EXECUTIVE SUMMARY

INTRODUCTION

This report is the project preparation document (PPD) for the S.P.B.C.P. It revises the draft PPD prepared in July 1994 The object of the project is to assist the landowners to protect the biodiversity values of the Big Bay Forests, on the island of Santo, and to generate income by forming enterprises which enable the forest to be protected. The concept is for the Environment Unit to form a partnership with the landowners and village residents to provide technical support, training and funding assistance to assist them to develop a land use plan to protect their forest as a C.A. and to establish various income generating enterprises. This executive summary summarises the natural and cultural features of the area, the rationale and design for the project, and the main features of the work plan and budget for the remaining four years of project funding. It must be emphasised that the project design cannot be regarded as being fixed especially regarding the timing of activities. There will be a constant need for flexibility in budgeting and work programming to respond to issues and needs as they arise, and according to how the landowners and village management committee wish to proceed.

BACKGROUND TO THE PROJECT

The proposal to establish a C.A.P. in Vanuatu, at Big Bay on the Island of Espiritu Santo arises from a biodiversity survey carried out by the Vanuatu Environment Unit and the Royal Forest and Bird Protection Society of New Zealand in 1993. The survey also included a sociological component to assess the uses and the value of the forests to the people of Matantas, and Sara, their aspirations and needs for the future. As a result of this work the landowners asked the Environment Unit to assist them to protect their forest and find ways of generating income as an alternative to logging. Interest was expressed in nut harvesting and ecotourism. Concern was expressed about the continual expansion of gardening into the area of dark bush.

The Environment Unit and Forest and Bird presented a concept paper to SPBCP in November 1993. The project was approved in principle and interim funding granted. The interim funding enabled the Environment Unit to carry out further research into the feasibility of the suggested income generating activities, and to run a workshop to generate greater awareness of the options and to seek landowner and village responses and further input into the design of this project.

NATURAL FEATURES OF THE C.A.P.

The forests of Big Bay are located in Big Bay on the Central North Coast of Espiritu Santo, see (fig. l). They comprise about 4,200 ha of which about 2,300 ha are lowland forests lying on the extensive alluvial plain formed by the Jordan river. The remainder are coral limestone forests on a raised coral escarpment some four km inland from the coast.

The proposed CAP boundary includes these forests and about 250 ha of garden and cropping land. The CAP area includes the River Jordan and a 500m riparian zone on its western banks and the black sand beach of Big Bay.

The Forests

The vegetation can be grouped into seven broad plant associations.

Alluvial Plain Forest

These forests are a complex mosaic of different plant associations characterized by changing dominance of the canopy trees and species richness. They are dominated by Nakatambol, (*Dracontommelon vitiense*) and Namatal (*kleinhouia hospita*). A total of 87 species were identified in the survey and this probably represents some 76 % of total species present.

Alluvial Plain Species Rich Forest

An area of about 1000 ha on the alluvial plain, has a particularly species rich shrub and field layer The Canopy is dominated by Melektri, (*Antiaris toxicariia*). A total 25 species were recorded, and this is estimated to represent about 60% of possible species present.

Species Poor Namatal & Nakatambol Forest

The forests on the western portion of the plain, in contrast to those on the eastern side are remarkably species poor with little cover in the understory layers. This may be due to the influence of pigs and bullocks, which are more abundant in this section of the forest.

Bin Tri Forest

Bin tri, (*Castanospermum australe*) dominates about 250 ha of the 500m wide belt of forest behind the beach.

Swamp Forest

There is a small area of about 10-15 ha of swamp forest dominated by *Barringtonia racemosa*, with *Dillenia biflora*, *Erythrina fusca*, *Quassia indica*, *Garcinia* sp and *Scirpodendron ghaeri*.

FIGURE 1 MAP OF VANUATU SHOWING BIG BAY

FIGURE 2 PROPOSED CONSERVATION AREA

Coral Limestone Forest

A very species rich forest occurs on the raised coral escarpments, which is quite different in character to the forests on the alluvial plain.

Savanna

There is about 50 ha of savanna vegetation in the middle of the alluvial plain. This area is dominated by low herbaceous shrubby vegetation, grasses and some marsh species. The origin of this is not clear, but today it is kept open through periodic burning and bullock grazing.

River Jordan

The riparian vegetation along the banks of the river is dominated by thickets of Burao (*Hibiscus tiliacus*), bamboo groves, wild tobacco, *Casuarina equistifolia* and *Acacia spirorbis.*

WILD LIFE

The forests of Big Bay probably support a bird species richness unlikely to be exceeded elsewhere in Vanuatu. Of all the islands, Santo has the greatest species richness. A total of 48 species of land and fresh water birds were recorded in the 1993 survey. This represents 75% of all land and freshwater birds ever recorded in Vanuatu, and 85% of land and fresh water birds that breed in Vanuatu.

Five of Vanuatu's' six endemic species are known to use this forest and Vanuatu's only endemic genus, the Vanuatu fly catcher is very common.

Four other bird species, which are each found on only one other island group outside Vanuatu occur here.

Four bat species were recorded including one of Vanuatu's two endemic bats, white flying-fox, (*Pteropus tonganus*) which was relatively common in Big Bay. Two small bat species, trident-horseshoe (*Aslliscus tricuspidatus*) and the leaf nosed bat (*Hiipposiideros cervinus)* were found. Other species are likely to be present.

Three species of gecko were found, including the endemic slender toed gecko (N*actus sp).* All were common. Seven skink species were recorded, including two endemic species. The Big Bay reptile species population represents at least 54% of all skink species ever recorded in Vanuatu and 74% of all gecko and skink species known from Santo.

Other wildlife species present include turtles and coconut crabs both of which are threatened. Turtles are known to nest on the Big Bay beach, (species yet to be identified).

CULTURAL VALUES

The forest resources have immense cultural and subsistence value to the people of Matantas. There are a number of tambu sites, yet to be accurately identified which the landowners are anxious to protect.

Resources from within the forest are used extensively for a wide variety of activities. The 1993 survey included a survey of traditional uses of the plants and animals of the forest. A total of plant species were identified as having a use, for medicinal purposes, construction materials, weapons and tools, food consumption and ceremonies. Birds, bats, bullocks, pigs, turtles and coconut crabs are all harvested for food.

LAND OWNERSHIP

Half of the Conservation Area is owned by three brothers whose families live in Matantas. Land tenure at Matantas revolves around matrilineal descent groups. The complexities of the land tenure are dealt with in the sociological survey report, (Ludvickson, 1994).

Part of the other half is legally owned by another two brothers who live in Sara, an inland village about 30 minutes drive from Matantas.

The 1993 survey recommended including the Wimbo area, and at the time it was thought that this area also belonged to the Matantas people. However it is now clear that this area belongs to another group of land owners who have not yet been contacted. It is intended to meet with them and discuss their interest in being included in the project as soon as possible.

The land legally owned by the Sara landowners is regarded as being under dispute because the Matantas land owners do not accept a Supreme Court ruling and wish the case to be reheard. The supreme court's decision gave ownership to the Sara landowners but said the Matantas people should negotiate a use lease with the Sara landowners and that this must not be unreasonably with held.

Resolution of this dispute has been the main focus of much of the work to date. The dispute has now moved to a stage where the landowners of Sara and Matantas have had their first meeting and have agreed to meet again to begin to work towards forming a joint Community Management Committee, (CMC) and managing the area as a complete unit.

COMMUNITY FEATURES

Two villages are involved in the C.A.P. on, Matantas occurs within the proposed CAP boundaries, and Sara which is some 25 kilometers distant from the area. Sara is involved as two landowners from the village are the legally established owners of half of the CA.

Sara

Sara consists of three separate hamlets with a total population of 274. Sara has medium distance road access to Luganville, Santo's main town and port, and has two churches, an aid post, kindergarten and junior school. By contrast to Matantas it is reasonably well serviced, with V.I.P. toilets for each household, and several new water tanks. Cash is generated by selling bullocks and copra, logging, leasing land to new immigrants. and the women selling garden produce in the Luganville markets. There is no power.

Matantas

Matantas is located on the eastern edge of Big Bay and has a population of 190 people made up of 127 whom are original Matantas families and their relatives and 63 immigrant mountain people. These two communities are physically and culturally separate and there are a lot of underlying conflicts between them, which will have to be addressed and satisfactorily resolved. The conflict centers over religious differences. The Matantas, "Man Ples" community are predominantly Seventh Day Adventists who shun much traditional kastom. The immigrant Man Hill Community retain their cultural traditions and have recently joined the Bahai faith. They are brought to the village and welcomed by the village chief and dominant landowner.

Most of the families have little opportunity to earn a cash income. There is some copra produced, occasional bullocks are sold by some families, and several families run a fishing business.

Matantas, is generally poorly serviced with community infrastructure. It has one water tank which is inadequate, a private kindergarten and junior school established on the initiative of the village women. The nearest health clinic is 3 - 4 hours walk. There is an urgent need to upgrade the water supply, health facilities, sanitation and education. These issues are regarded by the women as being top priority for development. The village does not have power or radio telephone communication. Power is not seen as a necessity. A radio telephone is to be installed by the Santo/ Malo Local Government Council.

PROJECT DESIGN

The landowners and village residents of Matantas want assistance to provide legal protection for their forests and wildlife, and technical and financial support to assist in the establishment of income generating activities, especially ecotourism and nut harvesting. The women in particular, stress the need for assistance in improving, health and education, and training for business management. These issues are to be addressed in order to ensure a healthy and vigorous community and the infrastructure needed for economic enterprises. The community also acknowledges that before the project can proceed conflicts within the community and between Matantas and Sara landowners need to be resolved.

The people of Matantas want to get started as soon as possible, and as a consequence of other failed projects and a need for income, which would otherwise be obtained by logging, they want to see a physical presence of the project which brings in vatu as soon as possible. They are sick of talk, talk.

The landowners of Sara also want their forest area to be protected as part of the Conservation Area and want to set up ecotourism. Although Sara is not in an ideal location for ecotourism there is an opportunity to develop some tourism based at Sara focusing on some World War II airplane wrecks found on logging sites close to Sara. Tour operators in Luganville have suggested combining walks to the plane wrecks and nature walks at Matantas.

Responding to the landowners and villages desires, the project comprises four distinct components, project management, community development, sustainable enterprises, and , sustainable land management plan.

The landowners are also concerned that garden expansion in the future will threaten the proposed C.A. unless gardening practices can be developed which require less land. They wish to trial alley cropping and funding of 7.5 million vatu has been obtained from the New Zealand Government. This part of the project is being managed and implemented by the Vanuatu Farm Support Association, which is a small farmers NGO. The Environment Unit and the Farm Support Association will draw up a terms of reference and jointly prepare a work plan. The Project Manager and the Environment Unit will oversee this to ensure that the alley cropping work is compatible with the CAP objectives.

COMPONENT ONE : PROJECT MANAGEMENT

This component is focused on establishing a landowner and community based management frame work, centered on establishing and training a Community Management Committee (CMC) to direct plan and manage the activities of the project, develop and implement work plans, employ staff and eventually to take over complete financial and management administration of the C.A..

Other activities center around the establishment of a Luganville based Technical Advisory Group to provide technical assistance to the CMC and E.U. and coordinate the input of other government agencies and NGOs. Project administration activities also include the hiring of project staff, a Santo based project manager and a Matantas based conservation officer, (salary to be provided by CMC), the establishment of a Santo office and financial and reporting procedures to SPBCP. Tables one presents a summary of total project costs in vatu and $US. Budget details are in Appendix two. The budget is organised into five categories according to the SPBCP funding lines.

TABLE 1 SUMMARY OF PROJECTED COSTS 1994 - 1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	3,769,700	1,987,700	3,886,700	777,600	**10,421,700**
CA Identification & Awareness	1,725,500	491	1,327,000	200	**3,053,191**
CA Establishment	4,715,600	2,421,600	2,047,100	1,475	**9,185,775**
Sustainable Development	1,551,000	1,114,000	1,314,000	866,000	**4,845,000**
Training	1,098,000	2,338	1,031,000	336	**2,131,673**
SUB - TOTALS	**12,859,800**	**5,526,129**	**9,605,800**	**1,645,611**	**29,637,339**
CONTIGENCY OF 10 %	**1,285,980**	**552,613**	**960,580**	**164,561**	**2963733**
TOTALS	**14,145,780**	**6,078,742**	**10,566,380**	**1,810,172**	**32,601,073**

TABLE 2 SUMMARY OF VANUATU GOVERNMENT CONTRIBUTION 1994-1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	1,416,000	1,416,000	1,416,000	589,000	**4,837,000**
CA Identification & Awareness	78,000	12,000	156,000	6,000	**252,000**
CA Establishment	554,000	306,000	306,000	108,000	**1,274,000**
Sustainable Development	81,000	18,000			**99,000**
Training	15,000				**15,000**
SUB - TOTALS	**2,144,000**	**1,752,000**	**1,878,000**	**703,000**	**6,477,000**
CONTIGENCY OF 10 %	**214,400**	**175,200**	**187,800**	**70,300**	**647,700**
TOTALS	**2,358,400**	**1,927,200**	**2,065,800**	**773,300**	**7,124,700**

TABLE 3 SUMMARY OF PROJECTED COSTS 1994 - 1998 IN US DOLLARS

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	33,152	17,480	34,181	6,838	**91,651**
CA Identification & Awareness	15,175	4,318	11,670	1,759	**32,922**
CA Establishment	41,470	21,296	18,003	12,972	**93,741**
Sustainable Development	13,640	9,797	11,556	7,616	**42,609**
Training	9,656	20,561	9,067	2,955	**42,239**
SUB - TOTALS	**113,093**	**73,452**	**84,477**	**32,140**	**303,162**
CONTIGENCY OF 10 %	**11,309**	**7,345**	**8,448**	**3,214**	**30,316**
TOTALS	**124,402**	**80,797**	**92,925**	**35,354**	**333,478**

TABLE 4 SUMMARY OF VANUATU GOVERNMENT CONTRIBUTION 1994-1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	12,453	12,453	10,590	5,180	**40,676**
CA Identification & Awareness	686	106	1,372	53	**2,217**
CA Establishment	4,872	2,691	2,691	950	**11,204**
Sustainable Development	712	158			**870**
Training	132				**132**
SUB - TOTALS	**18,855**	**15,408**	**14,653**	**6,183**	**55,099**
CONTIGENCY OF 10 %	**1,886**	**1,541**	**1,465**	**618**	**5,510**
TOTALS	**20,741**	**16,949**	**16,118**	**6,801**	**60,609**

COMPONENT TWO: COMMUNITY DEVELOPMENT

There are two main aspects to this component, firstly, the resolution of inter village conflicts between the "Man Hill and the SDA communities and secondly, the coordination of activities to improve water supply, sanitation, health and education in Matantas. The bulk of the work will be carried out by Government and non government agencies, but the initiative and coordination will have to be spearheaded by the Environment Unit and coordinated through the TAG This work is a priority for the first phase of the project. This component also includes monitoring of the impact of improved community development, on health and education.

COMPONENT THREE: INCOME GENERATING PROJECTS

This component focuses on the establishment of nut harvesting and ecotourism activities. There is a substantial resource of nut trees within the CA and a merchant in Vila wishes to purchase the nuts from Big Bay. It is likely that the Farm Support Association (FSA), a local agricultural NGO, will assist with developing this enterprise. A preliminary feasibility study into opportunities for ecotourism has been completed. This component is to be given priority over the development of a land use plan in order to meet the village needs for immediate income. As substantial training to develop business skills, tourist hosting skills, and nature guiding skills will be required these projects will take some time to become successfully established. However there is a need to start immediately, so it is planned to start with a guided walk and a store selling local fruits and drinks. We believe that the main elements of the sustainable land use plan and the content of a possible plan are relatively obvious, and do not need to be addressed prior to initiating the development of business enterprises. The agro forestry aspect of the component will however be delayed until a land use management plan is produced.

The establishment of ecotourism enterprises will occur in four phases, each accompanied by a feasibility study training and ongoing monitoring of social, cultural and economic impacts. The first phase will involve the establishment of a package for cruise ships and small tour parties and will involve a guided walk and a shop. The second phase will also target cruise ships and existing tour operators and will include a light lunch in the SDA portion of the village, kastom dancing in a forest clearing by the Man Hill people and a short guided nature walk. Facilities to be established include shelters, toilets and a short nature walk. It is expected that SPBCP will provide funds to assist in the establishment of these, but that the village will also contribute in terms of materials and labor.

The land owners at Matantas have expressed a strong desire to build tourist bungalows close to Matantas. This will be considered in the third phase of this project. In the interim it is expected that ecotourism will focus on day trips from the cruise ships, and visitors staying at the nearby Lonnoc Resort, and tourists traveling with either of the two local tour operators.

The fourth phase involves expansion of overnight accommodation, provided the first bungalow has been successful. We anticipate assisting the villagers to raise funds to contribute to the building of these.

COMPONENT FOUR: SUSTAINABLE LAND USE PLAN

This component comprises four main aspects; firstly, to assist the land owners identify options for new land uses, which involves a land capability survey and an agro forestry feasibility study; secondly, to assist the CMC and landowners to develop a management plan, through using participatory rural appraisal and planning techniques, thirdly; the carrying out of baseline studies of indicator species for biodiversity monitoring purposes, and a wider biodiversity reconnaissance survey to determine the need and feasibility of expanding the CAP. The management plan will also determine C.A. management and final C.A. boundaries. Completion of this phase will result in the formal establishment endorsement of the C.A.. This is expected to occur around March 1996.

The fourth stage is the implementation of the plan which will involve the establishment of more extensive walking tracks, C.A. facilities such as toilets, shelters and a camping ground, and establishment of C.A. funding mechanisms.

The aim is for the C.A. to be able to generate enough funds from the development of ecotourism enterprises, the sale of trading items and the camping ground to continue to employ a conservation officer and fund the management committee. The ecotourism businesses will be levied to also provide funds for these purposes. It is anticipated that the area will be a C.A., owned and managed by the landowners and Matantas villagers, and legally protected through an amended National Parks Act. The current act does not provide for this and the EU intends to prepare an amendment that will allow the creation of C.A's. in line call the proposed management structure to be established as part of this project. It is intended to amended the Act to provide for the landowners to retain rights of ownership and management and use of the flora and fauna within the CA.

