

Environmental Impact Assessments

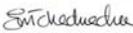
A consultants perspective

Helen Sykes

Marine Ecology Consulting Fiji

www.marineecologyfiji.com

Registered EIA Consultant
Conducting assessments
since 2005

 Certificate of Registration as Environment Impact Assessment Consultant	
This is to certify that Ms. Helen R Sykes renewed registration on 20th September, 2013 with the Department of Environment, Fiji, as an	
Environment Impact Assessment (EIA) Consultant in the following category:	
Subject Specialist (Marine Flora and Fauna, Corals, Marine Protected Area, Sustainable Tourism Uses of the Reef Environment)	
for a period of three years, subject to the EIA Consultants Code of Practice.	
Issued by the Department of Environment, Fiji, on 26th September, 2013.	
	
Mrs. Eleni Tokadua Acting Director Department of Environment Ministry of Local Government, Urban Development, Housing and Environment	
Important Notice: It is a Department of Environment policy that registrants must notify their registrar of any changes to their contact details or other registration information. Failure to do so may result in revocation of the registration.	
Your registrar of record is:	Department of Environment, Fiji efia@sykes.com P O Box 2109, Government Buildings, Suva (679) 331 1099 (679) 331 2789
	

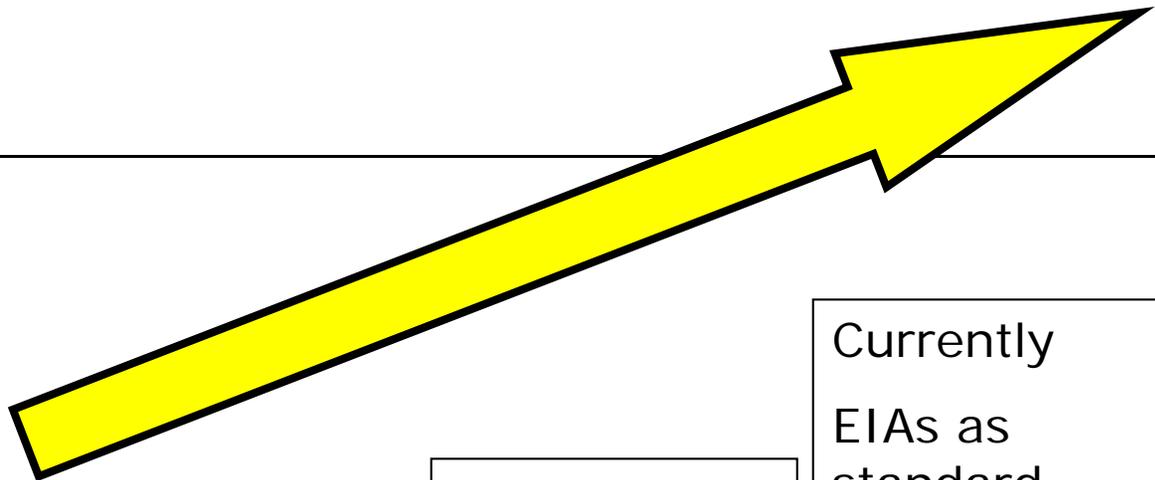


Scientific Advisor to Waitabu Marine Park in Taveuni since 1998,
FLMMA Executive Committee member since formation in 2001

A member since
formation



EIA process is still a journey, but one that is heading in the right direction



S
e EIAs,
not

2004
Environmental
Management
Bill, but no
regulations so
not enforced

2008
EMA
regulations in
place but
little
enforcement
capacity

Currently
EIAs as
standard,
some
continuing
monitoring,
but
government
still
undercapacity

Future
Better
monitoring
and capacity
to enforce
regulations
Better
POSITIVE
community
involvement

Lost in acronyms???



EIA

Environmental Impact Assessment

CEMP Construction Environmental
Management Plan

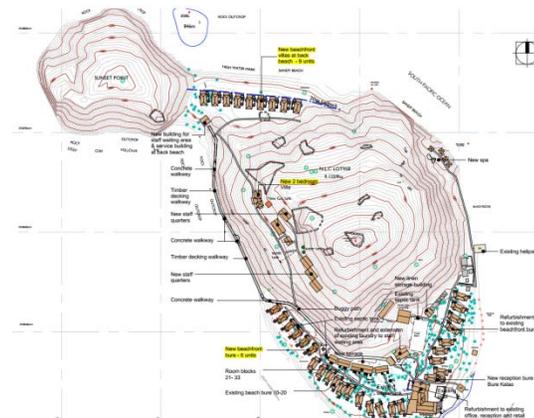
OEMP Operational Environmental
Management Plan

EIA: Environmental Impact Assessment

Inspection of existing natural and social environment, and of development plans.

Assessment of how the development could affect the environment.

Recommendations to ensure developer reduces those impacts or improves other aspects of the environment.



