Training Report no. 5 / 2

South Pacific Regional Environment Programme

# Environmental Impact Assessment Training in the South Pacific Region

## Meeting Report

Port Vila, Vanuatu
29 June to 3 July 1992

With technical and
financial assistance from the
Asian Development Bank (ADB),
United Nations Development Fund (UNDP),
United Nations Environment Fund (UNEP),
and the World Conservation Union (IUCN).

# FOREWORD

It gives me great pleasure to provide an introduction to the Meeting Record for the Environmental Impact Assessment Training Course held in the Federated States of Micronesia. This course was the first in what will be a series of EIA Training courses conducted by the South Pacific Regional Environment Programme (SPREP) in the Pacific Islands.

These courses address a fundamental issues for Pacific Island countries; that of how to successfully integrate environmental considerations into economic planning. Too often such considerations have been seen in a negative light, as a break on economic development.

Thankfully, this perception is changing and decision makers in the Pacific countries are increasingly aware of the need for careful and long term environmental planning. Environmental Impact Assessment is an important tool in bringing this about. It is important that EIA be applied in an appropriate manner in the Pacific. EIA must be relevant to the social and political systems in Pacific countries and it must be simple and easy to apply. It is not an academic exercise.

These EIA training courses build on the important work carried out by SPREP in the Pacific with the development of National Environmental Management Strategies. These Strategies are being developed through the RETA (Regional Environment Technical Assistance) project and the NEMS (National Environmental Management Strategies) project. These important projects are funded by the Asian Development Bank, the World Conservation Union (IUCN) and the United Nations Development Programme UNDP). I would like to thank those agencies for their generous support. I would also like to thank the United Nations Environment Programme (UNEP) for their generous support of this EIA Training Programme.

Dr. Vili A. Fuavao
**Director**
South Pacific Regional Environment Programme

# 1. Introduction

The course was held at the University of South Pacific centre in Port Vila, Vanuatu between 29 June and 3 August. The course was divided into two sections, with the first day being a senior officials meeting to review EIA procedures in Vanuatu, and the remaining four days being a course for government officials on managing EIAs.

There were five resource people to help put on the course:

| | |
|---|---|
| Komeri Onorio | EIA Officer<br>South Pacific Regional Environment Prog.<br>Apia, Western Samoa |
| David Hill | Regional Manager,<br>Ministry for Environment,<br>Auckland, NZ |
| Alisdair Hutchison | Regional Manager,<br>Ministry for Environment,<br>Christchurch, NZ |
| David Green | Acting Director<br>Institute of Applied Sciences<br>University of the South Pacific<br>Suva, Fiji |
| Remi Odense | Manager, Environment Unit<br>Institute of Applied Sciences<br>University of South Pacific<br>Suva, Fiji |

Chairman for all five days of the course was Ernest Bani, who is head of the Environment Unit in the Ministry of Natural Resources. Jenny Whyte, of the Environment Unit, provided extensive support for the course, including many of the arrangements for case studies, logistical arrangements, and secretarial arrangements.

Since the EIA course is in fact two separate courses, these will be discussed separately.

# 2. Senior Officials Meeting

## 2.1 Attendees

The following persons attended the senior officials meeting on Monday, 29 June.

| | | |
|---|---|---|
| Emil Mael | Physical Plannning Officer | Physical Planning Unit |
| Elizabeth Mermer | Acting President | Vanuatu National Council of Women |
| Tahi Steven | Principal Lands Officer | Lands Department, Luganville, Santo |
| Joel Rawai | Sawmill Trainer | Vanuatu Small Sawmill Programme |
| Jack Yakan | Forestry Officer | Vanuatu Rural Development Training Centre |
| Kathy Fry | Vanuatu Country Director | Foundation for the Peoples of the South Pacific |
| Gustave Gaillard | Energy Advisor | Energy Unit, Ministry of Natural Resources |
| Jeremy Challacombe | Environmental Consultant | Vanuatu Agricultural and Resource Management Services |

## 2.2 Agenda

The meeting began with a formal welcome by the Secretary of the Ministry of Natural Resources. Once the initial welcome was complete, Dr. Green reviewed the meaning of EIA, its history, and its role as a management tool. Mr. Bani discussed the present status of the EIA process in Vanuatu. The remainder of the day's discussions centred on reviewing these procedures, and suggesting improvements that might be made to the procedures.

## 2.3 Summary of Discussions

Approximately seven formal EIAs have been done by consultants in Vanuatu, and about twenty preliminary assessments have been done by the Environment Unit. All EIAs have been for private developments or for aid projects. There are no examples of government projects undergoing EIAs as yet. Of the formal EIAs done, all weJre written by expatriates. Two were for logging, one for a sawmill, two for resorts, and two for airstrips. Four were accessible to the Environment Unit, one was confidential and held by the Forestry Department, and the two done for the airstrips were apparently with the funding agency. Although many projects were now being referred to the Environment Unit for environmental assessment, some major projects were not. The National Advisory Committee on the Environment, which is supposed to review EIAs, had not met in several years and was not functional.

