



# **A REVIEW OF INTEGRATED ENVIRONMENTAL ASSESSMENT AND PLANNING PROCEDURES IN PACIFIC ISLAND COUNTRIES**

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## 1. INTRODUCTION

The Secretariat for Pacific Regional Environment Programme ('SPREP') have commissioned Cardno (Qld) Pty Ltd ('Cardno') to undertake a comprehensive review of integrated environmental assessment approaches and procedures in Pacific Island Countries ('PICs'), and to provide advice on regional priorities for capacity building requirements in this regard.

A key focus of SPREP's activities has been to enhance the tools available to Member countries (i.e. PICs) to undertake sound decision-making in pursuit of sustainable development. These tools are sought to be developed at the national level to effectively promote integrated assessment and environmental planning as part of a PICs development process, as well as to 'mainstream' the environment. SPREP has assisted with country capacities to undertake environmental impact assessment for well over 15 years. Since the World Summit on Sustainable Development in 2002, and the Mauritius Meeting in 2005, there has been renewed interest by PICs to ensure national development is sustainable. In this regard countries are keen to improve the use of environmental impact assessment ('EIA') and strategic environmental assessment ('SEA'), and explore the options for land use planning to ensure better coordination of development.

As a result, the 2006 SPREP Meeting agreed a review of integrated environmental planning approaches and procedures in the region should be undertaken to guide regional priorities on the matter. In March 2008, Cardno were commissioned to undertake this task with the following specific objectives.

- Update information and review the outcomes and recommendations of the SPREP review on the status of EIA in 1997.
- Establish baseline information on existing human and institutional capacities for effective EIA and SEA in the region.
- Identify institutional, legal and capacity needs and barriers to addressing effective integrated environmental assessment of development resulting from local, national and global environmental change impacts.
- Identify key regional priorities for effective integrated environmental assessment approaches, and the institutional and human capacities and resources needed to implement those priorities.
- Identify potential opportunities and make recommendations for the long-term improvement of EIA and SEA quality and commitment in PICTs.

### Methodology of the Review

During March and April 2008, Cardno conducted face-to-face consultations with EIA and SEA specialists, relevant national and regional non-government organisations ('NGOs'), and civil societies working in the area of integrated environmental planning and assessment in a representative sample of PICs. Countries involved in face-to-face consultations included Tuvalu – a Polynesian atoll island state, Samoa – a Polynesian volcanic country, and the Micronesian countries of Guam and Palau. In addition to gathering in-country information, surveys were sent electronically to similar contacts in other PICs to establish the existing status of integrated environmental assessment throughout the Pacific.

Summaries of the information gathered through in-country and desktop surveys, provided herein, provided the means to identify critical pathways towards more efficient and productive environmental assessments and planning in the region.

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This report presents the information garnered through review of relevant literature in the region, and an analysis of the key information and messages gathered from in-country and desktop surveys regarding current capacities and needs. This review sought to address the TOR as thoroughly as possible within the time constraints surrounding its preparation. The reader will find a comprehensive basis upon which to plan future support to PICs to further capacity for integrated environmental assessment and planning.

The key objectives of the Terms of Reference were to review current 'environmental assessment approaches and procedures' to 'guide regional priorities'. As such, the work and report took the form of a needs assessment for strengthening EIA and SEA processes. It did not incorporate audits of EIA or SEA products.

## 2. FINDINGS OF PREVIOUS EIA ASSESSMENT REVIEW

A review of the SPREP EIA Programme was undertaken by Komeri Onorio<sup>1</sup> in December 1997. The review, conducted over a two-year time frame, addressed uncertainties as to whether SPREP's EIA programmes to date had been sufficiently achieving their outcomes for a focused emphasis on EIA in member PICs. The review also addressed the need to establish priorities together with an overall sense of direction for the region's EIA Programme.

The review considered SPREP's activities in regards to EIA during the period between 1991 to 1997, evaluated the impact of these activities with particular emphasis of EIA capacity in the region, conducted a desktop study of the status of statutory and common practice of EIA at national levels in the region, and identified outstanding regional and/or national needs in relation to EIA.

### 2.1 Key Findings

The key findings of the Komeri's review of environmental assessment processes in PIC's in 1997 are summarised following.

- On an institutional level, environmental protection and management programmes were gaining acceptance and EIA systems, particularly, were growing as a key concept to achieving sustainable development in PICs. However, considerable questioning of the value of EIA was occurring by many key figures in PICs, especially when many EIA seemed to conflict with the economic objectives of projects, and/or expose social and economic differences as a result of the project.
- Existing laws and regulations were inadequate; a number of countries had developed draft legislation, however, were failing to progress these key functions to meaningful systems. Necessary major modifications to the legal/administrative framework for effective EIA practices did not appear to be key priorities at that time.
- Most PICs lacked national systems or policies for environmental assessment, nor a set of standards for such assessment. Where EIA systems had been established, the role of the central environmental impact assessment unit had usually been poorly defined and inadequately developed, and lack of interagency co-ordination and cooperation mechanisms which had impeded effective EIA practices in PICs.
- There was great resistance within development planning agencies to use EIA as a planning tool; rather, EIA had been used as a regulatory activity, resulting in the imposition of environmental strictures on a project-level.
- The need to revive traditional public hearing and comment procedures was identified to allow for adequate and effective public participation. Also, the need for EIA systems to be tailored to traditional island systems, and not the other way around was identified.
- The notable deficit in trained and experienced environmental professionals in the Pacific was identified, noting that considerable skill is present for existing environmental professionals.
- Need for development of formal academic programs and on-the-job training for senior policy and project decision makers, EIA system administrators, EIA team managers and leaders, EIA team members, and EIA reviewers in and outside government. A clear understanding of the diverse target groups or audiences requiring skills upgrading was identified as essential to the development of a sound capacity-building program.

<sup>1</sup> Komeri, Onorio (1997) *Environmental Impact Assessment in Pacific Island Countries – Review Report prepared for the South Pacific Regional Environment Programme.*

- In addition to required human resources, physical resources were identified as necessary to effectively carry out EIA and SEA, i.e. analytical and research laboratories, libraries and data centres, computer hardware and software, monitoring devices and equipment for measuring environmental conditions.
- Very few PIC's had baseline data systems, and those that were available were often inadequate i.e. inconsistent timeframe of baseline data, questionable accuracy.
- A greater collaboration between national and local government agencies/groups to develop environmental data systems which extend beyond the sole use of EIA was identified. For these data systems to be successful, adequate technical and system support was noted to be necessary.
- Although the influence of donor support for EIA was greatly acknowledged, concern existed that EIA systems had been influenced too much by foreign concepts and approaches at the expense of firmly rooted local conditions, needs, and priorities.

## 2.2 Key Recommendations

In terms of providing recommendations for the success of EIA systems in PICs, Komeri noted no single set of recommendations could be applied equally to the widely differing situations found amongst PICs.

Komeri's recommendations included the following.

- Facilitate public participation involving the broad-based participation of NGOs, affected communities, and individual citizens in development planning and implementation and strong, environmentally sensitive planning orientation.
- Make information available to the public where public comment could be requested at the time when a project is first declared to be subject to EIA review, before Terms of Reference are developed.
- Clarify participant's responsibilities to off-set the diminished effectiveness of EIA from poorly defined roles of various participant.
- Provide training for all participants, allowing for EIA systems having people with diverse skills; from EIA technicians to EIA reviewers, to EIA system administrators, and EIA policy and system-makers.
- Link EIA to development planning programming and policy-making.
- Collect and manage environmental data so that access to comprehensive, properly validated environmental databases was available so that project proponents would have the capacity to prepare EIA reports comparatively quickly.
- Link EIA to project permitting and licensing to avoid the situation of an agency lacking the legal authority to modify project location and design decisions or the political strength to impose conditions on the project's operations.
- Prepare clear, concise EIA reports to avoid discouraging people from using an otherwise worthwhile document.
- Create an EIA network to share practical EIA experiences, both successful and otherwise, in a less formal and more collegial setting.
- Conduct EIA demonstration projects to transfer EIA skills through "hand on" demonstration projects.



### 3. SUMMARY OF THE CURRENT SITUATION IN PICS

Many PICs face acute development pressures, lack comprehensive planning systems as foundations to coordinated development decision-making, and have limited reference material to guide practice within environmental planning and assessment systems. EIA and SEA processes, paralleled with land use planning processes, could fill the void in linking national economic and sub-national development decision-making. Additionally, it is often a lack of two-way communication between relevant stakeholders (i.e. villagers and governments) that leads to frustration and conflict over development and land resources. Tailored with the advancement of spatial information through GIS (geographical information systems) development, EIA/SEA systems can provide powerful communication conduits between local (and often remote) villages and national governments.

Advancement of integrated environmental assessment and planning can be addressed along a number of fronts. For some countries, the advancement of simple 'administrative tools', or provision of reference material such as standard Terms of Reference ('TOR') for EIA and SEA may fill a void in implementation. There are a growing number of standard resource survey templates, and prior examples of EIA documents that would prove invaluable to PICs where major institutional, expertise, and knowledge gaps occur. For others, there may need to be a review and consolidate numerous environment and planning law platforms to ensure coordinated approaches and nurtured capacity building. Some may have well instituted legal platforms but lack plausible land use policy, have critical information gaps, or be faced with complex procedures between levels of government.

For smaller PICs, instituting complex land use and environmental assessment laws and systems may not be efficient or effective. If delivered with appropriate awareness and acceptance, administrative tools can be instituted to good effect without complex legislative and planning foundations. For instance, environment and development objectives and requirements could be instituted through business licensing systems, import/export licensing, resource extraction licenses, or tax incentive packaging.

Many PICs understand environmental assessment to be a modern reference to the rigid and prescriptive EIA systems of the past. However, wise environmental planning can take many forms and directions<sup>2</sup>. Key principles and concepts in modern integrated environmental assessment include the need for early involvement in the development process, the promotion of 'triple-bottom-line' considerations in development planning, responsive design, and the need for and use of quality data.

Contemporary environmental and land use planning approaches are now recognised as knowledge systems that can be instrumental in avoiding conflict over land and resource-use and the distribution of benefits. Well-developed systems incorporate both EIA and SEA methods, as well as accommodate risk assessment and environmental management plans (ISO 14,000) – the latter being instrumental in minimising governance costs and ensuring the on-going 'duty of care' by developers. Not all approaches, however, would suit the circumstances of the customary societies of the Pacific, and indeed unique forms of planning systems and methods may be required. As such, one of the project objectives of this review is to determine prospective approaches of EIA/SEA that would suit the variety of needs experienced in PICs.

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<sup>2</sup> In the Pacific, a 'planning' system should be interpreted widely. Converse to western standards of land use planning regimes, it could consist of an extension of environmental management laws, natural resource management laws etc. A 'planning' regime for land use and resource management may be introduced in some remote and customary islands as a package of administrative mechanisms.

In environmental assessment, it is relevant to note the difference between EIA and SEA approaches. Invariably EIA are project based, where the development activity and site are known, and the likely impacts assessed and mitigation options are presented. The ability to influence the 'allocation and distribution' of the activity through a project based EIA process is virtually nonexistent. The 'location' of an activity or development is known to be the single most significant causal determinant of impacts. It is this legacy of project based EIA that has spurned the uptake and use of more strategic assessments i.e. SEA.

The perception of EIA as an anti-development tool by many PICs may be symptomatic of the methods of introduction and practice of EIA to-date. EIA can be, and typically has been, instigated in a reactionary manner at the end of development processes where many commitments, political and financial lobbying has occurred. The reactionary use of EIA has often lead to conflict between development and environmental management, doing little to invoke confidence in the application of sustainable development initiatives and processes. Consequently, much needs to be done to improve the confidence in the use of EIA. Means to achieve this may best commence with a greater understanding of what EIA is and what it can achieve.

EIA is a planning tool and as such, is generally only workable when operated in the context of a planning system. Largely, many PICs do not have adequate land or resource-use planning systems upon which to proceed with more positive forward EIA approaches and interventions that would facilitate 'opportunities' for development. Without the foundations of a planning system, positives of environmental assessment processes are not easily conveyed. Application of EIA principles to area-wide, multiple-use and resource-use policy choices is a means to demonstrate the positives of environmental assessment, commonly referred to as strategic environmental assessment. SEA has many redeeming features suited to customary and subsistence cultures of the Pacific Islands in that it:

- allows early participation of the community;
- can be easily adapted to include traditional management and use regimes;
- enables local ownership of the process and outcomes;
- allows early intervention mechanisms (eg guidelines for development, criteria and standards); and
- can integrate the strategic outputs from many other initiatives (e.g. climate change, NBSAPs, waste, reefs and coastal management initiatives).

SEA approaches (which are usually introduced earlier in the development process) are able to include the consideration and affect of the location of development. Often the end-use is yet to be determined; therefore there are fewer pressures for specific locations. Land capability and suitability type assessments can be objectively completed. In this regard SEA approaches are powerful for not only minimising the impacts of an activity/development but in also providing strategic information for both investors and the local community regarding environmental constraints and future potential uses - a better basis for sustainable development decision-making.

Furthermore, undertaking 'passively' orientated SEA development allows methods and approaches to be introduced without heavy handed legislative or institutional development. SEA can be gradually introduced for those countries with a mix of development and environmental laws, competing policies and poor institutions without incurring major 'shocks' to the present modus operandi. Also relying heavily on participatory and community approaches which are characteristics of customary governance in most PICs allows for more effective environmental assessment and management.

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Rather than the replacement of EIA with SEA, both approaches should be used in unison, acknowledging the role of EIA in providing an 'end of pipe' checks and balance audit on development decision-making. Environmental planning systems can provide the foundation for links between SEA and EIA. Where communities spend effort on SEA approaches which 'map out' constraints and (importantly) outline opportunities, the level of detail of subsequent EIA (which come at a high cost) can be reduced. The SEA work may highlight specific issues that need further attention and the subsequent EIA 'terms of reference' (TORs) can be developed to target such detailed assessment, rather than simply duplicate prior work.

## 4. FINDINGS ON THE STATUS OF EIA AND PLANNING IN PICS

This section summarizes much of the feedback received from the survey of PICS and the matters raised in consultative meetings held in some of the PICS.

Appendix A and B contain more details of the feedback received by country and meeting within country.

### 4.1 Capacity for EIA and SEA

EIA capacity development has had a varied history in the Pacific. Much in the past has been based on project-based models, which invariably rely on well-instituted land use/environmental planning systems for effective implementation. EIA practice in PICTs is generally inhibited by: ineffectual land use planning systems; human and capital resource shortfalls; lack of know-how, and deficiencies in the extent and types of information to assist assessments. Capacity building has been spasmodic and resources for national development and regional guidance limited.

Options for legal provisions for EIA have not addressed the plethora of confusing development and environment laws in-country, many of which are inherited from colonial periods. The result has been the slow uptake of EIA laws, the marginalization of EIA processes and the spasmodic application in development processes.

However most PICS have instituted some legislative or policy processes for the completion of EIA for significant developments. Commonly countries are concerned with the operational status of EIA and the ability for integrating development and assessment processes. All Environment Units in PICS give EIA a high priority in terms of environmental protection as well as providing the initial tool for integrated assessment for sustainable development. Many give an indication that much more work needs to be done to enable:

- equitable administration of EIA;
- acquisition of skills and experience through on-the-job and organised training;
- integration of EIA processes with physical development processes;
- explicit criteria and guidelines for development and environmental protection;
- (for the more advanced PICS) the use of Strategic EIA (or SEA) for land use, policy assessment and means to satisfy MEAs;
- improvements in the methods and benefits that may be used in early public participation of development-environment protection debates; and
- improved standards in information and data to assist in EIA and other associated decision-making.

The impetus of the Convention of Biological Diversity ('CBD') and the United Nations Convention to Combat Desertification ('UNCCD') to report on the progress of EIA (both project and strategic) to facilitate respective Conventions has crystallized calls for better EIA and associated planning capacity building in-country. In some instances there is concern from resource development agencies that the prescriptive nature of EIA adds costs and delays for development, and as such, is seen by some as a 'negative' development tool. This view leads EIA processes to be treated with disdain, or at best, as an administrative process/hurdle. Some improvement in coordination mechanisms in-country stirred by reporting requirements to the World Summit on Sustainable Development ('WSSD') and Commission on Sustainable Development ('CSD') has seen better understanding between finance and environment agencies on the mutual benefits of wise use of EIA for environmental protection and sustainable development.

The perception of EIA by many communities as anti-development may be a symptom of the means through which EIA has been introduced in many PICs. EIA can be applied in a reactionary manner at the end of development processes after many commitments, political and financial lobbying has occurred. This means of EIA application is typical of project-based efforts, often leading to conflict in development and environmental management which does little to invoke confidence in EIA and SEA. Much needs to be done to improve confidence in EIA; this may best commence with a greater understanding of what EIA is and what it works to achieve.

EIA is a planning tool and as such is generally only workable when operated in the context of a planning system<sup>3</sup>. Many PICs do not have land or resource-use planning systems, and without these foundations effective and efficient use of EIA may often be difficult.

Applying an EIA approach to land use planning has often been found to be problematic, as it:

- does not enable the 'location' element of good land use planning to take precedent;
- does not cater for competing uses for land, including conservation;
- is a rigid form of decision-making that does not enable partnership approaches to determine the best use of land within its capability and suitability for community needs; and
- provides limited opportunity for community involvement in land use decision-making.

The use of EIA, however, as a check-and-balance of development form, quality of inputs and outputs should not be dismissed.

Strategic EIA as part of integrated planning systems enable positive forward interventions and processes to uncover 'opportunities' for development, thereby bringing an element of certainty into the development assessment process. Application of EIA principles to area-wide, multiple use and resource use policy choices is a means to demonstrate the positives of environmental assessment. This extended use of EIA principles is often referred to as Strategic Environmental Assessment (SEA), and has many redeeming features suited to customary and subsistence cultures of the Pacific Islands. It allows **early participation** of the community, enables **local ownership** (in that a development may not be known – therefore less pressure for rushed decisions), can be easily adapted to include **traditional management and use regimes**, and allows **early intervention** mechanisms (eg guidelines for development, criteria and standards). SEA within an integrated planning system also facilitates the use of strategic outputs from many other initiatives (eg Climate Change, NBSAPs, Waste, Reefs and Coastal management initiatives) in decision-making.

A number of assessment and design processes, techniques and tools can be included with SEA approaches. For example:

- Natural resource economics (from user pays systems, to valuation and cost-benefit analysis to Natural Resource Accounting);
- Land and Watershed Capability and Suitability assessment;
- Integrated Coastal and Watershed Management/assessment;
- Policy and Programme assessment (often now referred to as sustainability assessments);

<sup>3</sup> In the Pacific context a 'planning' system should be interpreted widely. Contrary to western concepts of land use planning regimes, it could consist of an extension to environmental management laws, natural resource management laws etc. A 'planning' regime for land use and resource management may be introduced in some remote and customary islands as a package of administrative mechanisms.

- Thematic or development sector assessment, e.g. tourism;
- Multiple criteria and objective assessment techniques;
- Environmental Audits and Environmental Management Plans (ISO 14,000);
- Social and Cultural Impact Assessment techniques;
- Land Development and Management guidelines;
- Engineering and Building Design guidelines;
- Environmental Checklists, objectives and criteria;
- Land Use and/or Resource Use planning techniques/tools; and
- Resource Management Plans.

Appendix E of this report provides further explanation of the benefits of Strategic Environmental Assessments (SEAs).

## 4.2 Legislation and EIA and SEA

The legal aspects of EIA/SEA in PICs vary from a state, from no active legislation to that of robust legislation constrained by limited technical know-how, human and financial resources. With legislative foundations differing between Westminster, French and North American influences, PICs have a range of legislative styles, each with strengths and weaknesses.

Active environmental legislation is generally based on robust principles of environmental protection and management. Their implementation is often hindered by the quantity of staff available to carry out administrative processes. In many PICs there is a disjunct between environment protection legislation (incorporating EIA processes) and land use planning legislation (where it exists).

Some countries (i.e. Palau and Guam) have long-established legislation established during colonial periods (for Palau and Guam, during colonisation by the United States of America). Often this has meant the transfer of requirements from colonial homelands where the context and situations are far different to the Pacific. The scope of legislation is also influenced by homeland affairs. For example, Guam contains several areas owned and operated by the US military which is subject to US law that is comprehensive in terms of those particular land uses. However, disparity between Guam and US laws leaves many gaps in the effectiveness of environmental legislation for Guam. For example, a development in Guam is only subject to carry out an environmental assessment if it is not in compliance with existing land use zoning, thereby allowing potentially environmentally harmful activities to occur without regulation. Likewise, authority to request EIA in Palau is confined to earth-moving activities; where other activities are not required to be subject to a review of its environmental performance.

Other PICs have had environmental legislation for a relatively short period of time, or are yet to enact environmental legislation. Samoa's Planning and Urban Management Act (PUMA) has been effective since 2004, broadening the scope of its legislation to include planning and development in conjunction with conservation and national parks management. It has, however, encountered issues associated with poor quality of information supporting applications for approval especially as regards environmental aspects. Other issues include: developer non-compliance with approval conditions; lack of funding to the administration unit; and limited human resources to undertake strategic management planning.

A number of PICs or states/provinces within, like Tuvalu have no enacted environmental legislation to date. The Department of Environment acts essentially as an advice agency to development within the country. Although they are infrequent, developments of whatever scale are significant in terms of the country's natural environment when increasing urban density and limited natural resources are considered.

The effectiveness of, and compliance with, environmental legislation needs also to be considered in terms of the influence of customary practices and ownership of land. The modern legislative institutions used within Pacific Island countries are largely based on western legal systems and can conflict with traditional practices and subsistence lifestyles.

Much of the legal systems applied to PICs are adapted from countries with much larger and complex development systems. The result is countries having legislation which is often too grandiose for the scale within the Pacific, or introduce decision processes and requirements which are at odds with traditional systems.

In summary, the following are key legislative aspects of EIA/SEA in PICs:

- Active environmental legislation is generally based on robust principles of environmental protection and management, often hindered by the quantity of staff available to carry out administrative processes – limited to some PICs.
- A small proportion of PICs have had environmental legislation for a relatively short period of time, or are yet to enact environmental legislation.
- Modern legislative institutions used within Pacific Island countries are largely based on western legal systems and can conflict with traditional practices and subsistence lifestyles.

### **4.3 Science and Technology**

The limited capacity of PICs to access and utilise modern science applications is another dimension to the limited efficiency of environmental assessment. The small scale and limited resources of PICs often cause countries to work with old technology or go without. Specific application areas of priority are wide-ranging including areas such as biodiversity assessment, land capability, water quality analysis, coastal and marine science, energy, climate change, land use planning, transportation and sustainable development.

In this part technical capacity to undertake and manage EIA and SEA is considered. Most PICs indicate there are limits to technical know-how of government agencies as well as locally available consultants. Comment was also made that broader understanding of EIA and SEA across government agencies – could see officers outside of environment units able to offer assistance with environmental assessments.

Particularly government and community stakeholders lack expertise or reference material to assist with developing adequate terms of reference (TORs), to assess EIAs against TORs or advise on methods and approaches to assessments. This shortcoming is also recognized at the regional governance level.

Some PICs have indicated that future national based training should involve private enterprise to try and improve the competency of local consultants. They have mooted the use of professional association and certification processes to complement such endeavours. Use of networks of practitioners among island states and even countries may need to be explored. Association with developed country professional groups such as the Planning Institute of Australia (PIA), or the Environmental Institute of Australia and New Zealand (EIANZ) may be advantageous.

GIS development is required to provide common or integrated platforms for PICs to link, manage, store, retrieve, update and analyse information and data across sectors and themes. GIS development at the national level needs to be nurtured and supported over a long period. The author has recently completed a review of land information systems in the Pacific for land administration, land use planning and management for the PIFS Land Management and Conflict Minimization Project. The key messages are that GIS enhancement at the national and regional level requires careful management, specific skills development and long term financial and technical support. Without this efforts may result in new technologies that are cumbersome, costly and in-effectual.

Science and Technology are the cornerstones to innovation and the application of knowledge management systems (including tools, techniques, know-how and systems). With well-planned inception and development they can also open up opportunities for human resource development and productivity. All science and technology new to the Pacific may need to be synthesized with local ways to stimulate commitment, or to enable it to be applied in the context of local social and physical conditions.