CEMP: Construction Environment Management Plan

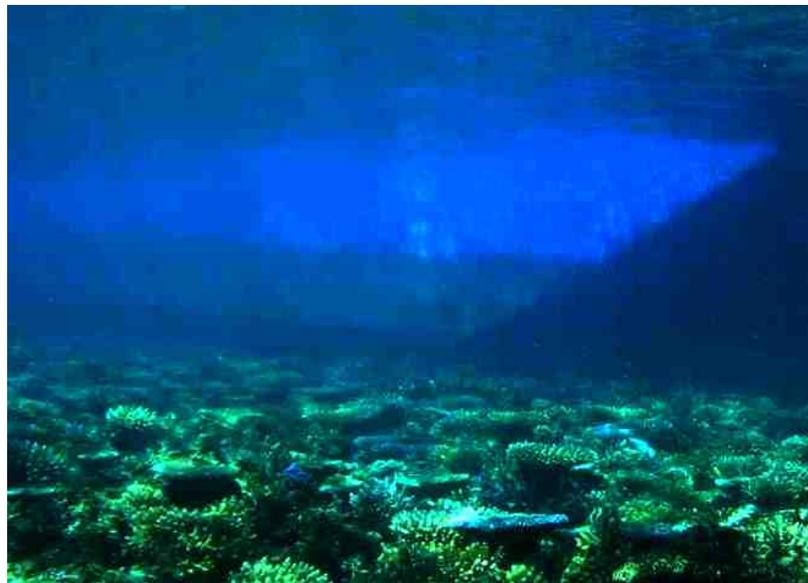
Plan based on the potential impacts of construction phase activities identified in the EIA that details how developers will avoid causing environmental damage, e.g., putting in barriers to avoid sedimentation caused by digging near the reef.

May involve regular environmental monitoring during construction



OEMP: Operational Environment Management Plan

Plan based on the potential impacts of operating the resort/hotel identified in the EIA that details how developers will avoid causing environmental damage, e.g., ensuring deliveries by barge only come in at high tide so as not to destroy reef flat corals. May involve further EIA studies in the future.



Who approves a development plan?

A development plan may be approved by different authorities.

Tourism developments are usually approved by Town and City Council or the rural local authority depending on location.

Which agencies are approving authorities?

An **approving authority** is any public authority or person authorised under a written law to approve a development proposal.

Examples of approving authorities include:

- town and city councils
- rural local authorities
- Department of Lands
- Department of Forests
- Department of Mineral Resources
- Native Land Trust Board.

Town councils, city councils and rural local authorities are authorised to grant planning permission for development within a town planning area under the *Town Planning Act*.

Who carries out EIA, CEMP or OEMP?

An EIA is an INDEPENDENT scientific study. Only consultants and companies registered with the Department of Environment (DoE) can carry out EIA, CEMP, OEMP. The developer can select anyone from the DoE's list, and pays for the study.

“Team Leader”

“Technical Expert”

SECTION F SCOPE OF CERTIFICATION

The development field(s) selected must correspond with work experience included in this application form.

This information is included in the EIA Consultants Register to assist Clients in selecting EIA Consultants with appropriate development experience. For each category (i.e. TL or TE) please select a minimum of 1 and a maximum of 5 boxes ONLY.

Team Leader (TL)		Technical Expert (TE)	
	Agriculture		Hydrology
	Forestry		Geotechnical
	Fishery		Coastal Processes
	Infrastructure (roads, airport etc)	✓	Marine flora and fauna
	Water Supply/ Sewerage		Terrestrial flora and fauna
	Power & Gas		Fisheries and Aquaculture
	Waste disposal and treatment	✓	Coralis
	Resort & Foreshore Development		Forests
	Water Bottling Processing		Pollution and Waste Management
	Mining		Water and wastewater
	Industry (poultry, cement, fertilizer)		Drainage and Irrigation
	Others		Watershed management
			Energy
			Infrastructure/ Planning
		✓	Others*
		✓	Marine protected areas
		✓	Sustainable Tourism uses of the reef environment

