in a unique position to assist PNG to overcome problems relating to asset maintenance as it considers new areas and projects in which it will request loan or grant assistance. As a first step, Australia should provide further assistance to the PNG Treasury to specifically analyse this issue (IV above refers). Secondly, Australia should press the issue of donor program co-ordination through regional mechanisms (II above refers) and the World Bank-sponsored PNG consultative group. Thirdly, it should liaise directly with PNG authorities to examine project and program design considerations to ensure that RCF factors are taken into account at both macroeconomic- and project-based levels in the provision of new assistance (I above refers). Finally, there should be a study to determine whether the continuing move to full project aid in the program is correct and whether some margin should be retained for recurrent cost support (for Australian financed projects) in key sectors (III above refers).

Further analysis is recommended in the above areas as is more direct contact with European donors and discussions with the Banks. While the DAC allocates ongoing resources to the issue, these are limited. Under DAC auspices and in liaison with other donors, the provision of short-term consultancy resources might give a higher profile to the issue.

In the short term, it is also recommended that AusAID take some specific actions. Greater staff awareness of the issue must be encouraged. In examining project proposals and project designs, greater attention must be paid to the time-frame of projects to ensure sustainability in the light of *any* O&M concerns across the entire sector and indeed the economy of the recipient as a whole. In the preparation of country strategy papers, a section should be devoted to discussion of the issue which should also be set down on each HLC agenda. The availability of Australian resources in this area must be ascertained so that, if offered, assistance can be made available. There should be policy decisions as to whether there should be increased emphasis on rehabilitation assistance and on the direct provision of RCF.

The financial costs of the above recommendations are minor. Additional study of areas not adequately covered in this report; consultations with donors; support for initiatives by the DAC and by the South Pacific Forum; and small project-level interventions to support IBRD/IMF advisory efforts. The recommendations involve some redirection of funds in the South Pacific but not additionality. In the long term, the benefits to the Australian taxpayer and to recipients will be substantial.

APPENDICES

1. Bibliography

2. Questionnaire

3. Terms of Reference

4. List of persons contacted

Appendix 1: Bibliography and further reading

The articles by Pincus and Morton written in the 1970's still provide a valid introduction to aspects of the subject, while Bauer, Dissent on Development, provides a useful conservative critique, including comments on Pincus' development analysis. Asset maintenance is, however, generally treated as a component issue of aid practice in most articles and papers.

For those wishing to undertake detailed general reading on the subject of this report, Griffen *(1970: Foreign Capital, Domestic Savings and Economic Development);* Cassen *(1986:Does Aid Work?);* Mosley *(various and 1996: Aid, Conditionality and Moral Hazard)* and Killick *(1991: The Developmental Effectiveness of Aid to Africa)* all provide interesting analysis, balanced perhaps by Bauers's *1981: Equality, the Third World and Economic Delusion* (especially Ch.14).

As a guide to more recent literature, the *1994 WDR* on Infrastructure has an excellent bibliography, a number of key references which are noted below. Similarly, the *1991 IMF Public Expenditure Handbook* contains key articles and references.

The bulk of recent research has been undertaken by the World Bank and much of this material can be accessed through their website. Key papers are noted below. In particular, the articles by Pradhan and Heller (see Box 3) are essential reading while *Development Expenditures and the Local Cost Financing Constraint* (Agbonityor) 1998 (see Box 8) provides an up to date bibliography and relevant analysis as regards this report. The recently issued Bank research report *'Assessing Aid'* is also essential reading.

Unfortunately, articles on the specific O&M/RCF problems of small island states are few and far between. Internal AusAID papers (e.g. Hope *'The Problems of Island Smallness'*, Manning and Kerr-Stevens, both on RCF in the South Pacific) address the issue to some extent. Similarly, other donors have undertaken work on the subject some of which can be obtained by accessing their home pages through the internet, for example CIDA at **<www.acdi-cida.gc.ca>** and DFID at **www.dfid.gov.uk/**. Other avenues of approach include the work undertaken on small island states sponsored by the Commonwealth Secretariat.