Despite some good progress in areas of global – regional monitoring (climate change and atmospheric variations), there is a growing call for more practical national-based applications of technologies and decision support systems. . Many made comment that the lack of coordinated databases or systems for state of the environment type monitoring – means there are important gaps in trying to convince politicians and some in the community of the detrimental impacts of poorly planned developments.

As mentioned there are prospects for the use of GIS and Remote Sensing technologies and applications in a number of areas. The Pacific regularly reports on the inadequate basic spatial and textual data coverage over many islands and for the region. Pursuing use of GIS and Remote Sensing capabilities can help with a number of cross-sectoral and thematic environment areas, address the poor status of data, as well as characterise data suitably for decision-making for sustainable development

## **4.4 Institutions and Organisations**

### **4.4.1 National Governments**

Government departments and organisations play a key institutional role in environmental assessment and land use planning processes in PICs. Different systems are in place across the Pacific to administer such systems.

Many countries have a 'board' or 'taskforce' to perform the administrative and regulatory processes of environmental assessment, both for those countries with and without active legislation. The structure of Palau's Environmental Quality and Protection Board ('EQPB') provides for robust, efficient and functioning environmental assessment administrative process, however they note that there are shortcomings without conducive land use planning. Many smaller developments that do not trigger EIA, have detrimental direct and cumulative impacts, mostly due to poor location (in wetland areas).



The EQPB contains a core group of select members from different government departments and community groups to assess environmental aspects of development applications. The EQPB are the responsible party for provision of project approval through group consensus. This system facilitates a balanced and unbiased assessment of environmental considerations. Similarly, Tuvalu has an EIA Taskforce by which applications for development are reviewed by a group of representatives from various government departments and community groups. The Taskforce determine likely project impacts by way of pro-forma checklists and determine actions required in light of these findings. Tuvalu's processes, however, are constrained by lack of authority to request further studies and withhold approval on these grounds. Furthermore, being a small, isolated country with relatively few medium-large scale projects, those that are proposed are often viewed favourably in light of their economic and social benefits to the country. Whilst environmental impacts may be acknowledged in these situations, the seemingly more pressing matters (i.e. food security) tend to over shadow deficiencies in environmental knowledge and potential long-term environmental impacts.

Awareness of the functions and mandate of the environment departments is varied amongst government departments in many PICs. Generally, health-related departments have an appreciation and working relationship with environment departments due to the relevance of environmental health to aspects of community health. Potential for further collaboration and pooling of resources between these departments exists. Generally, health-related departments have an avenue to comment and provide advice on environmental assessment; however, these departments have limited authority to influence the outcome of a development application.

Other government groups, such as land and resource-based departments, have an appreciation for environmental management but are not necessarily active in pursuing and ensuring a high level of environmental performance. In some countries, agriculture and forestry agencies have been active participants in good environmental management. In Niue, for example, there is great recognition that soil and forest health has positive implications for their food production. Some agricultural activities, however, have seen the provision of improved farming equipment or techniques for local farmers not suited to the local land capability (e.g. tillage processes not suited to steep slopes). This has in instances contributed to increased soil erosion and waterway contamination. These situations of capacity building efforts impacting on the environment indicate a lack of knowledge or inability by departments or their donors to provide sound advice to community members in regard to environmental performance.

For institutions outside of environmental or land management units indifference resounds regarding environmental performance, often influenced by a lack of understanding, or their own limited funding and human resources.

Contributing to inadequate consideration of environmental performance of development projects in PICs is the influence of politics. With a relatively short-term cycle of political residency, many politicians influence the development approval process to fast-track projects with economic, social, personal benefit. In some countries, the politicians are often the property developers or closely aligned with them through community links - and seek to ensure approval of the proposed development despite environmental impacts. Ownership of customary land further increases the political influence on development approval.

Many PICs highlight the lack of conducive links between levels of government within country – whether this be between national and state (including provinces), state and local villages, or national and local villages. Disparate laws or mechanisms among laws related to environmental assessment and planning can have influence on institutional processes – which will result in poor harmony between levels of government. The ADB PRES case study in Vanuatu (ADB, 2004) highlighted the friction between a local government's encouragement for certain development without assessments, and the national agencies concerns over impacts.

#### **4.4.2 Regional and International Organisations**

Regional agencies and international organisations active in PICs, including donor agencies and regional environment groups, have both direct and indirect influence on the performance of environmental assessment in many PICs. Donor agencies include aid agencies from neighbouring 'developed' nations such as Australia, New Zealand, Japan and Taiwan. They provide funding for capacity building, undertake development projects, or undertake research within PICs for a variety of project types.

Some PICs are wholly dependent on donor agencies to provide funding to undertake training and research, and as such, are subject to different agency processes and requirements. Alternatively, some PICs are relatively independent and participate with donor agencies to a lesser degree.

Tuvalu, for example, has a limited national economy due to limited natural resources, isolated location and largely subsistence lifestyle, and as such has limited potential to generate the funding required to undertake training, research, and activities in the national interest. Consequently, many development projects are initiated and carried out by donor agencies. Fiji, on-the-other-hand, operates various areas of industry which provide revenue for government and community initiatives, making them less reliant on donor funding and assistance.

To the advantage of Tuvalu and other countries with limited environmental legislation, donor agencies are increasingly adopting environmental standards for aid projects. However many of these are standards relevant to the donor agency's country. These standards can however be burdensome to smaller nations with limited human and financial resources. Often there are a number of donors in a particular country at any one time, and they may all have different approaches to environmental assessment or community consultations. Furthermore, countries with limited environmental legislation and who are reliant on donor funding and expertise have little control over project specifics, being largely at the mercy of the service provided under the development project. Having interactions with a variety of donor agencies, a lack of consistency between agency requirements can be time consuming and resource draining for smaller PICs.

There have been many instances cited where development activity promulgated by development assistance agencies have involved environmental assessment by outside parties. PICs are concerned with the transparency of such approaches and the lack of local consultations that often prevail. For instance the siting of the new Rarotonga Waste Facility was an apparent result of a site selection process undertaken by the donor's consultant. This assessment and reporting did not involve government or community agencies or groups. There have been problems with the recommended site.

Among the regional agencies of the Pacific there exists a solid base of skills, know-how and technical capacity to undertake and assist with a variety of environmental assessment forms. EIA and SEA are now accepted as being broader assessments than bio-physical investigations, involving social, health, economic, physical and cultural impact considerations. Given PICs strong message of a lack of government and private enterprise skills in environmental assessments, tapping the resources of the regional organizations may be a useful challenge.

#### **4.4.3 Non-Government Organisations**

NGO's of different sizes, membership and thematic interest exist within PICs and perform different functions within the environmental assessment processes. For instance the Palau Conservation Society ('PCS') is a national NGO with the mandate of encouraging both protection of biodiversity and sustainable use of resources. The organisation cooperates with Palau's national environmental assessment processes, having a member on the Environmental Quality Protection Board ('EQPB'), the mechanism for review of environmental assessment in Palau. With direct links to the community, PCS provide a vital link to the review of environmental assessment in Palau, providing valuable perspective to the potential influences of a proposed development on both the natural and social environments.

However, cooperation between NGO's and government groups is not uniform throughout the Pacific. Projects not carefully planned or resourced by an NGO or their donor partners have been handed to the government environment department's to finalise; becoming a burden both on the reputation and resources of government departments.

#### **4.4.4 Summary of the key roles of Institutions**

The key aspects of the role of agencies and organisations in EIA/SEA processes in PICs can be summarized as follows:

- many countries have a 'board' or 'taskforce' to perform the administrative and regulatory processes of environmental assessment, both for those countries with and without active legislation;
- awareness of the functions and mandate of the environment departments is varied amongst government departments in many PICs;
- indifference is common among many government departments regarding environmental performance, influenced by a lack of understanding or their own limited funding and human resources;
- some PICs are wholly dependent on donor agencies to provide funding to undertake training and research, and as such, are subject to different agency processes and requirements for environmental assessments;
- large scale approaches to development assistance by donor agencies are often applied to small island nations, resulting in impractical programmes which are implemented disproportionately to the needs of the recipient country;
- cooperation between NGO's and government groups is not uniform; and
- there are key human, technical and technological resources within regional organizations and agencies which could be tapped to fill the void in skills at the national and sub-national levels.

## 4.5 Planning Systems and Mechanisms

Formal land use planning ('LUP') exists to a degree in a number of PICs. However, where it does exist LUP is often hindered by conflict with customary land ownership and limited augmentation to suit current natural, social and financial conditions. Formalised LUP systems are generally inconsistent with current environmental, cultural and social situations. Smaller PICs facing increasing urban migration, limited natural resources, and issues associated with customary land tenure would benefit from LUP to address potential conflict scenarios common with social systems facing considerable and 'foreign' pressures. The tailoring of LUP systems to suit the customary societies in the Pacific would be of great benefit to its effectiveness.

Community infrastructure is increasingly demanded due to growing populations and urban migration. However the provision of many of the essential services such as sewerage, stormwater disposal, and safe water supply are limited in many PICs as there are no consistent bases upon which to plan strategic development. Additionally, financial resources to satisfy growing demands is lacking.

With an inability for the strategic placement of community and service infrastructure, intense pressure and impacts is placed upon sensitive natural environments in areas already constrained by limited land mass. Not only do these pressures and impacts restrict environmental performance, they contribute to community health issues and costs, such as land and water contamination, water borne vectors and infrastructure damage from local flooding. LUP, assisted by SEA, can provide a coordinated approach to development to contend with limited land availability and sensitive natural systems whilst accommodating increases in urban densities. SEA processes can be highly applicable to customary cultures as a participatory process, allowing community involvement that identifies 'opportunities' for sustainable development rather than constraints. Furthermore, SEA allows flexibility in the face of customary land ownership as opposed to the restrictive influences of traditional Westminster style land use zoning and land titling which have had limited success in the Pacific.

Many PICs describe being unable to guide the location and form of development in the absence of formal LUP or effective use of strategic environmental assessment approaches. Current institutional and legal shortcomings, coupled with issues related to customary land ownership, see development and activities occurring in areas of natural significance that cause long-term and wide-spread environmental impacts. Sensitive areas, whether they are customary or public land, are facing increasing pressure from either direct impacts or indirect impacts from pollution flows. For instance, the mangrove regions in Palau, which are not subject to customary land tenure, are often the only source of limited public land for families who are not members of the local indigenous groups. They are often families who have been displaced or those that have migrated from remote islands for work purposes.

Development in populous areas about the Pacific is often discordant and intense, causing serious environmental damage, and making basic infrastructure servicing difficult. Public or 'crown' land is often limited, and development is often encouraged for community and social benefit. Without strong policy, legislation and political will, poor development form is often difficult to reject in the face of public pressure despite numerous and cumulative environmental impacts. Systems that would enable the quantification of cumulative impacts from poorly designed and located development are not commonplace. Without such information, demonstrating the likely costs of bad development against the net environmental quality and socio-economic benefits of planned development cannot occur.

Although not widely appreciated, efforts to establish LUP in PICs have been attempted. Some have had relative success, but in many cases effective systems have not necessarily been implemented. There are many reasons for the limited execution of planning systems: poorly designed systems that are not suited to customary societies; bureaucratic inefficiencies; lack of cohesive legal systems; lack of commitment; lack of understanding by international agencies; poor or limited information suited for decision-making; or competing models forwarded by a variety of international stakeholders.

In summary, the following are key aspects of land use planning systems and mechanisms in PICs:

- lack of strategic placement of community infrastructure places intense pressure and impacts upon sensitive natural environments in areas already constrained by limited land mass;
- development projects, in the absence of formal LUP and effective environmental assessment (coupled with customary land ownership issues), are occurring in areas of natural significance or result in pollution flows to sensitive areas. As such they are causing long-term and wide-spread environmental impacts; and
- bureaucratic inefficiencies in government organisations; lack of cohesive legal systems; lack of commitment; lack of understanding by international agencies; poor or limited information suited for decision-making; as well as overwhelming and burdensome planning ideals have lead to limited execution of land use planning systems.

## **4.6 Financial and Economic Aspects of Environmental Assessment**

The financial resources and economic aspects of EIA and SEA in PICs must be considered in terms of successful implementation of systems and the dynamics of the interaction between customary systems and modern models of development.

Many Pacific countries have an approach to economic growth that relies on the concept of infinite resource availability coupled with a general indifference to environmental matters. These factors are commonly encouraged by the lure of short term financial benefits or international parties taking advantage of PICs with limited environmental legislation, institutions and human resources for enforcement.

Generally, the limitations of funding in PICs cause widespread constraints. For example, lack of funding for training flows on to limit the capability of government to properly assess EIA or to carry out SEA.

In many countries, given current funding regimes, the cost involved of undertaking EIA is burdensome for those undertaking the studies and preparing relevant documentation. The costs involved in undertaking EIA related data collection and analysis in small and isolated countries (i.e. Tuvalu) are excessive, and combined with the lack of guiding or reference material, or practical criteria, EIA is often substandard if undertaken at all. Proponents are often a local community group or member funded by a foreign investor or donor agency. It is often the case that limited funds are available for government approvals and are sometimes only available for a short period of time, influencing the quality of EIA and environmental studies.

The subsistence lifestyle in most PICs is predominant and long-standing, despite the growing trend towards more capitalist influences. These subsistence 'economies', however, are rarely defined and their value rarely quantified, with no acknowledgment made of the contribution of such economies to modern life in PICs. The impacts of a proposed development on subsistence economies tend not to be considered in EIA and environmental assessment processes. These impacts can be considerable and hugely relevant to the impact on local communities and/or the long-term success of the project.

Government fees and charges are an important source of revenue for government organisations and departments, providing financial resources for the development of capacity including training, technological update, and for further use in environmental programmes and initiatives. With the emergence of EIA as a key aspect of development application, fees for the review of such are becoming more necessary and central to the functionality of the EIA process. It was noted that various government fees and charges applied throughout the approval process can become burdensome to the applicant when viewed as a total cost. Collaboration between government groups to consolidate costs so they are appropriate to the needs of government as well as to the needs of the proponent would alleviate this pressure.

It was further noted that appropriate pricing of royalties to encourage sustainable use of natural resources, and to mediate the quantity and types of development, aren't intrinsically embedded in EIA and planning systems in the Pacific. For example, in some countries the extraction of sand attracts minimal royalties or 'surcharges'. This often encourages a non-sustainable rate of extraction. Furthermore, often there are little means to determine the rates of extraction, or there are too few staff to administer the systems to ensure correct extraction rates and appropriate collection of fees. Fees and charges are often not suited to the type of development. The usual model is for those activities with significant environmental and social impacts being charged higher fees to compensate and to contribute to environmental programmes and initiatives.

Services in most island countries and especially the smaller isolated multi-island countries are often focussed in those areas with the greatest population density. The focus of services in areas of greatest population tends to neglect those populations on outer islands. This situation leads to exacerbating pressures for urban migration and increased urban population densities on capital islands. Furthering the planning of opportunities and services on outer islands may offer some relief to critical urban areas about the Pacific.

In the past there has been a tendency for foreign investments to reap the benefits of local natural and human resource capital with minimal or inconsistent retention of economic multipliers in-country. This has been particularly notable in Fiji in the Tourism industry. Communities in developed or developing countries almost always face 'hidden' community costs to physical development. This may come in the way of long term environmental damage that threatens health, or it may be from increased flooding from additional hardstand areas and barriers to natural flows.

Carefully structured integrated land use or resource use planning systems can provide a mechanism to secure returns to local communities, through for instance, the need to pay economic rent for public good. Or conditional approval can safeguard against future environmental damage from development through the instituting of basic 'user pays' mechanisms assigned to developments intensities and locations. Both of these practices are common in many developed countries. Section 94 of the NSW Environmental Planning and Assessment Act, 1979, for instance, provides a means to address community costs from development through the planning approval process. A derivative of this approach should be investigated for tailoring and possible adoption in the Pacific region.

In summary, key financial and economic aspects of EIA and SEA in PICs include the following:

- limited funds are available for government approvals and are sometimes only available for a short period of time, influencing the quality of EIA and environmental studies;
- subsistence 'economies', are rarely defined and their value rarely quantified. As a result, impacts of a proposed development on subsistence economies tend not to be considered in EIA and environmental assessment processes;
- various government fees and charges applied throughout the approval process can become burdensome to the applicant when viewed as a total cost;
- funding for services in smaller isolated multi-island countries are often focussed in those areas with the greatest population density, meaning populations in more isolated areas are often excluded from receiving services. This encourages urban drift and urbanisation; and
- without land use planning systems PICs do not have the ability to introduce 'user pay' systems, or methods for the payment of economic rent for use of public goods, or to influence the location of development.

## 4.7 Human Resources

Continued human resource development is a key element to the success of conducting and enhancing integrated environmental assessment and planning in the PICs. Environmental assessment and land use planning is only be as robust as the ability of the people they involve. Most PICs commented on the constraints of limited human resource capacity and the associated drawbacks.

The knowledge base of the purpose and role of EIA/SEA among a variety of government and community groups within any one country was found to be generally lacking. This was despite, in some instances, the involvement by government agencies in environmental assessment boards and taskforces. Additionally, for those government departments with direct influence on the natural environment (i.e. public works, agriculture, fisheries) there were serious constraints due to limited financial and human resources. This was often expressed as inhibiting their ability to consider the environmental impacts of their activities. There does seem to be a willingness to help from across government agencies with a strong message to ensure training and understanding opportunities involve a broad range of people in government. Some would be able to assist environment units with specific science based input to TOR development, review of EIAs or with assisting local consultants complete environmental assessments.

PICs with smaller populations and in more isolated localities were found more vulnerable to human resource constraints. Tuvalu's Department of Environment consists of two full-time staff members with the responsibility of not only administering environmental assessment applications for the country, but at times, carrying out environmental assessments for proposed developments (which are noted to be infrequent in Tuvalu). Not only does this consume time, human and financial resources but it also affects the degree of independence and transparency required in such processes.

International practice dictates that proponents should undertake EIA independent to the authorities that would be considering the assessment. However in many PICs there is a lack of locally-based technically trained professionals to carry out such assessments, or the costs involved in contracting external professionals to carry them out are exorbitant.

A common comment made by PICs in relation to EIA was the limited standard of work amongst those preparing EIA and environmental assessment reports. An absence of qualified persons or of a certification system to ensure particular standards of work was often noted. There is also a severe lack of guidelines for environmental assessments for both consultants and government staff – to assist in the standardization of reporting. The initiation of a certification system and the generation of simple guiding documents were identified as possible solutions to the substandard quality of assessments.

National awareness of environmental legislation and the benefits of working within such mechanisms were identified as an important factor in those countries establishing environmental assessment processes. Samoa, after four years of active environmental legislation, are in the process of working with the community as a partner rather than as a regulator to facilitate compliance. This process of collaboration and partnership seeks to cultivate positive experiences with environmental assessment to ensure adherence with requirements in the future. Those countries lacking environmental legislation commented on the need to work with the community rather than regulate against them in a bid to ensure compliance. This is especially plausible in the smaller, subsistence-based islands and communities with fewer technical resources.

In summary, key human resource aspects of EIA and SEA in PICs involve the following:

- Government departments with direct influence on the natural environment (i.e. public works, agriculture, fisheries) were found to experience constraints due to limited financial and human resources, inhibiting their ability to consider the environmental impacts of their activities;
- PICs with smaller populations and in more isolated localities were found more vulnerable to human resource constraints;
- an absence of guidelines for the standardization of assessments and reporting, as well as a need for certification to ensure particular standards of work were noted. EIA and reporting in many PICs was identified as of substandard quality; and,
- National awareness of environmental legislation and the benefits of working within such mechanisms were identified as an important factor in those countries establishing environmental assessment processes – particular for those encouraging participatory and collaborative arrangements with communities.



## 5. OVERVIEW OF EIA SYSTEMS

The prior section reports on feedback on integrated environmental assessments and planning, consistent with the TOR for this review and the make-up of the surveys.

Many PICs provided discreet feedback and commentary on experiences with project based EIA. This section canvasses these issues.

### 5.1 General EIA practice

The scope of EIA application varies from one country to another, however in most PICs it is affected by inefficiencies and process pitfalls. Most countries have a system for receiving and processing environmental assessment applications, varying between PICs from small-scale general overview of expected impacts to in-depth environmental studies and proposition of mitigation measures. EIA systems are usually influenced by the availability of financial and human resources, which in most cases is the limiting factor to process efficiency. Some environment departments of some smaller countries are burdened with the task of undertaking the environmental assessment, rather than acting purely as the regulator. Not only does this not provide an independent review of current conditions and potential options for such, it consumes already limited financial and human resources.

Further, lack of process and information-dissemination between key agencies was seen to have a limiting influence over effectiveness and efficiency of certain government organisations. For example, lack of process between quarantine and natural resources departments regarding invasive species has meant that quarantine, often an agency essential in addressing the issue are not involved in assessments processes or training. Quarantine groups were often found to be dislocated from the EIA process and largely under-resourced to assist if required.

### 5.2 Assessment Process

Environmental assessment reporting in most PICs was found to involve the use of pro forma checklists to ensure compliance with predetermined criteria. Checklists were found to cover standard aspects of current environmental conditions and expected project impacts. To ensure accurate definition of expected environmental impacts and to make valid judgements of such, the completion of checklists by the proponent and the assessment of these checklists by regulators need to be undertaken. This requires sound and up-to-date information and knowledge by both parties of potential issues. This is generally lacking in many PICs.

Those countries with more robust EIA systems usually involve a board of government directors and community members such as the established Environmental Protection and Quality Board ('EQPB') in Palau. The EQPB, for example, have a five member quorum involving government representatives and relevant community members, including active environmental NGO representatives. The EQPB provides for public hearings when deemed necessary to provide communities with project information and opportunity to comment on such, as well as providing a variety of perspectives for approval of any one development project.

Deficiencies recognised by respondents included: the lack of requirement for developers to consider a proposal's influence on local, state, and national infrastructure; the lack of requirement for developers to contribute to infrastructure development; and the consistency of triggering mechanisms which dictate the need for an EIA. In Guam for instance, the triggering of the need for an EIA for proposed developments only occurs when that development does not comply with current zoning plans. This often means that if a development conforms to basic planning requirements, regardless of its environmental performance, it will not undergo an environmental review.

### **5.3 Community Consultation**

Some Palau participants in this review commented that public hearings were a useful method of providing project details and gaining community input, however they were not necessarily thorough in gaining all relevant opinions. Elements of community hierarchy and similar conditions may influence the freedom to which community members communicate their inputs and information. The identifying of essential information regarding areas of cultural significance or areas of high community environment significance were two cited examples. Elsewhere feedback from PICs was that formal public hearings were too traumatic for many customary community members, given that many were held in the larger towns and cities. Others noted that providing information less formally such as at public places (shops and libraries) was not enough and that formal public hearings combined with this –would be beneficial.

Commonly, community consultation in EIA was noted as an end of the design activity, limiting the ability of project modification to suit local natural and social environments. Feedback indicated that community views were rarely considered at the start of a project and throughout the design phase. It was also noted that communities also were in need of more time to adequately consider a project's scope, scale and intensity before being able to adequately provide comment.

It was obvious that there were often community suspicion regarding governments' performance in undertaking adequate environmental assessment or review of these. There is a need for more transparent processes and thorough community consultation.

Many commented of inadequate processes to inform neighbouring owners of land adjacent to a proposed development site – of the nature and potential implications of development. As a result many approvals are granted for projects without appropriate consideration of neighbours nor the introduction of mitigation methods to appease neighbours.

### **5.4 Technology**

Currently, the scope of technology use for EIA within PICs varies. Generally it is constrained by a lack of funding and technical support; however there are emerging practices in the use of information systems for EIA and desktop studies.

Many PICs recognise the need for environmental monitoring and the maintenance of such data in database systems, and that the lack of reliable and current data contributes to inaccurate decision-making. Most identified the need to improve data and information for moves toward strategic environmental assessment and LUP. It was noted that cumulative impacts cannot be assessed with a lack of baseline data to use for comparison. Lack of funding for software, training and maintenance of such systems inhibits regulatory decision making and an absence of technical support further limits use of existing databases and systems.

