Konsevason na Divelomen insait
Long Papua New Guinea

An Evaluation of Integrated Conservation and Development Projects in PNG

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ABSTRACT

Since the signing of the Convention on Biological Diversity in Rio de Janeiro, Brazil during the Earth Summit in June 1992, community participation in the conservation of natural resources, especially in biological diversity, has become the subject of much global discussion. The issue of how participation should be approached depends very much on the different cultural and social contexts from which it is viewed. Similarly there has been much global debate on various models of conservation and how best conservation should be approached. The Integrated Conservation and Development Model is a new paradigm that supersedes the old paradigm of strict nature conservation. It calls for social and economic incentives for the resource owners, who mainly inhabit the global forest systems of poor and marginalised communities in developing countries. The traditional owners are often willing to make available their forests, as well as human resources in terms of labour and locally acquired traditional knowledge, in order to implement appropriate and applicable practices for the better management or protection of biological diversity in that given area.

While there is a genuine undertaking and desire by the Governments and peoples of the developing countries for conservation of biological diversity, there is however, differing and opposing perspectives between the leaders of developed and the developing countries on what, who, why and how such biodiversity should be managed for the benefit of humankind. Western countries that possess the financial resources and well established institutions of higher learning and research capabilities are often at the helm of a decision making process that often leads to the importation of culturally inappropriate concepts of conservation and natural resource management practices for developing nations. As a result of this dichotomy, the funding criteria for biodiversity conservation projects may be markedly different between the donors and the local stakeholder groups, as the priorities of each group are ranked differently. For example, social and economic benefits are often ranked a high priority by the communities of the poorer countries while the richer donor countries consider research, conferences and short-term informal training courses as a major consideration for the conservation of biological diversity. The research undertaken for this thesis has shown that there is a need for both the project proponents and the resource owners to agree on what they collectively see as the priority aspects for the integrated conservation and development (ICAD) model to address in Papua New Guinea.

This research examined, employing qualitative social science methodology, three of the ICAD projects in Papua New Guinea: Crater Mountain; LakeKamu; and Kamiali. Apart from looking at various stakeholder participatory roles and the mechanisms of participation, the project also investigated aspects of social and economic incentive
packages; the role of funding agencies and level of funding; the ability of the project proponent to raise international donor funding; funding arrangements for a project’s continuity; and the resource owners' expectations and perceptions, especially of the short-term social and economic benefits pronounced by the project proponent at the inception of the project. The study shows that, in a society like Papua New Guinea with its complex social system (750 cultural and linguistic groupings) and vastly differing cultural attachments to land and natural resources, much more time than is normal is required to appreciate and understand the appropriate traditional protocols prior to obtaining approval from the local communities to share the management of these biological resources. Local societies have guarded and managed natural resources over millennia, and it is important to preserve the cultural obligations, responsibilities and requirements of local communities to manage these resources. There has been a lack of Government commitment to the rights and responsibilities of local communities. Meaningful training is needed to assist local communities to initiate and manage natural resources appropriately, in order to achieve lasting environmental, economic and social benefits. Environmentally destructive forms of economic development have been a major set-back to conservation of biological diversity in Papua New Guinea. Now, at the final stage of this write up, it is noted that several of the ICAD communities have decided to invite development companies to their areas, since the much awaited good and services promised by the implementers of the ICAD projects have not arrived.
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Certificate of Authorship

I hereby declare that this submission is my own work and to the best of my knowledge and belief, understand that it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at Charles Sturt University or any other educational institution, except where due acknowledgement is made in the thesis {or dissertation, as appropriate}. Any contribution made to the research by colleagues with whom I have worked at Charles Sturt University or elsewhere during my candidature is fully acknowledged.

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Date

Wednesday 31st October

________________________
CHAPTER ONE


1.1 General Introduction
The application of western conservation models, which do not incorporate socio-economic benefits for local communities, have proved to be a failure in developing countries. The reasons for this failure are complex; however, the displacement of local communities and their shortcomings in ascertaining the social and economic needs of communities living in and around these protected areas are important factors.