The implementation phase also involves further training for the conservation officer, study tours of National Park Australia, (Uluru)or a National Park in New Zealand, (Urewera), for the, P.M and CO. Training in financial administration and C.A. management will be provided for the final management committee.

PART A BIG BAY CONSERVATION AREA FIVE YEAR PLAN

1 BACKGROUND TO SPBCP

The South Pacific Regional Environmental Program (SPREP) manages funds from the Global Environment Facility (GEF), through UNDP, and Australian International Development Assistance Bureau (AIDAB) to implement the South Pacific Biodiversity Conservation Project (SPBCP).

The project is described in the Project Document (April 1993). This was the culmination of Phase 1 activities which also included preparation of a Project Formulation Framework (October 1991), an Interim Project Document (May 1992) and an Appraisal (August 1992).

Project implementation (Phase 2), initiating draw down of funds in May 1993, is for a period of five years to April 1998. Major elements are the development of Conservation Area Projects (CAP's) in a possible 14 South Pacific countries. To this end submissions were sought by SPBCP that defined conservation areas (CA's), features of biodiversity, priority in the national and regional context, project components and an indication of inputs and outputs.

Guidelines to assist preparation of the submissions were provided in the form of SPBCP CAP selection criteria and other advice. A small amount of funding in some cases was provided to assist preparation.

Submissions are called concept papers, these are reviewed by SPBCP and approved or rejected for further project preparation and implementation.

A concept paper was prepared by the Environment Unit of the Ministry of Health, Vanuatu and the Royal Forest and Bird Protection Society, New Zealand, and submitted to SPBCP in November 1993 for the Big Bay National C.A. Project. This was reviewed by the SPBCP Technical and Management Group (TMAG) meeting in February 1994 and approved for preparation suggesting further attention to some issues. This means the project has been approved in principle and a Memorandum of Understanding (MOU) between SPREP and the Environment Unit was signed in May 1994 allowing interim funding of up front inputs to proceed.

2 INTRODUCTION

This report is the Project Preparation Document (PPD) being the next step after the concept paper. The objective is to design a project that conserves the biodiversity of the project area. It will use the commitment and management skills of the landowners and village residents in partnership with management and technical support enabled by

SPBCP through the Environment Unit, Forest and Bird Protection Society and other government and non government agencies and the private sector.

The report describes the area on the basis of known data, presents the rationale for biodiversity conservation and development and defines the components, work plan, organisation and management, inputs, outputs, benefits and risks.

The report is a stand alone document and contains material included in the concept paper. The material has been enhanced where possible, and a summary of the information arising from the 1993 biodiversity survey has been included. For details of the survey please refer to the report titled; Big Bay National C.A. Proposal and Opportunities for Sustainable Development, Maturin et al., 1993.

The next stage in the CA project cycle is a review of the PPD[1], prior to final approval of design. This should not be seen as a constraint to the start of project funding especially if the Concept Paper was explicit about the overall work plan, initial costs and other relevant funding sources. Interim funding is provided to maintain momentum between approval of the concept paper and implementation.

PART B THE EXISTING SITUATION

3 DEVELOPMENT TO DATE

3.1 Project Development

In 1991 the New Zealand High Commission in Port Vila Vanuatu, granted funds from its small project fund to the Environment Unit to enable it to undertake a survey of natural heritage sites through out Vanuatu. This project lapsed for two years due to lack of staff. In 1992 the Environment Unit invited the Royal Forest and Bird Protection Society, New Zealand to assist with the identification of potential conservation areas.

Extra funding to enable external technical assistance was obtained from SPREP and AIDAB. Funding was not available for a full survey so it was decided to concentrate on one area which had been previously suggested for protection and which was imminently threatened by logging.

Permission was sought from the Landowners to undertake a survey. A team comprising staff from the Environment Unit, Forestry Department, Vanuatu and the Department of Conservation New Zealand, and the Royal Forest and Bird Protection Society, New Zealand undertook a survey of forest types, birds, reptiles and bats in August 1993. The landowners participated in the survey, assisting with the identification of species and sharing information on the traditional, and medicinal uses of the forest resources. The conservation values of the forest and the potential impacts of logging were frequently discussed during the survey. The survey also included an assessment of the traditional and current uses of the forests and threats to the forest. Informal house hold interviews, and

casual group and individual discussions were held to assess village needs, aspirations and skills.

The draft report was then presented and discussed with the landowners, individually and at Nakamal meetings with landowners and village residents. Opportunities for alternative sustainable enterprises, such as ecotourism, and nut harvesting were also presented and discussed. At these meetings the land owners asked us to proceed with investigating the establishment of a C.A. and sustainable enterprises.

Following receipt of funds from SPBCP in March 1994, the Environment Unit held village meetings and focus meetings with women's, men's and youth groups, at Sara and Matantas, to verify that the landowners and village residents wished to proceed with the project and to discuss priorities for community development and income generation, and management of the project. An interim Community Management Committee with representatives of the landowners, women, youth and SDA church, was established. A workshop was held in both villages. The workshop involved sessions on conservation awareness, basic ecology and protection of biodiversity. Specialists presented introductory information relating to the development of ecotourism, establishment of small businesses and alley cropping. Alley Cropping is a system of gardening using nitrogenous fixing shrubs as hedge rows and planting traditional crops in between. It reduces rotation lengths, and the amount of ground that is needed for gardening. Following the workshops, discussions were held with separate men's, women's and youth groups to assess levels of interest in each aspect of the project, seek other ideas for income generation and identify priorities.

There was a high level of interest expressed by land owners and other village residents for establishing an alley cropping trial. The interest in this aspect of the project stems from a concern about the increasing distance of gardens from the village and the inevitability of gardening expanding into the "dark bush". Funding for the establishment of alley cropping trials has been approved by the Ministry Of External Relations and Trade, New Zealand and the Farm Support Association of Vanuatu (FSA) has been contracted to establish the trials. The EU will work closely with the FSA and the village residents to generate a work plan beginning in July 1994.

Water supply was identified, by the women, as one of the priority problems to be addressed as part of the community development aspects of this project. The Department of Local Government is in the process of assessing the water resources and options for improvement.

A second priority for development was the need for installation of better sanitation. . An NGO, Rural Skills Training Program,(RSTP) have been contracted to run a quality of life assessment at Matantas, and train residents to build VIP Toilets, (Ventilation Improved Pit Toilets). The quality of life assessment will also be used as part of the baseline monitoring data base.

A village profile, including land tenure patterns and assessment of the impacts and perceptions of the project to date has been carried out by a Social Anthropologist, Dr Tom Ludvickson, University of Auckland, New Zealand.

3.2 Land use Developments within the CAP

The proposed CAP boundary includes about 200ha of gardens and coconut plantations, the remainder being forest which is undeveloped.

Prior to the biodiversity survey, the landowners had signed a logging contract over the bulk of the proposed C.A. site. This was later withdrawn as a result of the landowners deciding they wanted to protect the area and find alternative ways of generating income.

A small area of Bin tri forest was logged in the late 80's early 90's, however this was stopped due to a land dispute. Small areas of coastal forest are being continually cleared for coconut plantations, new gardens and bullock grazing. Logging Companies continue to visit the area.

4. NATURAL AND CULTURAL FEATURES OF THE CAP

4.1 Location, Boundary, Areas and Access

The forests of Big Bay are located at Big Bay on the central north coast of the Island of Espiritu Santo, see Figs 1 and 2. They lie on an extensive alluvial plain to the east of the Jordan River.

The proposed boundary of the CAP site incorporates the lowland plain forests extending from the black sand beach of Big Bay, southwards to the top of a limestone escarpment, and plateau to reach a height of 402m, some four kilometers from the sea. The draft PPD document included Wimbo within the CAP boundaries. However during the Sociological survey it was found that this area belongs to another group of landowners, and so it has been excluded. This area will be surveyed as part of the biodiversity survey for an extended CA towards the end of the project. The total area (excluding Wimbo) is estimated to be about 3,470ha with about 2,276ha of lowland forest. The village of Matantas is included within the proposed boundary. This boundary is an interim boundary, with final decisions to be made by the landowners during the land use planning phase. A reconnaissance is planned to assess the desirability and feasibility of expanding the area to include a greater part of the catchment of the Jordan River to the north west, and/or the plateau and terraces to the north east of Matantas, towards the end of the project.

The CA is easily accessible by road which leads from Luganville, the main center of Santo on the south east coast, to the small village of Matantas, which is situated on the eastern edge of Big Bay. A new road is being developed, on the western side of the Jordan River, which will reach Malao, a village close to the western boundary of the CA in 1995.

4.2. Landforms

The lowland area of some 2,276 ha is essentially a flat alluvial plain formed by the Jordan River. Some deeply entrenched stream channels meander across the plain. The VANRIS data base classifies this area as little to moderately dissected older alluvial plains. The alluvium consists of recent and older raised terrace deposits, predominantly of sand and gravel deposited by fast flowing rivers from the Mt Tabwemasana range, (Derek Depledge, pers. comm). They are described as relict depositional plains, as they are above the present flood levels and are not subject to active depositional processes on a large scale. It is clear from aerial photographs that the Jordan River has changed its course in the past, as near the river mouth there are several old deep river channels. Some low-lying areas are subject to seasonal wetness.

Our observations do not support the classification of moderately dissected alluvial plains as the lowland area is not undulating nor is it dissected by deep broadly spaced valleys.

The Jordan River is one of the larger rivers in Vanuatu and forms wide cobble beaches in places. Adjacent to the mouth is a shallow lagoon which is periodically closed to the sea. It is probable that the Jordan River floods into it during very high flows.

To the south, the lowlands end abruptly as they meet a series of raised coral terraces, uplifted by a series of fault movements. The terraces are separated by a series of steep reef limestone escarpments. Vuitokar at 402m forms a prominent high point. Many small caves and overhangs are found in the limestone escarpments. Large reef limestone boulders, often forming chasms are found on the lower terraces. To the north east of Matantas lies a narrow low coral terrace which abuts an escarpment and a series of steeped reef limestone terraces rising to 179m in the south. In the north the terraces broaden out to form a moderately dissected plateau.

4.3 Soils

The alluvial plains are predominantly very deep, rich well drained old alluvial deposits,(hapludolls). These occur commonly through-out the wetter areas in Vanuatu and are widespread in Malekula, Santo, Epi and Maewo. North of Wimbo, between the escarpment and the Jordan River, is a small area of young alluvial soils, (tropofluvents).The reef-limestone terraces are moderately deep, stony, well drained eutropepts, slightly to moderately weathered brown soils. On top of Wimbo and on the terraces to the west of Matantas reddish brown clay soils (hapludalfs), occur. These soils are common in Vanuatu especially in Santo and Efate.

4.4 Climate

Big Bay lies in the wet zone and receives 2,500 - 3,000 mm annual rainfall. In the hot season temperature varies between a maximum (mean monthly) of 310 and a minimum of 230, and in the coldest month temperatures reach a maximum of 270 and a minimum of 210. According to the VANRIS data base, the probability of a cyclonic event in the Big Bay region greater than 64 knots is once in every four years and once in every 2 years for cyclones and strong winds greater than 35 knots. The Big Bay area was last hit directly by a cyclone, (Marion) in 1977. Since then some minor damage may have occurred with Gordon 1979, and Eric and Nigel in 1985, (Steve West, pers. comm.).

4.5 Vegetation

The vegetation of the Big Bay area can be grouped into seven broad plant associations, (see Figure 3). Species names are given in bislama, where possible, followed by the scientific name.

Alluvial Plain Forests

The alluvial plain forests are a complex mosaic of different plant associations characterised by changing dominance of the canopy trees, differences in the density of the shrub and understory strata, and in species-richness. This pattern may reflect changes in soil fertility, water tables, or be just a matter of chance. The forests lying on the flat flood plain are dominated by Nakatambol, (*Dracontomelon vitiense*) and Namatal, (*Kleinhovia hospita*).The main canopy species are Melektri, (*Antiaris toxicaria*), Bin tri (*Castanospermum australe*), Bluwota (P*terocarpus indicus*), Bisa (*Adenanthera pavonina*), Nakoka (*Bischofia javanica*), Natora (I*ntsia bijuga*) and Namalaus (*Garuga floribunda*).The main understory trees are, *Myristica fatua*, *Fiscus wassa*, *Cleidion spiciflorum*, *Codiaeum variegatum*, and Nangalat (*Dendrocnide latifolia*), Nandai (*Tapeinosperma sp*.) is very abundant in the shrub layer in some areas.

Species Rich Forest

Melektri is the most abundant canopy tree in the eastern half of the flood plain forest, its small crowns emerging above the wide-spreading canopies of *Kleinhovia hospita* and *Dracontomelon vitiense*. It appears to be associated with a species-rich shrub and field layer, under-recorded because of lack of time. This species rich area occupies about 1,000 ha and is predominantly a midnight (30m) closed canopy forest. The VANRIS data base mapped it as midnight, open canopy with sparse remnants and part of it as low forest - swamp. The edible nut trees, Nangai (*Canarium* sp), Navele (*Barringtonia edulis Agg*.) and Natapoa (*Terminalia catappa*), and a variety of fruiting trees are interspersed throughout these forests, and are probably introduced and may have been deliberately planted. These are especially common near several old village sites. The large-leafed canopies of *Pangium edule* are most conspicuous on the eastern edge of the flood plain, at the foot of the coral limestone terraces.

FIGURE 3 DOMINANT VEGETATION TYPES

Species Poor Namatal and Nakatambol Forest

In stark contrast the western half of the alluvial plain is very species poor with little cover in the understory, shrub and field layers. Contributing factors could be trampling and grazing by wild bullocks, differences in water table, differences in shade. Terrestrial ferns were abundant in the Melektri forests on the eastern half of the plain but were almost absent from the western portion.

Bin tri Forest

Bin tri *(Castanospermum australe*) dominates about 250 ha of the 500m wide belt of forest behind the beach, in places growing in almost mono-specific stands. These have probably developed as a result of the Bin tri having large and heavy seeds which fall to the ground and germinate close to the parent tree. The seedlings can remain suppressed on the forest floor for 10 - 20 years. A small area of the Bin tri forest has been very lightly logged. The narrow skid tracks are regenerating with light demanding species, and Bin tree seedlings and small shrubs fill the gaps left by tree removal. Another area is currently being cleared for cattle grazing.

Swamp Forest

The area of swamp forest is about 10 - 15 ha, and is dominated by *Barringtonia racemosa* with *Dillenia biflora*, *Erythrina fusca*, *Quassia indica*, *Garcinia* sp and *Scirpodendron ghaeri*. These associated species were only recorded in this habitat. *Barringtonia racemosa*, is a widespread pacific species but it is only found along streams and in freshwater swamps close to the sea. A number of trees common elsewhere on the alluvial plain also occur here and are interesting because of their tolerance of periodic inundation. They include *Pterocarpus indicus*, *Intsia bijuga*, *Dracontomelon vitiense*, *Kleinhovia hospita*, *Cleidion spiciflorum*, *Hibiscus tiliaceus*, *Myristica fatua* and *Semecarpus vitiensis*. Certain large trees - *Pterocarpus indicus*, *Erythrina fusca* and *Barringtonia racemosa* - were noted with flying buttresses, a feature of this habitat rather than characteristic of the species. A drier phase of periodically inundated wooded pasture dominated by *Erythrina fusca* lies between the *Barringtonia racemosa* dominated forest and the savanna/seasonally wet pasture. South of the savanna the *Barringtonia racemosa* association does not reappear. *Erythrina fusca* occurs with mixed species of the alluvial plain - *Dracontomelon vitiense* and *Bischofia javanica.*

Coral limestone Forests

About 250 ha out of about 2,000 ha of those forests were surveyed on the coral limestone terraces overlooking the flood plain from the southeast, called Vuitokar or White stone. This forest is remarkably species rich in comparison with the forest on the alluvial plains. Forty four species of trees and shrubs were collected and this probably represents about 60% of all species present.

Savanna

About 50 ha of savanna dominated by low herbaceous shrubby vegetation with some marsh species, occur as a clear area in the middle of the plain. The origins of this are not clear but it may be the result of an earlier disturbance, perhaps cyclone damage, which was then grazed. Cattle trample and may eat seedlings on the forest floor. When gaps appear through senescence of a tree, or loss of branches, there are no tree seedlings to take advantage of the gap and weed or grass seeds germinate in the light. Cattle select for grass which can grow despite trampling and grazing. Today the savanna area is kept clear by periodic burning and constant bullock grazing.

River Jordan

The River Jordan meanders between wide, flat coral banks up to 0.5 km wide, becoming braided in places. The vegetation on the coral banks is sparse, dominated by weedy shrubs and Herb's such as wild tobacco, (*Pluchea odorata*) and small thickets of Burao, (*Hibiscus tiliaceus*), *Casuarina equisetifolia* and *Acacia spirorbis*. Damp sand and mud beside still water provides habitat for marsh species. The forest edge is very abrupt with a few light demanding species such as *Macaranga tannarius* and trailing vines. Disturbance, presumably from flood damage, is marked by thickets of Burao and groves of bamboo. Patches of grass are a result of bullock grazing. In the early 1960's the course of the river changed. It now flows into Big Bay 1 km west of its original mouth, leaving a lagoon possibly 1 ha in area. Stands of the blue-stemmed reed *Schoenoplectus validus* largely fill the lagoon. Floating leaves of the water lily *Nymphoides indica* and the submerged aquatic *Ceratophyllum demersum* were found in the open water. The mangrove fern, (*Acrostichum aweum*) stands 2-3m tall on rafts of floating, and decaying vegetation.

4.6 Wildlife

Vanuatu is an important faunal crossroads in the Pacific for three main streams of the colonisation of the sw pacific meet here, Papuan, Australian and Polynesian.