It was found that international and regional organisations enhance the frequency of data collection and use in PICs, although this is often not consistent. Research procedures by international groups and agencies were usually thorough and well-funded, undertaken to comply with international and regional standards and protocols. The contribution of such data and systems to environmental assessment in PICs was noted as enabling more efficient and accurate decision making. However efforts have been spasmodic and data collection and knowledge management relied too much on external discordant efforts. There was also concern that international and regional standards and procedures required from PICs were burdensome for countries with limited funding and staffing.

Use of GIS (geographical information systems) was found to be varied among and within PICs. Where GIS was obvious in government departments, it was often not readily available to environmental departments or environmental assessment processes. In some countries recent advances saw collaboration between government departments enabling the use of GIS and other data maintained by various government departments for some environmental assessment purposes. However, efficient use of these resources is limited due to bureaucratic procedures and lack of in-house technical expertise. Some countries made the specific request for in-house GIS training for more substantial periods to ensure thorough capacity building in use of these technologies. This sort of capacity building exercise would require follow-up support for software and technologies to maintain such systems, as well as a substantial programme to gather data for use in such systems.

In summary, the following were key systematic and technological aspects of EIA in PICs:

- most countries have a system for receiving and processing environmental assessment applications, which are usually influenced by the availability of financial and human resources;
- environmental assessment reporting in most PICs was found to involve use of pro forma checklists to ensure compliance with predetermined criteria;
- commonly, community consultation was noted as an end of the design activity, limiting the ability for project modification to suit local natural and social environments;
- many PICs recognise the need for environmental monitoring and the maintenance of such data in database systems, and that the lack of reliable and current data contributes to inaccurate decision-making;
- international and regional organisations enhance the frequency of data collection and use in PICs, however efforts are spasmodic or inconsistent; and
- use of GIS (geographical information systems) was found to be varied among and within PICs, and GIS use does not often feature in environmental departments or environmental assessment processes.

## 6. KEY VULNERABILITIES

In considering the context of the use of EIA and integrated land use planning in the Pacific, as well as future needs for these processes, there is a need to understand both current and future pressures and circumstances that will be faced by communities.

The Pacific Islands Environment Outlook (M. McIntyre Ed. 2004) identified six critical areas as important environment and development vulnerabilities for the PICs: agricultural productivity; loss of forest resources; the availability and quality of freshwater; climate change, including variability and sea level rise; decline in fisheries; and environmental change and infectious diseases.

Appendix C contains a summary of these vulnerabilities and pressures. Provided below are comments on the implications for integrated planning, EIA and SEA for PICs.

### 6.1 Loss of Productive Agricultural Land

With growing evidence of land degradation and population pressures on land resources, more now than ever, farmers need to be able to identify the land that is suited to their cropping ambitions. Focus of agricultural programmes has in the past concentrated on supply and market chain enhancement, often recommending crops that are foreign to local ecological communities. Little has been done to assess the capability and suitability of land for various crops, including indigenous species.

Community based planning approaches incorporating SEA can be used to strengthen agricultural development projects and programmes.

### 6.2 Degradation and Loss of Forests

There is a need for SEA approaches for forestry and agricultural suitability analysis of rural land in most PICs. There is limited application of systems and information technology about the Pacific that delivers this type of land capability assessment. PNG has the PNGRIS, Vanuatu has VANRIS and Solomon Islands the SOLFRIS. Each have been through formidable development phases, however they continue to have application problems.

Assessing suitabilities of land for either agricultural or forestry uses, and providing policy to guide the forms of development based on the capability 'units' of the land, provides a sound base to ensure land use is sustainable. This sustainable land use should enable communities to be more resilient to natural and human induced stresses, and severe cyclical events such as drought. Providing long-term poverty mitigation in this manner can assist with economic development and conflict reduction.

### 6.3 Depletion and Pollution of Fresh Water

Fast growing settlements, especially on the periphery of established towns, with inadequate water supply and sanitation are the inevitable result of rapid and uncontrolled population growth and urbanization. The scenarios place massive pressure on limited government funds to invest in utility services. Without a land use base upon which to plan utility and infrastructure services, the government is often forced to supply temporary solutions. The situation does little to assist with social cohesion in displaced communities and informal settlements (ADB, 2004).

Improvements in water resource management are fundamental and the coordination required can be greatly assisted by integrated land use planning assisted with SEA approaches. Specific scientific and engineering responses can then be made to matters such as: improvements in watershed management; reductions in deforestation rates; land rehabilitation; raising of public awareness; promotion of wise water use and management; controls over agricultural activities and improvements in waste disposal, especially sewage disposal facilities.

#### **6.4 Climate Change, Variability and Sea Level Rise**

There are serious threats from climate change which will manifest as stresses on already declining environmental resources: increased natural disasters; coral bleaching; coastal erosion; extreme weather events (storms, droughts, cyclones); disruption of agricultural activities; decreasing resilience of forests; possible salt water intrusion of ground water systems; affects on crops and fisheries; affects on and control of vector borne diseases.

Many adaptation measures will need to be implemented through integrated land use planning systems. Coordination of land use and development will assist in increasing the resilience of communities by: ensuring human and physical development does not heighten threats; by ensuring development does not impact on reefs and stable coastal environments which assist resilience; ensuring that settlement does not occur in high risk areas; as well as providing the base for informed assessments of catchment implications in matters such as flooding and land use capability that may be affected by changes to climate regimes.

#### **6.5 Depletion of Coastal Resources**

Continuing high levels of population growth, density and economic development in coastal areas are expected to place mounting pressure on wetlands and mangroves, generate land based sources of pollution and increase subsistence and cash demand for living marine resources.

Initiatives to stem the degradation of in-shore fisheries need to target terrestrial development and land use planning, as it is often the discordant development from massive population pressures that are the chief drivers of degradation.

#### **6.6 Environmental Change and Infectious Diseases**

The environmental degradation of soils, forests, freshwater and coasts can alter the prevalence of infectious disease and illnesses. Outbreaks of typhoid are becoming more prominent in some PICs. This may be a symptom of rapidly expanding urban areas where governments are unable to provide essential infrastructure services to maintain sanitary conditions.

The use of SEA to identify suitable areas for urban extension is needed, as is follow up land use planning to ensure timely and coordinated development to suit the efficient extension of utility and infrastructure services.

## **7. CROSS-CUTTING ISSUES AND PRESSURES**

Where the previous section highlights the key environmental vulnerabilities in the Pacific, this part explores some of the broader socio-economic and human pressures and characteristics prevalent in PICs. They represent important aspects that managers need to be cognisant of in designing interventions suited to the Pacific way.

Appendix D contains a description of various cross-cutting issues and pressures, and comments on the implications for EIA, SEA and integrated land use planning are provided below.

### **7.1 Population Dynamics**

Rapid urbanization and changes to population dynamics has led to massive transition of many communities from subsistence lifestyles to a consumer society. Often the impacts of change are beyond customary government processes and traditional practices. Land use pressures and variations in community values have resulted in conflict over use, occupation and development of land.

Integrated planning systems with a community development focus are able to tackle the dilemma between accommodating western style investment and security options, and protecting customary ways and aspirations. The key is to ensure that communities guide the development of such systems from the outset.

### **7.2 Land Tenure and Resource Access**

Integrated land use planning systems for PICs need to be conducive to customary tenure systems.

UK Westminster style 'zoning' systems or US led 'nuisance law' based systems have limited scope for implementation because they are often in direct conflict with customary governance systems.

There however been some useful advances of planning systems in countries such as Samoa and Niue. The Planning and Urban Management Act (and Authority) in Samoa is the most advanced, and was based on many years of community consultation and choices. Many facets of the base law are yet to be implemented, so its true value in assisting with the dilemma's of western investment and security ideals versus the protection of customary ways are yet to be realized. Interestingly, the component of law yet to be activated is that which enables the use of SEA approaches for strategic land use planning.

### **7.3 Resource Use and Management – Merging Customary and Western Ideals**

Land conservation and use of land are inextricably linked in most PICs. Use and conservation of natural resources as a means to maintain lifestyles and livelihoods has been an integral part of traditional resource management practices and approaches for centuries. While there may be unique practices about the Pacific, the fundamental symbolic principles and values of the traditional practices and approaches are generally the same. Most of these traditional management practices and approaches were geared to stable populations and constant pressures on resource systems.

However, over the last three decades the pressures on natural systems from population growth and dynamics, natural and human induced hazards, and changes in land use practices are beyond the coping capacity of the traditional communities. Traditional methods alone do not provide the means to limit degradation and over-consumption. It has become necessary to introduce alternatives that merge both western and traditional methods and approaches to contend with the pressures faced by communities and governments.

Integrated land use approaches incorporating SEA methods can assist in this arena.

## **7.4 Urbanisation – Unsustainable Consumption and Production**

Rapid population growths and in-country migration has exacerbated urbanization and coastal developments to the point where national governments and local authorities cannot keep up with demands for basic services. The result is diminished human quality of life, rising incidence of disease, disruption and conflict, as well as degradation and over-exploitation of the natural resource base (UNEP, 2004).

Integrated planning processes can provide systems and mechanisms to work with communities to solve conflicts over competing uses. They can also provide a means to address historic settlement and development problems, by introducing SEA approaches to plan for better future development form. Where discordant development has prevailed poor servicing often is the result. By introducing a means to determine a certain future use of areas servicing agencies are able to plan efficient extension of services.

## **7.5 Governance and Institutional Development**

Governance links between local/traditional villages, province and outer islands, and the State, in many instances, are very weak. There is significant breakdown in communication between these levels of government, which leads to confusion and lack of trust with State authority.

Physical or land use planning systems tailored at the local level of governance can provide a conduit for communication and improvement of administrative links between levels of government.

The processes of community-based resolution of land use and tenure issues involve complex communications and several elements need to be in harmony. They are consistent with a systems-based approach, including:

- open access to information to ensure transparency;
- backing of appropriate institutional and legal mechanisms;
- adequate means of communication between parties both in communities and in government;
- the existence of trust among conflicting parties and those assisting;
- the identification and agreement of underlying needs and conflicts;
- consideration of issues by parties from the broader to the local perspectives; and
- good governance and land use planning.

This section considers the international reasoning of tying environmental assessment and land use planning with good governance.

Successful implementation and use of EIA and SEA requires acceptance of such systems as tools for integrated land use planning for sustainable development. This part is important in setting the right principles for future capacity development. In the international arena over recent years, there has been much assimilation of good governance with wise urban governance, where land use features prominently.

## 7.6 Good Urban Governance

The UNHabitat's Global Programme on Urban Governance defines urban governance as follows:

*“The exercise of political, economic, social, and administrative authority in the management of a city’s affairs. The sum of the many ways individuals and institutions, public and private, plan and manage the common affairs of the city. It is a continuing process through which conflicting or diverse interest may be accommodated and cooperative action can be taken. It includes formal institutions as well as informal arrangements and the social capital of citizens. It is thus a broader concept than “government”, which refers only to the formal and legally established organs of political structure.” (UN-HABITAT, 2000)*

While there is often mention of ‘cities’ the UN Human Settlement Programme, elsewhere it ties reference to cities to equate with other forms of local and municipal centres.

In essence, good urban governance focuses on the quality of governance at the local level. The need for such arose out of the recognition of emerging democratic processes, the growth of civil society involvement, the overall emerging complexities of the development economy, and the pressures the development economy presents to local communities. There are growing responsibilities and needs for accountabilities for outcomes, impacts, and central governments under increasing pressure to deliver an expanding range of public and social services.

The mounting pressures on local governance stakeholders, many of whom are ill equipped, make communities vulnerable to corruption, crime, and other forms of poor organizational behaviour. These pressures also increase susceptibility for citizens to be alienated. The pressures manifest in lack of clarity regarding roles and responsibilities, confusing regulatory frameworks, complex administration and poor information flows at the local level, as well as between local government stakeholders and central government. Poor decision making prevails, as well as often disjointed actions that are not sustainable.

Good urban governance extends beyond transparency, accountability and corruption to address the forces of urbanization, globalization, decentralization and democratization (UNHabitat, 2004). These forces manifest at the local level, and there are two critical implications for local actions.

- i. Immediate quality of life of a citizen is affected by factors that are mostly determined at the local level. This may relate to: the location of settlement, land use/activities, the quality of development and of the environment, types of services and facilities provided, opportunities for livelihoods, and the availing of means to influence the range of choices and options through decision-making. Additionally, where systems are not in place, the impacts of corruption and alienation are acutely felt at the local level whether through inequitable and arbitrary allocation of land, provision of services, bribery and or extortion; and



- ii. Localising governance: the efforts of the local area or village to improve governance can provide catalytic lessons and effects for fundamental reforms at the national level; whether this be the coordination of agencies in service provision, strategic decision-making (improved effectiveness and efficiencies), better resource provision or the tackling of corruption. For instance, Transparency International suggests that tackling corruption at the national level requires a 10 - 15 year timeframe, whereas actions at the local level have provided good results in as little as two (2) years (UNHabitat, 2004).

The UN's programme is underpinned by universally accepted principles of good urban governance. These include the following.

- **Sustainability** in all aspects of urban development.
- **Subsidiarity**, or devolution of authority and resources to the lowest appropriate level of decision-making.
- **Equity** of access to decision-making processes and the basic necessities of urban life.
- **Efficiency** in the delivery of public services and in promoting local economic development.
- **Transparency and Accountability** of decision makers and all stakeholders.
- **Civic Engagement and Citizenship**, characterized by active participation of citizens in public life.
- **Security** of individuals and their living environment.

The question stands - how does this relate to environmental assessment and land use planning? The principles of contemporary land use planning are similarly steeped in equity principles consistent with those for good urban governance. The advocacy for land use planning to target, firstly, local communities has also been a principle since the Stockholm Conference on Human Development (1972), highlighted also in the Rio Conference (Agenda 21) and most recently in the World Summit for Sustainable Development (WSSD, JPoI). The manifestations of poor urban governance are often poor living environments and quality of life opportunities, as briefly described in point (i) above.

Introducing a land use approach to assist communities address mounting pressures and complexities beyond their usual control and resources can serve as a entry point for catalysing broader actions by village level governance; to improved transparency, accountability, clarification of roles and responsibilities, simplification of regulatory platforms, provision of better information, and extension of capacities for decision-making.

## 7.7 Risk Based Land Use Planning

PICs are considered the most hazard prone islands and small countries in the world. Vanuatu, for instance has been identified in a Commonwealth Secretariat study as the most vulnerable to disasters amongst island countries experiencing about 3,000 earthquakes of varying intensity each year<sup>3</sup>.

The WSSD and the MIM (2005) recognized the special case of Small Island Development States (SIDS) in sustainable development especially in the area of vulnerabilities to natural and human induced hazards. It is important for planners and decision-makers to incorporate management of the most significant risks at all stages of development planning.

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<sup>3</sup> *Third United Nations Conference on Least Developed Countries: Presentation of the Government of Vanuatu. Programme of Action for the Development of Vanuatu 2001-2010 January 29 2001*

An integrated, multi-hazard, inclusive approach to address vulnerability, risk assessment and disaster management, including prevention, mitigation, preparedness, response and recovery, is an essential element of a safer world in the twenty-first century. Actions are required at all levels to:

*...Reduce the risks of flooding and drought in vulnerable countries by, inter alia, promoting wetland and watershed protection and restoration, improved land use planning, improving and applying more widely techniques and methodologies for assessing the potential adverse effects of climate change on wetlands and, as appropriate, assisting countries that are particularly vulnerable to those effects...*  
(Extract from the JPoI, 2002)

There has been much work on vulnerability and hazard/risk assessment in regards to the Pacific. Little progress, however, has been made on how to synthesize outputs from various initiatives into the progress of land use planning systems. Mostly this is because, as previously reported, land use planning system development in most PICs is at very early or embryonic stages.

## 7.8 Rights-based Development

There are three important legally binding international conventions addressing different aspects of human rights, social justice, and participatory governance; incorporating provisions of relevance to land use approaches to achieving sustainable development.

These include:

- International Covenant on Civil and Political Rights (ICCPR) (01/05/72);
- International Covenant on Economic, Social and Cultural Rights (ICESCR) (01/05/72). Reservation to art. 10 (2); and
- Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) (09/03/84).

Reflections on the objectives of these Conventions would be beneficial and should be explored further in the context of responding to this needs assessment. Details of each Convention's clauses of relevance are not provided herein, however commentary is provided on the relevance of rights-based governance.

### ***Right to adequate standard of living:***

Every person's right to an adequate standard of living was articulated in Article 11(1) of the ICESCR:

*"The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent".*

In the World Social Summit+5 (July 2000), it was stated that the decentralization of administration and the development of local and municipal authorities were the means to the creation of inclusive and participatory societies. This commitment to good governance was repeated in the Millennium Summit and Declaration as a strategy for eradicating poverty. Participating states also stated they would work towards more inclusive political processes, allowing genuine participation by all citizens in all countries. At the Istanbul+5 Conference in New York in June 2001, the same commitment was repeated, however to specifically combat urban poverty through transparent, responsible, accountable, just, effective and efficient governance of cities and human settlements.

Parties to the 13<sup>th</sup> Session of the Commission on Sustainable Development (April, 2005) recognized the poor, especially women and youth, are those suffering the most from deficiencies in infrastructure and services in relation to water, sanitation, and human settlements. It was noted that the solutions to these challenges could not rely on sectoral and isolated approaches. Full stakeholder participation and partnerships between the public and private sectors and civil society were seen as fundamental to addressing the problems.

Innovative policy responses were called for. These included targeting the challenge of slum areas, job generation, special needs of the urban poor, waste management, land tenure, public transport/mobility/accessibility, participatory approaches, and community mobilization. The growth of *effectively functioning* cities and towns was seen as essential for equitable and sustainable growth.

The pursuit of integrated assessment and planning to assist with sustainable development should be accomplished in a steady state to provide a system of rights-based development planning that would be consistent with some of the objectives of the above agreements.

## 7.9 Community Planning Approaches

Contemporary land use, or 'community planning' approaches, has emerged in recognition that the built environment, and its layout, can lock communities and governments into resource-intensive patterns of living. Strategic assessments and planning can enable low impact lifestyles where consumption and production is maintained within sustainable limits. It is widely accepted that land use and environmental planning are the natural home of sustainable development (Short, 2003). Planning theory and practice takes a rounded perspective on all the environmental, social, and economic impacts associated with development (absolute, relative and cumulative impacts), and provides approaches and methods to act to manage these in an integrated manner.

In the past, however, practice was centred on older principles of 'town planning' and was more reactive than proactive in making development more sustainable. The most significant change in recent times has been the emphasis on the need for positive or strategic planning, actions seeking to positively influence development, not simply to control it. Performance-based plans, and systems which support them, enable use by authorities to provide clear expectations to individuals, community representatives, business, and developers to meet minimum criteria. In support of minimum criteria, the contemporary planning approaches provide information on which the achievement of these criteria can be based. Stakeholders can proceed on a 'given' platform, assisting investments and providing checks and balances by the community on performance. It is far easier to work with developers to achieve sustainable developments, than to 'control' them by prescriptive requirements that require burdensome enforcement.

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To be truly effective, planning for sustainable land use and development will need to be based on development appraisals that no longer ignore long-term environmental, social and economic costs in favor of short-term political and economic benefits. The best place for starting such sustainable planning approaches is with the community.

## 8. THE PACIFIC SITUATION – A WAY FORWARD

This section canvasses the lessons learned from communications and liaisons with PICs for this review. Also discussed is information gleaned from literature review, as well as other relevant assessments carried out since Komeri's report in 1997 (namely the UNEP sponsored Pacific Environment Outlooks 2005 and the ADB Pacific Regional Environment Strategy, 2004).

### 8.1 Supporting Good Governance

PICs are characterized as having burgeoning populations of very young people, growing areas of environmental decline, and limited resources for dealing with tensions that are an amalgam of physical, social and economic pressures. PICs are remote, of limited land size, have massive exposure to ocean and atmospheric conditions, and have ecosystems that are especially vulnerable to disturbance.

The state of environmental resources in the Pacific, socio-economic pressures, and a strong link between land, coastal resources and society are such that risks are high for impact and community tensions with many forms of development.

The status of environmental resources, the manner in which they are used, managed and governed, and the cohesion between land, users and local communities is often relative to the strength of governance linkages between the traditional indigenous villages and the State. Often, where there are poor governance linkages, environmental impact from development and activities is high; to the point where conflict scenarios can be expected. Good environmental assessment and integrated land use planning approaches can assist in providing communication links between the State and local communities. If developed well, these approaches can enable governments to link state level socio-economic conditions and responses with local environmental and community conditions. These ambitions are best achieved through advancement of SEA and integrated land use planning, than through continued reliance on project-based EIA alone.

### 8.2 Land Use Planning

Very few PICs have developed land use policies, and where they do exist, there is often problems in effectively implementing such policies. Many PICs lack integrated planning systems which pull together cross-sector initiatives in social, economic and environmental development. Some have 'patchwork' policy platforms led by EIA provisions, environmental pollution control provisions or species protection based laws. Many recognize from Climate Change, Biodiversity, Waste Management, Community conservation and EIA programmes the need for an underpinning foundation to unify haphazard resource use, conservation and economic development decision-making. Contemporary SEA and community development (land use) planning approaches could be a means to provide this foundation.

Throughout the Pacific, there has been little consistent development and institutionalization of development and environmental assessment approaches/methods to assist with land use planning. For instance, there has been little consistent progress in land capability analysis for sensible land use allocation, and the managed intensity of rural, coastal and urban development. Where useful work has been undertaken, it has been restricted by the coarseness of available information, or is limited to broad policy analysis work such as the development of rural land use policy. The focus of these policy products is therefore limited to national rather than local implementation.

Standalone EIA guiding documents and legal procedures have been generated over the past decade for most countries; however universal implementation has been an issue. Essentially, acceptance of EIA by government development agencies and the community is hindered by the fact that EIA are integrated into neither consistent land or resource use, nor economic development decision-making processes. EIA are also predominantly based on centralized government operation and provisions that are not largely applicable at the village level where land use and development decisions are often made.

Community-based land use planning, supported by contemporary SEA approaches and driven by local information systems, can fill the gaps in good integrated assessment and planning. These approaches have been found to offer a means to internalize and localize disputes. Communities are enabled to identify opportunities as well as constraints, to identify competing development and environment aspirations early in the development process, and maximize the local ownership of decision-making (satisfying principles of subsidiarity). However, these advantages can only be so if systems are carefully designed with communities and implemented over time (to ensure nurtured development and acceptance). Box 1 highlights related commentary from a recent paper '*Environmental causes of Conflict in Pacific Island Countries*', prepared the author.

**Box 1**

"Often tensions build when the intentions of neighbours or others in society are unknown, and people feel that they are either missing out or that they would be injuriously affected (McIntyre, 1999). By talking through problems, negotiations often reveal that win-win situations or trade-offs can be made between competing parties. Open communication of information and knowledge often reveals there have been wrong perceptions of a proponent's intent. In these instances, early communication can reveal to proponents that development action would likely cause significant and on-going social, physical and economic hardship. If such constraints or barriers are revealed up front to them, they are more inclined to vary intentions or consider alternate locations.

Where these forms of local adjudication are progressed, tensions are often diminished in intensity, and the conflict becomes manageable. Where there are no legal, policy or administrative systems to cater for this 'alternative dispute resolution' approach, formal adjudication (i.e through court systems) often maintain the level of intensity, delay decisions, cause continued uncertainty and lack of confidence, which can cause situations to turn violent.

Maps produced with and by the communities can assist in community planning and land management approaches. They help communities understand the geographic, social and economic situation in question and assist in the visualization of issues, areas of disagreement, as well as areas of potential agreement. Maps can help in addressing boundary issues through the visualization of the landscape, natural resources, associated land uses, settlement patterns and pressures. Often in customary societies, useful initiatives combine efforts in boundary definition of geographical spread of resources, resource use, and the tenure of the land.

Planning systems invariably provide communities with a system of tools to deliberate and come to consensus on competing land uses, development, and activities. Without these conflict resolution processes, tensions can persist and intensify over time. Often such tensions spill over to land administration processes that are often not equipped to adjudicate between uses and activities. Land tenure issues, in turn, become more complex and turbulent."

### 8.3 Integrated Assessment and Planning – Key Systems Approach

The international community has recognized the need to ensure ongoing and future development is sustainable and conflict free. This is evident through such important modalities as Chapter 10 of the Agenda 21, and more lately through the equity provisions of the Johannesburg Plan of Implementation (JPOI, WSSD, 2002). For PICs, the Barbados Programme of Action (2004) spent much of its preamble on reconciling between development and the environment. All three key international policies advocate the role of land use policies and systems in reconciling competing aspirations and needs. As well they reveal that land use and environment problems are not common across all jurisdictions, highlighting that pressures can be multifarious and unique to particular regions and locations.