Evaluation databases also provide relevant information including those sponsored by CIDA and the OECD.DAC; the World Bank; and AusAID's own Lessons Learned Database. Again, the asset maintenance/RCF problem is generally treated as a component of overall aid performance. Relevant sites are:

OECD.DAC: <http://minweb.idrc.ca/daclog.htm>;

World Bank: <http://www.worldbank.org/html/oed/lessfrm.htm>; and

AusAID <http://www1.ausaid.gov.au/business/lessons/lessons.cfm>

The World Bank provides the most succinct summaries of design and implementation factors in their *Lessons from Practice* series of publications which can also be accessed through the internet.

Specific References

Agbonyitor, Albert D.K. 1998. *Development Expenditures and the Local Financing Constraint*. World Bank.

Baffes, John and Shar, Anwar. 1993. *Productivity of Public Spending, Sectoral Allocation Choices, and Economic Growth*. World Bank.

Bauer, Peter. 1971. *Dissent on Development*. Weidenfield and Nicholson, London.

Burnside, Craig and Dollar, David. 1997. *Aid Policies, and Growth*. World Bank.

Campos, Ed and Pradhan, Sanjay. 1996. *Budgetary Institutions and Expenditure Outcomes*. World Bank.

Chandavarkar, Anand. 1994. *Infrastructure Finance: Issues, Institutions, and Policies*. World Bank.

Eichengreen, Barry. 1994. *Financing Infrastructure in Developing Countries*. World Bank .

Gannon, Colin. 1993. *Pacific Islands Transport Sector Study*. World Bank.

Heggie, Ian G. 1995. *Managing and Financing of Roads*. World Bank.

Israel, Arturo. 1992. *Issues for Infrastructure Management in the 1990s*. World Bank.

IMF. 1991. *Public Expenditure Handbook: A guide to Public Policy Issues in Developing Countries*. Edited Ke-young Chu and Richard Hemming. IMF.

Jackson et al. 1984. *Report of the Committee to Review the Australian Aid program*. Australian Government.

Jones, David. 1977. *Aid and Development in Southern Africa*. ODI/Croom Helm.

Morton, Kathleen. 1975. *Aid and Dependence: British Aid to Malawi*. ODI/Croom Helm.

Pincus, J. 1974, *Staff Paper*. UNCTAD.

Pradhan, S. 1996. *Evaluating Public Spending*. World Bank.

Simons et al. 1997. *One Clear Objective*. Australian Government.

Tanzi, Vito and Davoodi, Hamid. 1998. *Roads to Nowhere: How Corruption in Public Investment Hurts Growth*. IMF.

General references

Asian Development Bank, 1995. *Project Quality*. Manila.

CIDA, 1998. *Framework of Results and Key Success Factors*. Ottawa.

IFC, 1996. *Financing Private Infrastructure*. World Bank.

World Bank, Washington D.C.

- 1991. *Pacific Island Economies: Towards Higher Growth in the 1990s*.
- 1994. *World Development Reports 1993, 1994, 1997: Investing in Health; Infrastructure for Development; The State in a Changing World*.
- 1996. *The Aga Khan Rural Support Program: A Third Evaluation*.
- 1997. *1997 Annual Review of Development Effectiveness*.

Appendix 2: Questionnaire

RECIPIENT EXPERIENCE IN THE MAINTENANCE OF AUSAID-SUPPLIED PROJECT ASSETS

PIA Section is undertaking an assessment of recipient experience in the maintenance of AusAID-supplied project assets with particular focus on problems associated with recurrent cost financing. In this connection, we would greatly appreciate your assistance in responding to the questions detailed below. It requires only a brief qualitative assessment and no detailed analysis. Of course any additional comments that you can provide would be welcome. Further information and or clarification can be obtained from the task manager, Dr Satish Chandra, X4633, or by email correspondence with the lead consultant engaged for this task, Mr. John Kerr-Stevens at csa@dynamite.com.au.

Background

AusAID bilateral activities usually provide, at significant cost, assets which are handed over to recipients at project completion. For project initiatives to continue to provide long-term benefits, AusAID expects that the recipients will use and maintain these assets in a productive way for as long as is reasonably feasible and cost-effective.

Assets supplied by Australia initially had a strong focus on infrastructure: roads, bridges airports, etc; but also including those that involved considerable provision of technical expertise such as agricultural development projects. It was generally Australia's policy at the time not to provide recurrent cost funding. All these investments had to be maintained after completion by the recipient. More lately, the nature of assets provided has changed in that funding is devoted to projects which may be described as 'institutional development' in nature. Nevertheless, this still involves a transfer of assets through upgrading capacity say in a Government Department or University, which also have to be maintained.