The forests of Big Bay area probably support a bird species "richness" unlikely to be exceeded elsewhere in Vanuatu, and is therefore important both nationally and regionally. Of all the Islands, Santo has the greatest species richness, with 49 native species of land and freshwater birds, two of which are generally confined to the highlands and not expected at Big Bay.

Chief Moses and other residents of Matantas recognised 48 species of land and freshwater birds, including spotless crake and white-browed crake, neither species is recorded for Santo. This represents 75% of Vanuatu's native land and freshwater birds, and 85% of land and freshwater birds that breed in Vanuatu.

This survey recorded 44 species including the silver eared-honeyeater which has not been previously recorded for Santo and a large kite or eagle not recorded in Vanuatu. Five of Vanuatu's six endemic species are known to use these forests, the exception being the

Santo mountain starling, a mountain species not expected in the lowland forests of Big Bay. The Vanuatu flycatcher, Vanuatu's only endemic genus, is very common, as it is else-where in forested regions of Vanuatu. The endemic Vanuatu white-eye, was the most abundant and conspicuous bird species. Vanuatu's endemic kingfisher was present and the Vanuatu fruit dove was commonly encountered. At least five kingfishers were heard during the five minute counts, in the "dark bush" closed canopy forests, near the southern limestone escarpment.

Four other bird species, which are each found on only one other island group outside Vanuatu occur in the Big Bay Forests. These are the Santa Cruz ground dove, green palm lorikeet, thicket warblers and southern shrikebill. species richness, and population density were greater in the mature forest sites. Vanuatu king-fisher, scarlet robin, - white-throated pigeon, Santa Cruz ground dove, shinning cuckoo and Island thrush were recorded only in closed canopy forests.

Other species, though recorded in thicket or vine vegetation, were more common in the closed canopy forest. These were golden whistler, southern shrikebill, Melanesian cuckoo-shrike, spotted fantail, pacific imperial pigeon, Vanuatu flycatcher and broad-billed flycatcher species seen only in the open savanna sites were the introduced mannequin, myna, swiftlets, an unidentified raptor and wetland birds.

Bats

Four bat species were found including one of Vanuatu's two endemic bats, white flying-fox (*Pteropus anetianus*). This bat was present in very small numbers, and Flannery, (1993) suggests that some populations of white flying fox may be at risk because it is represented by distinct, isolated subspecies on many islands. The Black flying fox, (*Pteropus tonganus*) was relatively common. The largest tree roost found contained at least 35 individuals. Several smaller roosts were located throughout the area. Populations of Black flying fox in Vanuatu are of international importance as this species is considered to be threatened throughout its range. Five cave roosts of the leaf nosed bat, (*Hipposideros cervinus*) were found between 100 - 200 m altitude. The largest colony contained about three hundred bats. A very small bat, Trident-Horseshoe bat, (*Aselliscus tricuspidatus*) with a face that has three tiny projections sticking above it, was present in large numbers. One thousand three hundred were counted on one of many dusk flight paths. Time did not permit an extensive search for bats, and the village residents were unable to take us to any other roosts. More study would probably reveal a greater number of species. Vanuatu has eleven species of bats, seven of which have been recorded from the Santo region, (Flannery, 1993).

TABLE 5 WILDLIFE SPECIES RECORDED IN THE 1993 SURVEY

ENGLISH NAMES	LATIN NAMES	RECORDED BY LAND OWNERS	RECORDED BY SURVEY
Green winged ground dove	*Chalcophaps indica*	Y	Y
Red bellied fruit dove	*Ptilinopus greyii*	Y	Y
Vanuatu fruit dove	*Ptilinopus tannensis*	Y	Y
Pacific imperial pigeon	*Ducula pacifica*	Y	Y
Baker's mountain pigeon	*Ducula bakeri*	Y	N
White throated pigeon	*Columba vitiensis*	Y	Y
Rufous brown pheasant dove	*Macropygia mackinlayi*	Y	Y
St. cruz ground dove	*Gallicolumba santaecrucis*	N	Y
Silver eared honeyeater	*Lichmera incana*	Y	Y
Cardinal honeyeater	*Myzomela cardinalis*	Y	Y
Vanuatu mtn. honeyeater	*Phylidonyris notabilis*	Y	N
Yellow whiteeye	*Zosterops flavifrons*	Y	Y
Grey backed whiteeye	*Zosterops lateralis*	Y	Y
Green palm lori	*Charmosyna palmarum*	N	N
Rainbow lori	*Trichoglossus haematodus*	Y	Y
Long tailed cuckoo	*Eudynamis taitensis*	Y	N
Shining cuckoo	*Crysococcyx lucidus*	N	Y
Fantailed cuckoo	*Cacomantis pyrrhophanus*	Y	N
Vanikoro swiftlet	*Aerodramus vannikoresis*	Y	Y
Glossy swiftlet	*Collocalia esculenta*	Y	Y
White rumped swiftlet	*Aerodramus spodiopygius*	N	Y
Pacific swallow	*Hirundo tahitica*	Y	Y
Long tailed triller	*Lalage leucopyga*	Y	Y
Polynesian triller	*Lalage maculosa*	Y	N
Melanesian cuckoo shrike	*Coracina caledonica*	Y	Y
White collared kingfisher	*Halcyon chloris*	Y	Y
Vanuatu kingfisher	*Halcyon farquhari*	Y	Y
Myna	*Acridotheres tristis*	Y	Y
Spotted fantail	*Rhipidura spilodera*	Y	Y
Grey fantail	*Rhipidura fuliginosa*	Y	Y
Fantail warbler	*Greygone flavolateralis*	Y	Y
Thicket warbler	*Cichlornis whitneyi*	Y	Y
Scarlet robin	*Petorica multicolour*	Y	Y
Island thrush	*Turdus poliocephalus*	Y	Y
Wood swallow	*Artramus leucorhymchus*	Y	Y
Golden whistler	*Pachycephala pectoralis*	Y	Y

Southern shrikebill	*Clytorhymchus pachycephaloides*	Y	Y
Broad billed flycatcher	*Myiagra caledonica*	Y	Y
Vanuatu flycatcher	*Neolalage banksiana*	Y	Y
Black headed mannikin	*Lonchura castaneothorax*	Y	Y
Jungle fowl	*Gallus gallus*	Y	Y
Megapode	*Megapodius freycinet*	Y	Y
Banded rail	*Gallirallus philippensis*	Y	N
Purple swamp hen	*Porphyrio porphyrio*	Y	Y
White browed crake	*Poliolimnas cimereus*	Y	N
Spotless crake	*Porzana tabuensis*	Y	N
Beach thick knee	*Esacus magnirostris*	Y	N
Wimbrell	*Numenius phaeopus*	Y	N
Wandering tattler	*Heteroscelus incanus*	Y	Y
Pacific golden plover	*Pluvialis fulfa*	N	Y
Reef heron	*Ardea sacra*	N	Y
Pacific black duck	*Anas supercilios*	Y	Y
Harrier	*Circus approximans*	Y	Y
Peregrine falcon	*Falco peregrinus*	Y	Y
Barn owl	*Tyto alba*	Y	Y

Y = yes
N = no

Reptiles

Three snakes, all Pacific boa, (*Candoia bibroni)* and many golden bell frogs, (*Litoria aurea*) were found in the mature forest. Three species of Gecko were found and these were all common, *Gehyra oceanica*, mourning gecko (*Lepidodactylus lugubris*), and the slender toed gecko, (Nactus sp.) which is thought to be endemic to Vanuatu. These species are all widespread in Vanuatu.

The giant stump toed gecko, (*Gehyra vorax*) was found in the canopy of a felled tree at a nearby logging site and it is likely that this species is present at Big Bay, but we could not effectively sample tree canopies.

Vanuatu has eleven gecko species, including one known from a single specimen collected in 1924, (*Gehyra mutilata*), and the endemic saw-tailed gecko, (*Perochirus guentheri*) known from only four specimens. The Big Bay gecko fauna is representative of Vanuatu's common geckos.

Seven species of skink were found with (*Emoia caeruleocauda*), pacific blue-tailed skink, (*Emoia cyanura*) and (*Emoia impar*) being the most common. The spectacular, endemic Vanuatu green tree skink, (*Emoia sanfordi*) was commonly found on tree trunks and branches in the forest and in the open grassland area. Another endemic skink, the Vanuatu black-barred skink (*Emoia nigromarginata*) was present but not found in large numbers. Green bellied skink, (*Emoia cyanogaster*) and the moth skink, (*Lipinia noctua*) were plentiful.

There are 13 skink species identified in Vanuatu, three of which are known from a few specimens only. The Big Bay fauna represents at least 54% of all skinks species found in Vanuatu and 74% of all gecko and skink species known from Santo.

Turtles

One hawksbill turtle, *(Eretmochelys imbrica*ta) was seen swimming close to the Matantas beach. Chief Moses and other village residents report that turtles are common in Big Bay and many come ashore to nest, usually in November. Two local names were used for turtles, Avua Havorua and Avua Hovofati but it was not possible to accurately identify the species they referred to. Turtle populations of the South Pacific are declining and some species have reached dangerously low numbers. Big Bay, due to its size and relatively low human population, may be an important nesting location. This deserves further investigation.

Coconut Crabs

Village residents report that coconut crabs, *(Birgus latro*) are common in the coastal forests of Big Bay. Due to limited time no survey was carried out.

Introduced Species

Pigs are very common throughout the forest and one group of 27 was seen on one day. Wild bullocks are in relatively low numbers at the moment, although relative to pigs they are abundant, and a tabu has been instrumented to let numbers build up again. It is likely that these animals are having a detrimental impact on the forest, especially forest regeneration.

Much of the forest floor is very open with a minimal shrub layer, which may be natural but is more likely the result of bullocks, pigs and human use. Establishment of enclosure plots would be necessary to identify the impacts. Both, bullocks and pigs also probably have an impact on invertebrates. Evidence of pig predation on native land snails was observed.

Wild dogs and cats are prevalent. Cats have been observed by village residents eating the green-winged ground dove and lizards. Wild dogs were reported to eat megapodes, purple swamphen, spotless crake, white-browed crake and buff-banded rail.

Rats are present, however our rat trapping caught only seven Polynesian rats (*Rattus exulans),* three in the coastal forests and four in the mature forest. Village residents did know of a larger kind of rat seen around the gardens, river and pig pens and it is likely this is the Norway rat (*Rattus norvegicus*).

African land snails are well established and may represent a significant threat to native invertebrates.

4.7 Summary of Ground cover and Land Use

The CA is approximately 3,470 ha which includes, about 200ha of transitional zone, being the Matantas village and gardens, see Figure 4.

We have not located historical landuse data, however we know that at the current population of 17 families approximately 4-5 ha of new land is cleared each year for gardens and coconut plantations. The village has been sited at Matantas since about 1961, however it was previously much smaller.

The proposed C.A. area also contains an old village site, which is now regenerated into forest, and an old runway developed by the Americans during the war.

FIGURE 4 CURRENT LANDUSE

Table 6 Distribution of Land by Vegetation and Agriculture Land Use, CA and Transition Areas

A. Proposed Protected Area	
Alluvial Plains Forest	1,859ha
Swamp Forest	15ha
Coastal Forest	250ha
Limestone Terrace Forest	1,194ha
Savanna	50ha
Logged Bin Tri Forest	2ha
Riparian Vegetation	100ha
Total Proposed C.A. Area	1,195
B. Transitional Area	
Natural Vegetation	50ha
Gardens & coconuts	200ha
Village area	25ha
Total Transition Area	275ha
Total Land Area	**4,470**

4.8 Summary of CAP Ecosystems and Threats

Table 7 summarises the natural and cultural features of the area and the existing and potential threats to the area.

Table 7 Natural and Cultural Features and Threats

Natural Component	Current & Possible Major Threats
Native forests	
Lowland Forest Swamp Forest Coastal Forest	Cyclones Logging (minimal threat at present) Unsustainable level of activity Eco/adventure tourism Bullock grazing Pig foraging Gardening Agricultural development Fire
Shrublands/grasslands	
Riparian Vegetation	Cyclones Collection of wood and materials Bullock grazing Pig foraging Gardening Agricultural development Fire
Inland Fishery	Over fishing Pollution Tourist activity Land clearing leading to: * increased sedimentation * reduced residual stream flows * reduced fresh water fish
Wildlife	Over hunting Reduced forest area/habitat Cyclones Degraded habitats Ecotourism Pigs, bullocks, wild cats & dogs

Table 7 Continued-CAP & Transition Zone Natural & Cultural Features & Threats

Natural Component	Current & Possible Major Threats
Land	
	Degradation due to: * clearing on steep land leading to erosion * contamination from pollution Reduced fertility from intense use
Cultural features	
	Unplanned infrastructure Clearing for agriculture, forestry & gardening Bullocks and pigs Loss of oral history Insensitive tourism and other activities.

The conservation significance of the major ecosystems in the CAP is described in Table 8 below.

Table 8 - Definition of Major Ecosystems and their Significance

Major Ecosystem	Natural Components	Significance
Alluvial Plain Forest	Diverse forest flora Bird & other wild life Scenic attributes Streams Cultural sites	Only remaining significant area of alluvial forest in Vanuatu. Probably the richest area wildlife in Vanuatu & contains all but one of Vanuatu's endemic bird species. populations of Vanuatu's endemic fruit bat and *Pteropus tonganus*, both regarded as threatened species. Important for science & education. Good site for ecotourism.
Swamp Forest	As above	Largest known area of intact swamp forest in

		Vanuatu. Important scientific & values.

Table 8 Continued Definition of Major Ecosystems and their Significance

Major Ecosystem	Natural Components	Significance
Coastal Forest	Black sand beach Coconut crabs Scenic attributes Cultural sites Bird & other wildlife	Only extensive intact lowland forest to reach the coast in Vanuatu. Important area for coconut crabs, a threatened species.
Limestone Forest	Very species rich flora and fauna. Scenic attributes Caves Rock formations.	Largest intact area of forest on this land and soil type known in Vanuatu. Important refuge for wildlife and bats as more remote.
Regenerating Forest & Shrublands	Wildlife Historical war sites	Important for the protection of Jordan River Water quality and fishery.
Lagoon	Wetland flora Water birds Fresh water fish	No other known opportunity in Vanuatu to protect this range habitats.
River Jordan	Wader and water birds Clean water Scenic attributes	Combination of habitats and bird species richness makes this area important for bird watchers. Jordan River is Vanuatu's largest & only braided river.
Blacksand Beach	Sea birds	Probably significant Nesting place for turtles. Value for

tourism.

5. COMMUNITY FEATURES

5.1 Settlement Pattern

The C.A.P. has only one village, Matantas, located within its boundaries. Matantas lies on the coast of the eastern side of the C.A.P. It is a new village originally cleared by Man Hill people from their mountain villages and settled by people from Malao, a coastal village on the west bank of the Jordan river. There are still close links with Malao, and many families spend part of their time living there.

On the western side of the Jordan river, the western boundary of the C.A.P. there are some 13, mostly very small villages. People living in these and mountain villages further inland use the forest for hunting. The "legal" owners of the disputed land live at Sara, some 25km inland from Matantas, and make small use of the CA site, mainly hunting pigs, bullocks and pigeons, and collecting coconut crabs for sale in Luganville.

5.2 The Population and Its Features

Matantas

Matantas has a population of approximately 190 in April 1994, made up of about 17 families. The population fluctuates continually due to movement of families between Malo and Matantas, and the temporary in migration of Man Hill people from mountain villages, who come to supply labor for Chief Moses, or to seek his healing powers. Some of these families have been living in Matantas for two years, others stay for short periods only. They number 63 people.

The village is deeply divided being split between the "Man Ples" people who are predominantly Seventh Day Adventists, and the Man Hill people who share the Bahai faith with chief Moses. The two communities live separately, with the Manhill houses being clustered about the chief's house. Chief Moses strongly identifies with the Man Hill people and spends most of his time with them. The Chiefs Nakamal is generally only used by the Man Hill and Chief Moses, the SDA have their own Nakamal close to the sea.

The predominantly SDA community live closer to the salt water and are concerned that the Man Hill people still practice kastom, with the women wearing kastom leaf and the men calico loin cloths. There is little communication between these two groups of people, and an increasing feeling of resentment by the S.D.A.'s towards the Man Hill. During the Sociological Survey, Dr Tom Ludvickson reported that the S.D.A.'s would prefer it if the Man Hill people moved out.

This is a sensitive issue which will have to be worked through before some of the planned activities can proceed. The issue has come to a head as a result of discussions on ecotourism. Chief Moses would like to develop kastom dancing with the Man Hill people, but the S.D.A.'s are opposed to this within the village. Chief Moses wishes to establish this well away from the village and it may be possible to resolve, provided two physically and ideologically different enterprises are economically feasible and socially sustainable. Bringing these two communities together and increasing village cooperation has been the focus of much of our work to date. As a result of our work Matantas now has a Community Management Committee, (CMC) which contains representatives of both communities and the two groups are beginning to share village tasks and work together. There is no more talk about the Man Hill community moving out.

Sara

The owners of the disputed area, are Chief Lus, his brothers and their families, most of whom live in Sara and the nearby Sara Two. The people of Sara have a large area of land, most of which has been logged, or leased to immigrants from other Islands. Chief Lus's family is only a small percentage of the Sara population, of about 173 people. This village too, is divided between religions.

5.3 The Role of Women in the Community

As to be found in other parts of the Pacific the women of Matantas and Sara are the home makers and care takers of households and the workers in the gardens. This traditional role also includes undertaking community development initiatives. In Matantas it is the women who have started and organised the private kindergarten and school. They also wish to build a women's house, but the men have been uncooperative and haven't built one.

In Matantas women are allowed to speak in the Nakamal if their husbands have given them permission. Some of the senior women have this permission and are confident to speak but most rely on their husbands to bring up any issues. Most of the younger women do not have this permission, mainly because they have never sought it for it is not widely accepted. The Man Hill women, however remain excluded from decision making and rarely participate in village activities if the SDA are involved, due to their sense of shame about their kastom dress. They are virtually excluded from the SDA community. The women of Sara are also not permitted to speak in the Nakamal and are excluded from the formal decision making arena.