There has been much recent work on documenting new approaches to sustainable land use, inclusive of reforms to property rights regimes, development, investment and environmental laws – see

[http://assets.cambridge.org/97805218/62165/frontmatter/9780521862165\\_frontmatter.pdf](http://assets.cambridge.org/97805218/62165/frontmatter/9780521862165_frontmatter.pdf).

Land use planning can be generally defined as the process of organizing the use of lands and their resources to best meet people's needs within the capacity and capabilities of those resources, including the land itself (see NSW Farmers Association, 2007).

The incentive for establishing conflict resolution procedures within planning systems has been strong in post WWII development processes of developed countries, where growth in development caused greater conflict between uses and users. Grievances were exacerbated as development mix and types became more complex. Uncontrolled development caused greater conflict, greater environmental degradation, and was more costly for governments and communities. Relying on court arbitration became too expensive, time consuming, and vague in outcome prediction. This provided difficulties in the market place as land use and development certainty and confidence became too fluid. As development planning systems evolved, they were designed to provide an alternative arbitration mechanism. While for many years these planning systems maintained a 'top-down' autocratic style, their role in providing a base for certainty in development and management of urban and rural systems assisted with reconciling competing demands.

Approaches since the late 1970s have balanced "top down" policy with "bottom up" administrative processes in land use planning, accommodating the growing interest in community participation and ownership of decision-making. Public participation in the planning process offered wide scope for sharing of problems, power and information – all positive elements for alleviating conflict from competing demands, uses and aspirations. Policy and arbitration precedent was able to be determined, systematically reviewed, and documented, establishing a degree of certainty for the market place. The growth in this alternative arbitration process gained more merit as it evolved, not only with the saving of time and cost of court based adjudication and proceedings, but also by providing a strong base for conflict amelioration, a strong base for the sharing of information and a base for long term planning and management of key regional and state level matters (Allan, 1996).

Most contemporary planning systems take heed on the nexus between land use and the functions and services of natural resources. They are also cognizant of the role of the 'planning system' to reconcile conflict and competing demands between environment and development.

While this is recognized at the international policy level, and within developed countries – there are very few examples of the successful implementation of land use planning systems to assist in reconciling competing demands and conflicts in PICs. The *Planning and Urban Management Act 2003* and system implemented since 2004 in Samoa, as well as the Land Management and Resource Use Planning project (1997-2000) in Niue, represent worthy initiatives that need promulgating to consider applicability to other PICs

Other matters are worthy to note with regard to land use planning systems in developed countries. Many land use planning systems have had nurtured development over many decades and are suited to well developed land registration and ownership systems. The customary tenure base on most land in all PICs would mean that UK Westminster style ‘town planning’ systems would not be suited. Objective based community approaches that are reliant on good spatial and textual information have shown some promise in customary land tenure societies. Efforts by the World Bank and other donors in the 1970s and early 1980s to introduce ‘planning systems’ as a precursor to western style registration and tenure reform are still remembered by many governments and communities. There is still much suspicion, therefore, of the intent of formalizing old style UK based ‘town planning’.

The utility of community based land use planning systems to reduce local conflict, provide empowerment, and self-determination needs to be de-coupled from the land reform advocacies, especially those calling for the complete overhaul of customary land management systems. Land use planning approaches can work in customary societies. It can provide alternative dispute arbitration at the local level, a base for certainty and consistency in investment and use, a sound based for information exchange, and reduce costs in governance. In addition, sound land use planning systems can be tailored to contend with significant threats and can assist in separating the administration of development processes away from the political processes. It is the latter which is often not achieved in economic planning and becomes a source of corruption.

## **8.4 Strategic Environmental Assessment**

Whether the introduction of integrated land use planning systems are pursued, or EIA application is addressed, the challenge for PICs will continue to be the consistent integration of environmental concerns in economic policy sectors. These may be economic development, foreign investment; security; land administration, infrastructure, agriculture; energy and transport sectors. One means to introduce better environmental consideration is the instigation of SEA in policy analysis for social and economic development programs and projects.

There have been some useful examples of the use of SEA in policy analysis in the Pacific. The most notable is the SEA of the Fiji Tourism industry, undertaken as a case study project for ADB in the development of their ‘Pacific Regional Environment Programme’ (2005). The International Association for Impact Assessment (IAIA) are also a good source on the introduction of SEA for policy analysis, as well as the new approach to cumulative impact assessment (an extension to SEA). AusAID now have a comprehensive impact assessment framework for all of its development assistance programmes/projects, which incorporate the use of both SEA and EIA.



Care is required to ensure the use of SEA and project orientated EIA are vehicles to move toward integrative assessments, policy and outcomes, and not an end in their own right. The latter scenario has often seen the institution of EIA processes as an additional layer of bureaucracy outside of mainstream development decision-making. This opens up EIA to derision by powerful stakeholders and can cause the further marginalization of the environment by the radical economic and development lobby. Over-zealous bureaucrats and interest groups often inadvertently turn EIA processes into bureaucratic processes that extend development timeframes at huge costs to communities.

Many environmental degradation and social development problems currently faced by communities can only be reversed over very long timeframes, and strategic assessments are best to keep these longer term visions in mind. Policy approaches are best to focus on knowledge management, the formation of problem-solving capacities and implementation management capabilities. Increasing knowledge management and decision-making capacity has benefits that can be exponentially grown over time: local knowledge of the causes, emergence and prevention of environmental degradation, local knowledge of ways to sustainably use increasingly scarce resources, and local knowledge on the best means for peaceful dispute resolution when competing uses, aspiration and needs arise.

## **8.5 Progressing Information and Assessment Capabilities**

Impact assessment methods assisting planning, monitoring and environmental management require focus on the provision of an analysis of root causes and triggering factors of environmental degradation and over-consumption. Assessments should extend beyond single sector matters/issues to composite or broader environmental conditions and pressures (e.g. water, population, migration and urbanization stresses, ethnic tension, land degradation). SEA approaches accommodate these needs. By considering these matters in an integrated manner, baselines and benchmarks for complex relationships would be more readily established and form an early warning system. Responses, too, would be more informed, applicable, and robust.

The above suggestions are common mantra with contemporary environment and sustainability assessments and planning. Project based EIA, SEA, and integrated planning approaches, however, are all data reliant. Progress of integrated assessment and planning in the Pacific will, therefore, require corresponding improvements in data creation, enhancement, and management.

Deficiencies in information and knowledge have been reported as critical shortcomings in environmental conservation and the pursuit of sustainable development by most PICs for the past decade (UNEP, 2004). Actions to address data, information, and knowledge gaps should be more concerted and accept the implications for EIA, SEA, integrated planning, as well as environmental conservation and sustainable development initiatives.

Geographic Information Systems (GIS) provide the best medium for the integration of multiple spatial and tabular data sources, at various levels of governance. Ecological, population, physical land use and geographical features, all important determinants of environmental status, do not correspond to cadastre or political boundaries. GIS are able to cope with this and the conundrum of the right level of detail with the right level of use.

However, capacity building for GIS use at the national and regional levels requires careful long term strategies based on specific needs assessments. There are opportunities to use 'state of the environment' approaches or national capacity assessments such as the NCSA to prioritize data needs for environmental assessment, as well as to plan technical, financial, and human resource capacity building. Multi-sector approaches should prevail, where cross-cutting approaches to data gap filling can assist with mainstreaming environmental matters in broader development decision-making processes.

Information collation and GIS enhancement is a critical element for developing SEA approaches and introducing integrated planning systems. It provides an effective communication tool for community participation, products and platforms. It allows for both rudimentary, multi-level and multi-disciplinary query based analysis of resource status, sensitivity, capacity and suitability. Resource inventory and GIS enhancement for systems-based planning can be developed as an interactive information tool to assist decision-making.

## 8.6 International Governance

Many international Conventions, Agreements and Protocols call for the integration of environmental consideration in development assessment, and the need for integrated planning platforms to support this endeavor.

The 1992 United Nations Conference on Environment and Development (UNCED) devoted Chapter 10 of its Agenda 21 to this topic, noting that:

*"...Expanding human requirements and economic activities are placing ever increasing pressures on land resources, creating competition and conflicts and resulting in suboptimal use of both land and land resources. If, in the future, human requirements are to be met in a sustainable manner, it is now essential to resolve these conflicts and move towards more effective and efficient use of land and its natural resources. Integrated physical and landuse planning and management is an eminently practical way to achieve this. By examining all uses of land in an integrated manner, it makes it possible to minimise conflicts, to make the most efficient tradeoffs and to link social and economic development with environmental protection and enhancement, thus helping to achieve the objectives of sustainable development. The essence of the integrated approach finds expression in the coordination of the sectoral planning and management activities concerned with the various aspects of land use and land resources."*

The Johannesburg Plan of Implementation from the WSSD (2002) contains a number of actions for implementation and objectives that are of particular relevance to integrated assessment and planning.

The Barbados Programme of Action (1994) conveyed the importance of integrated planning for providing the platform for integrated decision-making and the mainstreaming of the environment into development processes for the pursuit of sustainable development for SIDS:

*"The Programme of Action presents a basis for action in 14 agreed priority areas and defines a number of actions and policies related to environmental and development planning that should be undertaken" [Preamble].*

The integration of environmental considerations into national decision making processes was considered to be the single most important step for PICs to ensure sustainable development principles guided all future development (Clause 46). An interdisciplinary approach was advocated for planning and decision-making as well as community participation from the outset of the development processes (clauses 47 and 73). The recognition of the human face of the environment-development nexus came to the fore for sustainable development to be further recognized elsewhere in the BPOA (clauses 34, 49, 64, 76, 80 and 81).

The National Assessment Reports completed by PICs for the World Summit for Sustainable Development (2002) (WSSD) identified the lack of integrated environmental/land use planning as the key 'implementation' shortcoming for the coordination of decision-making and management of resources for sustainable development. The need for community development planning approaches incorporating traditional information and practices was argued by many (Pacific WSSD Regional Assessment, Summary of Key Points, SPREP, July 2002).

The progress of EIA, introduction of SEA use, and move toward introducing integrated land use planning systems (or tools) would satisfy the ambitions of many relevant international governance objectives, as well as address a shortcoming communicated by PICs in recent important international forums.

## 8.7 Community Development Frameworks

The benefits of indigenous or local peoples' involvement for 'good governance' in sustainable development initiatives (i.e. co-management) have been commonly expounded (Chambers, 1983: 101; Burkey 1993; Courrier 1992: 85; Kothari and Parajuli 1993). However, this philosophical viewpoint is not often put into 'practice', that is, where the local community is involved with central government throughout the development decision-making and management process.

Community development frameworks were promoted through *Chapter 26 of Agenda 21* and specifically the objectives under 26.3:

*"In full partnership with indigenous people and their communities, Governments and, where appropriate, intergovernmental organizations should aim at fulfilling the ....establishment of a process to empower indigenous people and their communities .....through various measures..."*

To strive for a 'sense of ownership' in land use and environmental planning, conservation and management, the community needs to be involved at the outset of policy, program or the project design and implementation. Participation and partnerships, rather than consultation, should be the redeeming principle in ensuring the sense of ownership (Burkey, 1993; Chambers, 1983). As mentioned previously, with the introduction of integrated land use systems, a long-term development timeframe would be needed to ensure nurtured capacity building and to assist in this strong sense of ownership in the system.

## 8.8 Community Driven Conflict Resolution

With strengthened respect offered from community based frameworks for decision making, the adjudication of land/resource conflict matters (defining and redistribution of rights) could be transferred to the local village level away from the 'foreign' traumatic centralised court systems of many PICs (*Objective 26.3 (v) of Agenda 21*).

Between 83 - 97% of land in PICs is held under customary ownership. Growing conflict over land and resource access and use stemming from value-conflicts between customary and western ideals is seen as an impediment to economic development, astute environmental management, and poverty alleviation. Introducing locally developed land use planning systems can establish a model approach to contend with these pressures from the grass-roots level in a manner that is sensitive to the reality of continuing customary ownership.

Critical to capacity building for integrated assessment and planning is the output of a system that facilitates:

- people able to express their views (at various levels) through on-going meetings of locals to talk more about solutions;
- networking to improve inter-group relationships (understand problems of other islands, improve landlord/tenant relationship, review the role, place and responsibilities of intermediaries); and
- open transmission of information to explain issues/proposals to people, where possible in their own language.

## 8.9 Community Planning and Participation

PICs have seen the push for better governance stimulated by economic planning over the last decade. PICs are now calling for the filling of the void in physical resource use/land use planning (*PIC National Assessment Reports for WSSD, 2002*). Such systems are necessary to ensure countries are able to cater for sustainable development (physical, ecological, economic, social and cultural considerations). Planning systems can bring certainty and confidence into development and environmental management processes especially when targeted at the local level through the provision of adequate environmental information, policy integration, safeguards, planning strategies, and development guidelines.

Current philosophies aim to integrate economic and physical planning due to inherent linkages. For example, economic policy (especially fiscal) can stimulate physical development, where physical development stimulates economic activity and/or creates an asset value system. Both perspectives have implications for the environment and are best integrated at the grass-roots level, consistent with national policy directions.

The aim should be to provide countries and territories with concepts of objective based planning systems that maintain community level decision making, while enabling national action when key threats are faced. The benefits of a total package including enhanced GIS, sustainable development guideline documents, land and resource use development objectives and criteria, as well as integrated assessment planning legislation should be conveyed in capacity building initiatives. The holistic system should be driven by information and community involvement, incorporating abilities to value the environment and to ensure user pay systems are included in decision making at the outset of the development process.

Features of contemporary community-based planning systems, in addition to features expressed above, include:

- incorporation of forward assessment/forecasting of threats or cumulative impacts;
- incorporation of community and local knowledge in decision making;
- objective-based guidelines and EIA as part of a simple planning process;
- flexible and modular systems able to be adapted or adopted by local communities with local additions or variations; and

- 
- reliance and support for community empowerment, information and continued involvement throughout the development and resource use process.

## 9. RESPONSES AND RECOMMENDATIONS

The following section pulls together the messages reported above, and distills recommendations in a manner consistent with UN sponsored capacity development initiatives and assessments.

### 9.1 Common Constraints and Barriers

The previous sections canvas a number of matters and issues with regard to the status of environmental assessment and planning practice in PICs, as well as the key vulnerabilities, cross-cutting pressures, good governance principles and linkages to current international best practice. The result is a shopping list of matters for consideration in looking forward.

This section attempts to meld this compendium of thoughts and suggestions into a digestible form. It firstly bundles the common messages then suggests the packaging of responses.

The following represents commonly sited constraints and barriers hampering the fair consideration of environmental resources in research, policy, and implementation mechanisms for conflict management.

- i. ***Institutional weaknesses.*** With institutional weaknesses in environmental and natural resources management at the national, provincial, and community level, the natural environment continues to be marginalized in many PICs with governance dominated by economic development and social protection policies. A common trend exists amongst development institutions as having a limited realisation of the impact of natural resource decline on economic and social stability. Weaknesses in governance are typified by poor vertical and horizontal linkages, the dominance of a centralist system and the large gaps between state level economic policies and plans with the frustrations experienced at the local level.
- ii. ***Policy and legal frameworks.*** Frameworks are often either weak, disjointed or have disparate application due to institutional weaknesses or human and financial resource constraints. There is often little understanding of the causal pressures that environmental stresses and decline have on social and economic stability. Lack of integrated land use planning processes has stifled opportunities for development consistent with current land management mechanisms. There is a dominance of research and policy development at the national level led by economists and political scientists, rather than instituting systems to link national governance with local implementation.
- iii. ***Land use Planning and Land Management.*** There is an absence of effective mechanisms for linking and integrating traditional customary land management, practices and governance, with the western styled investment and land tenure systems. Integrated planning tied to land management systems *that encourage certainty, confidence and security of tenure – but are balanced with the protection of customary systems* – is necessary. A mismatch of systems often leads to the exclusion of traditional resource users from meaningful dialogue, thereby limiting their involvement in planning or development decision-making. Mismatched systems also reduce the ability of traditional users to influence the flow of benefits to their communities (often involving development dependent on the use of the natural resources used by communities for their sustenance). Where land use systems do not exist in parallel to land management, the disparity causes contention with capability, use, and consideration of impacts and opportunities; becoming barriers to land management progress.

- iv. **Increasing population and urbanization.** With the occurrence of increasing populations and urbanisation in PICs, pressure is applied to already threatened or dwindling resources, and increased pollution sources are impacting upon natural systems. The common large population growth in PICs necessitates services and infrastructure beyond the capacities of governments. Urbanization is rife in small atoll to large mountainous countries. Economic rationalization of public services over the last decade may have influenced the levels of urbanization. Resource scarcity from over-consumption or degradation, has also contributed to urbanization.
- v. **Data gaps and information systems.** Limited information or access to data and information systems has constrained effective and informed decision-making by the governing bodies of many PICs. Such limitations have also denied opportunity for community access to knowledge regarding relevant economic, social and physical systems; information that would assist communities with effective planning and conflict resolution. Lack of networks of EIA and land use practitioners has also limited access for PICs to existing knowledge bank systems.
- vi. **Political will and poor governance.** Faced with a compendium of constraints and barriers and with complex and ongoing pressures on poverty alleviation, the status quo in governance is often maintained. The long-term visioning required stands outside of the political dimensions of current government structures. Environmental sustainability is often still seen to impede sustainable economic growth, and is commonly watered down as a cross-cutting issue, usually considered after economic and social matters are decided.

## 9.2 Solution Areas and Recommendations

The context, status, and use of integrated assessments and planning regarding PICs varies greatly. As reported by Komeri (1997), no single set of recommendations would be suited to all countries.

Many of the past recommended actions are still relevant for most PICs and have been maintained within this document.

This review targeted an assessment of actions at a national level but with an outcome intended to guide regional priorities. The following recommendations are forwarded with this bi-focal perspective.

### 9.2.1 Institutional Arrangements and Administrative Processes

Although communication and liaison between the departments and agencies of most PICs occurs, the administrative linkages are largely not available for such communication to transpire as a matter of course in development assessment. With regard to physical planning, while some countries have land use focussed legislative platforms, limited cohesion with the coordination of infrastructure and utility services continues despite the best efforts of individual agencies and authorities. This deficit in physical planning is often reflective of a lack of a common base for the planning of networks based on projected land uses and development form.

Introducing integrated assessment and land use planning systems would enable countries to address institutional and current administrative shortcomings. Such integration requires all-inclusive capacity development systems i.e. involve resource-use, economic planning and infrastructure agencies, in addition to environmental units.

The ethos of such is that successful environmental assessment processes rely heavily on well instituted and workable integrated land use planning systems. These in turn require a whole of government and community approach. Institutional form and functions conducive to this approach are required and may well require much work on disparate policy and legislation.

Any advancement in institutional capacity development will require awareness regarding calls for 'public hearing' processes as part of community consultation and participation methods. Such improvements to participation mechanics may involve administrative, legal, policy and practice changes.

Pilot projects addressing institutional cohesion are suggested. A catchment- or watershed-based initiative involving SEA approaches tackling land use, ecosystems, social, economic and physical development analysis and evaluation would be useful with involvement of a selection of government and community stakeholders. Such an approach would see the identification of common resource patterns and requirements, in turn, establishing a consistent agreed direction for development. Importantly, a broader understanding of how environmental assessment processes can be beneficial to development aspirations would be provided.

At present, the Planning and Urban Management Authority (PUMA) under the Ministry of Natural Resources, Environment and Water ('MNRE') of Samoa, are conducting a pilot project dealing with unplanned developments in the Vaitele area. This work addresses community institution links and allows PUMA to instigate a section of their Act enabling SEA approaches in the preparation of sustainable development plans. This is a worthy pilot project deserving of further support to continue to address institutional development, with lessons for many other communities about the Pacific.

### **Recommended Actions**

- Encourage links between key national environmental assessment and planning 'Panels' and Sustainable Development committees, broadening the scope of understanding of the role played by integrated assessments and planning in achieving sustainable development outcomes.
- Review institutional and administrative processes of environmental assessment and planning to ensure 'whole of government' approaches are embodied in procedures. Actions may include the following.
  - Improve regulations, guidelines and procedures with involvement of various environment, resource-use, and community groups, and levels of government.
  - Streamline procedures and administrative tools to reduce delays and encourage assessment as part of development designing phases.
  - Provide a range of impact checklists and guides that address different forms of development, different situations faced by PICs, and their use by different stakeholders across government.
  - Improve the understanding of the different functions and mandates among stakeholders within the government spectrum.
- Review models of public participation and partnerships to provide guidance for institutional development to incorporate public hearing processes where they may be suited.
- Encourage and support pilot projects and case studies, having opportunity to reveal lessons for institutional development to address linkages across and between levels of government, and which assist PICs progress from static/reactive EIA methods to SEA and integrated planning approaches.
- Institutional processes established to reconcile differences between various donor agency procedures in environmental assessment and those of the host country.



## 9.2.2 Legislative Frameworks

PICs still suffer from the failure or the inability to link EIA to land use planning, sectoral, and national policy development. Strategic approaches enabling customary communities to have early participation in development matters are predominantly non-existent. Too often, project based EIA processes (many with flaws identified by the PICs) are instituted after key lobbying and decisions have been effected.

Progression of EIA and SEA approaches is often constrained by a lack of coordinated legislation to guide land use, land development processes, and natural resource management. Where legislation is in place, effective implementation is limited by lack of linkages between laws, lack of financial and human resources, and lack of technical know-how. Adding to this, there is often continuing conflict between formal legislation and customary principles.

Most PICs have a history of centralized legal frameworks often spurred on by foreign models and advocacy, or inherited from colonial periods. With this in mind, like in developed countries those models which are focussed on bottom-up approaches to strategic land use planning and development should be encouraged.

Where no environmental assessment or land use planning law bases exist (or where such laws are defunct), reviews should be made of existing environmental protection, resource-use, natural resource management, and 'sanitary' platforms. Such a review should explore institutional, policy, and administrative options with a focus of linking outcomes of each, and to insert means for early environmental assessment processes in project development pipelines.

For many smaller islands, especially those that form multi-state or multi-island nations, formal EIA and land use planning systems may not suit the size of communities or government. In these instances, performance measures in less formal licensing and permit processes under existing legislative platforms may be a more appropriate option. Strategic actions to minimize impacts could be instigated through incentive approaches to business or activity licensing or even award processes. Many of these remote islands have village systems steeped in whole-of-community participation and policy options, including watershed assessments and mapping, key to a forward planning outcome.

For more advanced PICs, where integrated assessment and land use planning systems are being developed, issues exist with follow-up and enforcement. Legislative means to introduce environmental management plans ('EMPs') for self or community monitoring should be explored. Further, community-based monitoring of post-development conditions and performance would enable NGOs a legitimate role in the development decision-making system.

Some countries, like Samoa with their *Planning and Urban Management Act 2004* ('PUM Act'), have created a 'foot in the door' toward better coordination and cohesion in development practices. However, barriers still exist through conflicts (in interpretations) between other legal platforms. Development and environmental assessment processes are generally struggling with the lack of quality in submissions, the inability to police conditions, and the lack of local consultants with adequate capability to assist proponents. Also, there are often conflicts between satisfying requirements under the enacted legislation and local traditional decisions.

Key aspects of the PUM Act have still to be made operational, which would enable SEA approaches to be undertaken with regard to land use planning. The responsible agency, PUMA, are yet to have the financial or human resources to pursue this, and have little reference information on how to instigate good approaches to developing 'sustainable management plans'.

A pilot project to assist Samoa to use SEA approaches with strategic land use planning outputs will provide invaluable lessons to other PICs in similar situations, or those contemplating following the 'PUMA' model. A pilot project covering one of Samoa's informal settlement areas (Vaitele) was proposed by PUMA, however gaining donor support for this work has proven difficult.

Even for countries without formal land use planning systems, the outputs achieved by Samoa may provide useful guidance on SEA and land use planning approaches especially with regard to the stylizing of legislative platforms.