## 2.4 Assessment of Senior Officials Meeting by Resource Staff

The senior officials meeting provided a forum for some useful discussions, but the meeting did not accomplish its objective of establishing firm recommendations on improved procedures for conduct of environment impact assessment of projects. The key problem was that the agenda was geared towards influencing and getting opinions from senior government officials, but in fact there were only five ni-Vanuatu present, and only two of these were government officials. Because the Environment Unit is only an advisory body to the government, its position within the government heirarchy is almost unrecognized by senior civil servants and politicians.In future, invitations need to be sent out at a high level, preferably by a cabinet minister, and the invitations need to include sufficient justification for spending a day on such a meeting.

# 3. Four Day Course on Managing EIAs

In contrast to the one-day senior officials course, this was a well-attended course with representation from all the eight government centres of Vanuatu, as well as the two town centres of Port Vila and Luganville. There were thirty participants, all ni-Vanuatu, representing virtually all the departments of government that impact on the environment. The list of attendees follows:

## 3.1 Attendees

| | | |
|---|---|---|
| Knox Aka | Project Development Officer | Santo/Malo Local Government Council. |
| Edward Are | Regional Forester | Department of Forestry, Santo |
| Lani Pillion | Assistant Secretary | Paama Local Government Council |
| Laliurou Eric | Councillor/Community Rep | Bankes/Torres Local Government Region |
| Benuel Tabi | Lands Officer | Lands Department |
| Jack Yakan | FSP VRDTCA, | N.G.O. |
| Aru Mathias | Forest Utilization Officer | Department of Forestry |
| Alick Valeros | Regional Development Planner | Shepherd Local Government Council |
| John Sta | Acting Principal Lands Officer | Lands Department |
| Reynolds Garae | Project Dev. Officer | Ambae/Maewo Local Council |
| Donald Sandy | Industries Officer | Department of Industry and Development |
| John Binihi | Assistant Secretary | Banks/Torres Local Government Council |
| Elizabeth Mermer | Acting President | National Council of Women |
| Feke Pedro | Forester Utilization | Department of Forestry |
| Moli Janjae | Rural Energy Officer | Energy Unit |
| Kalsakau Stevens | Secretary | Efate Local Government Council |
| Rodney Aru | Forester | Department of Forestry |
| Joel Rawai | Trainer | Vanautu Small Sawmill Project |
| Joe Narua | Assistant Secretary | Tafae Local Government Council |
| Cherol Ala | Physical Planner | Physical Planning Unit |
| Jefrey Silas | Senior Lands Officer | Lands Department |
| Makali Bani | Councillor | Malo Local Government Council |
| Japhet Hidson | Forest Ranger | Forestry Department |
| Kalosak Massing | Regional Development Planner | Malekula Local Government Council |
| Goeffrey Takaro | Assistant Quarantine Officer | Agriculture Department, Santo |
| Andrew Ala | Environmental Health Officer | Luganville Municipality, Santo |
| Setak Jack | Malmes Jack and Soons Ltd | Farun, S. Malekula |
| Tahi Steven | Principal Lands Officer | Lands Department |
| Lewis Wari | Regional Development Planner | Pentecost Local Government Council |

## 3.2 Course Description

The course consisted of three main lectures:

- Contents of an EIA
- Assessing Social Effects of Development
- Assessing Physical/Biological Effects of Development

The lectures were followed by an exercise in which the participants were divided into groups of three. Each group of three was given a different Environmental Impact Assessment report to review and comment upon. After having a period of time to review and summarize the EIAs, each group presented their EIA to the other participants.

The review of EIAs was followed by a case study exercise. The participants broke into three groups, and each group conducted a different EIA. Each group visited the site of their development, interviewed various people, and wrote up a report following a standardized format. The case studies were:

- A new garbage dump site proposed for Port Vila;
- A new hotel and residential development proposed for Port Vila; and,
- A partially completed sawmill complex on Efate.

The final morning of the course was spent reviewing the present EIA procedures, and making recommendations regarding improvements to the procedures.

Resource material for the course consisted of a booklet handed out to each participant, about ten EIAs from various South Pacific countries, a variety of books and reference materials, a brief slide show, and a set of videos.

## 3.3 Assessment of Course by Resource Staff

The course went very well, from the point of view of the teaching staff. There was excellent participation, and the case studies in particular were pursued vigorously. The major difficulty in conducting the course was the level of English spoken. Virtually all discussions were held in Bislama. Since only one of the resource people, David Hill, could speak Bislama, there were communication problems on both sides. Other than this weakness in communication from time to time, the course ran smoothly. The Environment Unit provided excellent support, and the logistics of the course in general and the case studies in particular were handled admirably. The venue at the main conference room at the USP centre in Vanuatu was excellent.

## 3.4 Assessment of Course by the Participants

The course was formally assessed by the participants using a standard form. The aspects of the course were scored on a scale of 1-10, with 1 being good and 10 being bad. Average scores are shown, as are all the comments made.