Bringing about a greater involvement of women will take time and needs to be handled sensitively. It is likely that a women's NGO will be needed to work with the women of the two villages to empower them and assist them in feeling more confident, and gain the right to speak at village meetings.

Land in Matantas is passed through the matrilineal line to the son, however women have little say in the management of the land. All decisions regarding the land are made by the land owning brothers. Chief Moses is regarded as Chief of the land. He however listens to advice from his niece who lives in Vila and is well educated.

5.4 Other Community Sub-Groups, Institutions & NGO's

The young people in both Matantas and Sara usually observe but are not included in discussions and decisions relating to development activities. In Matantas, young people follow the order of village life as dictated by their elders. For the "Man Hill" people, chief Moses gives direction to all activities. The girls especially work in the gardens and the boys frequently go hunting in the forest.

Religion plays a major part in the life of the people of both villages. Matantas and Sara are divided by the presence of two religious beliefs.

The church group in both Sara and Matantas are the strongest women's groups. However in both villages they meet infrequently. Part of their role is the initiation and organisation of community development. In Matantas there is a school committee amongst the SDA group and a truck committee to manage the village truck.

5.5 Village Governments

The chief's of both villages are the dominant decision makers, particularly regarding land, although they do discuss issues with their land owning brothers. However some issues, concerning the Man Hill in Matantas seem to be decided on unilaterally by chief Moses. There does not appear to be a strong village government structure, and until this project the village had hardly ever met as a whole to discuss village problems or development. Now the Matantas community have elected Chief Solomon, (a brother of Chief Moses) as Chief in charge of community affairs.

In the case of Sara, Chief Lus makes decisions regarding his families land with input from his sons and his brothers. Before this project got underway Chief Lus tended to make unilateral decisions. However as a result of his brothers concerns surrounding logging and their increasing desire to become more involved in this project, there is now more consultation and collective decision making.

5.7 Land Tenure

Half of the area is owned by three brothers, Chief Moses, Solomon and Esra, who live at Matantas. Details of land ownership are provided in the Sociological report, carried out by Dr Tom Ludvickson. Another family member, Denny Palo also has a strong say in the management of land.

An area in the core of the lowland forest is under dispute, between Chief Moses of Matantas and Chief Lus of Sara village, some 25km by road inland from Matantas.

A Supreme Court decision issued in 1991 ruled that the disputed area is owned by Chief Lus, but as the people of Matantas have lived there for a long time they should seek a use lease, which should not be unreasonably with held, and if necessary a decision could be imposed. The boundaries of the disputed land are not clear as there are three different versions, one in the Court records, one that the Matantas landowners have and another that the Sara landowners have. Figure 5 shows the map attached to the records kept by the Supreme Court.

FIGURE 5 LAND OWNER SHIP

Chief Moses and his family do not accept the decision, and in the past have had no desire to co-operate with Chief Lus. The Supreme Court Judge, called the parties back to court in September of this year in an attempt to clarify the case. It is now clear that neither party can appeal the decision except on legal principles. As a result of this and the realisation of landowners in both villages that this project can not proceed until the dispute is resolved both parties have agreed to come together to begin healing the rifts and exploring ways of working together, jointly managing the area and sharing the benefits. Resolution by Customary ways now seems possible.

A Port Olry Man has cleared some bush on the coast to develop a bullock farm. The Supreme Court declared that he is not a landowner, and the people of Matantas are pursuing a Court Order to evict him.

6. GOVERNMENT, NGO AND PRIVATE SECTOR SUPPORT SERVICES

Matantas lacks service from the Government and the Santo Malo Local Government Council (SMLGC) . One concrete water tank has been provided by the SMLGC, however this is not sufficient for the population, and during the dry season especially the people are dependent upon water from one small creek, and a freshwater spring that surfaces on the sand beach. Most of the village carries drinking and cooking water from below the place where they swim and wash. After heavy rains the water runs "red" for several days at a time.

There are few other visible signs of government services in Matantas, and no one remembers visits from Agricultural or Forestry Extension Officers, or Health Officers. The Department of Education has recently begun to supply the private school with books, and the teachers have recently been on several training courses.

Sara is better provided for and has VIP toilets, and several new water tanks built by the women with assistance from the Department of Women's Affairs. An aid post has recently been established in Sara. Neither of the villages have electricity.

The road to Matantas from Luganville is maintained by Public Works and by Vanuatu standards, it is a good road. The level of maintenance may decline in the future, due to a new road being constructed by the European Union, (EU) which crosses the Jordan River further inland and extends towards the Cumberland Peninsula and will reach Malao in 1995. Although this is an aid project there is no provision for maintenance, all costs are to be borne by the Provincial Government, which may reduce funding available to the Matantas road in the future, as the new road will service a larger population.

Currently the road between Sara and the main Luganville - Port Olry road is being maintained by a logging company, working in this area.

6.1 Health and Health Care

There are no medical facilities or personnel in Matantas and the nearest clinic is some 3 - 4 hours walk away or a boat trip. Most women walk to the clinic as they cannot afford to take a boat. Some babies are born in the village, the birth being attended by two senior women. The majority, however are born in the Luganville Hospital.

Chief Moses is renowned for his healing powers and all the Manhill people attend his healing house. The SDA people never go to Chief Moses however they often seek the services of one of the senior women who has skills in the use of leaf medicine. The most common sicknesses are malaria, cough, dysentery, and T.B.

The women of Matantas wish to set up a first aid post, and have identified a young women who has had some first aid experience while attending college. Further training is being provided through Government at the Malao Health Center. The Luganville Hospital will supply basic medicines following completion of training and the establishment of a building.

As mentioned above Sara is substantially better off with regard to health services than Matantas. They are closer to Luganville, and now have their own first aid post. Matantas has not had access to a radio telephone, though one is going to be installed with the next few months.

6.2 Education

Matantas has a private kindergarten and junior school to class three, for children of the S.D.A families. The Man Hill children do not attend these. Chief Moss has had a school built by and for the Man Hill community and they now have one Bahai teacher, a volunteer from New Zealand. Some Man Hill and SDA children go to school in Luganville, or in the case of the SDA to Malao or schools in neighboring villages. The SDA school committee has approached the Bahai teacher and there are plans to send all the kindergarten children to the SDA kindergarten and the older children to the Bahai school.

Most of the adult population is illiterate in all languages, as they have never had an opportunity to go to school. One Matantas women has iniated adult bislama literacy and basic math's classes, which are attended by both the SDA and Man Hill communities. This action arose as a result of the first women's business course, during which it became clear to the community that in order to spread the benefits of the project more people need to be able to read and write, at least in Bislama. The Bahai teacher is assisting with this and has plans to introduce English if possible in the future.

Sara has a private kindergarten and junior school. However most of the children after finishing junior school go to school in Luganville where they board during the week returning home for weekends.

6.3 Departments of Agriculture and Fisheries

These departments have not paid much attention to either of the villages, although the Department of Fisheries has run courses in establishing a fishing business. Several men in Matantas have been on the course and as a result have established their own fishing business which have been successful and the boats originally procured on leases have been paid off. There have been problems with the fishing company in transporting ice to the village and the businesses lapsed for nearly a year, but have recently started up again. There is potential for expansion in fishing if people where interested and adequately trained. The fishers are however finding that their catches are declining and they have to go further afield to find fish. The Fisheries Department believes there are more reef areas which have not been exploited. Assistance is needed to help find more fishing grounds and discuss a fisheries management program.

6.4 Ministry of Women, Cultural and Religious Affairs

The status of the Office for Women's Affairs has gradually changed over the years from that of a program unit within the Department of Community Development to a Department of Women's Affairs within the Ministry of Women, Cultural and Religious Affairs in early 1993. With the appointment of a Director for Women's Affairs, it is the hope of Government to better address development issues which impact on women and their families.

There are five Women's Development Officers who work at community level in the rural areas of Vanuatu. The Women's Development Officer (WDO), based in Luganville is responsible for the women of Matantas and Sara. The Government development programs are also for the women of both villages to call when they find a need to do so in relation to the Big Bay project and/or related activities.

To ensure the participation of community people and the involvement of women, the Environment Unit has discussed the project objectives and anticipated work-plan with the Women's Affairs Office, the Vanuatu Cultural Center and relevant NGOs such as the Vanuatu National Council of Women and the Vanuatu Association of Non-Government Organisations.

Due to the fact that the project manager is a male, a female counterpart will be necessary for many of the planned activities, eg., PRA workshop, Quality of Life Assessments, Water supply installation. It is planned to involve women either from an NGO or the WDO's.

6.5 National Tourism Office

The National Tourism Office has a program of promoting Vanuatu as an attractive destination for those seeking a unique holiday. The Yasur volcano on Tanna Island in the southern region of the Tafea group, the renown Pentecost land-dives relating to the yam planting season are but two of these attractions. Ecotourism is being promoted through the Santo Tourism Industry Association (STDA) a Luganville based group made up mostly of Vanuatu tour operators. These ni-Vanuatu tour operators are advertising eco tours - particularly bush walking.

STDA are organising tour packages for the cruise ships which visit champagne beach, about an hours drive from Matantas. They are keen to promote Big Bay and Matantas.

A Tourism Master Plan is being developed for Vanuatu and it is likely that this will suggest promoting Vanuatu as an ecotourism destination.

6.6 The Vanuatu Cultural Center

The Vanuatu Cultural Center will undertake a survey of the cultural sites of Big Bay and has indicated it will assist with bringing a cultural perspective to the project. This can be achieved through consultation with the people of Matantas and Sara, the Council of Chiefs and those agencies wishing to assist with the introduction of income-generating activities to the villages. Preparation of promotional materials for tourism for instance could have the National Tourism Office, the Vanuatu Cultural Center, and STIDA working together on visual and written material to highlight significant cultural aspects of the Big Bay C.A.

As a country which adheres to customary practices, the Cultural Center can play an important role in the project.

The 1993 Big bay survey included some oral history recording, however this needs to be completed and extended to interviewing people with general historical knowledge of the Big bay area. In addition there are several people in Vila with a specialist knowledge in wartime history, who should also be interviewed. This information should be used in interpretation brochures for the CA.

The EU will seek assistance from the Cultural Center to undertake this work and will coordinate funding if necessary.

6.7 The Vanuatu National Council of Women

The VNCW has already been identified by the lead agency as one of the important NGOs to assist with the involvement of women in the project. Through its membership at Island Council and Area Council level, the VNCW should be able to reach out to the women of Matantas and Sara with appropriate and realistic development programs.

The Presidents of both the Island Council of Women for Luganville and the Area Council of Women in which Matantas and Sara are located, will be involved in the planning discussions and consultations. Liaison between the Government Women's Development Officer based in Luganville and the two Presidents of the Island and Area Councils of Women will begin as soon as possible.

6.8 The Vanuatu Association of Non-Government Organisations

The Vanuatu Association of Non-Government Organisations (VANGO) as an umbrella organisation for all NGOs in the country can be most effective to the project by mobilising resources, especially the training programs of its affiliated members. VANGO could also call on the assistance of the Vanuatu National Council of Churches to undertake issues which can be best dealt with by that religious body. The Nasonal Kommuniti Developmen Trust, NKDT is a local environmental NGO specialising in training field workers in environmental management and providing the infrastructure for trained field workers to live and work in villages providing environmental advise to villagers. So far their program is restricted to Efate. It is likely that the Conservation Officer will partake in NKDT's regular training programs.

A new Environmental, NGO is being formed. The EU has already established links with this group and will continue to find ways of involving them in the project. The EU has spearheaded NGO meetings to discuss amending or rewriting the National Parks Act.

7. ECONOMIC DEVELOPMENT AND ACTIVITY

7.1 Agriculture

Agriculture in Matantas is almost totally related to gardens for subsistence living, no produce is sold to the Luganville market. This is partly due to the lack of awareness by the Matantas women about the procedures of using the market space. The EU has met with the market organizer and is working with him to overcome this barrier and facilitate an opportunity for the women to sell their produce at the Luganville market. Transport costs should not be prohibitive as women from much greater distances than Matantas can make a regular profit from selling their produce. Two families are developing bullock farming. They are not undertaking any pasture improvement. The bullocks are grazed under the coconuts and are used to clear bush. Copra is the predominant cash crop and all SDA families have coconuts. The Man Hill are also planting coconuts.

In Sara, all families have coconuts and a significant proportion have bullocks, one farmer is developing cocoa.

The people of Sara have access to the Luganville market and the women travel once a week to sell their garden produce in the market.

7.2 Forestry

The interest in forestry is limited to logging the natural forests. Sara have logged much of their land, and one sawmill operator is now beginning to work with the village to replant logged areas with white wood.

The concept of agro forestry and growing trees for posts was presented at workshops in both villages in March, however no interest was expressed. It is expected this will be raised during the land use planning phase of the project, as there is a large demand for posts, which can be grown in 7 - 10 years.

7.3 Tourism

Tourists are already coming to Matantas in small numbers. Most come from the Lonnoc resort about 3/4 hour drive from Matantas. They drive to the village, walk on the beach and some drive through a 4 wheel drive track to the Jordan river. Some also wander freely through the village, and some stay with families for several days. Tourists from the cruise ships are also starting to visit Matantas. Two local tour operators run guided tours to Matantas from Luganville. Currently the landowners do not receive any financial returns. On average these operators bring at least one mini van a week to Matantas. All three tour operators are keen to support the Park and want to start taking guided walks as soon as tracks are established, and consensus is reached about the distribution of benefits.

The villagers are keen to start some tourism businesses, especially guided walks and bungalows. These will have to be carefully planned, and much training will be needed before any major venture can be established. It is planned to start small and as experience and training increases existing skills the enterprises could be expanded.

It is expected that the Luganville Airport will be extended to enable international flights to come direct to Luganville. A large 28 bedroom hotel is planned for Luganville and there is an air of optimism that the economy of Santo will start to grow. Unfortunately there has been little advance planning for tourism development on Santo, and no studies into the likely impacts on the population of Santo.

7.4 Small Businesses

The SDA pastor in Matantas operates a small store from his house, selling basic household requirements, soap, fuel for lamps, batteries and rice.

The village collectively owns a village ute which is managed by a "truck committee." The truck was provided by the MP responsible for Matantas, but the loan has to be paid back. There have been some problems in servicing the loan.

Sara on the other hand has several small stores and most women sell produce in the Luganville market. The women's business unit of the Department of Co-operatives and Rural Development have recently visited Sara to asses the level of interest amongst the women to undertake small business training courses. Sara has a number of trucks.

8 ENVIRONMENTAL, CONSERVATION & LAND USE POLICIES & PROGRAMS

8.1 Regional policies and Initiatives

Vanuatu is a party to 25 international environmental/resource conventions. These include United Nations Convention on Biodiversity, 1993, and CITES. Vanuatu has not yet become party to the Convention for the Protection of Natural Resources and Environment in the South Pacific Region, the Apia Convention or the Convention on the Conservation of Nature in the South Pacific. The Vanuatu Conservation Strategy lists the importance of adopting these and passing laws to ratify their provisions as a priority.

8.2 National Policies and Initiatives

Appendix 4 lists all environmental legislation in Vanuatu. The National Parks Act, which has been passed but not yet gazetted is the most relevant to this project. It provides for the establishment of National Parks and Reserves and the setting up of a National Parks Board and local management committees. The Act is not compatible with the kind of local ownership and management envisaged for Big Bay, as the Act passes control of the National Park to Government Ministers and Government Departments with little authority remaining with the landowners. The EU intends to investigate the possibilities of either amending or rewriting the National Parks Act.

SPBCP have offered assistance to fund a legal advisor to assist in carrying this out. The EU has had meetings with relevant Government Departments, the Attorney Generals Office and NGO's. There is general agreement that the Act needs to be completely rewritten. The political acceptance of this has not been assessed.

Vanuatu has completed a National Conservation Strategy, which presents strategies for the preservation of biodiversity and tabu places.

8.3 Local Policies and Initiatives

The Matantas landowners have recently reinstituted traditional conservation measures, using “namele” signs to prohibit fishing in the Jordan River, hunting pigeons, and hunting bullocks unless permission is granted by Chief Moses, in the case of bullocks, Chief Solomon for fish and Andrena Thomas for pigeons. There is a great need for more conservation awareness which will be provided through workshops and general day to day activities and storiyarns.

PART C RATIONALE FOR THE CONSERVATION AREA AND PROJECT DESIGN

9 Selection of the Area

The Big Bay Forests were initially selected for a biodiversity survey by the Environment Unit and the Royal Forest and Bird Protection Society on the basis that this area had been previously recommended for protection by the Vanuatu National Forest Inventory, (Baldwin et al, 1991), and that it was known to be under threat from logging. The VANRIS Forest Resource Inventory showed the Big Bay forests to be the largest area of continuous forest remaining on alluvial plains in Vanuatu, and the area was known to be rich in bird life, (Bregulla, 1992, Medway, Lord and Marshall, 1975). The site has potential for the establishment of sustainable enterprises, such as nut harvesting and ecotourism.

Following the survey the landowners decided that they wanted to protect their forests and asked for assistance. They canceled their logging contracts pending further word from the EU as to what assistance the EU could offer.

The EU then selected this site for SPBCP funding, on the basis that it has high biodiversity values and is an ideal site for a C.A., and the landowners had already demonstrated their commitment to protection by canceling the logging contracts.

TABLE 9 CONSISTENCY OF THE CAP FEATURES WITH SPBCP CRITERIA

Criteria	CAP Features
Category 1 - Essential	
♦ Presence of national/regional important ecosystems of global concern, large enough to maintain viability	The proposed CA is Vanuatu's largest remaining alluvial plain forest with a rich diversity of flora and fauna and a range of habitats, unlikely to be found any where else in Vanuatu.
♦ Commitment from landowners and partners, achievable project.	The two land owning families have verbally stated that they wish to protect the forests and work to establish sustainable enterprises. Both villages are committed to the project. Activities to date show that the level of commitment is very high but the land dispute will have to be resolved before any money earning venture is established.
♦ CAP large and complex enough to be typical of a wide range of interactions between people and natural resources.	The CAP is about 3,470ha. There is one village, Matantas, of approximately 125 people within the proposed boundaries. There are two land owning families, one at Matantas, and one at Sara. Use of the forest is typical of current practices in Vanuatu.
Category 2 - Preferable (have one or more)	
♦ High levels of biological diversity and ecological complexity	CAP represents 75% of Vanuatu's native land and freshwater bird species (85%) of those that breed in Vanuatu, and 42% of Vanuatu's lizard fauna. It has range of habitat types not found together in any other area in Vanuatu.