If recipients do not continue to use the assets productively, aid funds are not being used as productively as they should. Effective use of assets is dependent, first, on the level of ownership developed by the recipient during the activity; and, secondly, on absorptive capacity considerations – including, in particular, recurrent cost financing (RCF) arrangements. The factors that can limit these latter are inadequate funds, poor financial and economic policies, inadequate skills, lack of management capacity, institutional limitations, insufficient infrastructure, cultural and social constraints, and inappropriate donor policies.

We would appreciate if you could answer any or all of the six questions detailed below together with any general comments you may care to make. Responses by 12 June would be welcome. Some issues that you might care to address in the context of the questions detailed below could include:

- How widespread are problems related to recurrent cost financing in AusAID projects?
- How do recipients view the maintenance issue for aid-funded projects?
- Are there sensible, appropriate mechanisms available to help resolve the problem?
- What are the causes for low levels of maintenance/recurrent cost inputs by recipients in AusAID activities. Are they caused directly or indirectly by AusAID selection, design and implementation of projects, or are they just a factor of the recipient's development base?

Question 1

Are you aware of, or have visited, any completed projects that have suffered to any degree through lack of provision of maintenance funds? Please detail project names. Are the projects still viable and effective? *(all projects since 1975.)* It would also be useful to learn of projects that have been considered successful in terms of both initial investment and ongoing support from the recipient government.

Question 2

For completed projects, did the Government make specific budgetary provision for RCF support? More generally, did the Government make general maintenance provisions in its budget at the time these projects were undertaken? Were revenue expectations realistic?

Question 3

For current projects, can you see any emerging RCF/maintenance problems? If so, to what do you consider these may be due? Has the Government adequate provision in its budget for maintenance and is it realistic? If there is a problem, is it budgetary or institutional?

Question 4

If there have been or are problems, have they in any way been contributed to by AusAID, for example, were we too ambitious in project design?

Question 5

If there are problems, are there solutions? Conditionality? RCF provision by Australia? Sectoral bias? Change in project selection? Recipient preference? Rehabilitation projects?

Question 6

Have you any other views or comments?

Should you be able to advise of any recipient concerns, past or present, we would also be grateful for details. Again may we emphasise that the above questions are only seeking opinion and not in any way detailed analysis.

Appendix 3: Terms of Reference

AN ASSESSMENT OF RECIPIENT EXPERIENCE IN THE MAINTENANCE OF AUSAID-SUPPLIED PROJECT ASSETS WITH PARTICULAR FOCUS ON PROBLEMS ASSOCIATED WITH RECURRENT COST FINANCING

1. Background

AusAID bilateral activities usually provide, at significant cost, assets which are handed over to recipients at project completion. For project initiatives to be sustainable post-completion and to continue to provide long-term benefits, AusAID expects that the recipients will use and maintain these assets in a productive way for as long as is reasonably feasible and cost-effective.

With appropriate maintenance, some assets should remain cost-effective for considerable periods, in the case of infrastructure for up to or in excess of thirty years, while for other projects the period could be very short as relevant technology changes.

The traditional definition of project assets focuses on infrastructure, machinery and commodities, that is on 'visible' goods and structures that are left in place on project completion. Increasingly important, however, as the nature of bilateral aid changes and there is less focus on physical infrastructure, are less tangible assets provided through technical assistance and training. For example, the loss or under-utilisation of expensively trained counterpart staff on an agricultural or health project, or the loss of knowledge gained through local design and supervisory staff participation on a bridge building project, represent a less than effective use of aid funds.

For AusAID the key question is whether recipients continue to use the assets productively post-project completion - if they do not, aid funds are not being used as productively as they should. Effective use of assets is dependent, first, on the level of ownership developed by the recipient during the activity; and, secondly, on absorptive capacity considerations – including, in particular, recurrent cost financing (RCF) arrangements. The factors that limit these latter are inadequate funds, poor financial and economic policies, inadequate skills, lack of management capacity, institutional limitations, insufficient infrastructure, cultural and social constraints, and inappropriate donor policies. These factors also have a bearing on the retention of project-trained and qualified staff, and their ability to utilise their skills.