## 1. Course booklet (Average score 1.8)

*Very handy*
*Give enough time to study content and then booklet is most excellent*
*It will help us make EIA on any development*
*The course booklet will help me how to make an EIA*
*Good clear picture of EIA*
*Give longer period for explanation*
*I feel that the course booklet are good*
*As first time to attend such course as this some terms used are bit difficult. To attend a similar course next time it will be much easier*
*Not enough time to read. Maybe we should received the booklets before coming to the workshop to give us time to go over it*
*The booklet states clearly various points which are very important to think about when doing an EIA and how to go about them*
*The course booklet is very useful to me and I think it will benefit the country when we apply all information on any EIAs that we come across in the near future*

## *Lecture 1:* Contents of an EIA (Average score 2.3)

*Quite useful but need more time*
*Good information*
*This subject was very helpful to me to draw an EIA*
*Good but talk a bit louder*
*Too fast in going through the page*
*Good but some words been used were too hard to understand*
*The presentation by Mr David was good but I presumed is too difficult for some of my colleagues to understand some of the English terms*
*Very clear and understandable*

## *Lecture 2:* Social Effects (Average score 2.2)

*Need more information*
*Interesting - like to discuss more*
*Local people should be made aware of these information relating to social impact. Invite community leaders to attend the next meeting*
*The above subject should relate to experiences in the islands state which host the training programme*
*For me, it was very important to know all those social effects that could be caused by a development project*
*Should be longer discussion on the subject*
*I think the lesson is very good and a clear teaching*
*More information on other projects for the social effects rather than saw milling or logging and resorts*
*Clear, especially communication in Bislama makes things much clearer*
*All the information given to the participants are very meaningful and interesting*

## *Lecture 3:* Physical effects (Average score 2.7)

*Quite scientific and make it simpler*
*Learn a lot of impact development may do natural or physical environment, awareness must be made known to the people*
*Too many technical terms used*
*Again side effects should relate to the area of island state*
*Should be longer discussion on the subject*
*The way it went through each topic step by step. To speak much louder*
*If he could speak louder for the people sitting at the back*
*All the lectures are useful and very interesting and all the informations are very interesting and meaningful to me*

## Review of other EIAs (Average score 3.5)

*Needs more practice*
*Not enough time to study the EIA report and this should be done in the middle or so because participants are not yet familiar with the issue*
*Shortage of time for comments on this subject*
*It was very to do so because reviewing an EIA help to make up our own*
*For reference and information*
*Not very clear because I think it's a first time*
*So good to read and get the feelings of developer and how some of the EIA haven't got much view from the landowner, community*
*The reviews although hard for the team to go through since this the first time such a workshop has been experienced. I did personally think that each one (participants) tried hard to tackle it, and gone through excellently*
*Let me say that I never learned or knew something about EIA before I came to Vila. It was very appreciated*

**Group Case Study** (Average score 2.9)

*Needs more time and practice to make it perfect*
*Should meet more people concerned with the project for change of views especially for social effects*
*At the next case study, we must take the developer and custom landowners together to learn of all the EIA impacts that will come when the development is introduced to the land*
*OK but the groups should be given more time to carry out their respective case studies. Good exercise though*
*Should have more case studies*
*More time should be provided to allow better and efficient group reports*
*Because it is my first time to involve in such case study like this I have learnt a lot of new things concerning my responsibility*
*More time should be needed for the groups case study to enable more information collection*
*Going out to see the site it really helps and widen our knowledge in EIA and how to do the social impact of development*
*It was very good going out or looking at the slides*
*Although some group couldn't get to every site necessary to visit*
*We learned more from us when we group together to discuss our problems*
*More time should have been given or extension of course period for individual participants to produce his/her own EIA*

**Discussion of EIA Process** (Average score 2.5)

*Process to undertake EIA in Vanuatu is not very clear*
*Because he speaks in Bislama that is why I think I should ring the figure 1*
*The project proposal should be submitted firstly to the NACE before to the NPSO for fundings*
*Ways to communicate is clear and understandable*
*He was good in explaining the EIA*
*Well understood*
*Very profitable*

**Slide presentation of what goes wrong** (Average score 2.3)

*Not enough time but is very informative way of communication*
*Didn't watch any*
*These slides teach me a lot of lesson concerning the environment*
*States clear some of the aspects and problems people might face if an EIA is not been carried properly*
*It teaches the participants more effects on EIA*

**The videos** (Average score 3.2)

*Not enough time to watch*
*There is no time for video so we do not know exactly the situation and progress in the countries*
*Should be shown throughout Vanuatu*
*Separate time within the course programme should be allocated*
*As I have mentioned in No. 8 by learning this method of teaching I have learnt a lot of new things dealing with environment*
*Not enough time of watching the video*
*Video diskettes should be available in the unit of all types of development projects and their environmental effects which will affect social activities. (The videos should be shown by the unit occasionally throughout Vanuatu)*
*Give how the EIA are explained, create a feeling of how to be careful about our environment*
*Gives us idea to start off with*
*Not enough time*
*It is very understandable to watch the affected environment on different countries while Vanuatu don't get affected yet and it gives a lot of awareness*
*Haven't yet seen any*

## 3.5 Report on Case Studies

There were three case studies done. The written reports for the case studies are attached as Appendices. The quality of the EIAs vary somewhat, but all show that the participants have a good grasp of the framework of an EIA, and all show that the major issues surrounding each project have been sighted, if not dealt with in depth.