Category 2 - Preferable (Continued)

♦ CA important for survival of endemic species, rare or endangered.	Five of Vanuatu's 6 endemic bird species are found here as well as populations of two species of fruit bat, one endemic & both of which are threatened, coconut crabs and turtles. Presence of endemic and rare plant species expected but not determined due to lack of a "Vanuatu Flora"
♦ CA threatened by destruction, degradation or conversion.	Logging contracts have previously been signed. Forest is being continually cleared for gardening and bullock grazing.

10 PROJECT DESIGN CONSIDERATIONS

10.1 Overview

The design of the project needs to address the ultimate dilemma of conservation and development.

Even if a level of understanding of conservation benefits by land owning communities exists it often does not provide sufficient incentive to override more immediate income earning opportunities offered by exploitation of the resources they control. Technology and markets have led to increased exploitation of resources that was not possible in the past. This has increased pressure on the resource base of land owners.

Strategies used to minimise the dilemma normally rely on one or a combination of two or more of the following approaches:

(a) Initiate or continue awareness/education programs in the belief that saturation will have a positive impact. Targeting programs to special groups such as youth (tomorrow's land managers) and women who are traditionally involved in activities relating to the environment will accelerate the creation of benefits.

Education material must aim at the village understanding of economics, not just biodiversity conservation as an end in itself but rather as a means to and an incentive for improvement in the life of rural households.

(b) Identify income earning opportunities that directly or indirectly relate to conservation of biodiversity. Reducing the market failure by creating a convergence between the private and social optimal use of resources.

(c) Lump sum payments to or asset purchases for customary land owners in exchange for a commitment to conservation.

The three approaches relate to the creation of incentives and an awareness that they exist.

10.2 Constraints and Other Design Considerations

10.2.1 National Considerations

The Vanuatu Conservation Strategy recognises the need for parks and reserves to protect ecologically important areas which are representative of all ecosystems in Vanuatu.

The National Planning Office are working with a new concept of planning utilizing a participatory approach and the natural watersheds of the country as planning units. Boundaries are not defined and villages and landowners are trained as planners and carry out their own planning as part of a participatory rural appraisal exercise. The CAP planning is process is quite compatible with this.

Table 10 lists constraints and opportunities relating to the conservation of biodiversity and the protection and conservation of land resources.

Table 10 Constraints and Opportunities for the Conservation of Biodiversity and the Protection and Conservation of Land Resources .

Constraints	Opportunities
Biodiversity	
♦ Knowledge of species presence, populations, and distribution seriously lacking, especially freshwater fish, reptiles, plants and invertebrates.	. Undertake further botanical, & wildlife surveys, including freshwater fish, and establish population monitoring.
♦ Effects of wildlife harvesting on bird and bat populations and on the ecological balance are unknown.	. Monitor harvested populations and undertake research to establish sustainable harvest levels.
♦ Effects of introduced predators are unknown.	. Monitor impacts and research options for control.
Protection and conservation of land resources	
♦ Lack of proper land use planning & legislation.	. Expand water shed planning approach.
♦ Land tenure and land ownership issues.	. Develop extensive conservation and landuse planning awareness program.
♦ Lack of proper EIA's	Expand EU capacity & develop legislation.
♦ Lack of appreciation about biodiversity value of resources.	. Public education and awareness raising.
♦ Population pressure.	Improve landuse planning and family planning awareness.

10.2.2 GEF and SPBCP Guidelines and TMAG Comments

Inherent in SPBCP philosophy is the participation of direct beneficiaries at all levels of project design and implementation.

Participation by people in projects may lie between two extremes, at one end it refers to cost recovery of inputs made available to beneficiaries such as the mobilisation of free labor and materials for community projects, cost sharing by villagers, introducing water user fees etc. At the other end participation refers to 'an open ended' process, where beneficiaries are encouraged to diagnose their own problems and to identify and implement their own solutions.

The latter approach is usually difficult to reconcile with requirements of loan funding institutions. These emphasise the need for accurate estimates of costs and returns for the project life.

Participatory projects are characterised by open ended designs where the choice of activities is left open to beneficiaries during implementation. This makes prior specification of the inputs and their associated costs, particularly in the longer term, difficult. Meaningful participatory design and implementation is drawn out. If it is to be more than a token event it requires a strong informed community institution or person for support through the initial phases, until it becomes a self perpetuating process.

Participatory projects are more appropriate for grants, such as GEF funds, rather than loan funding.

Where participatory planning of projects is a requisite, a critical activity is to make the community aware of the project concept and the available technical and practical options. This enables it to participate in a meaningful manner in ongoing planning activities with government and non government partners.

Just as there is a need for awareness raising amongst project beneficiaries there is also a need for raising the awareness of the other parties, the government and non government agencies, relating to the community, its social and decision making structures, land ownership and use patterns and decisions, customs, traditions, the expressed needs of the people, attitudes to business, conservation and the project.

The Concept Paper defines the outline of the CAP, this has been accepted by SPBCP. The following comments were made at the TMAG meeting in February 1994:

- "The meeting noted the urgency of the proposal in view of a major threat to the biodiversity of the area through large scale logging.

- The meeting agreed that the PM should follow the project up urgently with a view to achieving project design and program which is viable.

- The meeting noted that this project is at a critical point. Achievement of a work program which supports the local community through sustainable use of the renewable resources of the area would provide an important case study and example which may be relevant to other forest people and areas considering the prospect of major logging.

- Issues to be considered:

  ・Involvement of local people in assessment of the area:
  ・Development of options for sustainable use including ecotourism and nut harvest;
  ・Preparation of a work program."

10.2.3 Village Commitment

The landowners of both Matantas and Sara stated that they wanted to protect the Big Bay forests after the initial survey in September 1993. This commitment was reaffirmed after village and landowner meetings in March 1994. The people of Matantas had held several meetings and many discussions between September 1993 and March 1994 and demonstrated their commitment to protection by withdrawing from a logging contract.

In the case of the Matantas landowners the desire to protect their forests goes back in history as the area is an ancient tambu site, being regarded as "the place of the snake" and a dangerous place.

Chief Lus of Sara wants to protect the Big Bay forests because he has logged most of his forests and believes that some areas should be set aside.

There is a high level of commitment to the entire project concept within Matantas, particularly for ecotourism and alley cropping.

10.2.4 Lessons from Other Projects

<u>North east Ambrym</u>
The Profitable Environment Program (PEP) under the auspices of Friends of the South Pacific, (FSP) are involved in a project which is designed to intensify landuse and reduce the pressure to clear more land. They have concentrated on encouraging the cultivation of wild yams and garden produce for sale in the Port Vila markets. They are dealing with 13 villages. The main lessons to be drawn from this project is that a village management committee was not established at the beginning of the project and landowners and villagers have not participated fully in the design and planning of the project. Despite this many farmers are now cultivating wild yams. The shortcomings of non participation have been acknowledged and the project has been substantially changed with experience.

A New Zealand Aid Project, "Rural Skills Training Program" (RSTP) employs a participatory approach to enable villagers to assess their quality of life and identify what they would like to improve and what training they require to meet their needs. RSTP then either provide training or co-ordinate other agencies to carry out the training. Training has concentrated on introducing technology to enable families to build their own VIP toilets. The philosophy of the project is on training people to do things for themselves rather than the project providing everything. The village and individuals are expected to contribute towards costs. This has been found to be a positive approach and the reward is a high level of commitment to the project from the villages. One problem that has now been recognised and steps have been taken to overcome it, is that the assessment teams have not always included a woman member which has made it hard for the village women to truly participate.

10.2.5 International Initiatives

The draft Program of Action put to The Global Conference on the Sustainable Development of Small Island Developing in Barbados in April/May 1994 included a number of proposed national, regional and international actions to be taken towards the conservation of biodiversity resources. Amongst the issues emphasis is placed on increased awareness by promotion of community support through educational strategies, the collection of data to provide a sound basis for the preservation of biodiversity and the creation of buffer stocks of biogenetic resources.

The SPBCP Project Document provides a comprehensive inventory of regional policies and initiatives in the South Pacific. Table 11 lists some others of particular relevance to this CAP.

Table 11 Global and Regional Policies and Programs of Relevance to the CAP

Name of Program	Fund/Implement Agency	Duration
♦ Regional strategy for nature conservation and protected areas in the South Pacific	SPREP	1995 - 2000?
♦ South Pacific Sustainable Development Capacity Building Program	UNDP	1994 - 1995
♦ Initiative on Forest Genetic Resources (in design phase)	AIDAB/FAO	
♦ Equitable and Human Sustainable Development Program	UN	1994 to 1998

10.2.6 Project Development to Date

Village meetings and focus group meetings were held in Sara and Matantas in early March 1994. These meetings focused on discussing and encouraging the villagers to assess and prioritize their needs for community development.

Village workshops were held in both villages in late March 1994. The workshops presented more information about conservation and protection, alley cropping, nut harvesting, small business development, and ecotourism. Focus group discussions with women, youth and men were held after each session to assess levels of interest, needs, priorities and constraints. These village meetings, workshop discussions and focus group meetings laid the basis for this project design. The landowners and village residents have given us a strong message that they want to protect the forests and get on with the establishment of ecotourism businesses, alley cropping and nut harvesting. In their eyes there has been enough talk and now they expect action.

This project has been designed to balance the desire for immediate action with careful and participatory planning, and up skilling landowners and potential business owners to enable them to establish successful businesses and plan their own landuses. There is a heavy emphasis on community development especially for Matantas in the early stages of the project.

PART D THE PROJECT

This section is written as a stand alone section, which has been translated into bislama for local use.

11 PROJECT OBJECTIVES

The overall goal of the South Pacific Biodiversity Conservation Program (SPBCP) is to:

> "*Develop strategies for the conservation of biodiversity by means of the sustainable use of biological resources by the people of the South Pacific*".

The goal for the Big Bay Conservation Area Project is to;

> **Conserve the biodiversity of the Big Bay Conservation Area through the creation of sustainable management practices and development of ecotourism in the CAP and adjacent areas in partnership between customary landowners, government and non government agencies.**

12. THE TARGET GROUP

The direct beneficiaries of the project will be the present and future generations of customary land owners that have property rights in the proposed Big Bay National C.A.. The project is designed to conserve the biodiversity of the area and to facilitate income generation enterprises to provide income in the short and long terms. People will benefit from increased skills enabling sustainable resource management and independent decision making relating to their own destiny.

The project design will aim to include mechanisms that enable population subgroups as particular beneficiaries, these include women and youth. The project also aims to improve the quality of life for every one, particularly the residents of Matantas, who do not have, good water supply, sanitation facilities, or access to health and telecommunications.

Local resource management for the conservation of biodiversity will be compatible with the needs on national, regional and international levels which also realises beneficiaries at these levels.

13 PROJECT COMPONENTS

For planning purposes the Project is divided into 4 components as follows:

1. Project management
2. Community development
3. Sustainable management plan
4 Income generating activities (ecotourism, nuts and other forest products)

These have been identified at this stage of CAP planning on the basis of the expressed and perceived needs of the communities, the goals of SPBCP in relation to community managed biodiversity conservation, which are consistent with Government policy and the need for counterbalancing the opportunity costs of not logging the forest.

13.1 Component 1 - Project Management

Introduction

A number of project activities have taken place, including the initial biodiversity survey and needs assessment of Matantas residents, several village meetings at Sara and Matantas, and a week long workshop at both villages. These have been initiated and coordinated by the Environment Unit, now a part of the Ministry of Health.

SPBCP have initially provided funds to support a project coordinator, undertake awareness workshops in the area and preparation of a concept paper. AIDAB and the New Zealand High Commission funded an ecological survey (1993) of the area. Continued funding by SPBCP has been approved on the basis that a formal management structure and work plan be established that provides the framework for ongoing implementation.

Rationale

The scope of the project is such that it requires inputs from a number of government and non government agencies in addition to the landowners and the resources of the Environment Unit.

A formal management structure is required to ensure that planning and implementation is community based and the inputs are coordinated according to the work plans.

An initial CMC was established at Matantas with a landowners group at Sara. At the time of writing these committees remain in place, however there are indications that the two land owning families wish to come together and jointly manage the project and the CA. It

is therefore intended to establish a joint CMC as soon as possible. Establishment of the joint CMC requires resolution of a decades old land dispute.

Objectives

- To develop an effective community based management structure that allows the process of effective participatory planning and implementation by the community.
- To provide management and administrative services for effective project implementation.

Output 1 Establishment of Village based Community Management Committee

1.1 Facilitate the establishment of Joint CMC with landowner representatives from Sara and Matantas, and representatives of women, youth and churches, in early 1995.

1.2 Wan Smol Bag Theater group performance to facilitate cooperation between the land owning parties and greater awareness about the impacts of tourism.

1.3 Formation of CMC, prepare and finalise terms of reference, membership, responsibilities of members, meeting schedules, places and meeting procedures, early in 1995.

1.4 Training of CMC office bearers in meeting procedures, early 1995.

1.5 Discuss and agree on options for an MOU between Land owners and EU for protection of biodiversity and implementation of project, early 1995.

1.6 CMC appoints conservation area officer/s, mid 1995.

1.7 Discuss scope for management and implications for management to be based at community level, & plan a schedule of transfer of management to community, early 1995.

1.8 Identify training requirements to ensure that landowners and CMC members acquire appropriate skills that will enable them to take over complete management and financial administration of C A by late 1996.

1.9 PM and CO to undertake appropriate training and attend relevant workshops in Port Vila and or Luganville.

1.10 CO goes to Luganville once every three months for 5 days training working alongside the PM.

Inputs

Transport, per deims, office support services etc, training.

Output 2 An effective multi agency advisory committee to be centered at Luganville.(Luganville Technical Advisory Committee, LTAG)

2.1 Prepare Draft TOR for the Advisory Committee, by early 1995.

2.2 Contact possible members and outline responsibilities required. (include, Land Owners, Island Council Chiefs, Island Council Women, Local Government Council, National Planning Office, Forests, MALFF, EU Lands, Tourism, relevant NGO's, amongst others. Membership may change according to project needs at particular times), by end 1994.

2.3 First meeting to finalise TOR, meeting schedules, chairman, secretary (EU/secretariat), early - mid 1995.

2.4 TAG to meet quarterly or six monthly depending on requirements.

Inputs

Meetings, transportation, meeting facilities, training re conservation areas, planning, members time.

Output 3 Project coordinator (PC) and a Santo based project manager (PM).

3.1 Preparation of TOR for PC and PM, by December 1994.

3.2 Recruit PM - (CMC to be included in Interviews and PM must be acceptable to it), by September 1994.

4.3 Establish office in Luganville, by November 1994.

4.4 Training PM as required

Inputs required

Computer, printer, generator, video, (this and associated equipment to be put as part of training requirements), other extension equipment, increased operating costs for EU. Stationary, phone, fax, travel. Training for PM and PC may include international travel.

Output 4 Work plans

4.1 PC and PM and CMC liase to develop project work plans, by November 1994, & there after annual plans to be prepared by mid September each year.

4.2 Reassess and modify the work plans accordingly at project milestones.

Inputs
Reports, preparation, transport

Output 5 Operating procedures manual

5.1 Includes administrative procedures (reporting, meetings, funding requests, TOR for committees and key people) by February 1994.

Output 6 Identify all potential Funding Sources

6.1 SPBCP; ADB, AIDAB, NZ Government, NZ High Commission, British High Commission, UNDP, as required.

6.2 Development of network of international funding NGO's/agencies, SPBCP.

Output 7 Coordinate and oversee establishment and maintenance of alley cropping trial

7.1 Obtain funding for 5 year demonstration trail, June 1994.

7.2 Contract FSA to administer alley cropping project and establish and maintain trial, September 1994.

7.3 Draw up a TOR for FSA, November 1994.

7.4 Liase with FSA & CMC to develop 6 monthly work plans.

7.5 Monitor implementation of work plans.

Output 8 Project monitoring and evaluation (of project implementation)

8.1 Quarterly and six monthly reports, (six monthly - in March of each year.)

8.2 SPBCP program staff, annual monitoring

8.3 SPBCP Mid term review - early 1996.

8.4 Project completion report, March 1998. (as of when SPBCP stops funding)

8.5 Project impact assessment on social, cultural and economic impacts,(Quality of Life Assessment) July of each year, and review of project impacts, April 1997.

Output 9 Ensure project is well publicised within Vanuatu and through out the Pacific.

9.1 Issue press and radio releases monthly and bi monthly radio programs.

9.2 Commission production of a promotional and educational video on the project, at project beginning and nearing project completion, October 1997.

9.3 Prepare and distribute awareness pamphlets to surrounding schools, churches, August, 1995, August 1996.

9.4 Hold workshops in peripheral villages re awareness about the project and general conservation, February 1995, October 1995, April 1996, October 1996, October 1997 and March 1998.

9.5 Hold public meetings in Luganville, April 1995, November 1995, May 1996, August 1996, June 1997, and March 1998.

Component 2 - Community Development.

Introduction

There are two aspects to community development, one relates to the need for resolution to the conflicts that exist both within the village of Matantas and between the two villages of Matantas and Sara. The other concerns the basic needs in terms of social and physical infrastructure and services, particularly for Matantas.

Matantas comprises two main sub communities, Chief Moses, his immediate family and the Manhill community which maintain a presence in the village although individual members may not be there for very long. Chief Moses and the Manhill people are Baha'i whilst the other group comprise Seventh Day Adventists (SDA) and minor denominations, in the main represented by brothers of Chief Moses. The areas of disagreement arise from:

- The ideas that Chief Moses has about the development of tourism which include custom dancing utilising Manhill people,

- Unilateral decision making on activities that effect other people living in the village.