AusAID has decided to undertake an assessment of recipient experience in maintaining Australian-supplied assets after project hand-over. This assessment, and the recommendations deriving from it, will be helpful in contributing to the selection, design and implementation of lower-risk and more sustainable activities in the future.

2. Assessment Objectives

The objective of the assessment is to evaluate recipient experience in maintaining assets, as broadly defined above, that are supplied by AusAID through its bilateral activities. The assessment will identify countries/regions and projects/sectors most likely to encounter recurrent cost financing difficulties. Recommendations will include how AusAID should approach the problem of recurrent costs and what design mechanisms can be employed to counter these constraints and contribute towards more sustainable activities in the future.

3. Scope

The scope of the assessment will include an overall evaluation of recipients' capacity to support the maintenance of Australian-supplied assets post-project, focusing on RCF arrangements. The assessment will focus on factors such as overall activity sustainability and continuing development outcomes. It will examine the concept of maintenance, both in terms of physical factors (for example, the extent to which assets such as roads or water supply systems are maintained in a cost-effective manner) and the retention and utilisation of technical skills, transferred through bilateral activities.

Issues to be addressed could include:

- How widespread are problems related to RCF in AusAID activities?
- Comparing maintenance/RCF problems as they relate to physical infrastructure and the continuing utilisation of activity-trained staff.
- What is the concentration of RCF problems by country, by sector, by project size?
- What mechanisms has AusAID used in addressing the issues?
- How do the recipients view the issue?
- What are other donors' concerns?
- Are there sensible, appropriate mechanisms available to help resolve the problem?
- What recommendations can be made to help improve RCF issues in AusAID activities?
- How should AusAID go-about implementing these in its activities?
- What other factors should be considered?

The scope of the assessment will include the current way activities are designed and implemented in AusAID. The analysis will commence with the way RCF is considered in country strategies. It will conclude with recommendations on future strategies and suggestions, if appropriate, for design improvement of AusAID activities. Sources to be consulted will include AusAID staff, recipient government officials, and other donors. AusAID's project reports, evaluation and review reports, other publications and donor literature will be consulted. Fieldwork may be undertaken if considered appropriate.

Under the direction of the AusAID Task Manager, the consultant will undertake the following tasks:

- Identify and assess the importance of appropriate maintenance to AusAID activities.
- Examine causes for low levels of maintenance/recurrent cost inputs by recipients in AusAID activities. Separate the causes into sets including: (a) those that are mainly attributable to the way AusAID currently selects, designs and implements its activities, and (b) those that are the result of the recipients' development base and institutional approach. Consider what possible mechanisms are available to overcome RCF difficulties in AusAID activities.
- Examine reports of other donors as to their approach to RCF. Consider if they have a better way of addressing the issues and whether these can reasonably be adapted into AusAID activity designs.
- Undertake a desk assessment of a representative selection of available project reports, evaluation and review reports, and other documents in AusAID, and examine these in light of the issues raised above.
- Based on the desk assessment, which is likely to yield useful recommendations, select several countries for more detailed analyses. Discuss/consult with officials from these countries as to their view of the problems and likely solutions of RCF in AusAID-assisted activities.
- Discuss/consult with other donors as to their experience with developing countries on issues of maintenance/RCF and how they have approached these in their activities.
- Propose recommendations on how RCF problems can be better addressed in future AusAID activities.

4. Assessment Team

Dr S. Chandra, Performance Information and Assessment Section, AusAID will be the Task Manager. A short-term consultant will be the Evaluation Specialist for up to approximately eight weeks. The TORs for this position are listed under section 7.

Dr Chandra's prime responsibility will be to manage, co-ordinate and oversight the work of the consultant to ensure that the contents of the draft report, including the conclusions and recommendations, meet AusAID requirements. In addition, he will be responsible for ensuring that the final report meets AusAID's standards for publication.

5. Workplan

The workplan for the assessment will consist of two distinct phases.