5.0 REGISTRATION CRITERIA AND REQUIREMENTS

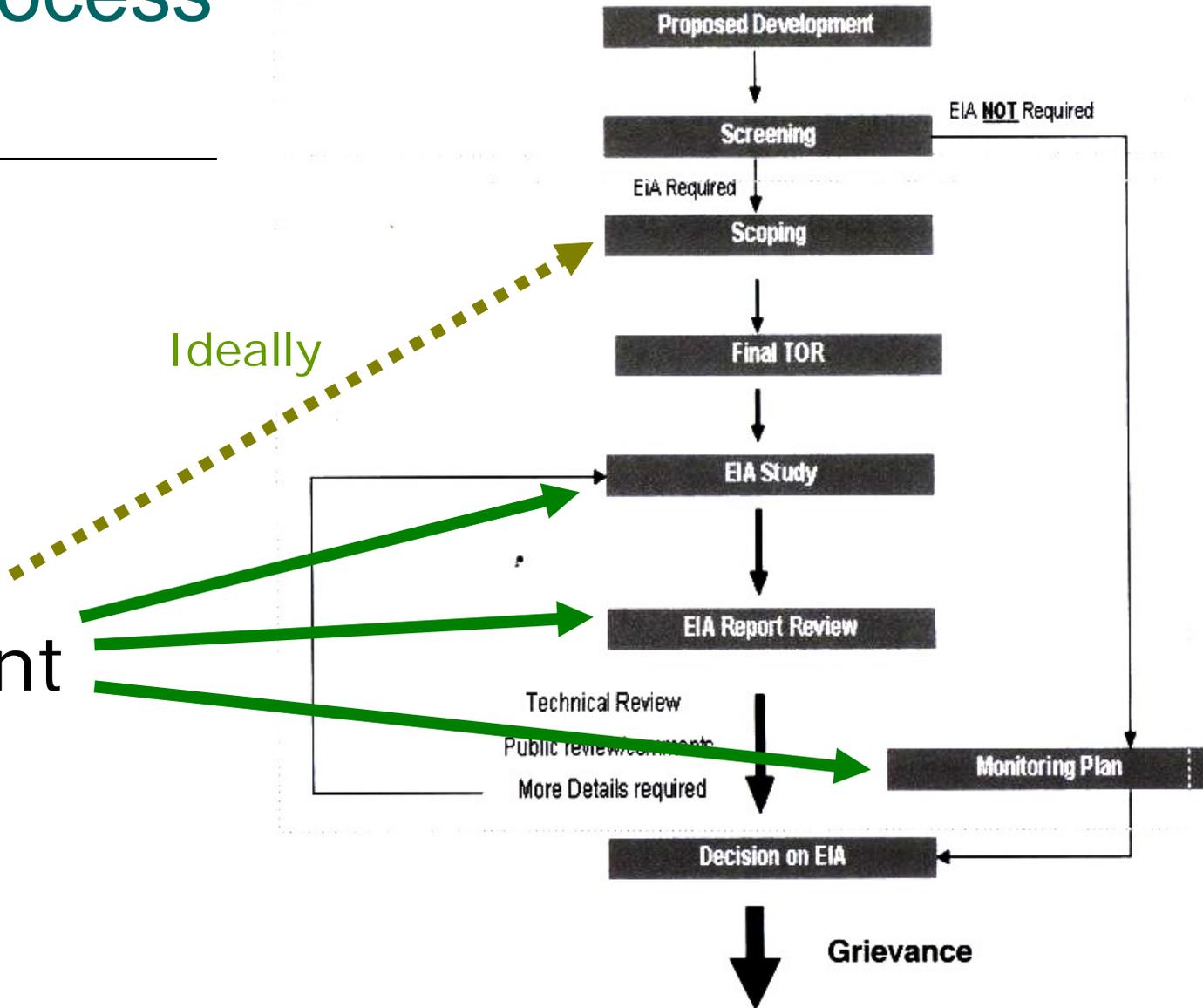
Table A: Registration criteria for EIA Team Leader, Subject Specialist and Assistant Consultant

CRITERIA	EIA Team Leader	SUBJECT SPECIALIST	ASSISTANT CONSULTANT
Academic qualification	<p>Degree in sciences, technology or engineering.</p> <p>Applicants with other non-technical or sciences degree may only work within their academic specialization.</p> <p>PhD with minimum 3 years of working Experience in the selected field.</p>	<p>Degree with minimum 7 years of working experience in the selected field or Masters degree with minimum 5 years of working experience in the selected field</p>	<p>Degree in sciences, technology or engineering. Applicants with other non-technical or science degree may only work within their academic specialization or Diploma in sciences, technology or engineering.</p>
General environmental management experience	Minimum 7 years	Not required	Minimum 1 year
EIA related experience	Minimum 5 years	Not required	Not required
Minimum number of EIA reports approved	5 reports	Not required	Not required
Core competencies	<p>(i) Attendance of formal EIA training (evidence to be supplied)</p> <p>(ii) Sufficient understanding of EIA processes (e.g. : scoping, screening, impact assessment, mitigating measures, monitoring, report writing, preparation of EMP, project management skills</p> <p>(iii) Sufficient understanding of environmental & planning regulations in Fiji</p> <p>Evidence on the expertise (core competencies) in the form of</p>	<p>Must be highly competent in the selected field (evidence to be supplied).</p> <p>Subject specialist must be able to perform detailed study and detailed assessment which may include</p>	<p>(i) Attendance of formal EIA training (evidence to be supplied)</p> <p>(ii) Basic understanding of EIA processes (e.g. : scoping, screening, impact assessment, mitigating measures, monitoring, report writing, preparation of EMP, project management skills</p> <p>(ii) Basic understanding of environmental & planning regulations in</p>

EIA process

Fiji's EIA Process

A
consultant



Sections of an EIA

I. EXECUTIVE SUMMARY

II. INTRODUCTION

III. PROJECT DESCRIPTION

1.0 DESCRIPTION OF THE EXISTING OPERATION SITE

1.1 Physical Environment

1.2 Biological Environment

1.3 Socio-cultural Environment

2.0 POTENTIAL SIGNIFICANT ENVIRONMENTAL IMPACTS

2.1 Design and engineering

2.2 Construction

2.3 Operation and Maintenance

2.4 Ecological impacts

2.5 Vulnerability of the project to natural disasters

3.0 SOCIAL STUDY

4.0 MITIGATION AND ABATEMENT MEASURES

5.0 SUMMARY & CONCLUSION

6.0 ENVIRONMENT MANAGEMENT/MONITORING PLAN (EMP)

7.0 REFERENCES

Main components of EIA studies:

- Marine Resource Assessment (if coastal)
- Coastal stability of design (if coastal)
- Terrestrial flora and fauna baseline
- Archaeological site identification
- Community consultations / social impacts
- History of cyclones and earthquakes in region
- Details of waste management