Growing concerns with regard to the restrictive nature of the protected areas management approach, and its negative impact on the local communities, has played a major part in the decisions that lead to the publication of “The World Conservation Strategy” (WCS) in 1980 by the International Union for Conservation of Natural Resources (IUCN). The new conservation strategy laid the basis for the initiation of the Integrated Conservation and Development Projects (ICDP) as a new conservation model (IUCN, 1980). The model based on the rural development theory is now perceived to be the new paradigm in conservation. Projects linking conservation objectives with development activities have been described by Wells and Brandon (1992) as Integrated Conservation and Development Projects (ICDP). The ICDP model is now being promoted in many regions, especially in developing countries.

Almost a decade after the introduction of the ICDP model, ten such projects have been initiated in Papua New Guinea since 1993. These have been described by James (1996, p. 5) as Integrated Conservation and Development (ICAD) projects. They aim to promote sustainable development as the basis to secure biodiversity conservation on traditional and communally owned land (Figures 1 & 2). This study will analyse and evaluate community participatory processes within three of these projects, by describing how each of the three Integrated Conservation and Development project is being implemented by the different stakeholders. The evaluation process
is based on a benchmarking procedure developed by the author, who has been closely involved in the implementation of this principle in one part of PNG since 1980.

Figure (1) Shows Map of Biological Priority areas or Hot Spots in Papua New Guinea.

1.2 **An Introduction to Conservation and Development Approaches**
The first United Nations Conference on the Human Environment was held in Stockholm in 1972 in response to the state of the environment as the result of the industrial revolution. Twenty years later the global efforts towards conservation have become evident, and development models have taken on a new dimension. However, according to Holdgate (1996) it still remains unclear if anything has been translated into action for better environmental management practice on a global scale since the first conference. The author in his book, *From Care to Action: Making A Sustainable World* (Holdgate 1996), analyses the conservation and development efforts towards creating a sustainable world. He doubts if the United Nations Conference, held in Rio De Janerio in June 1992 and attended by world leaders, which addressed such matters as Development, Environmental Protection, Climatic Changes, Depletion of the Ozone Layer, and Biodiversity Conservation, will ever translate into global action towards achieving better improved outcome to what they have been talking about since the first UN Conference held in The Hague in June 1972. After the Rio summit there has been other UN meetings as a follow up on very much the same issues and these include the following: Kyoto Protocol 1997, Catagena Protocol 2000, Millennium Declaration 2000 and Johnnesburg Declaration 2002 (Kwa, 2004).
1.2.1 The Strict Protected Area Conservation model - Definitions and Threats
The strict Protected Area conservation model aims to protect large areas of land where ecosystems harbour outstanding biological diversity and unique landscapes not disturbed by any human activities and generally considered to be wilderness. The management of conservation areas under this model is the responsibility of state officials and it restricts any form of activity within the protected areas. Visitors and local communities are allowed access by special permission only, for recreational, educational or spiritual purposes (Duffey 1983 p. 447). Many of these areas have become important destinations for the global tourism industry.

Many authors including McNeely and Miller (1984); McNeely (1992); Barraclough et al. (1995); Furze et al. (1996) Colchester (1997) and Stevens (1997) believe that this model has not succeeded in its aim of protecting the biological diversity of these areas. This is especially so in developing countries, due to their ever-increasing population with its pressing social and economic needs. They argue that this model does not recognise local participation and instead displaces human settlements, and restricts access to essential community resources. There are five main reasons why this conservation model has become unpopular. Bridgewater (1992) summarises the threats to the model as:

- Ongoing conflict with the local communities living within and around the protected areas.
- Lack of adequate legislative and policy support mechanism by Governments around the world to ensure conservation success.
- Uncertainty or insufficient funding by these governments to maintain conservation areas.
- Lack of greater participation by all sectors of the population towards effective conservation.
- The task of conservation enforcement has proved to be too much for few poorly qualified government officers to administer.

1.2.2. The Integrated Conservation and Development Project.
The shift in conservation paradigm from the strict protected area conservation approach to that of integrating with development under the ICDP model has given a new meaning to conservation of natural resources that includes both renewable and non-renewable resources. This change came about when an important step was taken in 1980 towards the publication of the World Conservation Strategy (WCS), as discussed in detail in Chapter 2. The United Nations
Environmental Program (UNEP) together with the World Wildlife Fund (WWF), which provided the financial support for its preparation by the International Union for the Conservation of Nature (IUCN), commissioned this particular document. The main aim of the World Conservation Strategy (WCS 1980) is to help advance the achievement of sustainable development through the conservation of living resources. The ICDP model calls for conservation to take on a holistic approach by addressing the cultural, social and economic development needs of local communities. Such an approach must include a long-term effort towards assisting these communities to improve their living standards as well as maintaining a healthy and productive environment.