- The lack of leadership and village co-operation re village issues and developments.

The conflict between Sara and Matantas is based on the disputed ownership of half of the land within the proposed CA.

Whilst there are outstanding social issues to be resolved or lessened the project has already had some positive impacts on resolving the land dispute and by improving relations within Matantas.

Matantas village lacks most basic requirements in relation to social and physical infrastructure. The main water supply is often polluted from cattle grazing upstream, and during heavy rain it carries a high sediment load. There is no government sponsored medical clinic or trained nurse although at least two people practice traditional medicine. The nearest aid post is 3-4 hours walk to Malao. There are 2 private schools, an SDA school run by a Matantas resident, and a Bahai School run by a Bahai volunteer from New Zealand. There is also a kindergarten.

In addition the village is rarely serviced by visiting government health and nutrition officers to advise on diet, sanitation, hygiene in relation to food preparation etc.

The village is isolated and has no telephone or radio communication, even local radio stations cannot be readily received. The road is in reasonable condition even at the end of the wet season and allows a 1.5 hour drive to Luganville however maintenance is costly for the road that services the Matantas population beyond Sara.

Sara is better off in terms of infrastructure with an adequate number of concrete and glass water tanks, having a new medical aid post with trained staff and only one hour from Luganville.

Rationale

The within Matantas conflict is potentially destructive because although there is a shared view of the need for conservation of the forest amongst most community members, including Chief Moses and the SDA's, the disagreement as to what and how associated activities should take place will disrupt implementation. Issues such as the distribution of benefits, offending religious and traditional values and lack of broad based consultation may lead to wider manifested fissures. The extent of the problem and opportunities for it's resolution have been identified through the Sociological Survey and our work in the village. There is now much more cooperation and consultation between the two

communities. Some ecotourism ventures are potentially divisive and these can not proceed until there is consensus between the landowners and the whole village.

The between village conflict revolves around the land dispute. Unless this is resolved in the eyes of both villages there will be ongoing disagreement relating to the use of the land and this will lead to problems relating to the distribution of benefits from income earning activities that might take place. Facilitating the resolution of this dispute has been our greatest priority and has now moved to a stage where resolution by traditional means is imminent.

For some reason Mantantas has missed out on government infrastructure and services required to provide inhabitants of rural villages with reasonable standards of welfare. Although there is no objective data relating to the health of the people the area is endemic for malaria, there appears to be nutritional disorders in children, there have been deaths due to diaoreah and complications at child birth with no adequate supports.

There is an urgent need to correct the situation. Firstly to improve the health and productivity of the village people and secondly to provide an adequate basis for the development of income generating projects such as tourism. The emphasis in implementation is on self help together with government and non government support.

Objectives

The objectives are to:

- Resolve the present within and between village disputes to a sustainable level that will allow the effective implementation of the CAP.

- Improve the standard of social and physical infrastructure and other social support services to approved government standards and to be maintained in such condition.

Output 1 A community consensus in Matantas as the basis for the effective implementation of the CAP

Activities

1.1 The EU Project Coordinator (PC) to stay in the village of Matantas with the object to bring about a closer relationship between the two factions, June, July 1994

1.2 Liase with SDA and Bahai church leaders in Matantas and Luganville, continually.

1.3 Workshop for CMC members in community participation, May 1995

1.4 Awareness raising for women, re participation in project management and community decision making, June 1995, September 1995, March 1996, August 1996, March 1997, August 1997, March 1998.

1.5 Identify needs for training within the village, ongoing.

Output 2 A between village consensus relating to major issues for the successful implementation of the CAP.

2.1 Explore potential for informal/formal forum for discussion of issues between Sara and Matantas, establish and hold ongoing meetings. Identify key issues that need to be resolved.

2.2 Highlight the likely negative economic and social impacts of ongoing disputation to both villages, June 1994 - July 1994.

2.3 Organise for the legal judgment to be fully explained in practical terms to both parties and their responsibilities relating to the decisions, September 1994.

Inputs

These will include transport to and from Santo, to and between villages, for the PM and MWA or NGO officer, in field per diems, provision of food by villages, extension and workshop materials, specialist counseling skills as required, training.

Output 3 To develop an improved package of social and physical infrastructure (especially for Matantas) and ongoing maintenance

3.1 Discuss at the Technical Advisory Committee re Government plans for needs and options for accelerated development, July 1994 and at the quarterly TAG meetings.

3.2 Discuss options for a health needs assessment, August 1994.

3.3 Prepare a community action plan to be developed by PM & CMC as part of PRA workshop for implementation by PM, CMC & TAG. (aspects to cover include funds, timing and responsibilities.

3.4 Present community action plan to TAG and assign responsibilities and develop a work plan, February - May 1995.

3.4 Assess options for water supply and if necessary apply for funding from, UNDP, SPBCP, NZ/AUST HC's June 1994 onwards.

3.5 Monitoring of implementation through the Technical Advisory Committee.

3.7 Facilitate quality of life assessment and training for building of VIP toilets with Rural Skills Training Program, September 1994.

3.8 Facilitate establishment of Aid Post at Matantas and training for aid worker, April 1995.

Inputs

Meetings, transport, per deims, training, reports and EU time.

Output 4 Understanding of land ownership and decision making procedures for Sara and Matantas

4.1 Sociological survey, April 1994

13.3 Component 3 - Income Generating Projects

Introduction

The most desirable activities are those that will protect the biodiversity of the area and have the potential to be both economically and environmentally sustainable in the long-term. Ecotourism and nut harvesting are two potential activities, which offer opportunities to derive an income at the same time as enabling the protection of the Big Bay forests. These particular activities will also provide an incentive to protect the forests.

The potential for developing such enterprises was noted during the initial biodiversity and village needs/opportunities survey in 1993.

These have been discussed with the landowners and village residents, during household surveys, village meetings and workshops. The landowners and residents of both Sara and Matantas have expressed a keen desire to establish a nut harvesting venture and some form of ecotourism as quickly as possible.

Nut harvesting was originally scheduled to start in August 1994, however due to a cyclone there were no nuts. It is now planned to start this activity in August 1995. The Farm Support Association will assist the landowners harvest and dry the nuts and will purchase them directly from them in the village. Storage and transport will be taken care of by FSA. This will overcome current problems of trust, as the merchant in Vila does not directly purchase the nuts or arrange for transport.

A preliminary tourism feasibility study has been conducted which confirms that there is considerable potential for the development of ecotourisim, based on nature walks of varying duration, combined with kastom dancing, canoeing and swimming. Tourism is already happening at Matantas but the land owners and village residents do not derive any economic benefit from the visitors. Current ideas are to link in with cruise ships for day trips, which in the first instance will based on a short guided nature walk, as confidence and skills increase this will be expanded to include a lunch, nature walk and possibly a kastom dance.

Before these ventures can be established there is a need to resolve some of the inter village conflicts, between Sara and Matantas, and facilitate agreements over the use and distribution of benefits from the disputed area. There is also a need to ensure that there is co-operation and consensus within Matantas, as to the nature of the enterprise, its location and who owns/manages the venture and the distribution of benefits.

As there are currently few people living in Matantas who have the skills necessary to run business ventures there is a need for extensive training and awareness raising.

Rationale

The landowners and village residents have expressed a desire to protect their forests but this is dependent upon the ability to derive an income from the forest resources. Without this ability large scale logging will always be a threat.

Objective

- To facilitate the establishment of economically and environmentally sustainable income generation activities.

Output 1 Establishment of Nut Harvesting

1.1 Undertake survey of all nut trees and map locations, June 1995.

!.2 Discuss possibility of Farm Support Association directly purchasing nuts from the villages.

1.3 Invite Charles Long Wah, to attend a CMC meeting re nut harvesting, July 1995.

1.4 Project Manager to assist with harvest, (book keeping, quality control) August 1995.

1.5 Monitor results.

1.6 Investigate options for further processing in Sara and Matantas.

1.7 If feasible facilitate greater processing in the villages.

1.8 Tourist hosting and village catering workshop, August 1996.

Inputs Nut survey, transport.

Output 2 Establishment of Ecotourism Enterprises

These will be phased in over the 4 year period depending on village desires and feasibility of expansion.

2.1 Complete phase one feasibility study including estimates of profit to landowners, February 1995, undertake phase two feasibility study for bungalow development, March/April 1996.

2.2 Present results of feasibility studies to CMC meeting and discuss at village meetings.

2.3 PM, CMC, & ecotourism subcommittee develop code of conduct for tourists and tour operators, April/May/June 1995, to be revised and printed August 1996.

2.4 Facilitate identification of potential owners/managers of tourist businesses, (local fruit shop, first priority).

2.5 Run 2 day basic business workshop, for shop keepers, guides and landowners with Hanson Kalo, (FSP), May 1995, and for kastom dancers, and villager caterers, November 1995, and bungalow owners & , June 1996, and for additional bungalow owners February/March 1997.

2.6 Run pilot tour using xpats from Luganville followed by village meeting to share experiences between 'tourists', landowners, and residents, and assess impacts, for shop and nature walk, May 1995, for lunch and Kastom dancing, November 1995, and for overnight stays, June 1996.

2.7 PM & Purity & Tony (Bahai teacher with small business skills),carry out ongoing training of CMC & owners/managers of fruit shop in basic book keeping, and banking.

2.8 Establish ecotourism subcommittee, (PM, CMC representatives, STIDA + tour operators) to facilitate, coordinate, the development and running of tour packages to the CA., February, 1995. Establish TOR at first meeting.

2.9. Training for potential operators, including, live in work experience, Lonnoc Resort, April 1995, May 1996, and May 1997, study tours of existing tour operations on Santo, May 1995, & March 1996, nutrition, food preparation, & hosting tourists, March 1995, and June 1996.

2.10. Training for guides,- language, oral & natural history. Four guides, (2 guides each from Sara and Matantas, 1 woman, 1 man, English and French speaking, two week attachment with STIDA based in Luganville, August 1995, March 1996, and March 1997. Other training for guides will involve them working with tour operator guides at Matantas.

2.11. Facilitate establishment of facilities, assist with fundraising, design, marketing etc, Shop - March, April 1995, Lunch Cafe - October 1995, Bungalow April/May/June 1996, additional bungalow's April/May/June 1997, and Camp Ground, December/January 1977.

2.12 Provide for potential business owners to attend tourism courses in Luganville,. November 1994 , April 1997.

2.13. Build toilets for tourists, March 1995.

2.14. Train Conservation Officer to collect data to assist with monitoring impacts of tourism, March 1995.

2.15. Conservation Officer and Project Manager to assist in resolving any conflicts that may arise.

2.16. Assess potential for expansion and assist in establishment of new or expanded enterprises, August 1997.

Inputs Consultants re feasibility studies, training, assistance with materials for tourist facilities, reports.

Out Put 3 Facilitate Marketing of Ecotourism Opportunities

3.1 Design and distribute A4 black & white brochures advertising the CA and ecotourist activities, May 1995, April 1996 and April 1997.

3.2 Produce color nature and cultural interpretation pamphlet/sheet, printed June 1995, update with additional track information, November 1997.

3.3 Write promotional and information articles for, in flight magazines, international conservation and outdoor activity journals etc.

3.4 Promotional trip for representatives of Tour Vanuatu, Air Vanuatu, Pacific Tours, Pacific Publishing, to coincide with the opening of the first bungalow, June 1996.

3.5 Set up information displays in Vila and Luganville, July 1995. and update every six months, (Tour Vanuatu office, banks) and distribute video to banks, TV Vanuatu, hotels etc.

Inputs
Photos, display materials, transport & accommodation.

Output 4 Establishment of other Income Generating Projects

4.1 If the need and opportunity arises, facilitate workshops, re other income generating projects such as, agro forestry, agricultural diversification, fishing, paper making, soap production, crafts.

4.2 Facilitate training with relevant Government Departments, NGO's.

4.3 Research options for and design products that could be sold to generate income, medicinal plants, body oils, perfumes etc., Obtain product development and marketing report August 1997.

4.4 Produce Ti Shirts for sale by CMC, May 1995, May 1995, February 1996, and February 1997. Posters, March 1995, and 1997.

4.5 Local artist to visit sire to design Ti Shirts, post cards, and drawings for craft items, May 1995

Inputs Feasibility studies, training, travel, reports.

Component 4 - Sustainable Landuse Management Plan

Introduction

The proposed C.A. contains a rich diversity of habitats and wildlife species, including lowland tall forest, swamp forest, limestone terrace forest, a lagoon, water courses and a major river, limestone caves with bats, endangered wildlife species and excellent representation of Vanuatu's flora and fauna. This range of biodiversity has a high value for the local communities, the country and the South Pacific region. As the biodiversity survey carried out in 1993 was limited by time and money there is a need to carry out reconnaissance surveys of the surrounding catchment, and depending on the results carry out further biodiversity surveys. This may result in a proposal to expand the project area.

The protected area will continue to be used for collection of resources for house building, medicines, food etc and these uses will need to be sustainably managed in order to protect the areas biodiversity and to ensure that future generations have access to the same or better resources as the current generations do.

The proposed C.A. area includes, gardens, coconut and copra plantations and the village of Matantas. There is also a range of potential landuses including agro forestry, new crops, ecotourisim. The land owners are not aware of potential options for increasing productivity from their land, and there is a need to carry out a participatory rural appraisal including a land capability assessment.

The development of a sustainable land management plan will require a participatory approach with the land owners and village residents, and a multidisciplinary team of advisors from Government Departments and NGO's.

Rationale

Central to this project is assisting the landowners to protect the biodiversity of the Big Bay forests and coast, by developing their planning skills to enable them to manage their resources sustainably and develop new sustainable income generating enterprises.

Threats to the biodiversity of these ecosystems have been identified and some damage has been done, is still being done and new threats are imminent. Sustainable management is required to conserve the biodiversity, and to ensure long-term sustainability of non destructive income generation activities.

Monitoring will be essential to ensure these resources are being used sustainably. This will require a number of baseline studies to determine population status of for example turtles, flying fox etc.

Land use decisions are currently made on an adhoc basis, with some decisions, eg establishing bullock grazing in riparian areas, causing problems that effect a large number of people. Some landuses, such as current gardening practices of clearing new gardens every year, either to leave fallow or replant in coconuts is posing a threat to the area that is proposed for protection, and is making life harder as people have to walk further and further to their gardens.

Objectives

- To assist the landowners and village residents to develop a sustainable land use management plan which protects the biodiversity values of the proposed C.A., provides for traditional uses and needs of landowners and village residents and the development of environmentally sustainable income generating activities.

- To carry out baseline studies to enable effective monitoring of the sustainability of the management plan, and to ensure management is protecting the biodiversity values of the area.

- To assist landowners identify other land use options for the modified ecosystems.

Outputs

Output 1 Baseline Studies to Establish Bench Mark Values

1.1 Biodiversity reconnaissance survey of adjacent land owned by Sara/Matantas, March 1995.

1.2 Turtle population survey, November 1994.

1.3 Coconut Crab population surveys, November 1994.

1.4 Flying Fox population surveys March 1995

1.5 Pigeon and Megapode population surveys March 1995.

1.6 Cultural sites survey, April 1995.

1.7 Freshwater fish survey, April 1995.

1.8 Butterfly Survey April 1996.

1.9 Snail Survey, May 1995.

1.10 Invertebrate Survey, May 1996.

1.11 Carry out landuse capability survey, February 1995

1.12 Carry out a Participatory Rural Appraisal, Matantas February 1995, and Sara, February 1996.

1.13 Carry out a water resources survey - map water courses, assess water quality, Matantas River, (Fecal coliforms), June 1995, February 1996, February 1998.

1.14 Biodiversity survey of extended CAP, June, July, August 1997.

Inputs

Aerial flight, procure aerial photos, consultants to design surveys and where necessary assist in surveying, cartography, workshops, biodiversity survey team, reports, workshop materials, radio messages.

Output 2 Development of a Sustainable Management Plan

2.1. Identify all threats to biodiversity values, and options for management, part of biodiversity surveys, March 1995.

2.2. If necessary finalise and define CA boundaries, February 1995.

2.3 Amend National Parks Act

2.4 Run PRA workshops at Matantas February 1994, and Sara February 1996.

2.5. PM and PC to prepare draft management plan in consultation with landowners, CMC for presentation and further development at village meetings, May - July 1995. Plan will include; management and design of ecotourism activities and facilities, including tracks, hides etc.

2.6. Run workshops about bio diversity conservation and the CA project in peripheral villages, February 1995, October 1995, April 1996, August 1966, October 1977 and March 1998.

2.7. CMC, and community meetings to present draft management plan for discussion and modification and assess potential impacts on village and landowner lives and explore solutions, August 1995.

2.8. Circulate draft plan to all relevant NGO's and Government Departments, tour operators, etc for written and phone comments - Luganville and Vila, September 1995.

2.9 Meeting with TAG for discussion and comment, September 1995.

2.10 Prepare final document and discuss with CMC and TAG. Seek formal agreement to Plan, November 1995.

2.11 Official declaration of CA, March 1996.

Inputs, transport, per deims, workshop materials, consultants.

Output 3 Implementation of CA Management Plan

Activities

3.1 Train Conservation Officer in C.A. management including:

- track development
- natural history
- law enforcement
- visitor management

3.2 Identify method for marking boundaries if necessary and implement.

3.3 Establish tracks and other facilities including toilets & signs, one/two short walks, (4 km) March/April 1995, extended tracks, toilets & lunch shelter, February 1996, extended tracks (15 km) and camp ground February 1997, and 5km tracks, February 1998.

3.4 Establish visitor information center at Matantas, May/June 1995.

3.5 Prepare and publish C.A. Handbook, July - November 1997.

3.6 Establish alley cropping trials with FSA., September 1994.

3.7 Build fence to exclude bullocks from rich biodiversity area, October 1997.

Inputs Training for C.A. managers, sign design, construction and placement, track marking + materials, artist, visitor information displays, meetings, transport, report printing.

Output 4 Monitoring Sustainable Management Plan

4.1 Design biodiversity monitoring and implement, March 1994.

4.2 Train conservation officer to collect population data on key indicator species, eg turtles, pigeons, flying fox, coconut crabs + prepare reports.