5.1 PHASE 1

- **1a.** Desk review of literature; examination and selection of project/country samples as appropriate; review of project reports and evaluations held within AusAID; and preparation of a detailed report outline for the assessment. The consultant will commence this work on 28 April 1998 (two weeks).
- **1b.** A desk assessment involving consultations with selected AusAID staff, and communication with other donors. In addition, discussions will be held with selected Australian managing contractors identified through the analysis of project reports in Phase 1a above. The consultant will commence Phase 1b immediately on completion of Phase 1a and prepare a draft report (three weeks) summarising the findings of the exercise. An additional three days will be set aside for completion of the draft report should it be decided not to proceed with Phase 2.

5.2 PHASE 2

- **2a.** Subject to successful completion of Phase 1, a second phase may be undertaken in which the consultant may be requested to follow-up the findings of the above draft report. This would involve a short field mission to consult in detail with senior officials of aid co-ordinating and line Ministries in key countries identified in the above phases, probably in the South Pacific and SE Asia, on conclusion of Phase 1 (two weeks).
- **2b.** Finalisation of the draft report for circulation (3 days) immediately subsequent to the field mission. An additional 2 days (at dates to be advised) will be set aside for the consultant to revise and produce the final report after comments are received.

6. Reporting

A short report of no more than 30 pages of text and any essential appendices is expected. The report will be forward-looking and constructively written so as to assist AusAID in the design and implementation of its future activities, specifically targeting the issue of RCF by the recipients. If Phase 2 is undertaken, involving fieldwork, any conclusions will be discussed with recipient Government agencies whilst the draft report is being completed in-country. Within AusAID a seminar will be used to highlight the findings. The lessons learned will be incorporated into the AusAID's lessons learned database under a special heading of recurrent cost financing. A flier will also be produced to publicise the findings.

7. Evaluation Specialist's Terms of Reference

The Evaluation Specialist will:

- be responsible to the Task Manager for all aspects of the assessment;
- identify and assess the importance of RCF to AusAID activities;
- examine the causes of RCF/maintenance problems in AusAID activities. Separate the causes into two sets: (a) those that are mainly attributable to the way AusAID currently selects, designs and implements its activities, and (b) those that are the responsibility of recipients. Consider what possible mechanisms are available to overcome the difficulties posed by RCF problems in AusAID activities;
- examine reports of other donors as to their approach to the question of RCF. Consider if they have developed better ways of addressing the issues and whether these can be adapted into AusAID activity designs;
- undertake a desk assessment of a representative selection of available project reports, evaluation and reviews reports, and other documents in AusAID, and examine these in light of the issues raised under section 3 above;
- select several countries for more detailed analyses, based on the desk assessment, which are likely to yield useful recommendations. Discuss and/or consult with officials from these countries as to their view of the problems and likely solutions as to RCF/maintenance difficulties experienced in AusAID-assisted activities;
- discuss and/or consult as appropriate with other donors as to their experience with developing countries on maintenance/RCF problems and how they have approached this in their activities, undertaking fieldwork as necessary;
- propose recommendations on how RCF problems can be better addressed in future AusAID activities;
- undertake responsibility for the preparation of the draft and final reports; and
- carry out any other tasks for successful completion of the assessment as requested by the Task Manager.

Appendix 4: List of persons contacted

The review team undertook fieldwork for this report in June/July 1998. Organisations contacted and persons consulted are listed below. The team expresses its sincere appreciation for the generous assistance provided by the many individuals contacted during the course of the fieldwork and those others who helped arrange and support the mission.

FIJI, SUVA (29-30 JUNE 1998)

Australian High Commission

- Mr John Davidson, Counsellor, AusAID.
- Mr Paul Kelly, AusAID.

Ministry of Education and Technology

- Mr A Naidu, Permanent Secretary for Education & Technology.
- Ms Emi Rabukuwaqa, Deputy Secretary for Education & Technology.
- Mr Jagdish, Principal Accounting Officer.

Ministry of Health

- Mr Luke Rokovada, Permanent Secretary for Health.

National Planning Office

- Mr Robin Yarrow, Permanent Secretary for National Planning.

Ministry of Finance

- Mr Satyendra, Head Aid Unit.
- Mr Aisake Tato.
- Mr Paula Uluinaceva.
- Mr Naipote Katonitabua.

United Nations Development Program

- Dr Romulo V. Garcia, Resident representative.
- Mr Shahrokh Mohammadi, Asst. Resident Representative.
- Mr Yuxue Xue, Asst. Resident Representative.