According to IUCN (1980) this Strategy is intended to stimulate a more focussed approach to living resources conservation and to provide policy guidance on how this can be carried out. It concentrates on the main problems directly affecting the achievement of conservation’s objectives and on how to deal with them through community or public participation. In particular, the strategy identifies the action needed both to improve conservation efficiency and to integrate conservation and development by addressing the social and economic concerns of the affected people. The new strategy acknowledges the views held by authors like Jacob (1991) who believe that degraded environments are indicative of poverty, which means that conservation cannot be achieved in isolation to the economic well-being of the local community.

Despite early signs of concerns, the new conservation model is not a centralised, top-down, state agency controlled management approach. It is a model that carries the possibility of greater participation by a broad section of the community, representing all walks of life. In particular the involvement of indigenous communities, who have in the past been displaced as a result of the strict protected areas conservation model, are now the targets of this particular approach. The new conservation approach embraces the theory of community participation and the theory of rural development, two inter-related theories developed during the industrial revolution in the 1960s and 1970s. The theory of community participation in the developing world emerged within the theory of rural development. The theory of rural development represented a response to the failure of development programs based upon modernisation theory to deliver improved living conditions for the majority of people in third world countries.

According to Midgley (1986) and Gabriel (1991), modernisation theory suggested that development of third world countries could best be accomplished through large scale industrialisation programs based that transfer the industrial technology of developed nations to
the developing nations. Under this theory, it is perceived that wealth created in the urban centres of the south would spread out from the urban centres to the rural areas and improve the living conditions of ordinary people. Midgley (1986), suggested that the theory of rural development emerged during the 1960s in opposition to the oppression of the poor by the wealthy and the powerful, oppression that created a widening gap in living standards both within third world nations and between nations at the core and periphery. This shift in perception explains that lack of community participation has contributed to the failure of the development model.

There are current concerns that there has been very little proof of success in many of the ICDP projects initiated in developing countries of the world. In reality, relatively few direct benefits have flowed to the people who live closest to over 3,000 protected areas established in the tropical countries over the past 50 years (McNeely, 1992).

1.3. Conservation and the Meaning of Sustainable Development.

The Brundtland commission defines sustainable development as, “meeting the needs of the present generations without comprising the need of future generations” (Brundtland Commission, 1987). The concept of sustainable development aims to involve the development sector, especially multinational cooperation forces that operate globally to refocus current development objectives in light of the new definition, as provided by the Bruntland Commission (1987). Thus the sustainable development concept as compared with previous development concepts not only takes on the need to improve welfare of the present generation but also recognises that world resources are finite. This recognition means that wasteful use of existing resources today will cause an unnecessary sacrifice of income and wealth in the future. The concept does not imply that all national resources should be preserved however, but acknowledges that successful development will have some impact on the natural resources (World Bank, 1992). Holdgate (1996) does argue, however, that despite numerous meetings and conferences on the issues of sustainable development and sustainable living, very little is done in practical terms. The global inaction towards the implementation of sustainable development policies by State Governments is evident after the signing of the UN Charter on Environment and Development in 1992.

Respetto (1989, p. 10) defines sustainable development as a strategy that manages all assets, natural resources and human resources as well as financial and physical assets, increasing long term wealth and well-being. Sustainable development as a goal rejects polices and practices
that support current living standards by depleting the productive base, including natural resources. Such policies and practices leave future generations with poorer prospects and a greater risk in maintaining an equitable life style, than our own. According to Jacob (1991, p. 181) sustainability is meaningless if it is not applied on a global basis, as much of environmental degradation in the South is the consequence, of economic activity of the North (through international trading relationships). Environments in the south are often degraded through the process of producing primary commodities for export to the north.