## 3.6 EIA Procedures: Summary of Recommendations

The present status of EIA procedures in Vanuatu is summarized in Annex D. The recommendations that came out of th discussions in this course were as follows:

1. A copy of all EIAs should be held by the Environment Unit. Aid agencies should be asked to cooperate in providing a copy of each EIA done on their projects to the Environment Unit.

2. Vanuatu should seek aid funding through SPREP to review possible amendments to EIA legislation.

3. A focal point for EIAs should be established in each department

4. The National Advisory Committee on the Environment should be re-activated with less government members (only departments who directly affect the environment), with NGO and women's groups, and with aid funding.

5. Local governments in each region of Vanuatu should be included in the EIA process

6. Development committees should be estalished for each region in Vanuatu.

# Annexes

## Annex A: Case Study #1:

## Efate Veneer Limited

### Engineering Description

*Management Information*

- Company: Pacific Veneer
- Established 1987 ($5 million US Efate, $2 million US Erromango)
- Location 14 km/Vila Town
- Species? Tamanu, Kauti, Nemoryetu, Whitewood, Milkwood
- Logs collected from Erromango
- Market - Japan, France, local market

*Project Design* (see at the back)

- Located away from Town (Fees Eratap Land Trust)
- Position in the centre of the whole country
- Near stream, good drainage system
- Available space for the future

*Sawmill Complex*

- Very modern, consist log dock, leader log, turner log carriage to minimise manual handling.

*Wastes Produced*

- Diesel
- Energy
- Pollution (no sign at the moment)
- Chemical used: CCA, Tanaliu and Spetin

### Changes in land use

- Coconut plantation area (sawmill site)
- Erromango (Re-afforestation)
- Operation closely monitored by Dept. Forestry
- Leased arrangement

### Changes in foreshore uses

- Local still fishing rights (allowed)
- No effects on near shore processes

### Biological effects

- Flora, fauna scarce due to disturbance of forest
- Open of canopy - increase chance for cyclone destruction
- Uprises of land disputes

### Social effects

- Up rises of land disputes
- Community benefit royalties, employment, roads
- Changes of living style
- Upgrading living standard
- Stream pollution - stop drinking
- Government of Vanuatu
- Those who have been consulted- Government, Landowner, Community, Local government (Chief)

### What Do They Fear?

- Over cutting
- Logging in restricted areas near streams

### Cost benefit analysis

- Company invested total US$7 million in the country
- Benefits through road taxes
- Reafforestation, taxes, royalties
- Building roads and other services provided to the community

### Global environment problem

- Good management of land use
- Replanting
- Good logging practice

### Conclusion

- The 10 metres green reserved along the sea coast has been neglected
- Others

### Recommendations

1. Erect rectangular stone wall before soil bulldozed for embarkment for the jetty
2. CCA drums keep out of sight in the store
3. Employees must wear safety wear at all times in the sawmill complex
4. Relocation of the toilet - too near to the coastal line
5. Always remember to abide to environment measure laid down in Schedule 2 of the Forestry Act
6. Replanting seafront as windbreaker

## Annex B: Case Study #2

## Malatau Commercial Enterprises and Residential Development, Efate

### Engineering description of the project

The development aimed to provide a residential development of 80 rooms, commercial centres, and a resort, all will be constructed with modern facilities that will be imported from Hong Kong and China.

As indicated on the map, Malatau is located on the South Coast of Efate. The proposed commercial enterprise and residential development will be constructed on the Malatau land and along its coastline. The Malatau developments will have its access by constructing a road from the existing road to the area along the hill side. In all it is estimated that 45 hectares of land will be required for these developments.

These developments will be developed over a period of six years at the total cost of 3 billion vatu. The intention of the developer is to develop the site, which will later be developed into a town of its own.

*Project Description*

The developer intends to construct high class houses with 80 rooms, a resort and commercial centre. Other proposals include:-

a) provide power station
b) reclamation of land
c) water supply
d) waste disposal
e) a coral sea wall

The developer has other aims in mind that will be introduced to this land, but this will only be possible if he has the right to the land or permitted by the government.

### Description of the environment

*Weather*

Most of Malatau shoreline is well protected from the normal south east winds. However during cyclone winds, south westerlies could not be avoided. The high ridge (Mt. Tumow) which extends further beyond Port Vila wharf and the offshore island of Ifira serves as good wind barriers. History shows also that with previous cyclones damage to the vegetation had some significance. Also the coastal vegetation serve as good wind breaks to the less disturbed vegetation inland and the higher slopes.

*Landuse*

The total estimated area of 45 hectares ranges in altitude from sea level to the highest point of 141 metres above sea level. Subsistence cultivation had been the main landuse on the better flat land, where coconut trees have been planted at irregular spacing for domestic use only.