CANADA, OTTAWA (2-3 JULY 1998)

Canadian International Development Agency

- Ms Bernice Vincent, Evaluation Manager.
- Dr Syed Sajjadur Rahman, Director of Evaluation.
- Mr Goberdhan Singh,
  Acting Senior Performance Review Specialist.
- Mr P Edmond Carpentier,
  Transport and Equipment Specialist, Africa and Middle East.
- Dr Paul S McGinnis, Acting Senior Performance Review Specialist.
- Mr E.K. (Ted) Langtry,
  Director General, Indonesia, Philippines and South Pacific.
- Mr Robert D. Woodhouse,
  Country Program Director, Bangladesh.
- Mr Jean Sabourn, Senior Energy Specialist, China.
- Ms Valerie L. Young, Senior Performance Review Officer.

The North-South Institute

- Mr Ted Paterson, Director of Finance and Special Projects.
- Mr Kerry Max, Researcher.

USA, WASHINGTON DC (6-10 JULY 1998)

The World Bank

- Mr Peter Versegi, Executive Director's Assistant.
- Dr Colin A. Gannon, Senior Economist, Transport.
- Dr Nicholas C. Hope, Director, Europe and Central Asia.
- Dr Sanjay Pradhan, Sector Leader, Public Sector Institutional Reform.
- Dr Ohene Owusu Nyanin, Manager, Regional Initiatives, Africa.
- Dr Cyrus Talati, Economist, East Asia and Pacific Region.
- Mr Dan Weise, Staff Consultant.
- Dr Antti Taluitie, Senior Evaluation Officer, OED.
- Dr Julian Blackwood, Operations Evaluation Department.
- Ms Helen Abadzi, Operations Evaluation Department.

- Dr Bilal H. Rahill, Country Officer, Papua New Guinea.
- Dr David Dollar, Research Manager, Macroeconomics and Growth.

International Finance Corporation

- Mr Tony Clamp, Investment Officer, Privatisation.
- Ms Dafna Tapiero, Senior Privatisation Officer.

PHILIPPINES, MANILA (14-15 JULY 1998)

Australian Embassy

- Ms Lynn Pieper, Counsellor, AusAID
- Mr Lindsay Chan, AusAID

Asian Development Bank

- Dr Graham Walter, Senior Evaluation Specialist.
- Mr Stephen Baker, Alternate Director.
- Dr Nihal Amerasinghe, Deputy Director, Programs Dept. (West).
- Dr Werner M. Schelzig, Deputy Director, Programs Dept. (East).
- Mr Stephen Pollard, Programs Officer/Economist, Pacific Operations Division.

National Economic and Development Authority

- Dr Rolando G. Tungpalan, Director.
- Ms Judith Gondra, Senior Finance Development Specialist.
- Ms Violeta Sicat-Corpus, Chief Economic Development Specialist.

Department of Education, Culture & Sports

- Ms Amelita A Cruz, Deputy Executive Director.
- Ms Nenita S. Crisologo, Project Manager,
  Philippines - Australia Project in Basic Education (PROBE).
- Ms Carla Calayag-Dones, Operations Manager, PROBE.

INDONESIA, JAKARTA (16-17 JULY 1998)

Australian Embassy

- Mr Ian Millar, Counsellor, AusAID.
- Ms Kaylene Grundy, AusAID.
- Ms Vyrene Smith, AusAID.
- Mr Remy Rohadian, AusAID

Asian Development Bank

- Mr Robert C May, Resident Representative.

SLB-A Pembina Tingkat Nasional (Special School For Handicapped Children)

- Mr Bambang - Principal's Representative.

Ministry of Public Works

- Dr Budihardjo Hardjowiyono, Head, International Co-operation Bureau.
- Mr Noeryanto, Program Officer.
- Mr Sidi Poernamo, Bureau of Logistics.
- Ir M. Rachmat Kramah, Water Resources (Eastern Region)

Bappenas, National Development Planning Agency

- Mr Freddy H. Tulung, Head of Bureau for Price Analysis, Operations and Maintenance.

Department of Health

- Dr Adji Muslihuddin, Director, Public Hospitals and Training.
- Dr Nurul Ainy, Assistant Director.