TOR set for each project from a standard list in the EIA guidelines

in the existing environment (including current land use),

1.2 Biological Environment

- Present baseline inventories of both terrestrial and marine fauna and flora with emphasis on *endemic, rare or endangered species of conservation significance*. Also comment on the presence of any indigenous trees which may have significant ecological, cultural or medicinal value.
- A baseline survey focusing on *current condition of corals shall be carried out*. Also, include the presence of *algal seaweed, if any* (their significance and possible causes) on the reef.
- Present information on any mangroves that occur on or around the site and how they will be affected by any aspect of the development (if at all)
- Locate sensitive habitats and significant natural sites

Consultant decides what surveys fit the TOR – Example of Marine Ecology Ltd

- Map of coastal shallow reef /mangrove area
- Broad scale habitat description
- Detailed surveys of areas of special interest or likely impacts
- (Coral surveys, Fish Counts, etc)
- Water quality testing

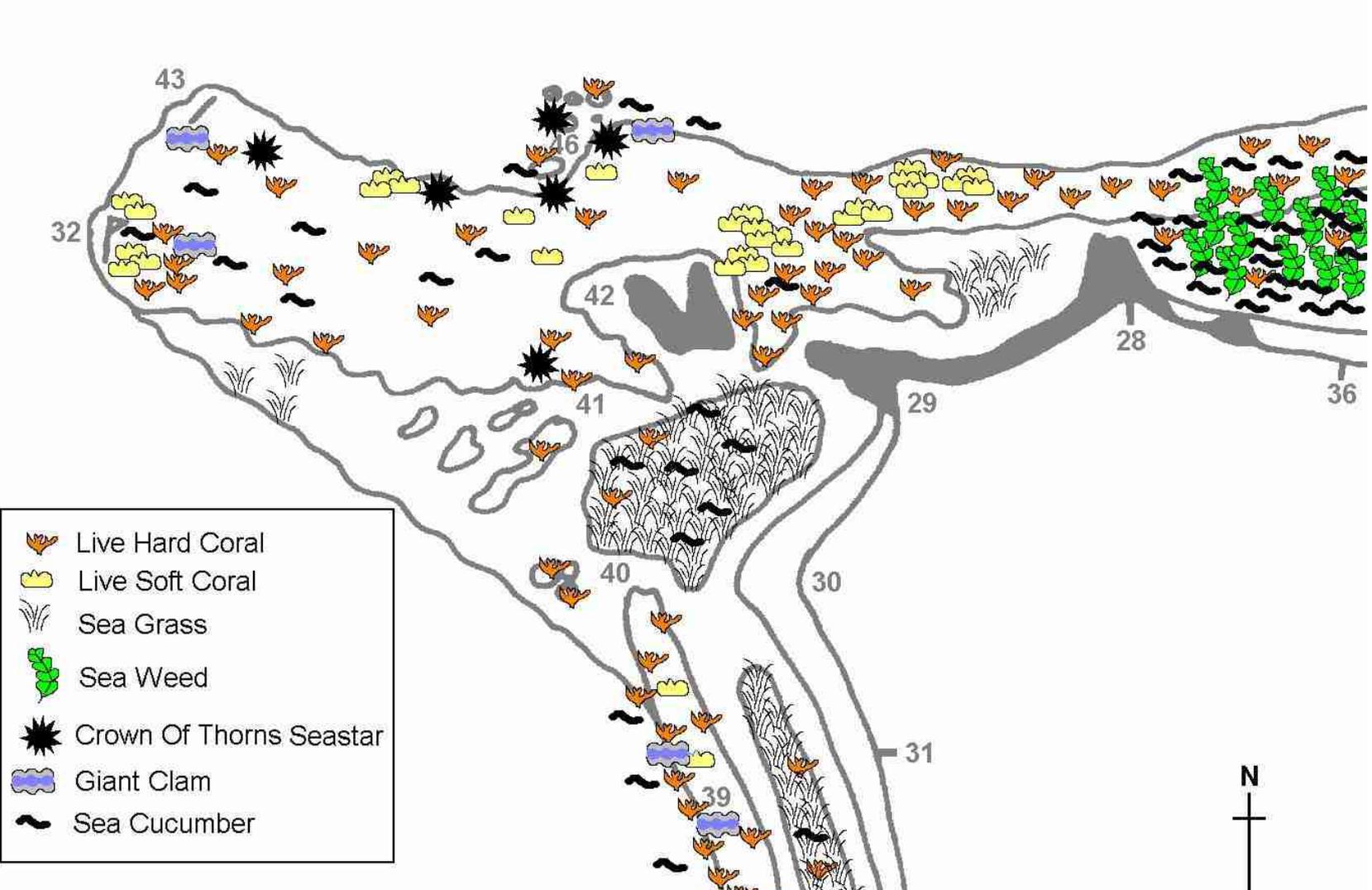
Pre-development Baseline against which
future impacts could be measured