1.4. Environmental Conservation and Sustainability Efforts in PNG

1.4.1. Wildlife Management Areas Model.

Many of the conservation efforts in Papua New Guinea is based on the locally developed conservation model, which is locally known as the Wildlife Management Area system (WMA). Under this conservation model the local people take the first initiative to approach or seek the support from the Department of Environment and Conservation to protect part of their forest as a WMA. The WMA elements are contained in the Fauna (Protection and Control) Act of 1966, which provides for the establishment of the WMAs in PNG. The degree of success through community control and management of protected areas under the WMA concept has been described by Healey (1989), when discussing the conservation and management of Garu Wildlife Management Area. Garu villagers of the West New Britain Province primarily established the Garu Wildlife Management Area to protect and regulate the harvesting of wildfowl eggs. The village-based rules are enforced by the clan representatives who are appointed who form the wildlife management committee members. The rules clearly stipulates that:

- Harvesting of eggs is restricted to only certain weeks of the breeding season
- Harvesting should not be made before or after the main breeding season
- Killing or hunting of wild fowl is prohibited within the conservation area
- Deforestation of any kind or logging is not allowed within the designated conservation area
- Community members caught breaking the rules will have to pay an appropriate fine.

In the same way traditional rules are reflected in the regulations that were put in place to restrict the hunting of Birds of Paradise by the Kundagai people of the central highlands of Papua New Guinea. A clearly acceptable system of fines have been developed and put in place to enforce the conservation rules. The potential of community participation through the WMA system of protected areas in PNG has been discussed in detailed by Kwapena, N. (1984) and Saulei (1993). From Independence to 1990, PNG has formally declared 13 Wildlife Management
Areas  This number has since increased to 31 WMAs (in 2000) with the inclusion of new areas that have been developed and gazetted as WMA under the new ICAD model concept. These areas include the Kamiali ICAD project in the Morobe Province and the Crater Mountain ICAD project located between the Eastern Highlands, Chimbu and the Gulf Provinces.

In Papua New Guinea the global and national interest to conserve biodiversity took off in a big way towards the end of the 1980s. In fact it officially began in PNG in 1989 after the World Bank Sponsored Tropical Forestry Action Program was produced. The Minister for the Department of Environment and Conservation in 1991 officially declared that 20% of the nation's terrestrial and near-coastal marine areas should be managed to maintain natural ecosystems and protect the nation's biodiversity (DEC, 1989). The Department was then given the task to locate these sites in each of the nation's 30-40 biogeographical zones.

Bromley (1994), cited in Arlyne Johnson (1998), acknowledges that existing Papua New Guinea legislation provides a suitable foundation for attaining the three successful elements of community based conservation areas to be achieved. The three elements are:

- to create the means or mechanisms for discussing, reviewing and assessing the values of biodiversity conservation;
- to permit those values to be expressed in policies which incorporate incentives for conservation; and
- to implement enforcement procedures to provide assurance that conservation actually produces results.


The global interest in Papua New Guinea as an exceptional resource of biological diversity was envisaged when the Tropical Forestry Action Plan (TFAP, 1993), sponsored by the World Bank, recognised PNG as one of the few tropical countries in the world with a high biodiversity status that was under threat from environmentally destructive Government development projects. Corruption at high levels in the forest industry was further identified as one of the underlying threats. The Commission of Inquiry into Forest Matters, known as the Barnnett Commission (1989), found that logging companies were not subject to environmental regulations and did not have to observe forestry development procedures to obtain logging licences. They were also
found to deprive the state of millions of dollars in revenue through price transferring to strings of subsidiary companies and by avoiding taxes.

In May, 1989 the Government of PNG responded to the international pressure by requesting World Bank and UNDP, through the global Tropical Forestry Plan, to assist the government to review its forest policies and regulations in the country. In April 1990, the World Bank responded to the request and called a Round Table Meeting with the Government, Bilateral and Multilateral Donor Agencies, Private Sector and the NGO communities involved in the development and conservation efforts at national and international level. The outcome of that meeting was that the Government of Papua New Guinea through the Department of Environment and Conservation was eligible to submit a proposal for US$10 million to establish a pilot, integrated conservation and development project in the country.

The funding bid for the PNG biodiversity conservation programme received reduced funding of US$5 million to initiate the first integrated conservation and development project in the country under the newly created Global Environmental Facility Programme. This is a funding facility or mechanism established by developed countries to assist developing countries towards biodiversity, conservation and sustainable development initiatives. Positive commitment by the World Bank to work with the Government of PNG, sparked off a focussed interest by many international private funding organisations to support the biodiversity conservation drive in PNG.