### **Recommended Actions**

- A review of legislative models incorporating SEA, integrated land use planning and EIA, with examples and explanatory materials made available to PICs.
- A review of national-based environment and development related laws to:
  - consider conflicts between existing legislation and options to address these;
  - explore options to improve linkages with local village or community governments in the implementation of laws;
  - explore options to instigate early triggering of those aspects of laws that might assist SEA and integrated land use planning (these may entail suggesting amendments to legislation, or implementation through policy options);
  - assist small remote islands instigate licensing, community mapping, or incentive based systems so as to minimise impacts and constructively influence the location of development projects.
- Encourage the use of environmental management plans (EMPs) to affect follow-up to EIA and land use planning decisions to:
  - improve performance, compliance and enforcement;
  - assist the transfer of responsibility to the proponent through self monitoring;
  - provide a role for NGOs in community monitoring of performance.
- Encourage and support pilot projects and in-country case studies that can provide PICs with choices in legal platforms to advance EIA, SEA and integrated land use planning.

### **9.2.3 Policy Frameworks**

Most PICs have been successful in developing a number of social, economic and environmental sector and thematic policies, and adhering to reporting responsibilities determined by international conventions and agreements. While there are achievements in policy coordination during the generation phases of these policies and plans, implementation and operational difficulties are common.

For those policies and plans centring on land management, environmental conservation, and development, shortcomings often include the lack of an integrated land use policy, and separate EIA provisions that are disconnected to land use policy. This is a pertinent matter as many of the implementing objectives of the key multilateral environmental agreements ('MEA'), for instance, advocate the need for integrated planning systems and use of EIA. The effect often is 'silo' (isolated) implementation of similar concepts across programmes of climate change, land degradation, biodiversity and coastal management, for example.

Essentially, the issue lies in a lack of systems approach to development assessment and planning. For the pursuit of sustainable development, outcomes synergy is required among regional governance, as well as between national and local-level governance. Effective linkages between such groups would involve areas such as:

- data and information;
- administrative and fiscal processes;
- laws and policies, institutional structures;
- accountabilities, technological know-how; and
- decision-making and responsibilities.

Barriers to linkages in these areas often include:

- a lack of suitable information;
- profusion of laws;
- 'silo' based policy formulation;
- spasmodic fiscal processes; and
- lack of empowerment of the grass-roots level of governance e.g. provinces and local village councils.

Where the systems approach to governance is not pursued, governance is often dominated by day-to-day politics. Such an approach garners decisions based on sectoral activity, and directions given without clear understanding of neither cumulative impacts nor the need to maintain long-term goals or objectives.

Pilot projects that explore the benefits of instigating land use planning systems, or at least the development of an integrated land use policy to address policy and administration synergies, would be constructive to the region. Outcomes of such a project would give PICs perspective of land use planning systems appropriate for their circumstances; allowing PICs to reform or crystallize governance linkages between national and local village levels. If successful, the empowerment, and capacity development, of local village level governance will do much to fill current voids in systems approaches for good governance.

Most PICs, including those with relatively advanced environmental assessment and planning systems, lack reference material to guide government agencies, community groups, and consultants involved in the production of EIA and planning assessments. Expertise and reference materials are required to assist with developing adequate terms of reference (TORs), to assess EIAs against TORs, or advise on methods and approaches to assessments. PICs have also expressed a need to review procedural tools and criteria to improve the quality and plausibility of assessments.

### **Recommended Actions**

- Regional programmes and projects should assist PICs to refine the common capacity building elements of policies and strategies promulgated by international governance relating to land management, environmental protection and management, and economic development. Key aspects in this regard include the following.
  - Many separate 'silo' based policy from UNFCCC, UNCCD, UNCBD, and others contain advocacies for EIA, SEA and integrated land use planning.
  - Many competing initiatives are commenced but then falter due to conflicting ambitions.
  - Most PICs require consistent land use planning platforms, incorporating both project based EIA and SEA processes, to assist with coordinated implementation.

- Provision of assistance for PICs in forming and/or integrating related policies to coordinate efforts with data management, governance linkages, institutional structures, technological development, and decision-support systems. All these arenas will be important in promulgating integrated assessment and planning processes.
- Where legislative platforms do not exist, the development of land use planning policy, incorporating the role of EIA and SEA approaches, will assist the guidance of development as well as provide opportunities to improve governance linkages between the national level and local village levels.
- Collect, aggregate, and avail reference and guiding materials targeting EIA, SEA and land use planning assessments. The range of materials should include information on:-
  - ecosystem services and function approaches;
  - use of natural resource economics in assessments;
  - use of multiple criteria and objective assessment techniques;
  - land and watershed capability and suitability assessments;
  - integrated coastal and watershed management;
  - social and cultural impact assessment techniques;
  - environmental audits and use of environmental management plans (EMPs);
  - developing EMS systems (ISO 14001); and
  - environmental checklists, quality criteria and performance targets.

#### **9.2.4 Information Management**

Most PICs are not adequately serviced with geographic, tabular, and textual databases covering environmental social and economic information, nor systems to monitor the status of the environment, and pressures upon those systems. Due to complexities of customary tenure systems, specific locally-based information is essential, and is often a tool for dispensing with conflict scenarios.

Natural resource inventories are important, where negligible coordinated efforts have progressed over the last decade to benefit governance and planning at each level (community, local/provincial, national). Substantial work is required in this regard, with the priority being to aggregate and assimilate data to jointly address International Development Goals ('IDGs'), Millennium Development Goals ('MDGs') and the need for State of the Environment ('SOE') reporting. Further, integrated assessment and land use planning capacity for urban and rural development is needed, and coordination and characterisation of information for such decision-making systems is required.

Even where there has been past useful development of natural resource inventories, natural resource data and information collection, storage, access and use is fragmented and often operating in a sectoral-based framework with limited linkages between departments or access by the community. Adding to this dilemma, there continues to be confusion on the 'tenure' of the data, the value of information, and means for access and security of such data. The lack of information sharing between government departments and agencies is also constrained by incompatible software and hardware, lack of administrative procedures to stimulate information flows, limited general communication, and lack of understanding of the importance of information sharing.

If not addressed strategically, the result will be development and resource management decisions made with limited, inaccurate, or outdated information. Without priority placed on village level and community access to available information, and the resultant value adding to scientific information from that level, planning decisions failing to contemplate long-term cumulative impacts will continue. Information is a useful vehicle for governments to explain and provide clarification on policy and practice to local communities. Information systems and products also assist village level governance depict their problems and possible solutions, and convey these to the national level.

While many PICs have some GIS capacity, environmental managers and land use planners are often inhibited by a lack of quality data, as well as shortcomings with hardware, software and network capacity. The full potential of GIS in land and environmental planning is also limited by lack of practice, knowledge and experience.

Pilot projects should aim to improve the skills in GIS for environmental assessment, planning and resource management.

### **Recommended Actions**

- Assist with the development of 'state of the environment' type databases and spatial systems to assist with monitoring and assessing direct, in-direct and cumulative impacts, including the following aspects.
  - Systems should be based on GIS development across various arms of government, with good access availed to the community;
  - Environment, land and GIS related database development should be guided by a government wide strategy, with coinciding nurtured development of human capacities, networks, hardware and software supported by a long-term financial resources strategy.
  - Systems should be planned as components of broader database systems that assist countries with their Millennium Assessment and international governance obligations, including their input to regional based systems such as PRISM;
  - Systems should commence with the aggregation of national, sub-national and regional natural resource and land information inventories, with strategies incorporating methods for multi-use collection of data in the future (this may need to commence with an audit of resource information requirements of various international and regional agreements);
  - Protocols should be developed for: valuing information; determining tenure of data; metadata systems development; sharing and accessing information; security and copyright.
  - Systems should balance science-based and technical data creation and enhancement with local community-based information development.
- Encourage and support pilot projects and case studies that improve skills across government in GIS for environment and planning assessments.
- Provide guidance to PICs on how to establish baselines and benchmarks for various environmental and development parameters.

### **9.2.5 Community-Based Planning Systems**

Much of the feedback for this review confirms a growing interest among PIC communities to use land use planning approaches to assist EIA objectives to reduce the impacts of development. Momentum expressed during the World Summit on Sustainable Development in 2002 has built on the recognition that integrated planning systems can provide useful platforms for development equity and conflict resolution. However, the warning is that to be sustainable, these systems need to be unique to customary land holding systems. Use of SEA approaches is a first step toward integrated land use planning and offers a low-impact entry for those PICs or communities without formalised environmental assessment processes.

Land- and resource-use planning platforms can be tailored to enable the 'treating of the cause of conflict and not the symptoms', which is often the legacy of project-based EIA. These planning platforms allow the drawing out of opportunities for development, not only the constraints, thereby offering a high degree of certainty required for sustainable development. Planning approaches can also allow a better decision-making platform through early intervention in the 'development pipeline', and can also provide the vehicle for better use and acceptance of EIA as well as other tools which promote self-monitoring (e.g. EMPs).

Land use, economic, and social pressures faced by many local communities are getting beyond the coping capacity of the traditional systems of governance. PICs need to be armed with an ability to resolve land- and resource-use issues and conflicts, many of which are rooted in local development matters. Community based land use planning systems carefully developed with communities may provide a platform to address these issues in a less threatening manner than state/national based initiatives.

The emergence of non-traditional village structures presents special difficulties. Without the usual village social structures to support and guide the community, there is a lack of control or ownership in the way activities are carried out within the community. This has led to tension, stifled activity, and idle areas with land in dispute. Where there are idle communities corresponding with areas of poor employment opportunities, often crime and disease proliferate.

Those PICs experiencing these difficulties are often becoming high crime enclaves, characterized by physical and mental health problems, poor amenity, and large impacts on terrestrial and marine environmental systems.

Community based planning systems can provide mechanisms to manage competing demands and uses in a manner that respects customary governance and use. Communities, however, are often suspicious of new western concepts regarding the formalization of land- and resource-use, despite the fact that contemporary planning systems are able to incorporate many traditional systems, enhancing empowerment and participatory mechanisms.

The Niue Land and Marine Resource Use Planning project and the Samoa PUMA project both provide models worth emulating.

Much benefit will be gained through research and generation of information kits on the development of community-based planning systems (i.e. model approaches and tools) suited to customary societies and land management practices of PICs. Pilot research and work should focus on informal settlements or non-traditional (village based) urban extension areas, which are becoming particularly burdensome for PICs.

### **Recommended Actions**

- Promote the development of integrated land use or resource management systems to stand as the appropriate platforms for better use and acceptance of EIA and SEA.
- Collect and aggregate information on various models of community-based land use planning to assist PICs.
- In conjunction with PICs, develop an acceptable approach for community-based or local land use planning system development incorporating effective and efficient use of SEA and EIA, and the use of EMPs for self-monitoring.
- Encourage and support case studies promoting a planning approach to minimizing impacts from development.

## 9.2.6 Public Participation

Many PICs expressed the need to improve institutional, legal and procedural processes to assist with community consultations and involvement of NGOs, signalling interest in broader participation in EIA and planning.

Some correspondent's saw NGOs as being too weak to add value to EIA processes, while others reported on the legacy of failed NGO projects where donor's had dealt directly with these groups on initiatives that were inconsistent with government priorities. Overall however, PICs saw the need for healthy NGOs and their involvement in decision-making processes and follow-up.

SEA and community-based land use planning offer in-roads to government forming collaborations with village councils, community groups and NGOs prior to project 'development pipelines' to determine the best uses of land and means to ensure accepted measures to minimize impact. These approaches would see public participation offered as a continual involvement process, rather than an administrative stepped process late in the development approval process.

### Recommended Actions

- Collect, aggregate, and provide information to PICs on alternative processes for community participation.
- Provide legal, policy, and institutional advice on incorporating community participation in decision-making processes.
- Encourage and support pilot projects and case studies targeting SEA and community land use planning methods involving local participatory approaches in pre-project scenarios.
- Assist PICs review inputs from communities, NGOs, and individuals in decision-making.

## 9.2.7 Human and Technical Resource Development

EIA capacity building initiatives in the mid to late 1990s targeted project-related EIA through regional workshop training, case study training in EIA and coastal management (regional workshop), the promotion of the need for EIA for certain developments (general regional guidelines), and development of project related EIA laws and provisions.

Increased use of EIAs to address issues of environmental protection and conservation has generally occurred, however, the acceptance and application of EIA is neither consistent within countries nor widespread among PICs. Training and exposure to EIA has raised awareness of EIA as a tool for better planning and management, but has not strengthened local capacity to conduct, review, or manage EIAs.

The wider array of EIA, land use planning, and design management techniques (e.g. Strategic Assessments and mapping, EMPs (ISO 14000 series), development design guidelines, environmental economics methods, and various choices in implementation (use of existing laws, policy, administrative processes, consensus and participation) were not consistently included in past training initiatives.

Such an approach to environmental assessment is required to promote a holistic approach to integrating environment and development. Past issues have evolved from the delivery and outputs of training not being targeted to particular PIC application (i.e. given with a regional emphasis) or involved a range of personnel across government. The result has been the limited uptake of EIA laws and use of EA guidelines despite many of such documents existing in draft form for PIC implementation.

Most PICs commented that there was still a deficit of trained and experienced environmental professionals to assist with EIA and planning. Regional efforts to attract resources for national based training should therefore still rank as a priority. National based training workshops are the best means of skills development as it provides opportunities to extend understanding and confidence building among a range of stakeholders. This scale of training also enables the demonstration of adaptable techniques to suit local conditions and needs.

Nationally focussed capacity building also offers the chance to identify case study/demonstration sites for EIA, SEA or planning study application. Initiatives should target the development of training material sets for application throughout the Pacific. Also, initiatives should canvas various development types and scenarios, and cross-link with corresponding efforts in biodiversity conservation, coastal management, reef management, and climate change adaptation training. The training sets may also focus on filling the void in guidelines and reference material for EIA management; over time addressing the lack of adequate technical and procedural guidance raised by many PICs.

In addition to technical skill development, the void in basic technology to assist environmental assessments at the national level should be investigated and strategies developed to fill critical gaps. An audit of technical services offered in the Pacific and from neighbouring countries may be necessary, and should canvas likely costs for services. Critical areas include basic water quality testing, laboratory services, soil analysis, contaminant analysis, air and noise testing (mapping and GIS included elsewhere).

### **Recommended Actions**

- As a matter of priority, secure regional-based funding and support for national-based training in EIA, SEA and community-based land use planning approaches, including the following.
  - Targeting a broad range of practitioners in government and community.
  - Focussing on various development scenarios and incorporating links to initiatives in biodiversity, climate change, coastal management and land degradation.
  - Using local issues set against local conditions and circumstances.
  - Exposing a range of assessment and planning technique such as land capability analysis, use of EMPs, user-pay systems etc.
  - Incorporating administrative and procedural tools.
  - Addressing legal and institutional framework options with outputs assisting the production of guiding materials.
- Expertise for national based training should be drawn from a number of Council of Regional Organizations of the Pacific (CROP) agencies to incorporate non-biological elements of environmental assessment.
- Education and awareness materials for EIA, SEA and community-based planning approaches should be tailored to the training initiatives.
- An audit of technical services offered in the Pacific and from neighbouring countries should determine the status of basic technology to assist environmental assessments, where:
  - the audit should report on the costs of various technical services; and
  - a strategy should be developed on means to fill critical gaps.

## **9.2.8 International and Regional Support**

Komeri's review (1997) made mention of the necessity for setup of a regional support office for EIA. It is understood this recommendation at the time was dismissed in some quarters due to logistics and conflicts over what constitutes capacity building.



The matter was again raised in some conversations and was certainly a key outcome of the session of Pacific delegates held at the IAIA Perth Conference in early May 2008, where the draft findings of this review were presented.

A regional Environmental Assessment Facilitation Office could be established to provide advisory services to PICs and assist with capacity development focussed at national delivery. It could be setup to be self-funding over time. There are many instances where CROP agencies are called upon to review TORs, review draft EIA or final assessments, or advise proponents on consultant inputs. Many of these services to proponents would be 'fee-for-service' activities in developed countries. There is precedence also for fees to be paid by proponents for government agency review of assessments. For instance, in Queensland, Australia, the Environmental Protection Authority under the *Environmental Protection Act 1994*, charges fees for review of assessments and EMPs. This may need to be implemented carefully to ensure multi-nationals are captured by the user-pays systems, but local entrepreneurs and consultants are relieved from such burdens.

The national calls for assistance with capacity building assistance have been overwhelming, including from those who are reasonably advanced in EIA and land use planning implementation. To address shortcomings, strategies to secure funding and technical resources are also required, and are best geared from the regional level. A regional facilitation office would also provide the means to coordinate inputs in direct assistance and training from CROP agencies and other regional organizations such as WWF and the UN organs.

The priority for regional assistance is the provision of environmental and planning units with tools to assist EIA, SEA and sustainable development decision-making. For example, simple reference material such as standard TORs for EIAs and SEA, standard resource survey templates, prior EIAs for various development forms would be invaluable to PICs where major institutional, expertise, and knowledge gaps occur. Guidance on administrative and procedural tools would also be required. The regional facilitation office could be used as a clearing-house for such information, with products tailored to suit individual PICs as national based training progresses.

Delivery at the national level should correspond with appropriate awareness and promotional materials, requiring regional coordination. The longer term objective is to promote and instil the recognition of the advantages of SEA and integrated land use planning systems so as to accommodate EIA to offer the best advantages to communities.

A regional facilitation office could also assist PICs identify and develop tailored pilot projects or case study options that would directly assist that country's circumstance.

Additional roles of a regional facilitation office could include:

- institutional strengthening to cover EIA, SEA and planning;
- options for planning policy and strategy development;
- development of legislative platforms for integrated planning (model provisions);
- providing links in law – guidelines – and standards;
- means to integrate administrative processes;
- reconciling the roles of various players involved in environmental assessment and planning; and
- forming networks of EIA, SEA and land use planning stakeholders.

The networking of EIA and planning practitioners within the Pacific and with neighbouring developed countries may offer advantages to PICs. Networking could target those requiring assistance as well as those able to provide advices and services. Additionally, a Pacific-based network would facilitate the provision of knowledge from regional-based experts and managers who may be able to assist with assessments.

EIA and planning profession associations (such as the Planning Institute of Australia ('PIA') or the Environmental Institute of Australia and New Zealand ('EIANZ')) offer opportunities for network linkages. Each also offers their members professional development credits for development assistance (certain scores in development credits are required each year to maintain membership). Arrangements with PIA or EIANZ could provide a source of free advisory service to young professionals in the Pacific. Such a network extension would enable access to large sources of comparative information for addressing different, often complex, and unpredictable development matters.

Many of the other corresponding actions recommended in this section will also require regional coordination, in the first instance, through CROP. This coordination may best be implemented through the Sustainable Development Working Group ('SDWG'), an inter-CROP advisory group. Particular activities and outputs assisted by complimentary programmes/projects include:

- GIS and Remote Sensing capacity development;
- environment and land-related databases, supplying member countries with improved baseline data-sets covering environmental, social and economic parameters; and
- International Agreement work, *inter alia*, UNFCCC, UNCBD, UNCCD.

Much comment was received about disparate assessments undertaken by, or for, various development assistance agencies. Many of the donors in the Pacific have different environmental assessment processes and guides. Many times there are multiple agencies in PICs undertaking projects. A reconciling of separate donor requirements and meshing with local requirements is necessary to reduce the confusion and conflicts that arise with the use of variable methods. This role could be coordinated by CROP agencies through the SDWG or the regional facilitation office.

### Recommended Actions

- Investigate the practicalities of setting-up an Environmental Assessment Facilitation Office at the regional level to:
  - assist with aggregation and provision of reference material to PICs;
  - coordinate resource and technological strategies;
  - assist PICs with TORs, review of EIA and component work on EIA where PICs do not have such expertise;
  - earn revenue from large multi-national proponents where highly complex assessments and reviews are required (to assist with on-going capacity building);
  - coordinate input from regional agencies in advisory services, capacity building training and joint awareness programmes; and
  - act as a clearing-house for materials including handbooks and guidance manuals on new approaches to EIA, SEA or integrated planning.
- Coordinate awareness and promotional materials regarding the broader benefits of integrated assessment and planning e.g. equitable decision-making, benefit sharing, conflict reduction.
- Coordinate the development of pilot projects and case studies in PICs with CROP-wide input to ensure projects are multi-focused and deliver multi-benefits.
- Approach Australian and New Zealand professional associations to form links with relevant networks and provide opportunities for 'free' advice through professional development credit systems.
- Reconcile the multiple donor requirements for environmental assessments and planning approaches, with regional and national requirements.

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## APPENDIX A

### Overview of Survey Returns

## SPREP - Review of EIA/SEA Capacity Needs in PICTs Overview of Survey Returns

Responding Country	Answer/Comment
<b>1. How would you describe the general use of EIA and SEA in your country?</b>	
Niue	- Conceptual
Samoa	- Good base but limited to individual project assessment
Kiribati	- Good use in national and local development planning processes, assessments and management
Tuvalu	- Good base but limited to individual project assessment
Guam	- Strong institutional and implementation base in government and industry, with mechanisms for all stakeholders to be involved.
<b>2. Can you describe the extent of use of EIA/SEA and integrated planning in your country?</b>	
Niue	- Used primarily to assist government development matters. - Used in land use and development planning.
Samoa	- Used primarily to assist with government development matters. - Used in land use and development planning – as part of usual processes in development planning. - Used by infrastructure and utility agencies for service planning, development and monitoring.
Other	<i>Comment</i> - Used for earthmoving permit application information.
Kiribati	- Laws and administrative processes encourage the use of integrated EIA/SEA in land use planning and land management. - Used in resource extraction/use industries: aggregates, forestry, agriculture, and/or fisheries.
Tuvalu	- Used primarily to assist government development matters.
Guam	- Laws and administrative processes encourage the use of integrated EIA/SEA in land use planning and land management. - Used by infrastructure and utility agencies for service planning, development and monitoring. - Used commonly by members of the community in project design, land use proposals and review. - Used commonly by health and community services in planning, management and monitoring of services. - Used in natural resources management initiatives.
<b>3. In recognizing the benefits of linking EIA and SEA with integrated land use management and planning, how would you rate the commitment and priority currently provided by Government?</b>	
Niue	- Good management and actions, and recognised as a high priority however lacks resources and systems capacity.
Samoa	- Benefits recognised but inconsistent commitment.
Other	- Benefits recognised but inconsistent commitment.
Kiribati	- Good management and actions, and recognised as a high priority however lacks resources and systems capacity.
Tuvalu	- Benefits recognised but inconsistent commitment. - Commitment given to locally driven activities, but inconsistent resources and spasmodic capacity building. - Good management and actions, and recognised as a high priority however lacks resources and systems capacity (human, technical and administrative capacity).
Guam	<i>Comment</i> - Good management and actions, and recognised as a high priority however lacks resources and systems capacity.
<b>4. What do you see as the critical barriers/constraints to EIS/SEA development in your country?</b>	
Niue	- Low profile of the utility of EIA/SEA for assisting with integrated land use planning. - Lack of understanding of the benefits of EIA/SEA and integrated land use planning among relevant groups and stakeholders.