Advice to developers to redesign if necessary

Start with Aerial Photograph or Google Earth Image

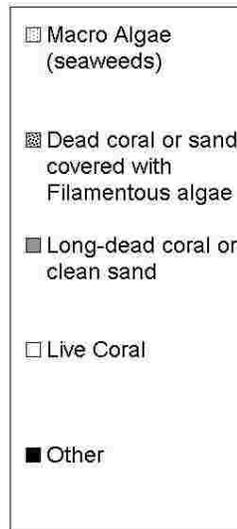
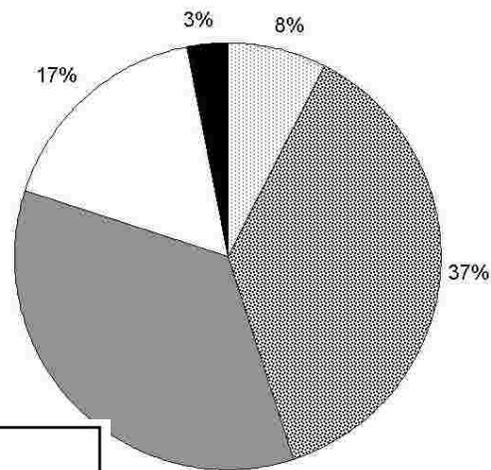