Other uses include picnic area, firewood, fruits and building materials, and hunting grounds, but these are of minor importance to the landowner. The steeper slopes and uphill is more or less untouched forest.

*Vegetation*

Because the land had been the main cultivation area for the landowner for years much of the flat sites vegetation is disturbed or secondary vegetation. This is dominated by burao (*Hibiscus tiliaceus*). The immediate coastline vegetation is dominated by *Accicia implex, Casuarina equisetifolia, Barringtonia asiatica, Calophyllum inophyllum* and *Hernandia peltata.*

The higher slopes vegetation is dominated by *Terminalia cartapa* and *Intsia bijuga.*

*History*

Malatau, is a piece of land given to Mr Kaltabang (i.e. Kalfori's father) by the people of Pango village due to some relative ties and moreover of his 12 years teaching service at Pango village. This land was given as a means of payment. Giving out land is a typical Vanuatu tradition in the past for exchange or barter. Pango village and Ifira Island are the two closest to the proposed development site. A lot of the villagers have jobs in the town and commute to and fro everyday.

Caves could be found at the bottom of the ridge but the present land owner is not sure of their archaelogical importance or value.

### Marine Environment

*Beaches*

The subject area has several coral sand beaches with steep berms and coarse coral thrown by the last cyclone. The beaches are broken up by severely eroded limestone at intervals of about 100 metres. The beaches are narrow - about 3 metres wide and steep.

*Intertidal Area*

The intertidal area is primarily coral rubble. The intertidal area extends about 50 metres offshore and is cut occasionally by channels of 1 metre deep. At one end of the project area, there is a limestone sinkhole of unknown called the Blue Hole. Intertidal life consists primarily of hermit crabs and snails with some clams and beche-de-mer. Sparse sea grass occurs in some areas.

*Coral Shelf*

Beyond the intertidal area, there is a coral shelf about 100 metres wide, sloping away gradually to a steep dropoff. This coral shelf is made up of coral cement, smooth and featureless except for occasional sink holes and erosion channels. The coral shelf has occasional hard coral with attendent reef fish, and occasional soft corals. Fish congregate in the channels and holes. However, the coral shelf is primarily barren of life.

*Summary*

The marine life in the project area is very limited. The explanation for the singular lack of live coral is not known, but local knowledge suggests that the construction of the main wharf at Vila, resulting in extensive sedimentation in the channel between Ifira Island and Efate, cutting off the circulation and markedly reducing the live coral cover, and the local fishery.

The nearshore area will not be a snorkelling attraction for tourists. The developer could be required to dredge sediment from the wharf project to construct the required access to the site.

## Resources required by the project

*During the Construction*

Most of the building materials required for the construction will be imported. The only resources that are likely to be required are as follows:-

- unskilled labourers
- rocks for the construction of the wave breaker
- gravel for road construction
- sand and coral for construction of buildings
- water from the government water supply

*Resources Required During the Normal Operation of the Development*

Similarly, most of the resources required will be important, such as skilled labourers and food products but only one or two of our local resources will be required, and that is man power labourers and fresh fruits, vegetables and root crops.

*Effect on other users of the Resources*

Hotels and resorts are known to be users of vast quantities of water and because this project is also using water from the government water supply, it could or may affect the other users of the same. Sand is quite scarce within the immediate area, therefore it is likely that constructors have to remove it elsewhere thus affecting other users, especially in areas where other resorts are situated or located.

*Sustainability*

Unlike other projects which depend on local resources for survival, this project depends heavily on the flow of tourists and investors for survival. Therefore its sustainability depends on the tourist economy of this country and the willingness of the investors to invest in this particular area.

## Waste produced by the project

*Solid Waste*

The developer since there is still no sign of whether he can be granted with the negotiator's certificate or not, he is still not sure what will happen with his solid waste. However, he has given three alternatives:

- to dig a big hole and dump all his solid waste which again he himself believes that the system is not very safe at all or

- to utilise the existing Port Vila Municipality refuse depot
- to recycle the solid waste for energy

We were given some consideration about the 3 proposals and our recommendation here is to utilise the existing Port Vila Municipal rubbish dump. This is due to the fact that the proposed area is confined to a narrow area with a very small entrance (i.e. sea at the front, blue hole at the end of the site, and limestone build up walls to the height of 80 to 100 metres and if refuse depot is created, it will create nuisance of smell, pollution of blue hole and perhaps will harbour more chance to rodents and insects in the area.

*Liquid Waste*

Proposed method of sewerage disposal here would be to build a pond, with the site not yet known, but not in the sea. The effluent will flow at a very low level and be sterilised by an ultra violet to almost free faecal coliform and discharged into the sea.

Our recommendation here was, although sterilisation could be an idea to protect bacteria from reaching and contaminating the marine life, toxins from the bacteria is another thing to be considered. Effluent cannot be from bacterial toxins and these can still harm marine life.