4.3 Train Conservation Officer to collect data on consumption of forest resources for local use.

4.4 Establish bullock + pig enclosure and train conservation Officer to collect data.

4.5 Train Conservation Officer to monitor feedback from tourists for their suggestions.

4.6 Monitor water quality of Matantas River - June 1995, 1996, and 1997.

Inputs Consultants, training reports, fence, monitoring and survey equipment.

14 PHASING AND WORK PLAN

14.1 Phasing

14.1.1 Pre Phase 1 and Phase 1 Activities to Date.

In summary activities include:

July - August 1993: ·Biodiversity, Forest Values and Village Needs Assessments and Survey.

September 1993: · Landowner, and Village meetings to present draft report for discussion and approval.

November 1993: · Concept paper and funding application to SPBCP

February 1994: · Funding approved in principal.

March 1994: · Environment Unit Vanuatu employs Russell Nari as Protected Areas Manager, and SPBCP contracts Sue Maturin, Forest and Bird New Zealand to assist.

· Village and focus group meetings to verify commitment to CAP proposal and identify landowner concerns, further assess village needs and priorities.(Sara and Matantas Villages)

April 1994:

· Awareness raising workshops on conservation, tourism, small business development, agro forestry and alley cropping at Sara and Matantas.

· SPBCP consultants, Fanara Kingston and Peter Wood visit Matantas and Sara and work with project team to draft a project plan.

· SPBCP program Manager, Joe Reti visits site and project team.

April - May 1994:

· Sociological Survey.
· Tourism Feasibility Study
· Preparing project plan and budget
· Preparing Alley Cropping Project for Government Approval
· Funding application for alley cropping to NZ Government

May - June 1994:

· Meetings with all Government Agencies and NGO's likely to be involved in the project.
· Preparation of project plan and budget.
· Funding application to AIDAB for video, generator, note book, printer, for EU and project.

June- July 1994:

· Water supply assessment, not completed.
· Peter Wood, SPBCP visits to assist with budget
· Establishing CMC & TAGS
· Village cooperation meetings
· Land dispute resolution meetings
· Draft PPD completed
· Funding approved for Alley Cropping
· Quarterly report completed.
· Area cleared for alley cropping

August 1994

· PM Recruitment
· Quality of Life Assessment
· First Aid Post Worker identified & meetings with Health Dep
· Tourism Master Plan visit
· Meetings re National Parks Act Amendment
· Display for Forestry Exhibition - Vila
· Coordinating use of Luganville Market space for Matantas Women
· Gary Spiller SPBCP visits.

September 1994	· PM Interviews Vila, Luganville & presentation to Sara & Matantas · Supreme Court hearing re clarifying land dispute · RSTP training in toilet technology , 36 concrete slabs built · PM starts work · 4 CMC/landowners meetings Matantas & Sara · SPBCP Video team makes video · PRA training for project staff · Alley cropping trial established · Rubbish pits completed · Puriti & Lilly attended women's business course, Luganville.
October 1994	· PM training in project administration, Vila. · PM to Fiji, SPBCP workshop. · Annual financial report completed · Accounts reconciled and computorised · Alley cropping financial administration organised · Financial administration for Santo office set up
November 1994	· Hans Anderson, Video producer visits & edits video · Joe Reti, SPBCP visits & assists revision of PPD · Staff attend part of the Pacific nut conference in Vila · PPD revised · 1994/95 work plan & budget completed · Three CMC meetings, Sara & Matantas · Project house at Matantas started.

14.1.2 Remainder of Phase 1 and subsequent phases

At the time of revising this document phase one has almost been completed. In summary this has included, establishing a CMC at Matantas, a landowners group at Sara, a preliminary Vila and Luganville TAG has been established, the alley cropping trial has been established, an initial tourism feasibility study and options for ecotourism development have been identified, baseline sociological data for monitoring cultural, social and economic impacts have been collected, and a Project Manager has been recruited and has taken up duties in Luganville, the Matantas community has received training in building VIP toilets and 36 slabs have been built and two Matantas women have been on a small business course. Other activities are listed in the diary of events above.

Community cooperation at Matantas, between the Bahai and the SDA has greatly improved since this project began, to the extent where both communities are represented on the CMC, albeit with an SDA majority, and they are working and consulting together on village activities, such as finishing the toilets, rubbish pits, and schooling. Our efforts

will now focus on increasing the Bahai representation on the CMC, empowering the women of both communities to increase their level of effective participation in decision making and working towards developing a consensus with regard to ecotourism development.

Many very positive steps have been made by both communities towards resolution of the land dispute. The two parties have had their first meeting and have agreed to meet further. Our role in this process is that of a facilitator and working with both communities to explore options for achieving a "win win" situation for both parties. The landowners of both communities are totally committed to the project and each party now has a strong desire to resolve the decades old dispute.

Once these key issues have been resolved the project can enter it's second phase. Phase two will concentrate on establishing ecotourism activities, initially two short tracks will be marked with tree labels for, the main species and important cultural trees. The income generation phase involves extensive training in small business management, tourist hosting and nature guiding. The other main activity of phase two is the establishment of baseline data for biodiversity monitoring, especially turtles, coconut crabs, bats, megapodes and pigeons. There will also be a reconnaissance survey of land adjacent to the proposed CAP boundaries, and the Wimbo area. Wimbo landowners will be identified and discussions concerning their interest in becoming involved in the project will be iniated. Preparations towards developing a landuse plan and village action plan will begin early in this phase. This includes a PRA workshop, agro forestry feasibility study, a landuse capability survey and training the CMC in management planning and the conservation of biodiveristy. Phase two also includes a public awareness program, involving workshops in peripheral villages, production of literature for distribution to schools, churches and other community groups with an interest in this project, displays, and regular radio programs.

The third phase involves the preparation and implementation of the landuse plan for the transition area and the protected area. Implementation includes the establishment of CA infrastructure, ie, tracks, shelters, toilets, camp grounds, visitors center, training CMC and CO in CA management and the conservation of biodiversity. The feasibility of expanding ecotourism to include bungalow development will be explored. There will be ongoing training and support for established enterprises and assistance with marketing. The potential of expanding the CA will be assessed and a reconnaissance biodiversity survey undertaken.

Phase four will concentrate on training the CMC and landowners in preparation for them taking over complete management and administration of the CA and all associated businesses. Other activities will include the development of sustainable products to assist in securing financial sustainability of the CA. Depending on the outcome of the biodiversity survey of an extended CA and the interest of other landowners, a proposal to extend the CA may be developed and funding assistance sought.

It is unusual to proceed with the establishment of alley cropping and ecotourism before the management plan is completed. The reason for this is that in the case of alley cropping the trial needed to get underway this year, otherwise it could not start until after July 1995 if a management plan was completed by then, and this would not leave enough time within the life of the project to enable an effective trial and transfer of technology. We have a good idea of what the management issues are and how they will be addressed in the management plan now, as it is not expected to be a complex plan. The landowners have reiterated many times they need to win vatu as soon as possible and they will lose interest should these aspects of the project be delayed until completion of the management plan. A further logistical reason is a lack of government personnel as a result of the public service strike. New staff are being recruited now.

14.2 Work plan

Appendix one contains a work plan for the remaining 4 year life of the project. The work plan will always need to be flexible as it is dependent upon the speed at which a CMC can be effectively established and the land dispute substantially resolved for the purposes of the project and the speed the landowners and village residents wish to work at, availability and timing of training, and availability of technical personnel to assist with landuse planning. It is not expected that the general nature of the planned activities will change, however it is likely that activities will be added and the timing for implementation will be continually amended in response to CMC needs.

14.3 Project Milestones

<u>November 1994 - April 1995</u>

- Establishment of the Joint CMC.
- Resolution of Land Disputes between the land owning families of Sara and Matantas.
- Establishment of nature walks and local food shop.
- Signing of the MOU and finalising CA boundary.
- Recruitment of CO.

May - October 1995

- Draft CA Management Plan completed.
- First Income from guided walks received.
- Establishment of Lunch and Custom Dance tour package.
- First income from nut harvesting received.

November 1995- April 1996

- Establishment of a pool of tour guides.
- Completion of CA Management Plan.
- Official launching of the CA.
- Village and land owners ready to host tourists.

May - October 1996

- Establishment of the first bungalow.
- CMC confident in preparing 6 monthly work plans, and taking increased responsibility in financial management of the project.

November 1996 - April 1997

- CMC undertakes own feasibility study for bungalow extension.
- CMC raises funds to build additional bungalows.
- Camping ground established.
- Community adopts alley cropping techniques.
- Tourism activities and sale products begin to show a profit.

May - October 1997

- Second bungalow established.
- Visitors Center completed.
- CMC have acquired skills in conservation management, resource planning, and financial management of the CA.
- CMC and land owners committed to protecting the biodiversity values and are ready to take over management of the CA.

November 1997 - April 1998

- All income generating activities established and competently managed.
- Income generated from the CA and tourism enterprises sufficient to:

  - Pay CO salary;
  - Maintain and create salable products;

- Manage the CA, and;
- Meet income needs of the land owners and community.

- CMC take over complete management of the CA

15 PROJECT COORDINATION

At the National level the project will be coordinated by the Environment Unit in Vila. The Project Manager, based on Santo and will be responsible to the landowners and Community Management Committee, and overseen by the Project Coordinator from the Environment Unit.

At the landowner village level the project will be coordinated by a Community Management Committee which is made up of representatives of landowners, community leaders, women, church, and youth groups, chosen by the community from both Sara and Matantas.(At the time of writing a joint CMC has not been established, however it is anticipated that this will be possible, if not we will continue with a CMC at Matantas and the landowners group at Sara.

A Technical Advisory Group,(TAG) made up of representatives from the CMC, NGO's and technical personnel from relevant Government Agencies will coordinate the activities of all Government Department Personnel working in Matantas and provide technical advise to the CMC, Project Coordinator, and Project Manager. TAG members will be selected at first by the EU and special emphasis will be placed on ensuring that the landowners and women are well represented. A primary task for the TAG will be the co-ordination of all government and non government activities, occurring in Big Bay. All community development activities will be coordinated through the TAG, and CMC.

It was originally intended that during the first phase of community development and land use planning that the TAG would meet every two months. However this has not been possible due to lack of staff in other Government Departments, so the EU has coordinated activities independently with each NGO and Government Department.

We now anticipate re-establishing the TAG early in 1995. Whenever possible these meetings will take place at Matantas. It is expected that subcommittees of the TAG will be formed to assist with the more specialist tasks, eg ecotourism development. Specialists outside of the TAG may be seconded from time to time.

16 THE LEGAL FRAMEWORK

An MOU has been signed between SPREP and the Environment Unit, which establishes the Environment Unit as the lead Agency.

At this stage it is not final as to whether the project will proceed under the umbrella of the Vanuatu National Parks Act, or a separate legal or formal agreement to be designed with

the landowners. We are investigating the possibility of amending the National parks Act to bring it in line with the proposed management and operational structure of this project plan. The options, and other options raised by the landowners will be presented and discussed with the Landowners who will make the final decision.

In the interim the landowners of both Sara and Matantas have asked to draw up a formal agreement or MOU between the Landowners, CMC and Environment Unit which sets out the obligations of all parties and secures interim protection for the CA..

17 ORGANISATION AND MANAGEMENT

It is the aim to establish a community based management structure for the project, the structure must enable an effective participatory planning activity to take place.

In the beginning the Environment unit will be responsible for overall project management and administration and financial control of project funds and will gradually transfer responsibilities to a Community Management Committee as the capacity of the community develops to effectively undertake them.

17.1 The Key Institutions and People

There are three land owning families represented by three men in Matantas, who are the Chief and Assistant Chiefs, and four land owning families in Sara. All decisions relating to use of their land are made by them, and will continue to be made by them. The landowners will be encouraged to work with the Community Management Committee (CMC) and to make decisions in consultation with it. Another Matantas family member, based in Luganville also has an important role in decisions surrounding land at Big Bay, and it is hoped that he will participate in the CMC. This issue is controversial at the time of writing, however the landowners are now addressing the situation, and working towards a peace settlement, as he has not been involved in the project up till now.

Currently there is a land owners group at Sara and a CMC at Matantas which has 12 members; five men and five women from the SDA Community and two men from the Bahai Community. These people were nominated by the Matantas village residents. It is hoped to form a joint CMC to include members from both Sara and Matantas. The CMC may include people from outside in an advisory capacity if requested by the village. It is not anticipated that these people will be permanent members of the CMC, except for the Environment Unit as represented by the Project Coordinator.

The aim is for this to develop as the community based management unit for CAP planning and implementation. The CMC will not usurp the role of the Chiefs and Landowners and will work cooperatively with them.

The CMC and the PM will be responsible for employing and overseeing the work of the Conservation Officer, informing and involving the village in making project decisions, co-ordination all work carried out on the land and within the village that is associated with this project. It is anticipated that any businesses established will be owner operated and owners will be responsible for their management, with guidance from CMC, PM, Environment Unit and the TAG.

A Technical Advisory Group (TAG) will be established comprising CMC representatives and relevant government and non government agencies (not excluding the private sector), such as the Environment Unit, (secretariat), the Departments of Fisheries, Forestry, Women's Affairs and Culture, Co-operatives and Rural Development, National Tourism Office, National Planning Office, Santo Malo Local Government Council, Area Councils, Farm Support Association, Cultural Center, MALFF, Ministry Women's Affairs, National Planning Office.

The Environment Unit (EU) will be the secretary to the TAG, and in conjunction with the PM will be responsible for preparing physical and financial reports to suit project, national government and SPBCP requirements. It would provide all administrative services required by the project.

The PC will be the ECU's representative in the field, working with the Project Manager (PM), and the CMC. The PC will guide the PM in her/his activities and report to the CMC and TAG on behalf of the EU.

The PM will be appointed as an employee of the Project to be based in the project area. He or she will implement the work plan on a daily basis in conjunction with the CMC and the villagers. The main activities in the initial stages will be working with the PC and NGO's to Organise training, increase the level of awareness about the project in local government and non government agencies, in peripheral villages, and the Luganville public. The PM will also be responsible for carrying out data collection for project monitoring requirements until the Conservation Officer is employed.

The PM will also be required to assist with the resolution of any conflicts or disagreements within and between villages and field coordination of inputs from government and non government agencies.

One Conservation Officer (CO)will be appointed by and paid for by the CMC, or if the need arises there may be two Conservation Officers. The CO will be a counterpart to the PM and have the role of advising the PM relating to the dynamics in and between the villages, land issues, use of the forest resources. The CO will also be responsible for training the PM and Environment Unit of traditional conservation procedures and rule making, and enforcement. The CO will gradually take over responsibility for most of the collection of the monitoring data. Once the C.A. is established the and SPBCP funding runs out, the CO will take over the role of the PM.

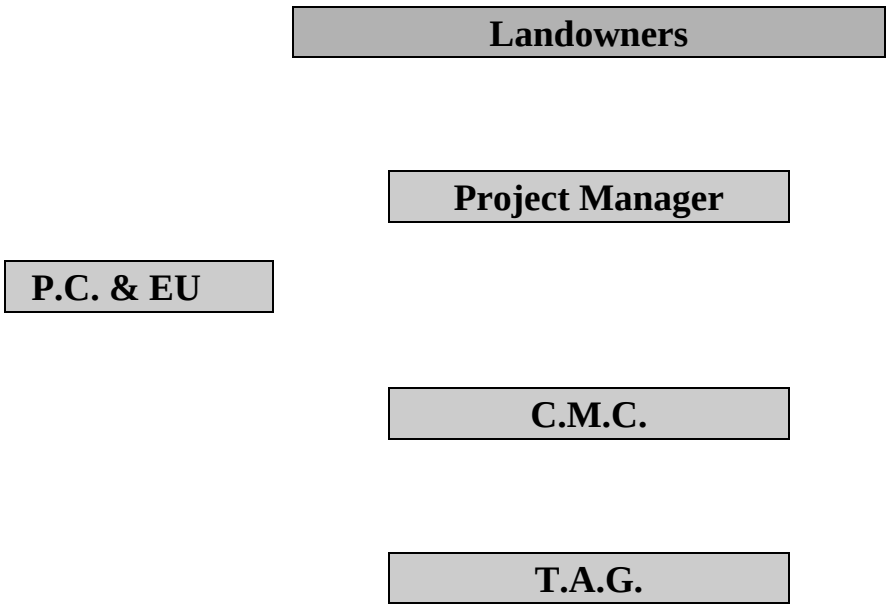
The Conservation Officer will receive training in aspects of project management, conservation of biodiversity, C.A. and tourism management and law enforcement if appropriate.

It is envisaged that NGO's will have a critical role to play in village based problem resolution, institutional development, enhancement of the participation of women and improvement in the social services provided to the villages.

17.2 Organisation Structure

Figure 6 is the proposed organisation chart for the CAP. It is open to modification in light of ongoing planning and experiences. The Landowners and Chiefs form the uppermost decision making body while the CMC is the peak planning and management body which in the early stages receives considerable support and advice from the PC, the PM and the TAG.

FIGURE 6 ORGANISATIONAL STRUCTURE



18 PROJECT COSTS AND FUNDING SOURCES

18.1 Costs

Appendix 2 includes the detailed cost tables and these are summarized in Tables, 12 -15 below summarise the costs for, Personnel, CA Identification and Awareness, CA Establishment, Training, and Sustainable Development. These categories are those established as funding lines by SPBCP.

The total costs are estimated at 32,601,073 vatu ($US 333,378). The costs assume constant 1994 prices.

The Vanuatu Government's contribution is estimated at 7,124,700 vatu, ($US 60,609). The greatest contribution is in salaries for personnel who will contribute their time and expertise to various facets of the project, including the Environment Unit's Protected Areas Officer who will spend upto 75% of his time on this project.