In 1991 The Government of Papua New Guinea requested funding from the U.S. Agency for International Development (USAID) to carry out a Conservation Needs Assessment (CNA) of the country. According to the Swartzendruber (1993, p.,ix) biodiversity assessment compiled “an extensive body of the available scientific literature on the biological diversity of Papua New Guinea” and assessed the present state of knowledge, conditions, trends and environmental threats. Special maps were produced identifying sites of species endemism, biological richness, and unusual ecosystems (Figure 1)

Since the introduction of ICAD projects in Papua New Guinea, several attempts have been made to bring together various stakeholders to analyse various issues, concerns and problems, as well as the success of these projects at the national level. For example, McCallum and Sehkan (1996) evaluated the Lak ICAD project and highlighted several issues that were overlooked in this project initiative that led to it's failure (see Chapter 2). The meeting to evaluate various stakeholder views is reported by Saulei and Ann Ellis (eds.1998), in the "ICAD Practitioner's
1. 5.  **Research Hypothesis and Key Questions.**

This research is descriptive in nature, and is based on the exploration and evaluation of questions that are basically used as a guide in field interviews to test the main research hypothesis (below). In principle, the research relates to issues and concerns such as ‘do the resource owners see the urgent need to conserve their biological resources’? If this is a true landowner perspective, then what participatory mechanisms have been put in place by the project proponents for the community’s equitable participation at all stages of the project implementation? The second issue examined is in relation to the community’s perception about the delivery of social and economic packages as advance compensation for allowing the use of their forest for conservation/biodiversity purposes, for the benefit of the global community. The third aspect of this thesis is an examination of the role of international conservation agencies and the funding agencies and what they perceive to be the important considerations for biodiversity conservation through the ICAD model in PNG.

1. 5. 1.  **Research Hypothesis.**

“Integrated conservation and development projects that are externally proposed, designed, funded and implemented with minimal local participation and with unsustainable social and economic benefit packages that cannot proportionately compensate for the lost opportunity cost to the local communities, will not be successful in PNG.”

Numerous literature and case studies have demonstrated the significance of social and economic incentive packages and the crucial nature of community participation in developing countries, where livelihood is dependent on natural resources. Numerous attempts have also been made to define what participation should comprise. Unfortunately, very little has been written by the indigenous people of those countries about the cultural perspective of community participation based on their social and cultural values. Nor have indigenous people written about the outsiders’ knowledge of the local requirements and sensitivity to protocols involved in facilitating greater community participation in either their own communities, or in other parts of their society. This research offers some insights, not necessarily conclusive, into the **Melanesian perspective of community participation** (Box 11.), as an additional contribution to what is presented and discussed on the various participatory processes employed in the three case studies. The
indigenous perspective is also represented in relation to the arguments presented (in Chapter 2, pp. 39 & 43) on the pros and cons of participation.

1.5.2. Research Objective.
The research objective is not so much to test the hypothesis; instead it is primarily designed to analyse the following features of the project:

- Project origin
- Mechanisms for equal and effective local participation
- Type and degree of delivery of perceived social and economic development benefits
- Measures in place to counter development threats to biodiversity
- Need for long term funding opportunities to assist enterprise development
- Support and participation from various levels of government
- Locally trained personnel to assume a leadership role.

1.5.3. The Key Research Questions being asked are:

- Are the clan leaders who make key decisions on what goes on in their land clearly identified by the project proponent?
- Are the inconsistencies between relevant aspects of the theory of community participation and the implementer’s approach towards participation identified?
- Are the measures taken to reflect these inconsistencies addressed and if so is there evidence of effective community participation?
- Are there inconsistencies between the delivery of perceived social and economic incentive packages, and what is actually delivered to the resource owners at the end of the funding period?
- To what extent have inconsistencies between the deliveries of perceived social and economic incentive packages influenced the views of resources owners on ICAD project initiatives?
- What measures are being put in place to ensure that a project is sustainable when the funding ends?
- What is the nature of the partnership between the project and the various levels of the government, the churches and the business communities?
- Is there a strong political will to support the ICAD initiative and if so what sort of administrative support mechanisms are put in place at both the provincial and national level to support ICAD initiatives in the country?
- Is there an appropriate policy and legislative framework in place in the country to administer the ICAD process, across sectorial boundaries, both at the provincial and the national level to ensure conservation of biological diversity and to promote sustainable development?
- What alternative funding mechanism is being put in place for the local people to continue the ICAD mission after funding period ends?
- What does ICAD reveal about the type of social and economic incentives presently offered to the local communities in the project areas?
- What sort of infrastructure support is provided for the local communities in the ICAD project areas?
- Does the conservation law under the ICAD model legally remove land ownership, right of access and management control from the traditional landowners?
- Is there real empowerment of local communities to ensure their capacity to exert “ownership” at the ICAD project process in their customary land?
Chapter Two:


2.1. Concepts and Definitions:
This chapter discusses some of the major developments and events associated with the origin and spread of the strict protected areas conservation model (the ‘national park’ model) at the global level. An analysis of this model is made in order to establish why it has worked well in some regions of the world and why it has caused many conflicts in others. The second issue being addressed in this chapter relates to the introduction of the Integrated Conservation and Development Project (ICDP) model as an alternative to that of the original strict protected areas conservation model. The effort to promote conservation objectives based on the ICDP model is not universal in approach and is often subjected to differing perceptions on what, why and how sustainable conservation and development should be achieved in both the developed and the developing nations. The newer model embraces the theory of rural development, which seeks to empower local participation and offer social and economic incentives packages as appropriate tools to enable local communities to benefit from such initiative to improve their living standards. The involvement of various stakeholders and their perceived role in biodiversity conservation and development activities lies at the very heart of this second model. The term "biodiversity conservation" is used here in the context as defined by McNeely et al. (1990, p. 17) as "...the preservation of all species of plant, animals and micro-organisms and the ecosystems and ecological processes of which they are part".

The ICDP model aims to achieve conservation objectives through meaningful local community participation that in turn embraces indigenous knowledge, traditional institution and land tenure. The term ‘protected areas’ is here used in its broadest sense; as suggested by Munro (1995 p. 13) "...to include all categories of protected areas from strict nature reserves to managed resource areas including national parks, wildlife sanctuaries, protected landscapes and resource reserves". In the new paradigm, conservation is defined by IUCN (1980) as “...the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations.” This definition ensures that conservation is positive in embracing preservation, maintenance, sustainable utilisation, restoration and enhancement of the natural environment in association with community user demand.
2. 1. 1. What is a national park or a strict protected area conservation model?

The term ‘strict protected conservation areas’ model is used throughout the thesis to refer to national parks and any other categories of protected areas that discourages human use of the resources within those areas other than the purpose they were created for.

2. 1. 2. Why is a national park important?

The main purpose of creating national parks or protected areas is to preserve scenic and cultural areas and to protect the plant and the animal species that live in them. According to both Hales (1989) and Dixon and Sherman (1990), protected areas or national parks in North America were mainly created to preserve spectacular scenery, as places of spiritual renewal, and venues for outdoor recreation and tourism development. The concern for the inclusion and protection of unique species of plants and animals and the natural ecosystems they live in picked up greater public recognition only in the 1980’s. Prior to this period, the concern of conservation movements was primarily to protect large scenic undisturbed areas of national significance.

In 1985 the IUCN introduced a more condensed definition and defined National Parks as “...large areas of land where the highest competent authority of the country has taken steps to prevent or eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological geomorphological or aesthetic features which have led to its establishment (IUCN, 1985).” The definition still implies that outstanding value and scenic areas can only be managed by keeping the people out of the protected areas and assumes that the protected forests or landscapes have not been altered by humans or by any other means. The definition also suggests that management is best conducted by a centrally controlled formal authority.

McNeely, Miller, Reid, Mittermeier and Werner (1990, p. 49) argue that ‘...this approach to habitat protection can be viewed as a reflection of our inability to live in harmony with our natural environment.’ They believe that biological resources need protection against inappropriate uses and over-exploitation but not against the people. This view is shared by McNeely (1988, p. 70) who claims that the issue of controlling public access to biological resources is considered to be of national or international importance and is perhaps the foundation of all conservation problems. However, this perception and the related views on what the protected areas should be had drastically changed since the UN Earth Summit in 1992. The shift is reflected in the new definition of national parks (IUCN 1993, cited in IUCN 1998, p. 1), which define a National Park as "...an area of land and/or sea especially dedicated to the protection and maintenance of biological
diversity, and of natural and associated cultural resources, and managed through legal or other means".