For the purpose of preventing any harm to marine life, it is also requested to provide some systems whereby to keep monitor the marine pollution, perhaps every six months interval to provide some chemical analyst of the shells and fishes in the area.

### Change in land use

The proposed area to be developed into a resort comprising of 80 rooms covers an area of 45 hectares. Vegetation is mainly secondary forest. About two thirds of the land is flat land composing of recent coral substrate.

The development site is customary land owned by a native of Ifira. The land is utilised mainly for subsistence cultivation of crops such as bananas, yams, cassave, taro, mandarins, mango, breadfruit trees, and coconut trees.

Small quantities of potential logging tree species are seen on the hills, but it is not sufficient to be commercially exploited.

Public often use the beach for picnics, the coral reef for collecting shells and fishing. Coconut crabs are also hunted by the residents of Ifira from the two existing caves.

Following land rights, the chief from Ifira island has to certify the ownership of that land. Once the lease is signed the custom ownership and rights are transferred to the financier under the terms/periods agreed upon.

How much land is going to be developed, one does not know and also how many trees are going to be cut down, one does not know. In other words, the developer does not specify exactly where, and how the project is going to occur. It stands vague.

## Changes in the Foreshore uses

*Wave Breaker*

The developer has indicated the idea of constructing a wave breaker but does not say exactly where the location of the wave breaker will be, and how it is going to be constructed. He seemed quite vague. Though the developer's views of this development is still in its primary stages, situations should be analysed to predict the effect of this development.

## Social effects

The key question to ask here is: Who will benefit and by how much; and who will suffer and by how much? Discrepancies between who benefits and who suffers are where the problem begins. When one talks about social effects, he or she is referring to the impacts that the proposed development will impose on the people who reside within the vicinity of the project area. Social impacts are bound to occur whenever an area undergoes change.

*Benefits*

To answer the question who will benefit from the proposed development, assumptions had to be made about possible social benefits and negative social benefits.

In Malatau's case, benefits will be allocated to those who will be employed (local unskilled labourers) during the construction of the resort. Likewise, those who will later be employed in the resort itself (i.e. engaging themselves in general duties, and administrative tasks). It seemed as the trend of employment is marked at the young energetic job seekers.

Moreover, the landowners himself will benefit by receiving land rents from his 45 hectares of land. This is applicable once the lease is secured. Even before receiving land rents, the developer or financier has promised a massive amount of capital to the landowner. Again this is another benefit that the landowner has.

Access is another benefit that the locals will possess. If a road is constructed through the project area, then it will serve those who do their gardening further down within the project site. Better accessibility within the project site will enhance future development.

*Negative Effects*

If there are positive social effects, then there are negative social effects as well. Malatau area or the proposed project site used to be a picnic area for the town residents. It is also a common fishing ground and hunting area for the people of Ifira. With the introduction of the tourist resort, the implication is that, this area will not be accessible for public usage any more. Those who utilise the area for subsistence cultivation will now lose their gardening spots, fishing spots, and hunting grounds.

It is not only the people who will encounter negative consequences from such development, but the wild life that exists they also share in the wrath. For instance, the habitat of birds, flying foxes, is disturbed. Where will they obtain their food now? An obvious answer could be, scattered wild life species could enter a garden and feed on the crops that are cultivated. In other words, the people are now affected since their food supply is dwindling.

Culturally, Malatau tourist development will impose some negative effects. For instance, if the nearby villages such as Pango and Ifira, are exposed to the life style of tourists, then gradually their traditional way of life will start to adapt to that western life style. Values will be lost, and social structure of village will change.

If the developer intends to make Malatau area a mini town in future, then the consequences of this are quite significant, since this will cause a lot of young people to migrate into the town from Ifira seeking entertainment, jobs, but causes an adverse effect on those on Ifira, since the families are dislocated, and no energetic young people to do the gardening for the old and destitute.

*Value of Social Effects*

To put a value on social benefits and negative social effects, one cannot see it, until the development has taken place. Assumptions will be that social benefits will carry more weight for the life of the proposed development, whereas negative social effects or those who suffer from such development will live with it.

*Summary*

To sum up, projects such as this have the potential of creating significant social impacts through introduction of technology, alteration in work patterns, the way of life or social structure of the village is altered tremendously. Despite this, it is in the interests of the developer to be aware of potential problems, recognise that changes to Ifira will be occurring and ensure that adequate dialogue takes place to accommodate such changes.

According to the landowner, Mr Kalfori Kaltabang, he does not take into consideration too much the social effects of the development, since he receives very little benefit from Malatau area. Instead he emphasises development to occur on his 45 hectares of land.

## Cost benefit analysis

Tourism in the Republic of Vanuatu is a major contributor to the economic prosperity of the country. While the economy is experiencing some diversification into financial services and new commercial development, tourism is likely to remain the single biggest industry for the foreseeable future.

There are 670 hotel rooms in Vanuatu at the moment. During peak months (June, July, August, September) 80 to 90% occupation can be easily reach while at other times 16 to 30% occupation level can be experienced. Tourism expenditure is averaging at approximately 1,267 million vatu which around 56% is retained in the Vanuatu economy.