Department of Education and Culture

- Mr Zulbadi, Senior Officer, Infrastructure Section, Directorate of Basic Education.
- Ms Tri Widayati, Senior Officer, Infrastructure.

The World Bank

- Mr Chitta R. Bhattacharya, Senior Procurement Specialist.

PAPUA NEW GUINEA, PORT MORESBY (27-30 JULY 1998)

Australian High Commission

- Mr Mark Palu, Counsellor, AusAID
- Mr John Westcott, AusAID
- Ms Fleur Davies, AusAID
- Mr Tony O'Dowd, AusAID
- Dr Borhan Uddin Ahmed, AusAID
- Ms Deborah Bowman, AusAID
- Mr Robert Tulip, AusAID
- Ms Judith Ugava, AusAID
- Ms Ellen Pati, AusAID
- Ms Becky Sambak, AusAID
- Mr Angus Barnes, AusAID
- Mr Kevin Gubag, AusAID
- Mr Paul O'Neill, AusAID
- Ms Anna Chikali, AusAID
- Mr Jiro Kandoiya, AusAID
- Mr Lawrence Tonte, AusAID
- Mr Archie Kasokason, AusAID
- Mr Fred Posenu, AusAID
- Mr Peter Izzard, AusAID

Department of Treasury and Corporate Affairs

- Mr Joe Demas, First Assistant Secretary, Sectoral Planning.
- Mr Elpat Enoch, A/Secretary for Social Sector, Budgets.
- Dr Farid Siddiqui, Consultant, UNDP Project for ONPI.

Department of Health

- Dr Isaac Ake, Director.
- Mr John Christie, Consultant, Hospitals Project (AusAID).

European Union

- Mr Maurizio Caldarone, Economic Adviser.

United National Development Program

- Mr Finn Reske - Nielsen, Deputy Resident Representative.

Royal Papua New Guinea Constabulary (RPNGC)

- Mr Robert Korus, Deputy Commissioner, Administration.
- Mr Jim Andrews, ACP Logistics and Maintenance.
- Mr Kevin Raue, Deputy RPNGC Project Manager.
- Mr Ken Patterson, Logistics Adviser, RPNGC Project.

Office of Civil Aviation

- Mr Steve Orea, Deputy Director, Operations.
- Mr George Norman, Deputy Director, Policy, Planning and Research.
- Mr John Lavu, Deputy Director, Finance & Administration.
- Mr Geob Karri, Deputy Director, Airports.
- Mr Noga Itama, Deputy Director, Jacksons Airport.

Australian Project Staff (Various Sectors)

- Mr Will Glynn, Technical Adviser, Maintenance and Assets, Correctional Service Project.
- Mr Terry Layton, Team Leader, FMIS Project, Office of Civil Aviation.
- Mr Jon Albrecht, Team Leader, Jacksons Interim Management Project.
- Mr John Waller, Senior Technical Specialist, Rescue Fire Fighting Services.
- Mr Stephen Keevil, Team Leader, ATC Radar Project.
- Mr Darius Olczak, Team Leader, Airports Maintenance and Upgrading Project.
- Mr Dennis Shaw, Team Leader, National Trade Testing Project.
- Ms Anne Glover, Team Leader, Elementary Teacher Education Support Project.
- Mr Graham Bamford, Project Administrator, Department of Education Institutional Strengthening Project

Office of Works and Transport

- Mr Roy Mumu, Deputy Director.
- Mr Joel Luma, Land Transport.
- Mr Rupa Kalamo, Assistant Director, Roads & Bridges.
- Mr Mosely Pukut, Project Co-ordinator.
- Ms Shirley Willy, Land Transport Division.
- Mr Nelson Lamy, Land Transport Division.
- Mr Avoa Issou, Assistant Director, Monitoring & Evaluation.

Quality Assurance Series No. 13

Asset Maintenance: The Impact of the Underfinancing of Recurrent Costs

The maintenance of assets is critical to the development impact and long-term sustainability of aid projects. Unfortunately, assets provided to support both the development of infrastructure and human resources are often not adequately maintained.

This report analyses issues of asset maintenance from literature, anecdotal evidence, and consultations with selected donors and recipients. It suggests ways in which assets can be better maintained to the benefit of both Australia and its partner countries.