Samoa	<ul style="list-style-type: none"> <li>- Conflict between national development objectives and environment objectives.</li> </ul>
Other	<ul style="list-style-type: none"> <li>- Lack of political commitment across government to facilitate its broader use.</li> <li>- Inconsistent resources and training i.e. limited human resource capacity development.</li> <li>- Lack of tabular and spatial baseline data to assist project-based EIA and SEA.</li> </ul>
Kiribati	<ul style="list-style-type: none"> <li>- Inconsistent resources and training i.e. limited human resource capacity development.</li> <li>- Lack of understanding of the benefits of EIA/SEA and integrated land use planning among relevant groups and stakeholders.</li> </ul>
Tuvalu	<ul style="list-style-type: none"> <li>- Inconsistent resources and training i.e. limited human resource capacity development</li> <li>- Low profile of the utility of EIA/SEA for assisting with integrated land use planning</li> <li>- Inadequate laws and guidelines to integrate environment and development assessment</li> <li>- Conflict between national development objectives and environment objectives</li> <li>- Conflict between land management systems (i.e. customary versus investment orientated systems)</li> <li>- Lack of tabular and spatial baseline data to assist project-based EIA and SEA</li> <li>- Lack of understanding of the benefits of EIA/SEA and integrated land use planning among relevant groups and stakeholders</li> </ul>
Guam	<ul style="list-style-type: none"> <li>- Inconsistent resources and training i.e. limited human resource capacity development.</li> </ul> <p><i>Comment</i> - Laws and commitments are in place but the huge volume of EIA/SEA review work overwhelms the limited capacity of government reviewers. Laws on EIA/SEA have room for improvement.</p>
<p><b>5. Are there particular areas of capacity development (i.e. different approaches, methods, tools) you would like to see advanced in tandem with current strategic directions for EIA/SEA?</b></p>	
Niue	<ul style="list-style-type: none"> <li>- Further integration of the 'environment' in development assessment laws and policies to broaden the use of EIA and SEA.</li> <li>- Use of community based approaches to integrated environmental assessments and planning.</li> <li>- Moving from land information systems to GIS (broadening the scope of use of integrated environmental assessment)</li> <li>- Moving from catchment management to integrated watershed and coastal management.</li> </ul>
Samoa	<ul style="list-style-type: none"> <li>- Moving from land capability to land suitability and ecosystems function analysis.</li> <li>- Moving from catchment management to integrated watershed and coastal management.</li> <li>- Moving from resource valuation for exploitation to valuing ecosystem functions and services.</li> </ul>
Other	<ul style="list-style-type: none"> <li>- Greater understanding of the use and benefits of SEA for integrated land use planning.</li> <li>- Moving from catchment management to integrated watershed and coastal management.</li> </ul>
Kiribati	<ul style="list-style-type: none"> <li>- Further integration of the 'environment' in development assessment laws and policies to broaden the use of EIA and SEA.</li> <li>- Use of community based approaches to integrated environmental assessments and planning.</li> <li>- Moving from land information systems to GIS (broadening the scope of use of integrated environmental assessment)</li> <li>- Greater understanding of the use and benefits of SEA for integrated land use planning.</li> <li>- Integrated assessments using traditional knowledge and management.</li> </ul>
Tuvalu	<ul style="list-style-type: none"> <li>- Further integration of the 'environment' in development assessment laws and policies to broaden the use of EIA and SEA</li> </ul>

	<ul style="list-style-type: none"> <li>- Use of community based approaches to integrated environmental assessments and planning</li> <li>- Moving from land information systems to geographic information systems (GIS) [broadening the scope of use for integrated environmental assessment]</li> <li>- Greater understanding of the use and benefits of SEA for integrated land use planning</li> <li>- Moving from land capability to land suitability and ecosystems function analysis</li> <li>- Integrated assessments involving tradition knowledge and management</li> </ul>
Guam	<ul style="list-style-type: none"> <li>- Moving from land info sys to GIS (broadening the scope of use of integrated environmental assessment)</li> <li>- Greater understanding of the use and benefits of SEA for integrated land use planning.</li> <li>- Moving from land capability to land suitability and ecosystems function analysis.</li> <li>- Moving from resource valuation for exploitation to valuing ecosystem functions and services.</li> <li>- Integrated assessments using traditional knowledge and management.</li> <li>- Integrated land use planning using the landscape approach.</li> <li>- Use of multi-criteria analysis in environmental assessment and planning decision-making.</li> </ul> <p><i>Comment</i> - Ability to assess secondary and cumulative impacts. Ability to use Habitat Equivalency Assessment to quantify impacts and to define mitigation needs, especially in the marine environment.</p>
<p><b>6. Community based environmental assessment and planning, has been known to assist in diminishing local tensions and/or conflict over development and land resources. Given this, and in terms of strategic direction for capacity building, are there particular areas of capacity development you would like to see advanced?</b></p>	
Niue	<ul style="list-style-type: none"> <li>- Improved understanding of the nature, constraints and vulnerability of various natural and resource systems.</li> <li>- Stocktaking of land and marine degradation and characterisation of pressures and impacts.</li> </ul>
Samoa	<ul style="list-style-type: none"> <li>- Improved participation methods for community involvement in decision-making.</li> <li>- Development of baselines and benchmarks for environment and socio-economic monitoring and evaluation.</li> </ul>
Other	<ul style="list-style-type: none"> <li>- Stocktaking of land and marine degradation and characterisation of pressures and impacts.</li> <li>- Development of baselines and benchmarks for environment and socio-economic monitoring and evaluation.</li> </ul>
Kiribati	<ul style="list-style-type: none"> <li>- Improved participation methods for community involvement in decision-making.</li> <li>- Improved understanding of the nature, constraints and vulnerability of various natural and resource systems – water and catchment management options, soil landscapes and capabilities, biodiversity and landcover, landscape and atmospheric interactions.</li> <li>- Stocktaking of land and marine degradation and characterisation of pressures and impacts.</li> <li>- Development of baselines and benchmarks for environment and socio-economic monitoring and evaluation.</li> <li>- Improved understanding of economic and human systems and their vulnerabilities i.e. nature of urbanisation, infrastructure and utility constraints, climate change implications, characteristics of population dynamics.</li> </ul>
Tuvalu	<ul style="list-style-type: none"> <li>- Improved participation methods for community involvement in decision-making.</li> <li>- Improved understanding of the nature, constraints and vulnerability of various natural and resource systems – water and catchment management options, soil landscapes and capabilities, biodiversity and landcover.</li> <li>- Stocktaking of land and marine degradation and characterisation of pressures</li> </ul>

	<p>and impacts.</p> <ul style="list-style-type: none"> <li>- Development of baselines and benchmarks for environment and socio-economic monitoring and evaluation.</li> </ul> <p>Improved understanding of economic and human systems and their vulnerabilities i.e. nature of urbanisation, infrastructure and utility constraints, climate change implications, characteristics of population dynamics.</p>
Guam	<ul style="list-style-type: none"> <li>- Improved participation methods for community involvement in decision-making.</li> <li>- Improved understanding of the nature, constraints and vulnerability of various natural and resource systems – water and catchment management options, soil landscapes and capabilities, biodiversity and landcover.</li> <li>- Stocktaking of land and marine degradation and characterisation of pressures and impacts.</li> <li>- Development of baselines and benchmarks for environment and socio-economic monitoring and evaluation.</li> <li>- Improved understanding of economic and human systems and their vulnerabilities i.e. nature of urbanisation, infrastructure and utility constraints, climate change implications, characteristics of population dynamics.</li> </ul>
<p><b>7. What do you see as the priority needs for EIA/SEA and integrated planning development for government and community use?</b></p>	
Niue	<ul style="list-style-type: none"> <li>- Better awareness of benefits of environmental assessment and planning and commitment to their continued augmentation.</li> <li>- Technical capacity building in use of data in decision-making e.g. land use planning, EIS, development management, natural resource management.</li> <li>- Broadening of training base across government, NGOs and community.</li> </ul>
Samoa	<ul style="list-style-type: none"> <li>- Better awareness of benefits of environmental assessment and planning and commitment to their continued augmentation.</li> <li>- Filling of essential data gaps.</li> <li>- Technical capacity development in environmental law and practice.</li> <li>- Technical capacity development in environment and land use policy.</li> </ul>
Other	<ul style="list-style-type: none"> <li>- Filling of essential data gaps.</li> <li>- Technical capacity building in use of data in decision-making e.g. land use planning, EIS, development management, natural resource management.</li> <li>- Technical capacity development in environmental law and practice.</li> </ul>
Kiribati	<ul style="list-style-type: none"> <li>- Better awareness of benefits of environmental assessment and planning and commitment to their continued augmentation.</li> <li>- Technical capacity building in data collection and application, enhancement, production and access to data for application in EIA, SEA and land use planning.</li> <li>- Technical capacity building in use of data in decision-making e.g. land use planning, EIS, development management, natural resource management.</li> <li>- Technical capacity to extend use of GIS in EIA/SEA and integrated planning.</li> <li>- Technical capacity development in environmental law and practice.</li> <li>- Technical capacity development in environment and land use policy.</li> <li>- Broadening of training base across government, NGOs and community.</li> </ul>
Tuvalu	<ul style="list-style-type: none"> <li>- Better awareness of benefits of environmental assessment and planning and commitment to their continued augmentation.</li> <li>- Filling of essential data gaps.</li> <li>- Technical capacity building in data collection and application, enhancement, production and access to data for application in EIA, SEA and land use planning.</li> <li>- Technical capacity building in use of data in decision-making e.g. land use planning, EIS, development management, natural resource management.</li> <li>- Technical capacity to extend use of GIS in EIA/SEA and integrated planning.</li> <li>- Technical capacity development in environmental law and practice.</li> <li>- Technical capacity development in environment and land use policy.</li> <li>- Broadening of training base across government, NGOs and community.</li> </ul>
Guam	<ul style="list-style-type: none"> <li>- Better awareness of benefits of environmental assessment and planning and commitment to their continued augmentation.</li> <li>- Technical capacity building in data collection and application, enhancement,</li> </ul>



	<p>production and access to data for application in EIA, SEA and land use planning.</p> <ul style="list-style-type: none"><li>- Technical capacity building in use of data in decision-making e.g. land use planning, EIS, development management, natural resource management.</li><li>- Technical capacity to extend use of GIS in EIA/SEA and integrated planning.</li><li>- Technical capacity development in environmental law and practice.</li><li>- Technical capacity development in environment and land use policy.</li><li>- Broadening of training base across government, NGOs and community.</li></ul> <p><i>Comment</i> - Need for comprehensive planning, land use and water use planning and urgent ability/capacity to deal with rapid growth due to military expansion.</p>
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### Further Comments

#### *Soloman Islands - Alex Makini*

- Capacity development in EIA/SEA required – training through short courses, awareness raising for Provincial planners, communities, developers.
- Expertise and resources in EIA/SEA is limited.

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## APPENDIX B

### Summary of Meeting Outcomes from Country Visits

## **SPREP - Review of EIA/SEA Capacity Needs in PICTs Summary of Outcomes from Country Visits**

### ***Samoa | Ministry of Natural Resources and Energy (MNRE)***

- National awareness events facilitate MNRE to work with local people as partner rather than regulator.
- Local village groups are often responsible for land tenure issues of a development after approval granted – takes impetus away from Department to make uninformed decisions in this regard.
- Capacity building within government is challenging as intergovernmental movement means staff aren't necessarily stable in any one role and any training provided to them may be "transferred" elsewhere – this limits training provided and means planning becomes more generalised.
- The process of EIA is working (information is being shared and systems becoming more efficient) within Samoa, however needs refinement.

### ***Samoa | MNRE – Planning Office***

- PUM Act enacted in 2004 to cover planning of development – broadening of scope so focus not just on conservation and national parks.
  - Section 42 provides authority to request EIA.
  - EIA Regulation (Aug 2007) clearly states format of EIA.
- EIA guidelines developed in 1998 prior to PUMA are now in process of update to incorporate related PUMA elements.
- Quality of work from consultants providing EIA is limited.
  - Information provided by consultants is often geared towards the promotion of the development rather than an objective assessment of range of potential environmental impacts.
  - Often limited funds available for EIA, affecting quality.
  - No certification system for standards of work, nor peer group networks to facilitate peer group information sharing.
- Compliance with conditions provided with development approval is seldom, in addition to lack of baseline and evaluative monitoring.
- PUMA makes mention to strategic management plans (SMP), however seldom undertaken and often constrained by funding availability. This part of the Act is yet to be formally implemented. This may enable the application of SEA type approaches in land use planning.

### ***Samoa | MNRE – Land Management***

- Price structure doesn't encourage sustainable extraction during sand mining.
- Mix of jurisdictions with extraction activities between 'Land Management' and 'PUMA'
- Permits provided under PUMA for land extraction, reclaiming land etc, with consistency between MNRE units improving with the involvement of village council consent.
  - Land reclamation and sand mining discouraged, however there is often implementation disparities.
- Monitoring of sand extraction limited due to lack of human capacity and resources – amount of sand extracted in reality is often unknown

- Sand resources are now scarce in Samoa and alternatives for uses of sand are sought i.e. concrete houses banned and timber houses encouraged – this raises issues of timber resources for such purposes.

#### **Samoa | SPREP – Climate Change Advisor**

- Scientific models require refinement; however pressing vulnerabilities need to be addressed.
  - It is difficult to determine the most threatening climate change-related impacts, and therefore which to mitigate.
- Influences to EIA quality and effectiveness include:
  - Donor's using own staff to prepare EIA – issues with consistency in quality/substance.
  - Customary land rights usually prevail, further constraining limited awareness of benefits/negatives of development by village chiefs.
  - Donor groups often apply “big country” approach to SIDS which is usually impractical and not scaled appropriately
- Awareness of EIA/land use ('LU') planning is increasing
  - Need for delivery of information regarding EIA and SEA to be consistent with target audience – linguistically and at appropriate level of understanding
- SEA is a passive approach to working with communities in alternative to large-scale LU planning regimes
  - SEA can work within current administration processes at a level more practical to implementation.
- Pacific Adaptation to Climate Change project (PACC) is being developed to provide examples of “climate proofing” at the national level.

#### **Samoa | SPREP – Pollution Prevention, and Solid Waste**

- Landfill are often placed without EIA due to scarcity of land and lack of choice regarding placement
- Enforceability of law is important – no point having a law that can't/won't be enforced
  - A cooperative/passive approach is preferred (i.e promotion of SEA approaches) before legislation - to direct environmental assessment and planning methods which work better with traditional systems.
  - Also, law needs to be appropriate to the scale of the country to which it is applied – laws from bigger countries applied to a country like Samoa and other PIC's are often too grandiose.
  - Some donor agencies require environmental standards matching that of their own countries which can be burdensome for smaller countries (as often found in the Pacific).
  - Samoa's Tafaigata Landfill uses a simpler but more effective leachate collection and treatment system (appropriate to its conditions) than those found in developed countries, and reflected in their standards/guidelines. However, agencies from developed countries are requiring technology as in their country due to legislative risks.
- SEA has capacity to encourage compliance with EIA by providing infrastructure/services for those areas/developments located appropriately and with appropriate services.

- SPREP have capacity to provide technical advice (re EIA, waste management etc) which is currently not utilised nor is it necessarily encouraged. The provision of technical advice could be a source of income for SPREP (when considering more limited funding from donor agencies) as well as provide higher level of advice to small Pacific countries.
- Capacity building exercises need to be followed-up to ensure people learning have an opportunity to retain new knowledge – e.g in-country experience with supervision.

#### ***Samoa | SPREP – Nature Conservation Action Strategy***

- PILN (Pacific Invasives Learning Network) is example of a recent successful capacity building initiative – links technical personnel with those who have contributory knowledge.
- Attributes of SEA :
  - Participatory process.
  - Easily implemented in countries without formalised planning system by introducing a plan in a non-legislative manner, reducing conflict.
  - Less threatening.
  - Not driven by land titling.
  - Allows ownership by community, and maps out opportunities for community rather than introduce constraints – also maintains level of respect of/for customary systems for young people of community.
  - More modern forms of planning (foreign) are inconsistent with customary systems.
  - More flexible than traditional formal (foreign) land use planning systems.
- SPREP has some demand to provide technical advice regarding contents of EIA and technical studies.
- Quality baseline data/monitoring systems are needed to make well-informed decisions within SEA and EIA.

#### ***Samoa | MNRE Forestry***

- After native timber forestry was banned in Samoa, donor agencies provided funds to reforest certain areas – however, these areas were planted with non-native species, without consideration of local conditions, being species which didn't contribute to the local ecosystems.
- Good level of field monitoring being undertaken through Forestry Division – GIS type system in place with this data.
- There is a need to educate locals about efficient use of quality wood products - i.e. quality timber should be used for furniture where it can be appreciated and seen rather than in construction where a decent price can't necessarily be demanded.
- Systems are currently being investigated to use invasive species in biofuel projects.
  - Also looking at invasive species and the need to maintain the stability of catchment areas (i.e progressive decrease in invasives to match native species regeneration).
- Forestry can assist the EIA process by providing GIS data that they regularly collect.

#### ***Samoa | Economic Planning***

- EA in Samoa has improved with introduction of PUMA (taken politicians out of the process), however as the Act was adapted from an NZ framework, refinements to PUMA are still required to suit the Samoan context (streamlining required).

- Fees and charges introduced to the EA process should be appropriate to the scale of the development i.e. residential developments shouldn't necessarily be required to pay charges (burdensome) – alternatively, charges could be applied to those developments not deemed “necessary” and charges waived for those necessary for national economic growth etc.
- Costs for EIA production combined with government costs may be harsh if applied to a service/development implemented for the common good of the country.

### **Samoa / Quarantine**

- Quarantine guidelines are used based on international guidelines
  - MNRE guidelines on invasive species exist and are separate to those used by Quarantine.
  - Training in use of guidelines, as well as risk assessment etc, is generally limited, but important and required.
- No requirements for exporter to provide information regarding cargo – rely solely on information offered by the exporter.
- Finance resources are lacking for a group that have vital role to play in preventing invasive species.
  - Technology lacking as a result – scanning equipment is limited.
  - Opportunity to provide quarantine information online is available however resources lacking to make it happen.
- Work of quarantine is information based - limited funding and training constrains advancement in these important areas.

### **Samoa / Fisheries**

- A good database of information is available – inshore database management needs some improvement.
- Some assessment undertaken re fish poisons, coral reef assessment (with link to land based causes).
  - Work undertaken with MNRE however would be more efficient with a formalised system – expert advice to be shared.
  - Fisheries have a lot of expert advice to share.
- Legislation against fish destruction is available with a strong compliance unit to support.
  - Communities are very strong in enforcing fisheries by-laws, having had considerable input into the by-law's preparation.
- Development of personal understanding regarding legal requirements of Fisheries Act needed
  - Also, further knowledge of the EIA process and potential outcomes may assist information provided by Fisheries.
- Fisheries have capacity to act as advice agency – particularly relevant when considering proposed 300km seawall (outcome of Coastal Infrastructure Vulnerability project, World Bank?).

### **Samoa / SPREP – Island Ecosystems**

- Most countries don't have SEA and perform EIA reactively.
  - Pilot project for SEA could be undertaken on one island of a multi-island country to show benefits.

- Many countries have an unrealistic approach to economic growth which relies on infinite resources
  - Better understanding of scope of environment and its sensitivities
  - Sustainable growth of countries needs to consider current issues such as peak oil, climate change etc.
- An environmental monitoring network is planned to be set-up within SPREP involving data collection and use of that data. Long-term investments required to bring this to fruition to assist PICs.

#### ***Samoa | SPREP – Coral Reef Officer***

- SPREP is being sent EIAs for review i.e. Marshall Islands EIA.
- CRISP (Coral Reef Initiatives for Pacific) for which SPREP provides institutional support:-
  - Involves research into status of reef, reef indicators, aquaculture suitability and performance, reef restoration requirements.
  - Multi-agency programme addressing 3 aspects of Governance, Economic Evaluation, and Global Network Support.
  - Database provides various layers of relevant information.
- SPREP's involvement in Integrated Coastal Management!
  - Project aiming to set-up inter-governmental data sharing system and steering committee regarding land management.

#### ***Tuvalu | Department of Environment ('DOE')***

- New legislation is being amended and second reading is to occur soon – first reading occurred in November 2007.
  - Current lack of active legislation causes major constraints to directing environmental performance of development proposals.
  - Currently no control over non-government projects – can only provide advice.
  - Some control over government projects is available as they are within the same organisation. However, other departments usually feel burdened by the need to undertake any EA.
- General lack of human and financial resources – only two technical staff in Department.
  - Limited human resources are further burdened by expectation on Department to actually prepare EIS (when they should actually only review).
- Major consideration for country is resource use due to limited quantities and limited land mass.
- No monitoring by DOE is undertaken, however monitoring undertaken by external group found poor water quality on lagoon and ocean side of Funafuti.
- Sewage collection involves primarily septic tanks which aren't maintained nor constructed correctly – most tanks aren't emptied and aren't lined so sewage leaches into groundwater sources.
- Department heavily reliant of donor agency funding – allows susceptibility to agency requirements which can be varied.
- No land use planning currently in place for country – influenced by customary land ownership.

- Customary owners have right to do whatever they please with land – introduction of environmental legislation may have little impact on this, especially given that protection of customary land ownership is paramount in the draft legislation.
  - Customary owners, NGOs and community groups, can and do attract funding from donor agencies, many of which have limited requirements or standards for environmental performance of a project.
- Seeking to integrate traditional knowledge into conservation efforts, future growth strategies and technical systems.
  - Families keep traditional knowledge in the family and are not willing to share (protection of family identity) – challenge for integrating traditional knowledge into a planning system.
- Current system for environmental assessment of proposed development proposals:
  - EIA taskforce scopes environmental performance of a proposal using a scoping matrix which determines whether further environmental studies are required;
  - EIA taskforce involves several government departments, including Environment, Home Affairs, Finance and Planning.
- Enforcement of new legislation will be constrained by the limited human resources of the Environment Department:
  - To ensure enforcement, collaboration with police, legal people inside and outside of government and community leaders.
  - Awareness of the benefits of EIA is the key to compliance and enforcement by the community – limited by lack of funding to undertake awareness raising initiatives.
  - Customary ownership is a sensitive issue in terms of enforcement – system usually designates that village chief has last word, although supreme power ultimately lies with government. There is much room for outcomes to be influenced by political aspects.
- No GIS capability within DOE so limited use of information systems.
  - Department of Lands have GIS capabilities that DOE can sometimes utilise but not always available – department are protective over information.
  - DOE would appreciate having a GIS tutor to work with them intensively to build capacity - would enable dept to make more informed decisions.
  - Database for information is limited – some UNCCD and climate change data available
  - Lack of funding limits collection of data for use in information systems.
- Human resource capacity to use information systems, monitoring and collection of data is limited.
- Local NGO works at the community level (TANGO)
  - Some duplication of initiatives of DOE and TANGO, and not a great deal of integration of efforts
  - At times, additional responsibility is placed on DOE when NGO efforts are unsuccessful – need for greater communication and collaboration between the two groups
- Database/listing of suitable consultants to undertake EIS/environmental reports required for Tuvalu.
- Seems to be responsibility on DOE to undertake actual environmental assessment.



- When DOE prepares environmental assessment, incur political pressure to undertake quickly to meet “deadlines”.
- Proponent should have responsibility to provide EIS/ environmental assessment.

### ***Tuvalu | Department of Agriculture ('DOA')***

- Most agriculture in country based around food security.
- DOA provide capacity for local residents to grow food i.e. provide seedlings.
- One major commercial farm in country is set-up by Taiwanese company.
- Ability to increase commercial food growth in country is constrained by limited land availability and costs of production i.e. imported fertilisers and peat and water intensive.
- FAO assist establishment of food crops. They provide capacity to the local community to grow food i.e. provide seedlings.
- Commercial piggery operation (large for Tuvalu with approx 20 pigs) to distribute to outer islands.
- Regional projects implemented through SPC to utilise traditional food crops using traditional growing methods – puluka pits.
- Health of locals deteriorating due to increased processed foods.
- Past initiatives to grow local crops i.e. coconut has not continued due to intensity of work versus benefit, growing technique on limited land, and urbanization pressures on land that is available.
- DOA seek advice from DOE regarding environmental impacts of agriculture projects.
- Often when there are no formal environmental management considerations there are impacts – mostly through waste i.e. fertiliser bags not properly stored or disposed.
- DOA encourages farmers to use minimal fertilisers and more compost - somewhat due to cost and environmental impact (impact on water quality in atoll).
- Traditional growing methods being impacted by sea water intrusion – puluka pits
- DOA bans fertiliser use in puluka pits due to direct contact with ground water (caused by style of growing).
- DOA looking to promote organic farming as a means of following niche market - also research into organic fertiliser use.

### ***Tuvalu | Department of Public Works***

- Environmental assessment not largely considered in Public Works operations – however they see the need for environmental considerations.
- Environmental design in Tuvalu is too expensive to pursue – if environmental law and policy/building code available, would be easier to pursue.
- Low awareness and concern for environmental impacts in works.

### ***Tuvalu | Ports Authority***

- No environmental requirements within ports and shipping.
- New wharf to be constructed doesn't have sewage facilities – level of facilities to mitigate environmental impacts quite limited.