Habitat and marine life map

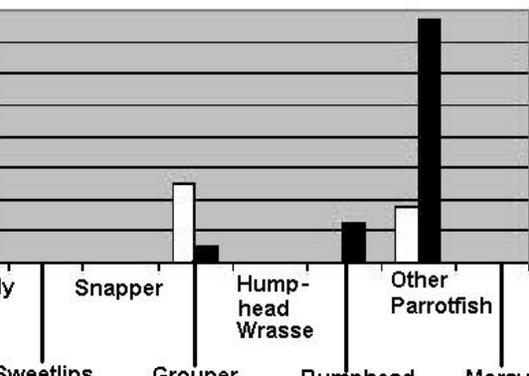


Detailed surveys of marine life

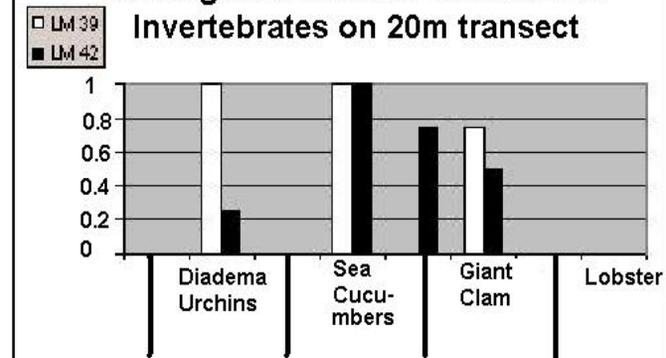
Benthic Cover around LM 46



Average Numbers Reef Check Fish on 20m transect



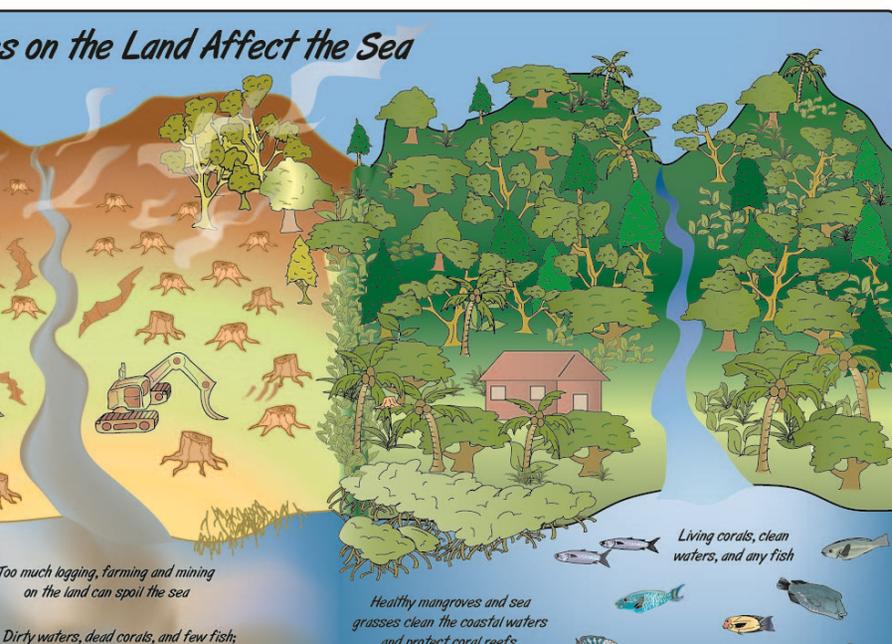
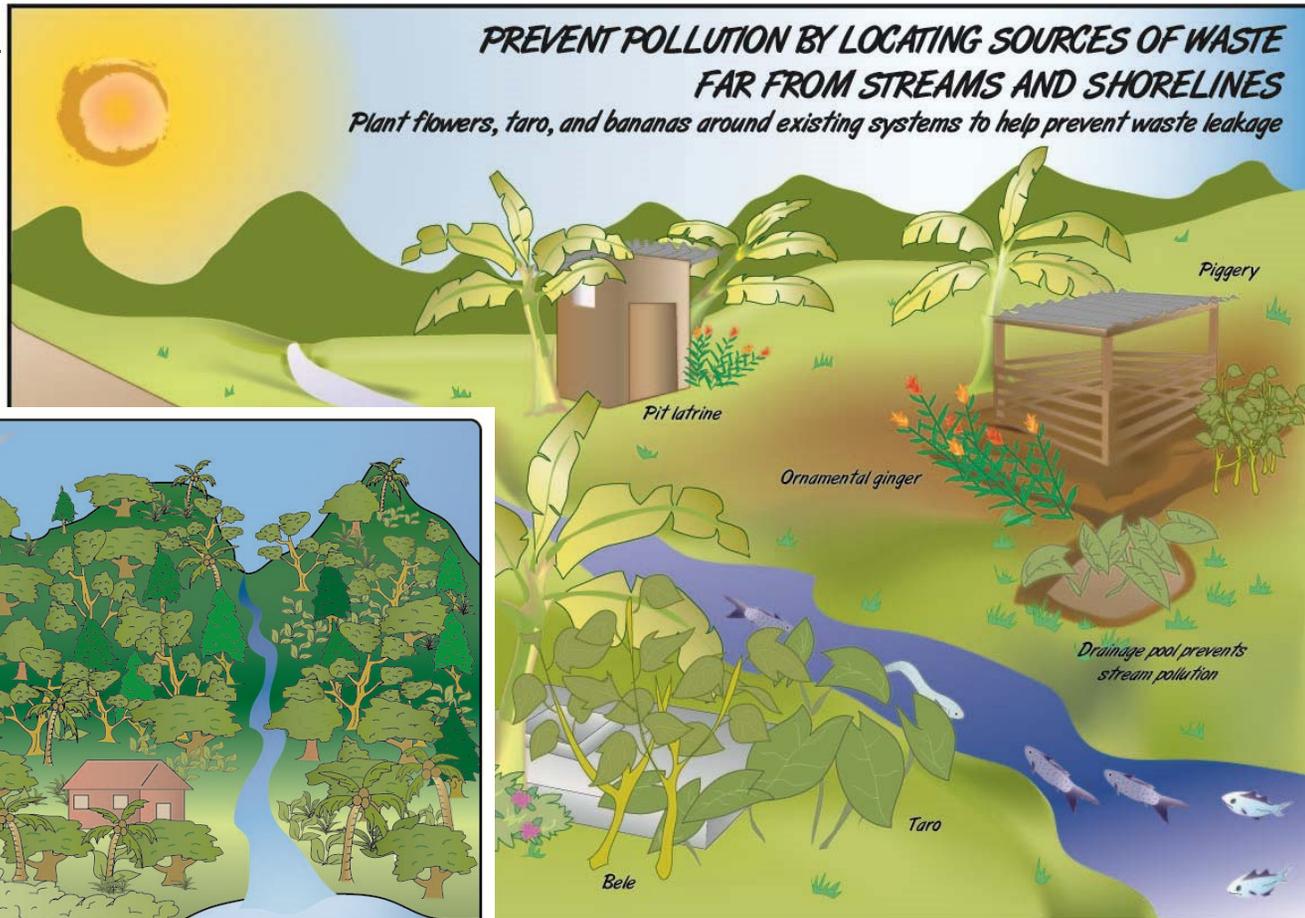
Average Numbers of Reef Check Invertebrates on 20m transect



Photographic record of existing reef health



Potential Risks and Mitigating factors



Example of Impacts and Mitigating Measures

Summary of Potential Impacts & Recommended Mitigation Measures

Potential impact:	Recommendations for amelioration:
<ul style="list-style-type: none"> ○ Wide-spread clearance of mangroves would reduce habitat for birds, fish and invertebrates, and also probably result in severe land erosion and siltation. 	<ul style="list-style-type: none"> ○ Mangroves, in particular those on the northern bank of the river, should not be clear-cut, but actively landscaped for maximum retention of trees . A mangrove management plan should be included in landscaping plans.
<ul style="list-style-type: none"> ○ Excavation during construction could result in increased sand and mud settlement on the reef resulting in the death of remaining organisms. 	<ul style="list-style-type: none"> ○ Excavations during construction should be carefully planned to stay away from the coastline, and run-off silt control barriers should be erected in the lake and creek.
<ul style="list-style-type: none"> ○ Building jetties without proper engineering advice could alter currents and change beach erosion / sand deposition patterns. 	<ul style="list-style-type: none"> ○ Professional coastal engineers should be consulted as to jetty location. Pilings are preferable to solid construction, and floating pontoon jetties are recommended over deeper areas.
<ul style="list-style-type: none"> ○ Fresh-water run-off from rain gutters, laundry, bathrooms and swimming pools could reduce water salinity and kill corals if channelled out at one spot. 	<ul style="list-style-type: none"> ○ Where possible, fresh water should be recycled or channelled back onto gardens, and not allowed to run directly into the sea. ○ Unavoidable freshwater drainage needs to be carefully designed and spread out to avoid concentrated areas of freshwater run off ○ Recently chlorinated water should not be allowed to run into the sea

Use of completed EIA report

- Report is delivered to the developer
- The developer submits it to Dept of Environment
- It is no longer the property of the consultant
- Impacts and Mitigating Measures Table
 - conditions of development permit
 - basis for monitoring plans