TABLE 12 SUMMARY OF PROJECTED COSTS 1994 - 1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	3,769,700	1,987,700	3,886,700	777,600	**10,421,700**
CA Identification & Awareness	1,725,500	491	1,327,000	200	**3,053,191**
CA Establishment	4,715,600	2,421,600	2,047,100	1,475	**9,185,775**
Sustainable Development	1,551,000	1,114,000	1,314,000	866,000	**4,845,000**
Training	1,098,000	2,338	1,031,000	336	**2,131,673**
SUB - TOTALS	**12,859,800**	**5,526,129**	**9,605,800**	**1,645,611**	**29,637,339**
CONTIGENCY OF 10 %	**1,285,980**	**552,613**	**960,580**	**164,561**	**2963733**
TOTALS	**14,145,780**	**6,078,742**	**10,566,380**	**1,810,172**	**32,601,073**

TABLE 13 SUMMARY OF VANUATU GOVERNMENT CONTRIBUTION 1994-1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	1,416,000	1,416,000	1,416,000	589,000	**4,837,000**
CA Identification & Awareness	78,000	12,000	156,000	6,000	**252,000**
CA Establishment	554,000	306,000	306,000	108,000	**1,274,000**
Sustainable Development	81,000	18,000			**99,000**
Training	15,000				**15,000**
SUB - TOTALS	**2,144,000**	**1,752,000**	**1,878,000**	**703,000**	**6,477,000**
CONTIGENCY OF 10 %	**214,400**	**175,200**	**187,800**	**70,300**	**647,700**
TOTALS	**2,358,400**	**1,927,200**	**2,065,800**	**773,300**	**7,124,700**

TABLE 14 SUMMARY OF PROJECTED COSTS 1994 - 1998 IN US DOLLARS

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	33,152	17,480	34,181	6,838	**91,651**
CA Identification & Awareness	15,175	4,318	11,670	1,759	**32,922**
CA Establishment	41,470	21,296	18,003	12,972	**93,741**
Sustainable Development	13,640	9,797	11,556	7,616	**42,609**
Training	9,656	20,561	9,067	2,955	**42,239**
SUB - TOTALS	**113,093**	**73,452**	**84,477**	**32,140**	**303,162**
CONTIGENCY OF 10 %	**11,309**	**7,345**	**8,448**	**3,214**	**30,316**
TOTALS	**124,402**	**80,797**	**92,925**	**35,354**	**333,478**

TABLE 15 SUMMARY OF VANUATU GOVERNMENT CONTRIBUTION 1994-1998

BUDGET LINE	1994 - 1995	1995 - 1996	1996 - 1997	1997 - 1998	COSTS
Personnel	12,453	12,453	10,590	5,180	**40,676**
CA Identification & Awareness	686	106	1,372	53	**2,217**
CA Establishment	4,872	2,691	2,691	950	**11,204**
Sustainable Development	712	158			**870**
Training	132				**132**
SUB - TOTALS	**18,855**	**15,408**	**14,653**	**6,183**	**55,099**
CONTIGENCY OF 10 %	**1,886**	**1,541**	**1,465**	**618**	**5,510**
TOTALS	**20,741**	**16,949**	**16,118**	**6,801**	**60,609**

18.2 Project Financing

18.2.1 Project Cost by Funding Source

The aim of SPBCP is to disburse funds to worthy projects that incorporate the conservation of biodiversity. Inherent in the project design is the necessary participation of government agencies, NGO's, any other agencies and the communities within the CAP. The sources of funds therefore are the SPBCP, the Government of Vanuatu, through the Environment Unit and other Government Departments (supplying both cash and kind in terms of time, use of vehicles, equipment etc.) and the villages in terms of time, materials and cash.

Project funding is designed to be provided by SPBCP over a period of five years from the start of implementation of the CAP.

Funding for the establishment of the Alley Cropping trials has been obtained from the New Zealand Government, and AIDAB have bought computer equipment and generator and video for use both by the Environment Unit and the project.

Table 16 below lists sources of funding obtained to date.

Table 16 Sources of Funds

Source	Item	Amount
SPBCP	Contribution to CA 1994 - 1998	
Vanuatu Government	Salary + Office contribution to CA - 1994 - 199	
New Zealand Government	Alley Cropping Trial 1994 - 1999	7,574,160
AIDAB	Generator, Video, Computer Equipment*	

18.2.2 Fund Allocation and Financial Control

(a) SPBCP funds

SPBCP fund allocations are made according to conditions required by UNDP. Funds are transferred to the project on a quarterly basis in response to a request from the project. The request takes the form of an acquittal of the previous quarters expenditure together with a

budget for the following quarter which is compatible with the annual budget submitted at the beginning of the financial year.

Major variations in either the previous or next quarters activities should be documented but already having been flagged with SPBCP. A simple report on physical progress including positive and negative points should be made.

SPBCP is required to submit an estimate of quarterly funds for all CAPs 15 days before the end of each quarter. Allowing for SPBCP's capacity to handle requests from all CAPs means that they will require individual CAP requests about one month before the end of each quarter. This doesn't allow actual expenditures to be recorded for the quarter.

Every six months a more detailed physical and financial progress report is submitted to SPBCP, this would show that the project was still addressing the objectives as originally planned.

The submission for the following years budget should be made to SPBCP by mid September each year. This would be based on a physical work plan for the year that has been developed by the CASO (project manager) in association with the CACC (regional advisory committee). It is essential that the work plan maintains the integrity of the project goal emphasising conservation of biodiversity for the benefit of the local community. Other known and likely funding sources and levels of commitment should be mentioned.

The annual report should be submitted within two months of the end of the financial year, it will include a reconciliation of all funds in cash and kind received and expended and the approved budget allocation for the following year. A more comprehensive report on the years activities highlighting both the achievements and the problems should be presented.

Funds will be transferred to a nominated project account by SPBCP every six months.

(b) Environment Unit Funds

The Government through the EU will contribute to the funding of the project and cover those items more in terms of the cost of time of people from the various involved agencies.

Application for and reporting of funds and expenditure will follow the normal procedures required by the Government. . The EU has established a Chapter Head with the Finance Department, and as funds are needed the EU submits an application for the release of funds to the Finance Department which keeps a record of incoming and outgoing cash.

The Santo Office will have a standing Imprest Account of 50,000 vatu to be replenished by Finance Department as required. This will be operated out of a project cheque account established with the ANZ Bank in Luganville.

19 MONITORING AND EVALUATION

There are two levels of monitoring activities:

(a) In relation to those outputs and activities identified in the work plan for each component and related to overall project implementation.

For project management the major indicators would include strengthened EU, the employment of the Project Manager, establishment and effective operation of the CMC and TAG, project procedures manual, effective reporting of financial and physical progress, a framework for effective participatory planning and transition to community based management.

For the CAP sustainable management plan indicators will include the achievement of the major inputs and the resultant agreed plan reports. The same applies for the income enhancement, ecotourism and CAP expansion components.

(b) Whereas the above are more the subject of monthly or two monthly project progress reporting the impact of the project is monitored by measuring the following indicators:

Impact on Community Management:

- Achievement of management and administration activities at community level: operating bank accounts, employing staff, CMC management role, increased village co-operation, effectively enforcing regulations for resource use, active participation in ecotourism etc.

- Effective participatory planning and implementation, community decisions reflected in project work plans.

- Widespread level of understanding and ownership amongst the community.

- Minimal number of complaints from village community relating to EU and TAG activities, distribution of funds etc.

Impact on Biodiversity Conservation and Land Management

- Baseline population studies will be completed for critical indicator species, selection based on their perceived population status, e.g. turtles, flying fox, (known to be threatened in the Pacific), and species regularly hunted but for which there is no data as to sustainable levels, e.g. Pigeons, Black Flying Fox, and Megapode.

- Wildlife consumption will be monitored through household diary's and overseen by the CO.

- Impacts of cattle and pigs will be monitored by the establishment of scientific enclosure plots.

- A land use sketch has been completed and this will be repeated in more detail during the land use planning stage, and repeated at the end of the project.

Impact on Short Term Welfare of Community

- A baseline health profile will be conducted and repeated at a project midpoint and on project completion.

- A subjective quality of life assessment will be conducted during the first phase of the project and will be repeated as above.

- Changes to household incomes will be assessed through an income diary kept by selected families and monitored by the CO.

- Changes in households use of time will be measured by time diaries as above.

- A sociological village profile, recording population, number and size of households, levels of education, existing village management structures, nature and extent of village conflicts has been completed, April 1994. This will be repeated at project midpoint if judged necessary and prior to project completion.

Impact on the Involvement of Women, Youth and Disabled

The following parameters will be recorded:

- Number of women involved in activities.
- Number of women trained as part of the project.
- Number of activities being undertaken by women.

In addition TMAG will undertake an annual review of the project.

Having adopted a process system of project implementation it is important for rigid systems of monitoring and internal and external evaluation activities. This will enable an effective system of ongoing project design. There is a need to make sure original objectives are maintained and any design modification is done with respect to them. This doesn't mean that objectives cant change but there needs to be strong justification such as original objectives becoming irrelevant in light of new information or there was a major external factor such as cyclone that alters the nature of the area.

PART E PROJECT IMPACT

20 PROJECT BENEFICIARIES

Benefits from the implementation of the CAP will accrue at the community, regional and national levels. The following indicates what and where possible benefits will arise.

20.1 Local Impacts

The project has high levels of training inputs for local people relating to, conflict management, sustainable land management, conservation, land use planning, business skills, business feasibility studies, tourism management, financial administration, committee skills, nutrition and primary health care.

The community development component will benefit all sectors of the Matantas Community, with improved water supply, sanitation, health care and education.

It is anticipated that the project will result in increased income to the landowners and through out most families of the community through ecotourism and nut harvesting and other yet to be identified income generating opportunities. These benefits are likely to bee small and spasmodic in the short term and increase as the C.A. is developed and marketed and as village confidence and skills in tourism increase. We will endeavor to ensure that the benefits are spread as equitably as possible throughout the community, including the Man Hill community. Benefits to the wider community from ecotourism will most likely take the form of payments by the business owners for services and goods. It is likely that there will be some kind of royalty per head for any tour packages, and this may contribute towards a village development fund.

It is Possible that once the community has developed some business skills and learnt to conduct their own business feasibility studies they will identify other business opportunities, independently of the project.

Implementation of sustainable land use practices and protection of the areas biodiversity will benefit existing and future generations by ensuring long-term sustainable access to forest resources. The protected area will have long-term educational benefits, allowing future generations to learn the traditional ways of collecting and using and protecting forest resources, in this way the CA will help protect Custom knowledge and practices. As the site contains a diverse range of habitats and high representation of Vanuatu's biodiversity it offers potential as an ecological training or field center.

20.2 National Impacts

The Big Bay Forests are an important site for the conservation of Vanuatu's biodiversity. These forests are the last extensive area of lowland forest remaining in Vanuatu and they contain a good representation of Vanuatu's known flora and fauna. At least 75% of Vanuatu's land and freshwater bird species are found here including five of Vanuatu's six endemic species and Vanuatu's only endemic genus. The area contains a diversity of habitats, including Vanuatu's only braided river, a lagoon, alluvial plains, limestone terraces and plateaus. There is no other known opportunity in Vanuatu to protect such a diversity of habitats in one place.

Several "at risk" species, Coconut crabs, (*Birgus latro),* Black flying fox, (*Pteropus tonganus),* White flying fox (*Pteropus anetianus),* are commonly found here. It is also known that turtles come ashore to nest on the black sand beach of Big Bay.

The Forests of Big Bay could become an important center for ecological education in Vanuatu.

It is likely that once the area becomes a C.A., it will contribute significantly to Vanuatu becoming an ecotourist destination. The GOVERNMENT and the people of Vanuatu would benefit from an increased number of visitors.

The project will involve a wide range of personnel during its implementation and these people will gain in their knowledge of biodiversity conservation and learn new skills in sustainable land use planning and management, which can be applied to other areas in Vanuatu.

20.3 Regional Impacts

It has been said that this area is one of the largest remaining flood plain tropical forest in the South Pacific. This has yet to be verified.

Many of the plant, and wildlife species found at Big Bay are widely distributed within and beyond the Pacific region, and their protection in Vanuatu will provide an important scientific reference site for the future.

20.4 Other benefits

Successful CAP implementation will need to address a number of issues where there are no known preferred methods or models to use for the project, such as community based project management and distribution of benefits from jointly owned assets (such as the scenery attributes of the CAP). The project however provides time for the development of the most appropriate methods to adopt. These will add to knowledge in these areas and may be replicable to other projects, nationally and regionally.

21 SOCIAL IMPACT

21.1 Village Population

Activities that have taken place in the development of this project to date have already had some positive impacts.

The community has been brought together to discuss issues which effect the whole community. Until this project village meetings were a very scarce event and each family has tended to go about its own business, even when as in the case of clearing land for gardening immediately adjacent to the villages main water supply, effects of one families activities extend to the whole community. The community as a result of this project are now beginning to come together to discuss village needs especially in the areas of health, education and water supply. In the past there has been virtually no co-ordination between families so that village issues have been largely left unattended.

There are only three committees, a school committee, a truck committee of three people and a women's church group. The establishment of a community management committee, will bring together for the first time representatives of the landowners, church leader, women, and youth.

There is little communication between the Man Hill people and the SDA people. SDA concerns appear to focus on the use of land for the Man Hill gardens and the fact that they wear traditional lion cloths or leaf and do not wear European clothes, and practice custom. This issue has been brought to the forefront as a result of discussions about tourist development. These concerns have been in existence for a long time, but the project has brought the issue more out in the open, so that it is now being discussed within both the communities. At this stage of the project it is not known whether these rifts can be overcome, or if the project has to be designed to work with the split factions. This is not impossible, as any tourist developments can be designed to bring benefits to both communities, yet be physically separated, which is what the community has decided they would rather do.

The project is likely to have a wide range of social impacts, relating to; changes in income which is unlikely to be evenly spread through out the families, changes in the way people spend their time, greater exposure to the outside world and awareness of other life style opportunities.

A major concern is that the establishment of businesses associated with tourism may result in a redistribution of time which may have negative impacts on the maintenance of households and gardens.

There will be obvious benefits associated with improved health facilities, water supply and sanitation and greater access to schooling, better clothing, improved housing and improved knowledge of what outside assistance e.g., training, technology etc. is available, brought about by increases in income and directly as a result of project delivery of improved community services and training.

Baseline monitoring of some of these components has already started and will be completed as soon as possible. In addition the community will be encouraged and given training to enable them to undertake their own monitoring.

21.2 Women

In Vanuatu, as in many other countries, women have well defined traditional roles which center around the running of households, care of family members and gardening. Most women in Matantas have large families. In Matantas, within both the SDA and the Man Hill Communities men share in the gardening but the majority of the work is done by the women. Women have little say in village affairs, other than as voiced through their husbands to the Chief.

The women however are often the initiators of community development, and it is upon their initiative that a kindergarten and school has been established.

This project aims to involve the women in all aspects, including planning and decision making, training in business and other skills, building VIP toilets, and the active participation in the development of any businesses and possibly ownership of enterprises.

It is anticipated that these activities will empower women, which may give rise to some unanticipated impacts which will have to be sensitively monitored.

The project is likely to result in an increased work load for the women, especially if the tourism enterprises involve catering and or accommodation. It will be very important that in carrying out the feasibility studies that the women address this issue and work out their own solutions.

Improved water supply, sanitation and access to an aid post will be of particular benefit to the women, as the incidences of family and personal sickness should be considerably reduced.

22 FINANCIAL AND ECONOMIC IMPACT

There are likely to be significant economic impacts for the people of Matantas. These will be related to the presence of personnel associated with the project, who spend money in the village on washing, guides and transport.

The potential net income from nut harvesting is about 2.5 million vatu per year. This is based on prices quoted by the Vila merchant and extrapolated number of nut trees and average production per tree from a survey carried out in 1993, see the Big Bay report, (Maturin et al 1993).

It is not possible to accurately identify the financial costs and returns from any ecotourism ventures until completion of the tourism feasibility studies.

It appears that there is potential to develop several ecotourism packages for Matantas, based on the C.A.. One for the Cruise ships which currently visit once a month, and existing tourist operators, which would involve, lunch, guided nature walk and custom dancing and in the longer term overnight accommodation with guided walks.

A Santo based tourism consultant has provided the following gross estimates:

♦ Cruise Ships	30 people x1,500 vt	45,000vt/month
♦ Overnight (private tourists with operator	8 people x 2,200vt	17,600vt/month

Costs for the Cruise ship venture involves food, most of which will be locally grown, labor, capital costs for establishment of facilities. For the first year this package will be marketed as a pilot tour to assist in the establishment of the C.A., and will also be used as part of village training for guiding, and business management.

23 RISKS

- That where it is presently reckoned that the local people derive between 25 to 75 percent of their real income from the ecosystems on their customary land areas, income introduced through ecotourism will more than likely reduce this proportion.

- Many of the inputs are to be undertaken by government departments which will endeavor to provide inputs as scheduled but are not always able to do so, this could upset the overall work plan of the CAP and will require a considerable management input in order to minimise delays.

- Non resolution of the Land Dispute to a level which ensures project sustainability, is the major risk.

- There is potential for conflict within and between families concerning the distribution of economic benefits, which will need constant monitoring during the establishment phase.

- The establishment of ecotourism activities may lead to an increase in conflict between the Man Hill and the SDA communities, as the two communities have very different aspirations as to the nature of the tourism activities they want to establish. Non resolution, or consensus to tolerate, may cause people to loose interest in ecotourism.

- The present pattern of earning income is dictated according to when crops are ready and when there are specific requirements for cash, e.g. school fees etc. Successful ecotourism businesses will require a change in work patterns which may not be sustainable over time.

- There are few literate people at Matantas and there will need to be a large component of training before any business can be established. There is a danger people will lose interest in the project. We are addressing this through the provision of community services, and establishment of alley cropping trials within the next three months.

24 OUTSTANDING ISSUES

At this stage it is not clear whether the area to be protected will be legally protected as a Conservation Area. under the National Park Act. It is hoped that the NP Act can be amended or rewritten to enable the area to be established as a C.A. and managed and owned by the landowners. In the interim the landowners have asked for a legal agreement to be drawn up between them and the EU which would establish interim legal protection to the proposed protected area.

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