### ***Tuvalu | Department of Fisheries***

- Subsistence and semi-commercial fishing operations.
- Tuna fish operations (commercial) being developed with Taiwanese company – no requirement for environmental reporting.
- Certain areas are overfished due to increasing population on Funafuti.
- No database or mapping systems for fish resources - some surveying done by SPC.
- International conventions place limits on commercial overfishing.
- Major cause of marine pollution is dumping of waste in the ocean and leakage of septic tanks – causing algal blooms.
- Traditional fishing techniques are the only way to retain fish stocks.
- Local people are good fisherman and increased population density on Funafuti is causing strain on fish stocks

### ***Tuvalu | Department of Home Affairs***

- Dept works with DOE to do EIA for each project.
- Limited technical resources for Department.
- Member of EIA Taskforce with DOE
- Donor agencies provide their own consultants for environmental assessments – issue with transparency.
  - Independent consultants required.
- Awareness of environmental assessment for people on outer islands is necessary but expensive
- Growing requirement for infrastructure on outer islands – communications, roads.
- Most funds invested in Funafuti however more capacity for growth on outer islands.
- Sewage infrastructure of country can't be improved until housing is improved.
  - Customary ownership limits planning and is politically sensitive.
- Funafuti Town Council (and town councils on other islands) could play essential role in town planning for country (as it involves elected members of local community giving grass-roots approach which is an important aspect in Tuvaluan culture).
  - NGO could also collaborate to develop town planning.
  - Govt doesn't currently have technical skills to plan thoroughly.

### ***Tuvalu | Local NGO - TANGO***

- TANGO is umbrella group for 47 NGO's within Tuvalu - Fishing groups, Women's group, Chamber of commerce.
- Agriculture programmes use EIA.
- All funding for new buildings require EIA – donor agency requirements.
- There is a need for monitoring of construction impacts.
- Some collaboration with DOE in local initiatives – MOU.
  - Sit on development board.
- TANGO involved in coastal management within Tuvalu.

- Work with community in environmental education
- Establish marine protected areas and undertake coral reef restoration and management.
- Projects are initiated by community for which TANGO provide technical assistance.
- Monitoring of coral reef and collection of traditional knowledge data.
- Good database of information – flooding, resource distribution, GIS re turtle nesting.
- TANGO and Fisheries work together.
- Establishment of marine protected areas seeks to establish networks between islands to increase information sharing.
- Need for land and marine use planning – terrestrial issues are having flow-on impacts on marine environment.
  - Sediment run-off impacting coral health.
  - Piggeries have very low quality run-off.

#### ***Tuvalu | Department of Health***

- Environmental Health Unit deals with sanitation – related to environmental quality.
- Some work with TANGO.
- Some water testing and reporting.
- Different initiatives have been undertaken to more effectively deal with sewage so as to increase sanitary quality – pit toilets, flush toilets.
- Compost toilets encouraged but community involvement is slow.
- Department of Health undertake a lot of community awareness initiative re health i.e. radio broadcasts – could be avenue to increase awareness of environmental health which is key element of sanitation.
- Lack of infrastructure i.e. water reticulation and sewerage, has impacts on community health.
- Location of one of hospitals incinerators was too close to adjacent school - Planning of hospital layout did not consider impacts to neighbours and sensitivities of neighbours (school children)
  - New incinerator location decided by Island Council in a more secluded location, however there was not a great deal of consultation with government agencies.
- Fee exists for solid waste collection on Funafuti which may limit involvement by community.
- An Integrated Solid Waste Management Plan was prepared by external consultant with donor funding and is now being progressed with funding from EU.
- Mosquito breeding and hence mosquito related illness exists from borrow pits and poor waste management.
- World Health Day was celebrated which had theme of “Protecting Health from Climate Change” – avenue for greater awareness of need for environmental health.

#### ***Tuvalu | Department of Planning***

- Secretariat of Project taskforce.
  - Taskforce only considers projects over \$10K to \$100K.
  - No requirements to consider environmental aspects of projects valued under \$10K.
  - Projects over \$100K calls for Development Coordination Committee.

- Department responsible for National Development Strategy.
  - Involves environmental aspects.
  - Department responsible to ensure priorities are implemented.
- Many land use plans for country have been developed however very few have been implemented.
- Government sought to decentralise government facilities a couple of years ago, however poor infrastructure on outer islands has limited feasibility of doing so.
- Commercial farming to be expanded to outer islands to increase food security.
- Environmental impacts of fertiliser use from farming practice are secondary issue when compared with food security.
- SEA would be very useful.
- Plans to encourage trade between outer islands and to develop farmers markets on Funafuti – encourage economic growth of outer islands.
- Climate change is an important issue in terms of planning.

#### **Guam | EPA, Chief Planner**

- EPA existed in Guam since 1973 with executive order since 1989 for all developments to do EIA.
- System for EIA:
  - Land Use Commission runs through Department of Land Management who assess compliance of application with zoning and pass on if appropriate.
  - Land Use Commission only occurs if development does not comply with zoning. Therefore, if a development is zoning compliant, it does not require environmental assessment, regardless of its scope.
  - Attempt in last 10 years to revise environmental law so that all development projects are assessed for environmental compliance – however did not eventuate.
  - Community consultation said to be thorough through Land Use Commission
    - Law requires public to be notified of proposed activity who are within a certain radius.
    - Public meetings and newspaper notices alert public to proposed developments.
  - Minimum requirement is checklist provided to developer to ascertain potential environmental impacts.
- Land use zoning was undertaken in the 60's which is still used now but hasn't been updated to modern context – therefore inconsistent with current environmental and societal issues.
- Politics plays large role in applications for development and success of such.
- Technical assistance for review of environmental applications is needed.
- Those preparing EIA's aren't competent enough to undertake the whole scope of the assessment.
  - There has been a push towards a certification system for environmental professionals in Guam.
- Military presence in Guam is significant.

- Military bases are not under Guam zoning, therefore do not need to comply with Guam law – bases are subject to US law.
- Development within bases seem to be diligent with environmental assessments.
- Compensatory habitat is a common mitigation measure in military environmental assessments.
- University of Guam has a Masters in Environmental Management.
  - Staff of EPA train in Guam, UK and USA.
  - USEPA provides a number of short courses on EIS etc, providing a good level of environmental knowledge to environmental practitioners in Guam.
- GIS capacity not utilised largely in EPA
  - University of Guam have GIS capacity which could be utilised.
  - Data available for use in GIS, however capacity to use data is limited.
  - Ground proofing of data is necessary to ensure accuracy.

### **Palau | PALARIS (GIS)**

- PALARIS – Palau Automated Land and Resource Information System
  - National resource for GIS data and application of such.
  - Provide training and technological assistance.
  - Information available to all Government departments.
- Software is being sought for all government departments to enable capacity to utilise systems and support already available – streamline use of GIS in departments.
- Data available for GIS is extensive, however generally outdated and in need of update.
  - Basic infrastructure information is lacking and limited resources to capture.
  - Data provided by US agencies.
  - Data received by PALARIS is to a certain standard – they will not accept “bad” data if they know it is of poor quality when they receive.
    - If they don’t know the data is of a poor quality, it is used as normal and decisions are made using incorrect information.
- Group have capacity to undertake spatial analysis, however the need at this stage is not high.
- Equipment of PALARIS is outdated and in need of upgrade

### **Palau | Environmental Quality Protection Board (‘EQPB’)**

- Environmental Protection Act prepared in 1980 with Environmental Impact Statement Regulation
- EIA process:
  - Initial scoping meeting with applicant and investor and EQPB during which checklist is undertaken – decision made whether EIS required.
  - State governments have role in reviewing EIS which means their capacity and awareness of key issues needs to be developed.
  - Timeframes for review of EA are often found to be too short to provide thorough review.
- Limited number of technical consultants in Palau – often external consultants used.

- No land use planning or zoning in Palau, and States have control over relatively small areas of land with few people – financial resources limited.
  - Umbrella organisation set-up for planning however no distinct movement forward.
  - Most land owned by customary owners which makes difficult to control development.
  - A National Development Management Plan was undertaken in 1999 which involved consultation with villages – process didn't progress.
- Community consultation is recognised as important process.
  - Public hearings are undertaken when determined to be necessary by EQPB.
  - Public hearings may not provide adequate opportunity for community to comment – those who aren't comfortable in that situation don't have other avenue to voice concerns which may be valid to decision-making process.
  - Community need more time to consider the scope of a project and assistance/capacity to provide comment on such.
  - Communities are suspicious of government after environmental assessment said to have been prepared for power plant (built in 80's) which now has very poor performance – plant was said to have benefits for everyone but these have not eventuated.
- Not many EIS conducted within country - more so small scale 'environmental assessment' which includes details of management processes to be used during construction and operation.
  - Monitoring and performance review capacity needed for developments to report on performance compared to initial expectations.
  - Compliance with monitoring and performance review requirements has been good to a degree – non compliance still exists.
  - Only four compliance officers in EQPB to assess performance of operators which is not adequate for scope of operations.
- GIS would be a useful resource – current capacity is limited.
- Enforcement:
  - Public are diligent in reporting environment non-compliances.
  - In response to environmental accidents, often police are first to scene, then fire department then EQPB – shows need for awareness of police and fire departments of environmental issues, as well as need for EQPB to be alerted earlier by these agencies.
  - Fines are applied to non-compliances. There have been many successes. Workers wages are withheld in some instances - which encourages diligence.
- Listing of consultants available for preparation of environmental assessments needed.
  - Situation occurs where one consultant is preparing a whole EIS individually and providing analysis and advice with limited time and resources to undertake thorough assessment.
  - Certification system would enable qualified and resourced consultants to prepare better quality assessments.
  - Poor quality of information provided to the EQPB means decisions are made that may not be appropriate for the reality of the situation.
- EIA processes are sometimes fast-tracked by politicians as they have a vested interest in the economic benefits of a proposal, and often see environmental assessment as a burden to the approval process.

### **Palau | Marine (Fisheries Law Compliance Officer)**

- Aquaculture is a promoted activity in Palau – tax incentives are involved.
  - A code of conduct is applicable to aquaculture operations.
  - Approval for licence is required.
    - When applying for approval, business plan and environmental assessment should be separate documents to ensure thorough information is provided, and to ensure environmental info is not influenced by the discussion on economic benefits.
- Some monitoring of aquaculture operations undertaken but not thorough – dissolved oxygen a large issue.
  - Outflow of aquaculture operations into ocean without necessarily having stringent controls on excessive nutrients and chemical release.
- Data collection of coastal fish resources occurs approximately every 5 years.
  - No data collection related to oceanic fish resources i.e. tuna
- Tuna fisheries are an established and regulated industry in Palau, existing since Japanese set-up during war.
  - Tuna management plans pursued by Department using an ecosystem approach to fisheries management.
  - Considers stakeholders, resources impacted by fishing, by-catch impacts, environmental and economic impacts.
  - Regulation of industry involves integrated waste management (solids, liquids), EQPB inspects fishing boats regularly.
- No quota on fish catch or number of fishing vessels.
  - Policies to regulate these numbers are in preparation.
- EQPB are heavily involved in Marine Board activities.
- States rely on national government for support in fisheries management.
- Process for approval of fisheries licence:
  - Various agencies consulted for advice.
  - Requirement for proponent to prove availability of funding.
  - Contingency plans required.
  - Quarantine processes apply.
- EQPB has a listing of areas in terms of quality for aquacultural purposes (Grade A, B etc).
- Greater GIS capability would assist to update data efficiently and frequently.
- Technical personnel don't have great capacity for documentation – only few years of college in Palau and limited motivation to report activities etc (although very capable in technical aspects).

### **Palau | Executive Officer, EQPB**

- Capacity of EQPB for review of assessments is limited, and requirements for preparation of assessments in regulations are limited.
  - Training required to increase capacity to review applications thoroughly.

- Consultants preparing assessments often have limited know-how, time or resources to prepare thoroughly.
  - Training required for consultants to ensure all information provided up front so as to streamline the process of application.
  - Resources are required to give to consultants a guide for preparation of EIA.
- EA is largely reactive due to no land use planning – makes environmental assessment piecemeal.
- SEA is not undertaken (due to limited land use planning) but is essential.
  - Government are assigning land for housing which is unsuitable
  - Government use excuse that land is limited, however type of housing should suit the land it's allocated – housing should be designed for the environment it is constructed within so as to maximise use of land and minimize impact.
- The lack for capacity to treat water means endeavours to prevent contamination is a key issue.
- Currently no fee for environmental assessment but looking to institute a fee – will increase revenue and therefore capacity for training etc.
- Applicants are often undertaking environmental assessment without undertaking a thorough scoping process – means pertinent environmental issues are often not adequately addressed.
- States require increased capacity for environmental assessment
  - States often asking EQPB to undertake EA
  - In absence of land use planning, States need to address aspects such as the feasibility of provision of infrastructure.

### **Palau | Bureau of Agriculture**

- Master Development Plan exists for the country.
- Forestry program addresses environmental aspects – deals with invasive species, tree planting for watershed protection, rehabilitation of degraded land/replanting with grasses etc.
- Department collaborate with EQPB and Palau Conservation Society ('PCS') on the Watershed campaign.
  - Designate buffer zones around river areas.
  - No fertilisers to be used in specific watershed areas.
- Farmers don't have equipment nor can they get funding for equipment - as farming seen as insecure. Bureau of Ag. provide equipment which utilises tilling style agriculture.
  - Methods for farming are often environmentally destructive – deep tilling used parallel with slope which encourages increased run-off and channel creation.
- Agriculture is important aspect of economy.
  - Has been burdened by devastating fruit fly therefore mainly root crops now grown.
  - Bureau of Ag. seeking to encourage more fruit generation by providing seedlings to avoid more imported food.
  - Farmers markets are utilised to sell off excess foods which is good for food security – political support for such is limited.
- EQPB regulate pesticide use, however fertiliser's used at will.



- EQPB do some water quality testing (as part of watershed initiative) however don't have capacity to test for presence of pesticides in water.
- Information on the impact from agriculture on the environment in Palau isn't available therefore aren't necessarily making informed decisions.
- Commercial farms are often run by foreigners to Palau (usually Chinese) who don't have a traditional connection with the land and therefore don't necessarily have respect for environment through their processes.
- Traditionally root crops are grown by women; however young girls aren't interested in agricultural practices in modern day.
- Bureau of Ag. doesn't have a say on location of farms – customary ownership issues.
  - Bureau of Ag. have identified need for land use planning as significant to avoid monoculture and deforestation.

### ***Palau | Bureau of Public Health – Environmental Health Specialist***

- Address health impacts from environmental issues:
  - Sewage influence.
  - Noise.
  - Traffic.
  - Asthma due to increased burning.
- Point of influence is at the operational stage when complaints are received about an operation – have little influence over planning/approval stage.
  - However now act as advice agency during project approval stage with EQPB.
- Limited number of staff with limited range of knowledge and time to undertake thorough reviews.
  - Ministry of Health have limited knowledge of technical aspects which undermines ability to tie in health impacts.
- Suggestion – nuisance-related legislation/policy should have requirement for a public health fund to be created which can be utilised to mitigate health impacts from a facilities operations.
  - Not a lot of attention is given to public health policy, and politicians are often pushing developments through approval process to achieve economic benefits.
- Community consultation processes are hugely lacking – neighbours aren't informed about a proposed project to be undertaken next door, and therefore don't have an input into its presence there or how it's operated.
  - Public hearings are undertaken – these are sometimes compromised by tight time frames which skip the public hearing stage to get development through “on time”.
  - Poor planning is creating nuisance.
- No requirement at national level for proponents to follow recommendations of EQPB, especially for government projects.
  - A lot of people are indifferent and just don't care.
  - EQPB are seeking to nominate “common resources” so as to have some control for the common good.
  - EQPB are often used a scapegoat for hold-ups etc.

### **Palau | Palau Conservation Society ('PCS')**

- Palau have fairly solid EIA process:
  - EQPB are semi-government but involve other board members from community i.e. executive director of PCS.
  - Work directly with the community.
  - EQPB are rational and fair-minded group of people and often work beyond conflict situations with activities that are of interest for the community.
  - Having a Board for environmental assessment makes decisions more robust – hard for developer/politician to influence five people.
  - Because of nature of community closeness, EPQB work well together and know each other to some degree outside of the bounds of the Board.
- Greatest gaps in EIA include:
  - Current process doesn't consider cumulative impacts – only approves on a project by project basis.
    - Problematic when considering mangrove areas are not covered by any one particular jurisdiction, and as such, is commonly frequently developed area.
    - Community benefiting actions are placed in mangrove areas (i.e. basketball courts, churches) which are hard to reject on a project by project basis but have damaging cumulative impacts.
  - Land use planning/zoning is not conducted on a state or national level.
    - PCS is involved in initiating LU planning for states – national plan to occur simultaneously.
    - These plans need to be linked to EIA process so EQPB have ability to strategically say whether a development will or will not be beneficial.
  - EQPB and environmental consultants don't have capacity to consider impact to biodiversity.
    - EQPB are legislated to only deal with earth-moving projects – any project that doesn't involve earth-moving is not subject to environmental assessment.
    - Mangroves aren't regulated and are therefore are vulnerable areas.
    - A lot of gaps are present – also lack of regulation over farming – no permits needed.
  - Challenge of the process is to find balance between allowing adequate community input to a process while also streamlining the process so as to keep important investors
    - A lot of pressure exists to approve projects quickly so as to 'keep' investor funding and grants.
- No value has been placed on subsistence economy of Palau.
  - Subsistence economy has huge benefits to community as it stops homelessness and starvation, also reducing and minimising large scale environmental impacts from commercial farming practices.
  - No value given to destruction of environmental resources and flow effect to subsistence economy – e.g. a reef that has been relied upon for centuries by a community gets damaged and debilitated by development which influences their ability to survive as they have in the past.

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- This brings in a whole new dimension to the decision making process.
    - The EQPB could ask the developer to explain how economic benefit overrides benefit to subsistence economy – developer usually says jobs for community but case usually exists that community don't want jobs because they live in a subsistence manner.
  - Most development in Palau is small-scale thereby only qualifying for 'environmental assessment' and not a thorough EIS – socio-economic impacts are only considered in EIA where EA only looks at specific environmental impacts.
  - EQPB are pushing to receive basic information regarding a proposed development's impact to current infrastructure – this information is not currently considered or required.
    - Government are now seeking developer's contribution to expansion of infrastructure.

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## APPENDIX C

### Key Vulnerabilities of Pacific Island Countries

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## Loss of Productive Agricultural Land

High population growth rates (as high as 4.2 per cent in the Marshall Islands) has increased the pressure on land and has led to an intensification of land use. The availability of agricultural land in hectares (ha) per head of population has been on the decline in most PICs. The ratio of agricultural land to agricultural population has varied widely, from 7.63 ha in Samoa to only 0.36 ha in the Solomon Islands in 1994. Customary land tenure disputes and tensions hamper access (limited availability, limited secure title, no security) to land, or affect ongoing investment. Many islands typically have limited flat coastal plains with steep land areas close to the coastline for which there is little access to appropriate technologies and knowledge for sustainable farming on steeper slopes. Stakeholders are often in conflict with neighbouring farming, infrastructure (i.e. road construction) and the encroachment of urban uses, often along the narrow coastal strips.

Inland soils are often degraded from depletion of nutrients, erosion and soil structure loss due to overuse of available land or insufficient land management practices. The cropping systems are not adapted to the new conditions of soil or land. High population growth rates and/or density, displacement of traditional land and resource management systems, introduced agricultural systems, land shortage, land tenure conflict, mining, deforestation and poor development practices have all been noted by PICs as being the principle causes of land degradation (Pacific Island Countries - Regional Synopsis on Sustainable Development, 2002).

The combined effect of the key forces and pressures summarised above is the over-use of agricultural land or the expansion of crop production into marginal lands. These areas are usually forested (sensitive biodiversity) or more susceptible to soil erosion and have lower natural fertility levels. The use of these marginal lands leads to further soil structure and fertility decline.

Many intensive agricultural programs, such as palm oil plantations have resulted in extensive land clearing, intensification of use, increased mechanical means of farming, new road networks in remote areas and heavy reliance on fertilizers.

The implications of agriculture production decline and land degradation for sustainable development and economic activity are large: food security is threatened and reliance on imported foodstuffs increases; food quality drops as do crop yields to the point of becoming non-viable; and rural labour opportunities are diminished. Where there is large scale soil fertility and structure decline, the lands are prone to invasive species. Where infestations are prominent, land is often abandoned. Abandoned lands become havens for invasive species, sources of sediment where no land management practices are implemented, or lead to additional tenure disputes – exacerbating already bad scenarios for local and community tensions. Reduced rural production capacity and opportunity in agricultural areas will also fuel urbanization.

More now than ever, farmers need to be able to identify the land that is suited to their cropping ambitions. Focus of agricultural programmes has in the past concentrated on supply and market chain enhancement, often recommending crops that are foreign to local ecological communities. Little has been done to assess the capability and suitability of land for various crops, including indigenous species.

## Degradation and Loss of Forests

Large-scale transnational corporations have extensively exploited forests in most PICs over most of the past century. Deforestation and eventual land degradation has occurred over large areas as logging roads opened up remote areas and selective extraction of species upset community ecological balances.

There continues to be external and internal pressure for forestry exploitation. Forest conversion by logging and reforestation with mono-species has occurred to the detriment of indigenous forests with cover replaced by large mainly exotic plantation estates. Some PICs have significant and valuable stands of hardwood species that are no longer available in the same volumes elsewhere in the Asia-Pacific region. The potential economic rent perceived by foreign investors from these remnants means there are huge pressures for their exploitation, despite their importance for local biodiversity, conservation, and resource management.

Forests are used for growing gardens, fuel wood collection, gathering medicinal and food plants, capturing animals for food, and sometimes textile production. Loss of forest habitat reduces the availability of medicinal plants and gathered foodstuffs and wildlife, and can have a negative impact on family nutrition, with the result that women are faced with more health care responsibilities. When deforestation causes ripple effects and land is allowed to be degraded, subsistence gardens must be moved further from villages and fuelwood must be carried longer distances. This significantly increases women's workloads and can have a negative impact on women's health and ability to meet family and community responsibilities. Additional social problems can result from large scale forestry operations as new ideals and foreign practices breakdown traditional social sanctions: increase in alcohol consumption; men gaining an income and foregoing village and farming responsibilities; alcohol fueling violence against women and children. Deforestation and forest degradation affects the moisture and nutrient regime, hydro-geologic flows, and retention capacities of whole catchments, resulting in the decline in the production capacity of neighboring land, increasing incidence of flash flooding and low flows of rivers and streams.

For some of the PICs, the remaining natural forests constitute the last refuges for many economically and culturally important plants and animals, cultural traditions and tabus, as well as provide protection from predicted adverse impacts of climate change including sea level rises.

While the Code of Conduct for Logging of Indigenous Forests in Selected South Pacific Countries was endorsed by the South Pacific Forum (now PIFS) in September 1995, and national codes have since been generated, they are still at various stages of implementation. Most, however, are not directly linked to land use planning and development decision making systems. They, therefore, are only useful once development decisions on location and intensity have been made, as a resource management tool. They have limited application as a land use planning policy to assist with location matters, intensity and performance issues, strategic and project based impact assessment and conflict resolution.

There is a need for SEA approaches to forestry and agricultural suitability analysis of rural land in most PICs. There is limited application of systems and information technology about the Pacific that delivers this type of land capability assessment. PNG has the PNGRIS, Vanuatu has VANRIS and Solomon Islands the SOLFRIS. Each have been through formidable development phases, however there continues to be application problems with each.

Assessing suitability of land for either agricultural or forestry uses, and providing policy to guide the forms of development based on the capability 'units' of the land, provides a sound base to ensure land use is sustainable. This sustainable land use should enable communities to be more resilient to natural and human induced stresses, and severe cyclical events such as drought. Providing long-term poverty mitigation in this manner can assist with economic development and conflict reduction.

## Depletion and Pollution of Fresh Water

The availability and quality of water resources is directly linked to the land use patterns and utilisation of land resources. Insufficient watershed management and logging of forests has led to uncontrolled water flow, flooding, erosion and sedimentation and degradation of land resources by affecting the hydro-geological processes of catchments. The resilience of catchments to droughts, as well as usual wet and dry seasons, is severely affected in many countries (UNEP, 2004). Additionally changes to the water system regime in some catchments continue to cause ongoing damage to urban and transport infrastructure at high costs to communities (ADB, 2004).