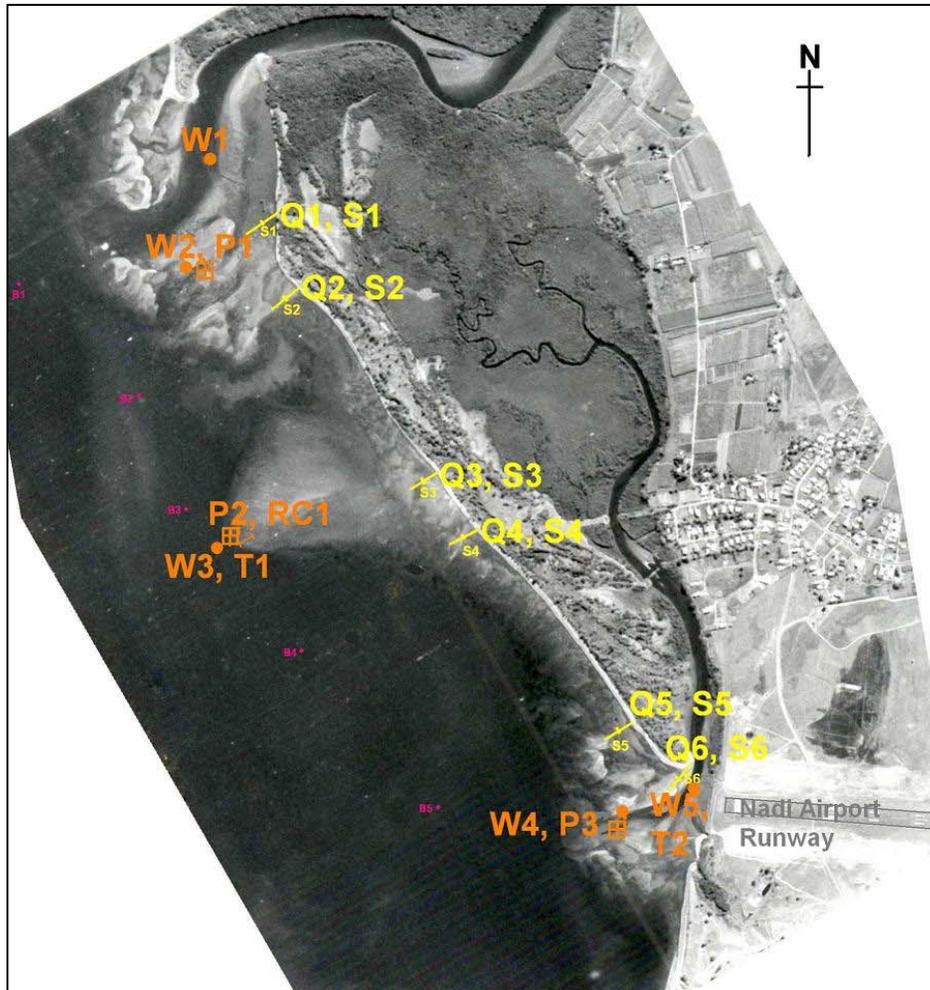
Next steps

- EIA consultant calls a **public meeting** for comments
- EIA consultant may be called on to **justify report** or carry out extra studies
- **Dept of Environment reviews report** and makes suggestions to the Approving Body, (e.g., Town and Country Planning, Dept Forestry, Dept Lands and Mineral Resources), who will define the conditions of the development permit.

Construction and Operational Environment Monitoring Plans

- After approval is given, the CEMP and/or OEMP should be carried out to monitor the progress and compliance of the development
- This may be done by the same EIA consultant, a different consultant, or in house, depending on approval of DOE.

Example water quality monitoring during construction phase (CEMP)



Key to Surveys

Q 1-6 Quadrat Transects

S 1-6 Sediment Samples

T 1-2 Sediment Traps

W 1-5 Water Quality test

P 1-3 Photo Quadrats

RC 1 Reef Check

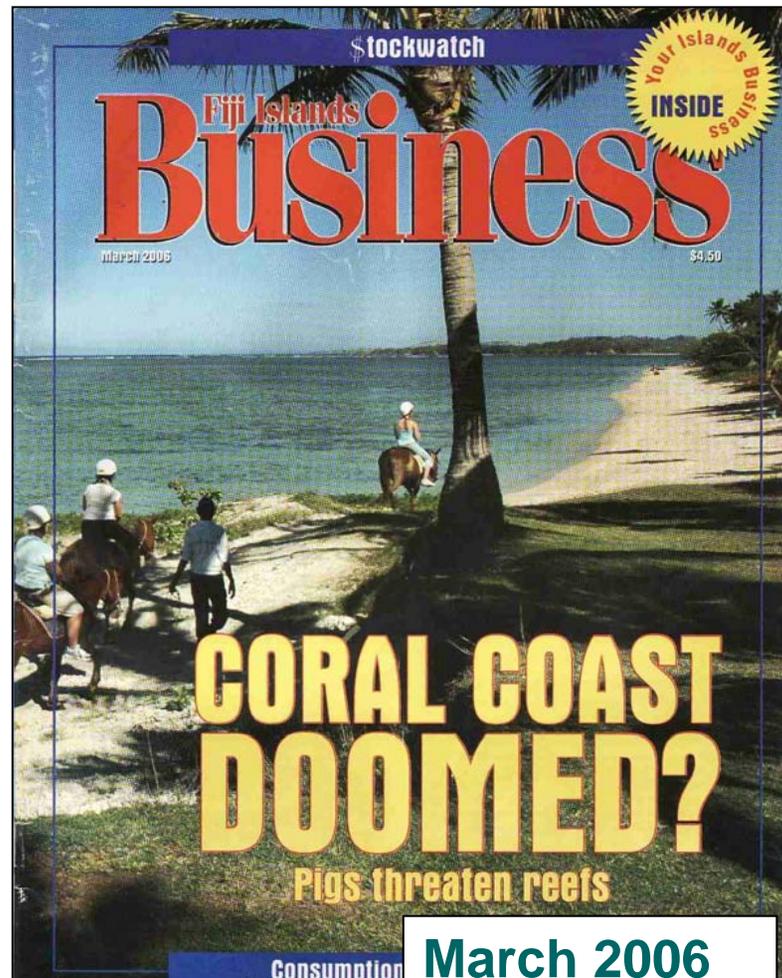
B 1-6 Water Quality monthly monitoring buoys