*Tourism Development Strategy*

According to the National Tourism Office (N.T.O.) the future intention is to promote tourism in Japan and Asia. Around 30,000,000 tourists are going out of Asia each year, and Hong Kong supplies the biggest percentage of this number. N.T.O. feels that better infrastructure will enhance tourism in Vanuatu.

*Economic Viability of the Malatau Tourism Development*

Efforts to obtain viability assessment of the Malatau tourist development were not very successful. This is due to the fact that the company involved cannot avail technical people for detail information until such time the lease on this land is executed. However, according to N.T.O., local people can benefit from such activities by selling fish, vegetables, employment and other spin off benefits. Customer owner will benefit from land rents since he feels that he is not intending to claim compensation for any existing development in the area. It is also understood that their existing activities such as fishing, gardening, shell collecting, firewood, hunting in the project area may be a loss to the custom owner.

After some discussion with the custom owner, it is felt that the benefits can override the cost if done properly. However, monetary assessment can be obtained more accurately if the company submits details of the project.

### Global Environmental Problems

The most common global environmental problem frequently mentioned in the South Pacific EIA's is the problem of climate change, with the issue of sea level rise. This is estimated about a metre over a hundred years.

In this case, the development is likely to be affected since the developer is intending to reclaim certain areas. As the lease term is a maximum of 75 years, the 1 metre sea level rise is likely to cover part of the project.

Therefore, during reclamation, the developer should consider the above and make sure that the reclaimed area is well above 1 metre.

### Conclusion

Following the study concerning the Malatau tourist development, it is concluded that the company concerned should carry out more detailed study before any decision is made on whether it is a viable project or not. As such it is recommended that:

1. before the land is executed, conditions concerning development should be clearly specified

2. the location of the wave breaker should be specified. Also more study of the possible effects that the wave breaker may cause

3. more study should be made on the reclamation of land, as well as road construction since it may be prone to erosion and other environmental hazards.

As stated, we feel strongly as a group that detailed study should be carried out in the project area before a massive development such as this (Malatau tourist development) takes place.

## Annex C: Case Study #3

## New Rubbish Disposal Site for Port Vila

### Introduction

The current dump site is located in approximately one hectare of flat land at Free Wota which is currently been required by the National Housing Corporation. Although no proper lease is yet to be prepared on this land (Part of Title 3827 and 1718), negotiations are already in progress for NHC to lease this land for its future Low Cost Housing Scheme.

Apart from burning of rubbish, the residents living within the locality do not appear to complain too much about the site. However, factors that the residents may possibly suffer from are :

- Smoke from burning materials
- Smell
- Flies
- Diesels from untreated waste

Since the facility is full and the intention to develop the site, it has therefore become necessary that a new dumping site be located. Studies done in 1990 made by Dr H. Ogawa.

From the World Health Organisations, a site in the Bouffa catchment was recommended for development of the new rubbish dump site.

As part of the SPREP EIA workshop held in Vila (July 1992) a group of course participants carried out an EIA case study on the proposed site and compiled the following assessment of the proposed dump site.

### Engineering Description

The project initiated by Port Vila Municipality is to locate an alternative rubbish disposal site for Port Vila wastes. The Site of approximately 30o towards the Bouffa catchment from which Momartre abd Lololima Institution's water supplies are derived. It has been found by the department of Geology and Mines that there is a metre layer of clay under the site which would be most likely to prevent leakage of toxic liquid wastes from the proposed dump into the ground water.

Trenches will be dugged across the site into which rubbish will be disposed. The trenches will be buried when filled and new ones dugged. Due to large amount of gas expected from rotting wastes, boreholes will be provided to allow gas to escape. Water leaching from the waste and rain water will be prevented from contaminating surface or ground water by means of drains to diverse leachate water into an Aeration pond at the bottom of the slope. Silt traps will be installed to prevent soil being washed into the nearby streams. Leachate water collected in the aeration pond will be pumped and re-circulated over previously filled trenches.

It is expected that the site will be used for 30 years or more. After the area is used up, it will be reconverted to grazing land again.

The proposed site being 8.5 km from Port Vila will be provided with a new access road of 2 km from the Teouma road. This will avoid trucks having to travel over a longer distance using the existing muddy and slippery road especially driving raining periods. The whole site will be provided with a stockproof fence and an all weather coral road constructed around the site for safety of workers and equipment.

### Resources Required

Preparation of the disposal site will require a total of 79,900,000 vatu to cover site development, construction of access road, onsite roads, fencing onsite construction, electricity buildings and other equipment. The annual running cost is estimated at 29,890,000 VT and to ensure the dump is operated effectively, it will require 12 employees.

### Description of Environment

The proposed site is currently used for cattle grazing and had been developed as such for over 30 years. Apart from grassland for very few trees are left thus has no significant effect on biological concern.

### Changes in land use

The proposed site will cover approximately 50 hectares of alienated land, (Alienator Catholique Mission) currently used as grazing land. Apart from this 50 ha, another 2 km strip of adjoining land will be needed for the construction of the new road. Part of the land required for the road belongs to another alienator, Mr Colardeau, who already have a lease on the land. Catholique Mission however still have no lease on the land occupied by them.