Generally the availability of water resources is declining, in contrast with the ever increasing water demand from rapid urbanization, new industries, changing lifestyles and more extensive reticulation. Even in PNG, the drought associated with the El Nino of 1997-98 left up to 1 million people in such short supply of water that Australia was called upon to assist with air-lifting water to remote communities. In many of the atoll countries, the balance of supply and demand is critical; however often there is a lack of technical and human resource capacity to monitor situations to plan for the future. Freshwater sources continue to be subject to contamination from effluent run-off, industrial and agricultural wastes, chemicals, sediments and nutrients from erosion and rising sea levels. In addition, population and urbanization pressures, reduced precipitation, or less natural retention in catchments have resulted in the overexploitation of groundwater and seawater intrusion, with consequent further deterioration of water quality and quantity.

Waste disposal systems (both solid and liquid) are still inadequate in most of the PICs. The problem is likely to worsen as populations increase at a rate beyond the ability of the countries to improve wastewater management (Loerzel, 1998; SPREP 1999). Higher levels of stress on freshwater resources from diffuse and point sources of pollution are expected.

In many communities where water shortages are experienced, use of polluted groundwater for drinking and cooking results in health problems such as diarrhoea and hepatitis. There are regular outbreaks of typhoid in Samoa, Kiribati, Cook Islands, Tuvalu and the Marshall Islands, with even rare occurrences of cholera. Often with poor waste disposal and inadequate water resource protection, streams and groundwater are highly susceptible to contamination and water-borne diseases.

Fast growing settlements, especially on the periphery of established towns, with inadequate water supply and sanitation are the inevitable result of rapid and uncontrolled population growth and urbanization. The scenarios place massive pressure on limited government funds to invest in utility services. Without a land use base upon which to plan utility and infrastructure services, the government is often forced to supply temporary solutions. The situation does little to assist with social cohesion in displaced communities and informal settlements (ADB, 2004).

Water supply and sanitation are the foundations of economic growth, social development, and in most cases, basic survival. If the protection and conservation of the supply and quality of water cannot be guaranteed with increasing rainfall variability expected from global climate change, water scarcity could quickly become an acute issue in PICs. Population growth, urbanisation and damage to water catchments as a result of rampant deforestation, inappropriate agricultural activities and inadequate waste disposal are all likely to have exponential impact on existing water resources, heightening the likelihood of their scarcity.

Improvements in water resource management are fundamental and the coordination required can be greatly assisted by integrated land use planning assisted with SEA approaches. Specific scientific and engineering responses can then be made to matters such as: improvements in watershed management; reductions in deforestation rates; land rehabilitation; raising of public awareness; promotion of wise water use and management; controls over agricultural activities and improvements in waste disposal, especially sewage disposal facilities.

### **Climate Change, Variability and Sea Level Rise (SLR)**

Climate change, variability and sea level rise are the most significant emerging threats to PICs (Pacific Regional Synopsis on Sustainable Development, 2002). Sea level rise is the paramount concern among many PICs (National Assessment Reports to the WSSD, 2002). For some of the low lying atoll islands such as Tuvalu, Kiribati and the Republic of the Marshall Islands sea level rise and increased frequency of extreme weather events such as cyclones, floods and droughts have already shown dramatic impacts. Most PICs are made up of coastal communities where up to 70% of islanders live in close proximity to the coastline (Jones 1998; Jones and others 1999). It is clear that they will be among the first to suffer the impacts of climate change and be forced to adapt, abandon or relocate from lower atolls and low island coastal plateaus.

The broader anticipated consequences of climate change are yet to be fully appreciated by many in government: disruption to agriculture due to changes in temperature, rainfall and winds; the reduced resilience of forests subject to greater pressures from changes to chemical, moisture and prevailing element regimes; and the greater degree of exposure of coastal areas from loss of vegetation and coral reefs. Although much reporting work has been done in the region, there have been overwhelming constraints to implementation of mitigation and adaptation measures:

- high vulnerability due to low elevations;
- concentration of population in the coastal zone;
- 70% of infrastructure in coastal areas;
- poorly developed planning systems;
- lack of data;
- poor environmental practices;
- lack of awareness amongst all stakeholders at the national level;
- lack of adequate practical and cost effective adaptation measures;
- lack of practical vulnerability assessments; and
- a lack of financial resources to address the problems through long-term programmes (short term project focus).

There are serious threats from climate change which will manifest as stresses on already declining environmental resources: increased natural disasters; coral bleaching; coastal erosion; extreme weather events (storms, droughts, cyclones); disruption of agricultural activities; decreasing resilience of forests; possible salt water intrusion of ground water systems; affects on crops and fisheries; affects on and control of vector borne diseases. Having these threats combine will see irreversible effects on the small economies, fragile environments and social systems.



Adaptation measures implemented through integrated land use planning may assist in increasing the resilience of communities by: ensuring human and physical development does not heighten threats; by ensuring development does not impact on reefs and stable coastal environments which assist resilience; ensuring that settlement does not occur in high risk areas; as well as providing the base for informed assessments of catchment implications in matters such as flooding and land use capability that may be affected by changes to climate regimes.

## **Depletion of Coastal Resources**

Coastal fisheries are an important resource for local communities' food source, representing most PICs primary source of protein. They are also important for customary and lifestyle pursuits. Coastal fisheries underpin local subsistence employment for many coastal communities, as well as more formal employment in many countries where there are established fish markets.

Over-fishing and the intensification of human activities along the coasts as a result of significant population growth or urbanization pose the most significant threats to coastal fisheries. Eighty percent (80%) of all coastal waters pollution is from terrestrial sources (Global Programme of Action [GPA] website). Particular terrestrial based threats are: habitat change, pollution and garbage, pollution of reefs and lagoons from logging and mining through poor catchment and drainage management. The impacts of poor terrestrial development are: declining fishery productivity from destruction of habitat; damage from shoreline development; uncontrolled sand mining; lagoon pollution; introduction of invasive species; and community health issues from polluted coastal waters or poisoned fish consumption. Poor coastal ecosystems including damage to fringe reefs increases the likelihood for more extensive risk and damage from global climate change.

Increasing urbanisation, dredging, and land reclamation have caused degradation, erosion and sedimentation of coastlines and reefs; sewage discharge has reduced water quality; reef fish are overexploited; rubbish is dumped along the foreshore and nesting sea turtles have been eliminated from areas (Bryant, 1998; SPREP, 1996). Continuing high levels of population growth, density and economic development in coastal areas are expected to place mounting pressure on wetlands and mangroves, generate land based sources of pollution and increase subsistence and cash demand for living marine resources.

Initiatives to stem the degradation of in-shore fisheries need to target terrestrial development and land use planning, as it is often the discordant development from massive population pressures that are driving degradation.

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## **Environmental Change and Infectious Diseases**

The environmental degradation of soils, forests, freshwater and coasts can alter the prevalence of infectious disease and illnesses. Outbreaks of typhoid, dengue fever and odd occurrences of cholera are all facilitated by poor sanitary conditions. Where there are serious pollution problems with urban drainage, open drainage ways and poor infrastructure services, unfavourable sanitary conditions often prevail in family life. Outbreaks of typhoid are becoming more prominent in some PICs, and may be a reflection of rapidly expanding urban areas where governments are unable to provide essential infrastructure services. Ciguatera fish poisoning cases are becoming more prevalent with evidence that land based pollution sources are the cause. With continued threats to ecological systems often associated with population movements and displacement, major new epidemics can be expected. Changing habitat conditions where there is poor drainage can alter vector distributions. Climate change may cause massive land use change, and create suitable harbours for more vectors and pathogens. Where ecosystems are degraded and squalid conditions prevail, increased incidences of illnesses and infectious diseases will diminish a community's ability to cope with socio-economic and physical stresses.

The use of SEA to identify suitable areas for urban extension is needed, as is follow up land use planning to ensure timely and coordinated development to suit the efficient extension of utility and infrastructure services.

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## APPENDIX D

### Cross-cutting Issues and Pressures

## Population Dynamics

Many communities have been caught in the dilemma of striving for improved standards of living, while maintaining cultural integrity. However the rapid rate of westernization, urbanization and population growth, places extraordinary stress on natural, economic and human resources, including water resources and sanitation services. The total population of PICs is about 8.6 million (UNEP, 2005), which represents an increase of some 1.9 million people since 1994. Urban populations make up 50 - 70% of the total population (10 of the 21 PICs), and many countries and territories are now among the most densely populated places in the world. South Tarawa, for instance in Kiribati with 2,330 persons per square kilometer, is amongst the most densely populated places in the world. Urban population growth continues to outpace rural growth in most PICs.

Many countries report to UN Conventions and Agreements of the problems generated with urbanization in the form of the movement of people from outer islands to the capital islands. The problems are multifarious: consumption pressures on limited resources; tensions over access to land; and an increasing dependency ratio on the originating outer islands as the younger work age leave for better opportunities. In Tuvalu the frustrations from stresses caused by over-population expand to include tensions over forms of development, the use of limited sand resources by some and not others, or fights over use of family paluka pits (root crop pits scattered about the urban areas).

Population dynamics and urbanization along with other socio-economic pressures from globalization have combined to see many communities move from a predominantly subsistence lifestyle towards a consumer society. This transition has been rapid for some communities and has not been without adverse impacts, including land degradation, loss of biodiversity, loss and degradation of marine and forest resources, plus an increase in problems associated with environmental health and a sudden confrontation with the realities of waste and toxic/hazardous substances management. There have also been tensions within families and communities between those that have adopted a western style of investment, development and consumption - to those that want to maintain customary methods, practices and values. This in some instances has progressed to where there is outright conflict within families over land, involving absentee 'multiple' owners wishing use for certain purposes against the wishes of the remaining family members who follow more customary ways.

Integrated planning systems will need to take a community development focus if they are to tackle the dilemma between accommodating western style investment and security options, and protecting customary ways and aspirations.

## Land Tenure and Resource Access

The customary communities of the Pacific have unique inheritance and limited re-distribution mechanisms - with land and resources managed through village and family units. In customary societies individualism results in rising land and resource conflict as it is inconsistent with community mechanisms where communal sharing, reciprocity and community well-being are paramount. Many PICs have Constitutional provisions that restrict the alienation of land and resources. Once land and marine resources are in conflict, fragmentation occurs either as a result of families being reluctant to get involved in individual allocation or as a result of adjudication that divides the land asset amongst all those that have demonstrated rights. In most of the communities there are little or no mechanisms to re-consolidate land once it is fragmented. Therefore the ability to use land resources for subsistent agriculture, cash cropping or other economic activities is negated as security and certainty of tenure is questionable, or the small fragmented parcels are not sufficient for adequate returns on investment.

The scenario has dramatic implications for land and biodiversity degradation. To avoid conflict families either reduce the shifting nature of land use, shortening fallow periods and placing a heavier reliance on the use of fertilisers – leading to forms of land degradation. Alternatively as mentioned earlier the families shift their efforts to family land which is not subject to individual allocation. This is often primary forested areas, steep land or marginal areas. The result is increased clearance of forests rich in biodiversity or ecological value. Remnant primary forest areas usually contain the poorer soils and with deforestation there is potential for accelerated soil erosion. Agricultural use of marginal lands for farming can also result in soil structure decline. Forest conversion can adversely affect biodiversity, the residual vegetation, the local micro-climate, local water quality, crop yield and the soil fertility of these areas.

Under many PICs Constitutions and/or Land Laws, through protection of customary ways, communities enjoy near absolute resource rights. The implications are that many Australasian, European and US derived environmental assessment laws have limited opportunity for successful implementation. Of similar importance is the need for integrated land use planning systems that are conducive to customary tenure systems.

UK Westminster style ‘zoning’ systems or US led ‘nuisance law’ based systems have limited scope for implementation again because they are often in direct conflict with customary governance systems. There have however been some useful advances of planning systems in countries such as Samoa and Niue. The Planning and Urban Management Act (and Authority) in Samoa would be the most advanced, however this system was based on many years of community consultation and choices. Many facets of the base law are yet to be implemented, so it’s true value in assisting with the dilemma’s of western investment and security ideals versus the protection of customary ways – are yet to be seen. Interestingly the component of law that is yet to be activated is that which enables the use of SEA approaches for strategic land use planning.

### **Resource Use and Management – Merging Customary and Western Ideals**

The implementation of many programmes and projects in the Pacific generate or ignite underlying family or community tensions over land or its resources. Russell Nari (2007) comments that many Pacific communities are in a ‘state of insecurity’ probably formed over time when customary cultures came more in contact with western ideals. One became the dominant culture in terms of economic rationalization and development (systems of individualism and commodities). The other, remained the dominant player in maintaining tradition village systems (communal and reciprocative ideals). The result is a continuing distrust of ‘foreign’ ideas. Many projects do not understand this predicament and do not invest in the communication time necessary to allay these feelings of distrust. Lane (2005) intimates that this lack of respect for the others’ values and aspirations, can exacerbate distrust in governments by communities.

Land, conservation and use of land are inextricably linked in most PICs. Use and conservation of natural resources as a means to maintain lifestyles and livelihoods is not a new concept in the Pacific. It has been an integral part of traditional resource management practices and approaches. While there may be unique practices about the Pacific the fundamental symbolic principles and values of the traditional practices and approaches are generally the same. Most of these traditional management practices and approaches were geared to stable populations and given the scope of pressures in resource systems – were short-term in nature.

However over the last three decades the pressures on natural systems from population growth and dynamics, natural and human induced hazards and changes in land use practices are beyond the coping capacity of the traditional communities. They no longer have the means to limit degradation and over-consumption. It has become necessary to introduce alternatives that merge both western and traditional methods and approaches – to contend with the pressures faced by communities and governments.

## **Urbanisation – Unsustainable Consumption and Production**

All PICs have identified population pressures as the chief driver to environmental over-exploitation and degradation (National Assessment Reports [NARs] for WSSD, 2002; UNCCD Country Reports, 2002). Many of the problems are a mix of historical circumstance and contemporary population dynamics, as described above. The impacts have been particularly dramatic where high population densities coincide with intense economic activity, such as in coastal areas in very discordant fashion.

Poverty is an emerging issue in a number of the PICs. Urbanization and the shift to a monetary economy are part of the problem as inequities prevail, particularly in the resource poor parts of countries. Rapid population growths and in-country migration has exacerbated urbanization and coastal developments to the point where national governments and local authorities cannot keep up with demands for basic services. The result is diminished human quality of life, rising incidence of disease, disruption and conflict, as well as degradation and over-exploitation of the natural resource base (UNEP, 2004).

Urbanization is fed by declining markets for agricultural commodities, the declining utility of agricultural lands due for fragmentation and conflict, the visibility of new investments in urban areas, and the perception that towns provide better conduits for socio-economic, cultural and political innovation and change. Those who migrate to the centres however soon face different realities. There they find poor job prospects, rising unemployment particularly among young people; high drop-out rates from primary schools; low household cash incomes; and a growing incidence of substance abuse and crime (SPC, 1998).

There are certain spill-over drivers that have limited PICs capacity to adapt to or address new pressures:

- Historic settlement and investment patterns: based on resource exploitation: has meant that many 'foreign' developed centers were sited for the winning of materials for export rather than for sound settlement through good land use planning; and
- Colonial relic laws: upon Independence many PICs inherited a raft of colonial laws often written in foreign countries as packages of law to be implemented in multiple countries. Many focused on western development ideals, and there was little integration with traditional systems. Discordant development patterns have resulted, many of which cannot be dealt with retrospectively.

Improving integrated assessment and planning capacity may not be the panacea for addressing all pressures that culminate and cause urbanization and over-consumption. However planning processes do provide systems and mechanisms to work with communities to solve conflicts over competing uses. They can also provide a means to address historic settlement and development problems, by introducing SEA approaches to plan for better future development form. Where discordant development has prevailed poor servicing often is the result. By introducing a means to determine a certain future use of areas servicing agencies are able to plan efficient extension of services.

## Governance and Institutional Development

Many Pacific communities while not living in absolute poverty, suffer from 'poverty of opportunity' (High Level Ministers Meeting, Suva, Fiji, 2002). Governance links between local/traditional villages, Province and Outer islands, and the State – in many instances are very weak. There is significant breakdown in communication between these levels of government, which leads to confusion and lack of trust with State authority. Where State sponsored or supported resource extraction is witnessed by village communities, with unknown intent, limited knowledge on how this helps society and little visible flow-on benefit to that community – confusion and distrust prevails. These tensions are heightened when there are direct and indirect impacts of resource use on local ecosystems or subsistence activities experienced by locals.

There continues to be a divide between economic planning and state level policy development on the one hand, and local level environmental and physical planning and policy implementation on the other. This has continued to foster competing biases in professional input and focus of action at the national level. At the national level there remains at least two distinct camps: the environmentalists and the economic rationalists. Cooperation and collaboration is often administrative e.g. agreements on indicators that could be used for policies. This division transfers to regional and local governance which sometimes entrenches sector based approaches. The situation may also be a reflection of the heavy influence of western partners in national based governance ideals and models.

Attempts to reduce this divide have been made however there are a lack of delivery mechanisms for cooperative approaches to cascade from national and sub-national levels. Opportunities to tie environmental and socio-economic measurement, monitoring and assessment present one opportunity. Physical or land use planning systems tailored at the local level of governance can also provide a conduit for communication and improvement of administrative links between levels of government.

Adequate ***Institutional arrangements*** are required at the national and sub-national levels to support approaches to determine rights and access to natural resources, such as land, water, trees, and wildlife. 'Systems' based capacity development should be a prerequisite to initiatives targeting rural resource use planning, land management reconciliation, agricultural development and food security. Many countries specifically require advice on such institutional arrangements - choices and options suited to their particular circumstances. Advice on systems for equitable property rights distribution and re-distribution, on equitable access by gender, on means to reconcile competing demands for natural resources, on land use planning approaches, on functioning land markets and land administration, and means for securing tenure and certainty for investment. They are all priority areas that need to be pursued for the good governance of land and natural resources.

The processes of community based resolution of land use and tenure issues involve complex communications and several elements need to be in harmony. They are consistent with a systems based approach:

- open access to information to ensure transparency;
- backing of appropriate institutional and legal mechanisms;
- adequate means of communication between parties both in communities and in government;
- the existence of trust among conflicting parties and those assisting;
- the identification and agreement of underlying needs and conflicts; and
- consideration of issues by parties from the broader to the local perspectives.

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## APPENDIX E

# Explaining Strategic Environmental Assessments (SEAs)



## EIA and Strategic Environmental Assessment ('SEA')?

EIA is a planning tool and as such, is generally only workable when operated in the context of a planning system. Largely, many PICs do not have adequate land or resource-use planning systems upon which to proceed with more positive forward EIA approaches and interventions that would facilitate 'opportunities' for development. Without the foundations of a planning system, positives of environmental assessment processes are not easily conveyed. Application of EIA principles to area-wide, multiple-use and resource-use policy choices is a means to demonstrate the positives of environmental assessment, commonly referred to as Strategic Environmental Assessment (SEA). SEA has many redeeming features suited to customary and subsistence cultures of the Pacific Islands in that it:

- allows early participation of the community;
- can be easily adapted to include traditional management and use regimes;
- enables local ownership of the process and outcomes;
- allows early intervention mechanisms (eg guidelines for development, criteria and standards); and,
- can integrate the strategic outputs from many other initiatives (e.g. climate change, NBSAPs, waste, reefs and coastal management initiatives).

In environmental assessment work it is important to note the difference between EIA and SEA approaches. Invariably EIA are project based, where the development activity and site are known, and the likely impacts assessed and mitigation options are presented. The ability to influence the 'allocation and distribution' of the activity through a project based EIA process is virtually nonexistent. The 'location' of an activity or development is known to be the single most significant causal determinant of impacts.

However, SEA approaches (which are usually introduced earlier in the development process) are able to include the consideration and affect of the location of development. Often the end-use is yet to be determined – therefore there are less pressures for specific locations. Land capability and suitability type assessments can be objectively completed. In this regard SEA approaches are powerful for not only minimising the impacts of an activity/development but to also in providing strategic information for both investors and the local community regarding environmental constraints and future potential uses. This is a better basis for sustainable development decision-making.

One of the other benefits of targeting SEA development is that the approaches and methods are 'passively' orientated in their execution – that is they can be introduced without heavy handed legislative or institutional development. SEA can be gradually introduced for those countries with a mix of development and environmental laws, competing policies and poor institutions - without major 'shocks' to the present modus operandi. It also relies heavily on participatory and community approaches which are characteristics of customary governance in most PICs.

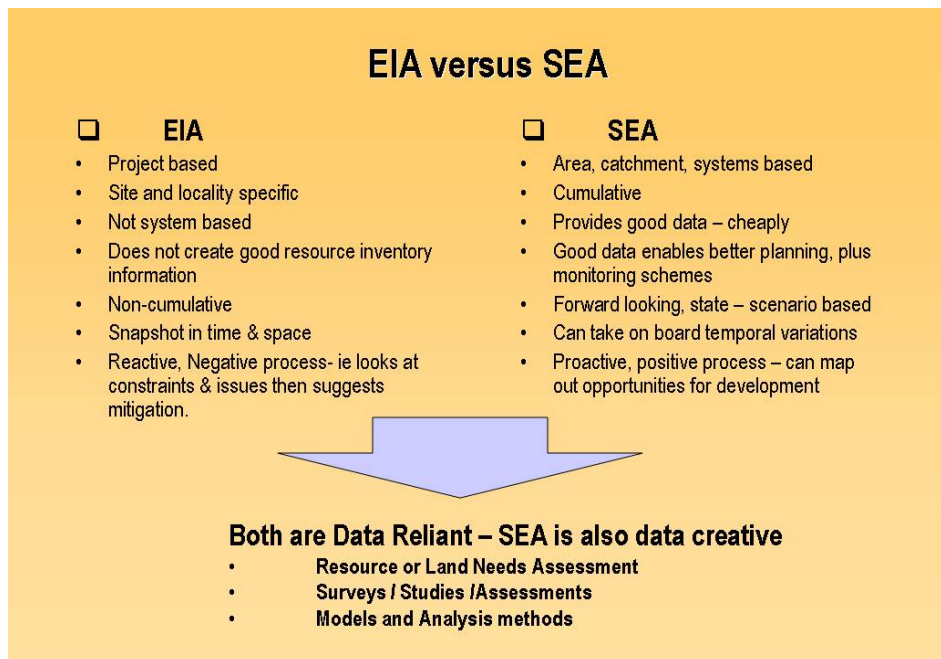
Rather than the replacement of EIA with SEA, both approaches should be used in unison, acknowledging the role of EIA in providing an 'end of pipe' checks and balance audit on development decision-making. Environmental planning systems can provide the foundation for links between SEA and EIA. Where communities spend effort on SEA approaches which 'map' out constraints and (importantly) outline opportunities, the level of detail of subsequent EIA (which come at a high cost) can be reduced. The SEA work may highlight specific issues that need further attention and the subsequent EIA 'terms of reference' (TORs) can be developed to target such detailed assessment, rather than simply duplicate prior work.

Internationally SEA is gaining acceptance as a multidimensional planning tool with different interpretative perceptions; used both for the purposes of policy analysis as well as strategic analysis. Contemporary environmental and land use planning approaches are now recognised as knowledge systems that can be instrumental in avoiding conflict over land, resource-use and the distribution of benefits. The application of these planning systems includes use of SEA as an analytical tool for an activity/development; providing findings and clear outcomes for application. SEA is also used strategically for land use planning; applied on a wider-scale whole system analysis.

Application of EIA principles to area-wide, multiple-use and resource-use policy choices is a means to demonstrate the positives of environmental assessment. Application of SEA in this regard is commonly utilized in the context of determining the sustainability of an activity/industry. For example, an SEA prepared in 2003 in regards to Fiji's tourism development plan<sup>4</sup> sought to understand the likely environmental and social implications of the plan. Environmental, social, and economic baselines and likely trends of the Tourism Development Plan were compared with sustainability objectives to assess its 'sustainability'.

Alternatively, SEA can be used as in a strategic capacity by which land capability and suitability type assessments can be objectively completed. In this regard SEA approaches are powerful for not only minimising the impacts of an activity/development but to also in providing strategic information for both investors and the local community regarding environmental constraints and future potential uses. This is a better basis for sustainable development decision-making. SEA also encompasses approaches and methods that are 'passively' orientated in their execution – that is they can be introduced without heavy handed legislative or institutional development.

**Figure 1** below simply depicts some of the differences between EIA and SEA.



**Figure 1**

<sup>4</sup> Levett, R., McNally, R. (2003) *A Strategic Environmental Assessment of Fiji's Tourism Development Plan*. World Wide Fund for Nature – South Pacific Programme and Asian Development Bank.