Killing the “Golden Goose” by careless development

Seaweed overgrowths are killing corals on the so-called “Coral Coast”

Caused by uncontrolled sewage treatment in villages, towns, and resorts developed in 1970s (now improving), as well as over fishing.

Impacts both local fisheries and the largest



Fiji's balance

Short term \$\$\$

VS

Long term resources



no development => no money => over fishing

too much or careless development => more money, but environmental damage

the balance of careful development, adequate job creation, and environmental preservation has yet to be found

What is the purpose of an EIA?

It is NOT to stop development!

Ideally, it should reduce adverse impacts of development and encourage developments that will be environmentally sustainable into

ENVIRONMENTAL IMPACT ASSESSMENT

Environmental impact assessment (EIA) is a process used to identify the environmental, social and economic impacts of proposed developments. EIA can be used to identify options for reducing the impacts of proposed developments, and provides information for the public and government decision-makers.

ENVIRONMENTAL LAW ASSOCIATION
ENVIRONMENTAL LAW FACT SHEET NO. 1

ENVIRONMENTAL IMPACT ASSESSMENT

The Consultants' tightrope

- Developers pay for study, but consultant must remain impartial and truthful.
- If consultant is seen as “Yes Man” study will not be believed
- If consultant is too stringent, they will be seen as obstructive and will not be used by developers
- Our job is to suggest changes to development to improve sustainability, not to prevent development or to unthinkingly approve uncontrolled development

Code of Practice for Consultants (EIA guidelines/ registration scheme 2007)

7.0 CODE OF PRACTICE

All applicants must sign and agree to abide by the Code of Practice, which is designed to ensure that registered individuals act in an ethical and professional manner.

All registered individuals shall:

- Act professionally, accurately and in an unbiased manner;
- Strive to increase the competence and prestige of the environmental impact assessment profession;
- Assist those under my supervision (if relevant) in developing their management, professional and environmental impact assessment skills;
- Not to undertake any job that I am not competent to perform;
- Not to represent conflicting or competing interests and to disclose to any client or employer any relationship that may influence my judgment;
- Not to accept any inducement, commission, gift or any other benefit from any interested party or knowingly allow colleagues to do so;
- Not to intentionally communicate false or misleading information that may compromise the integrity of any EIA study; and
- Not to act in any way that would prejudice the reputation of the EIA Consultants Registration Scheme or the environmental consultants registration process and to co-operate fully with any inquiry in the event of

Consultants' standards and ethics

- Need to monitor report standards
- Some EIAs are substandard but still gain approval unless there is a protest
- Reasons for substandard report may be lack of ethics, or inexperience
- Reason for acceptance of substandard report may be lack of capacity in relevant department, outside pressures or corruption.

Where does the buck stop?

Consultant → DOE → Approving Authority

- Consultant's involvement ends when report is accepted. Consultant assumes that DOE will read their report and act on the negative impacts/ mitigating factors
- Dept of Environment
 - Few qualified / experienced staff (6 officers)
 - Strong pressures to approve development
 - Developer may not meet conditions of permit but DoE do not have enough resources to monitor
 - May rely on Approving Authority to enforce conditions
- Approving Authority may not have resources to make decisions on environmental issues.
E.g. Rural Health Authority on Sewage Treatment,
Lands Dept on Mangroves

Who can challenge an EIA?

- Anyone can challenge an EIA, but it has to be within 21 days of publication of the report
- Often public meetings are not well advertised or not well attended
- Communities often do not know what questions to ask.

Effective challenges - usually educated concerned residents who understand how to make noise

Villages are often unable to make such challenges.

A plea to community advisors, lawyers, conservation officers:

Our communities need more from us than just advice on how to claim higher financial compensation.

As should encourage developers and stakeholders work towards sustainable development that does not destroy natural resources.

The best EIAs will include design strategies and mitigating measures that work towards environmental



When the last tree is cut down,
The last fish eaten,
And the last stream poisoned,
You will realise that you cannot eat money

Native American Indian saying

Communities should not be allowing destructive development just because it brings large amounts of compensation.

Being able to fish 50 years into the future is worth more than \$\$\$ today.

Encourage developers to create protected areas and restocking



Need to educate communities

- Questions to ask at public consultations
- What to look for in CEMP/OEMP
- Involvement in monitoring
- Importance of Sustainability and Mitigation Measures
- EIA should be seen as route to having development but also Environmental Sustainability, NOT just a tool to increased compensation.

We can have both development and sustainability - if we do it right