Land use potential is optimum (very fertile soil, freely drained), suitable for vegetable farming. The present land use though is mainly grazing land, will now be turned into a dump site.

At the moment, Custom landowners (Erakor & Eratap) still have not agreed on neither leasing to Catholique Mission nor the use of the site as a dump site, but it is possible that the government will compulsory acquire the land through the recently passed "Compulsory Land Acquisition Act".

### Social effects

As the site is situated out of the Vila Municipal area, it is likely that the site will now benefit not only the Urban residents but also the people living outside of Vila but within the locality.

Theoretical calculation as to how much the users will benefit can not be assessed though the Port Vila Municipalite will be collecting certain gabbage fee from the residents of Vila.

The other party who will directly suffer from the project is the Catholique Mission who will certainly lose about 50 hectares of their grazing land. This meant a 70-80 loss in cattle head to their current cattle stock which they supply to Mormartre School, the Vila market and also export.

One of the main concerns of the Catholique Mission is the effect the dump site will have on its Water Source/Supply. Their water pump being approximately 500-600 metres directly below the dump site. This water source supply water to the 400 and students at Mormartre and Lololima Schools as well as the workmen and other residents of the two Institutions. Their cattle also drink out of the same water source.

Surface water run-off towards the Teouma river will pose hazardous situation when the rubbish is not covered with soil (as planned) due to Mechanical breakdown or unforeseen circumstances. Being high up in the plateau, run-off will be enormous and may carry unwanted or untreated insoluble materials to the Teouma river which will eventually end up affecting a more greater number of people in the Lagoon below.

## Recommendation

Based on the brief assessment done by the group, we have made the following remarks and recommendations regarding the proposed New Dump Site of Port Vila.

1. *Engineering Description and Design of the Rubbish Dump:*

   No major engineering process is to be undertaken apart from the development of the access road, fencing and the onsite building construction. The design of the dump is recommended provided it is managed or carried out as planned. The group, however, feel that it is necessary that a more detailed survey be carried out to determine the direction of the flow of the underground water system, as the preliminary study carried out by WHO did not make a detailed study of the underground water system.

   There won't be any adverse effect on the destruction of the Physical environment as the site is already bare grassland with very few trees and vegetation. Again this is conditional that everything is carried out as planned.

2. *Resources Required by the Dump Site and Waste Produced:*

   Infrastructures required or to be developed is recommended. The only concern is the disposal of Solid waste, such as car parts, scab metals etc. One recommendation is to consider the possibility of re-cycling such waste materials. The group is also aware of the fact that only 3% of the current waste of Vila is bulky metallic materials and car parts, so it may not be economical to undertake this option.

   Enough capital needs to be reserved to maintain this operation since a breakdown in any of the machines (Bulldozer/truck etc) will pose another unforeseen problem of pollution in both its smell and affecting the surface run-off.

3. *Changes in Landuse and Social Effects:*

The foreseen change in landuse will be from bare grazing land to a dumping site. Obviously a decrease in the land value as well. The potential however is optimum with very rich soil, well drained suitable for agriculture (especially vegetable farming).

The population density within the locality is very low therefore there won't be any adverse effect on the people. However, Catholique Mission will stand to suffer and loss of grazing land - risk water supply.

4. *Monitoring:*

   Very important that responsible bodies (Environment Unit and Health etc) undertake frequent monitoring of the operations on the dump site to see that it is operating according to what is being planned.

## Conclusion

The group has not been able to make assessment of the other alternative dump site so based on the comparison of the current site at Fres Wota and the new one at Bouffa Catchment area, we feel that the site of the project as acceptable, provided that a more detailed EIA be carried out.

## Annex D:

## Status of Environmental Impact Assessment in Vanuatu

At present there is no formal requirement contained in the law of Vanuatu for the preparation of environmental impact assessments (EIAs) in respect of any project whatsoever. In practice, EIAs are required for certain classes of projects under the terms of "guidelines" prepared by the Environment Unit of the Ministry of Natural Resources. These quidelines are contained in a series of technical papers produced by the Unit and are published and publicly available.

The general guidelines contained in the first of these technical papers does not set out a list of those types of projects which are to be subjected to an EIA requirement, this being a matter which is reserved for the discretion of the Environment Unit. They do, however, envisage that the requirement may extend to public as well as private proposals.

The guidelines suggest that preparation of an EIA should be founded upon a "systematic analysis of all phases of the project on all the environmental characteristics of the area", which they group into four areas:

- physical resources
- ecological resources
- human use
- demographic and cultural use

The guidelines that have been published are as follows:

*General Guidelines for the Production of Environmental Impact Statements,* Technical Paper No. 1, 1987.

*Specific Guidelines for Coastal Tourism Environmental Impact Statements,* Technical Paper No. 2, 1987.

*Specific Guidelines for Mining Environmental Impact Statements,* Technical Paper No. 3, 1987.