2. 1. 3. Reasons behind the national parks conservation movement?
One of the driving reasons behind the first conservation movement in the early twentieth century in the United States is the belief that the forest resources are being depleted too quickly. This belief in resource depletion led to the establishment of the Soil Conservation Service in the 1930's. This step was triggered merely out of a concern that soil was being eroded faster than its renewal. Similarly, conservation has usually been advocated in response to perceptions that, without long term and sensitive management of natural systems, resources are likely to become less available in the future. Dixon and Sherman (1990, p. 10) claim that most of the early national parks were established to protect scenic and recreational resources or for viewing wildlife. The idea of protecting the entire ecosystem for protecting biological diversity was developed much later. According to Hales (1989, p. 139) National Parks in North America were created for the protection of scenic places and not for species protection.

Davidson (1993 p. 347) believes that the conservation movement has progressed from the radical creed of small groups of scientists and enthusiasts, 30 years ago, to the underlying idea of sustainable development, which is the guiding philosophy for an enlightened world in the 1990s. The scientists’ concern was about the need to protect as many habitats or ecosystems as possible as they are critical to harbouring many of the species of plants and animals not yet described in science. However, Micklewright (1993 p. 323) believes that most of the global concern about environmental preservation in the post-war period derived from the anti-nuclear movement and from concern about the impact of pesticides on the biological food chain in the 1950s through to the 1980s as a result of the publication of ‘Silent Spring’ by Carson in 1965. The impact of pesticides aroused greater public concern about the state of the natural environment. This public concern triggered the formation of prominent volunteer organisations such as Friends of the Earth and Green Peace organisations in the early 1970’s. According to Munro (1995, p. 14), the calls for resource conservation and nature conservation has been the reason why the conservation movement has intensified in the late 20th Century.

2. 1. 4. The principal advocates of the global conservation movement.
There are many players in the promotion of conservation and environmental protection. However, the national and international environmental non-government organisations have
undoubtedly become a major force. The volunteer organisations are gradually winning the
global recognition through public membership as active stakeholders towards environmentally
responsible development and the protection of the world’s biodiversity (Ghimire and Pimbert,
1997). According to Ghimire and Pimbert (1997, p.,1-2) the past four decades have seen the
emergence of several major environmental organisations that have close associations with the
United Nations. Such organisations include The World Conservation Union (IUCN), The World
Wide Fund For Nature (WWF) and The United Nations Environmental Programme (UNEP). Other
NGOs, like The Nature Conservancy (US-based), have also become very active in the drive
towards conservation and sustainable development globally. The Nature Conservancy is one of
the largest owners of private protected areas in the world, with 1,300 private protected areas
covering well over half a million hectares Murray (1995, p. 197).

Jacobs (1991, pp. 16-17) claims that the membership environmental pressure groups is very
much supported by the middle class of the west, support that is a cultural phenomenon in the
industrialised countries. Whereas in the South it is the movement of the poor who see their
livelihood security being taken away or put to great risk by the extractive forms of development.
The role played by the poor is discussed below under the role of international non-Government
Organisations.

2.1.5. Beneficiaries of the global conservation effort.
The question of who benefits from the biodiversity conservation is now beginning to gain global
attention, especially in the tropical countries of the developing nations, containing rich and diverse
biodiversity with acute shortages of funding. According to McNeely (1992) the conservation of
biodiversity benefits everyone globally. However, the poor countries bear a disproportionate
share of the costs. As a result McNeely (1992 p. 15) suggests, "...there is a need for global
strategy for the conservation and sustainable use of biodiversity."

Hodgson and Dixon (1989) also support the view that it is the people who live closest to the forest
who often lose out on the real benefit of the local biodiversity or natural resources as in the case
of tropical forests. This is because these people had long used the forest as the source of
irrigation, water source, construction materials, medical plants, spirituality and game hunting.
Consequently they have taken pride in caring for the earth. A good example is when logging
operations are allowed which disrupt the functions of the ecosystem, through heavy run-off that
creates massive sedimentation down stream and siltation that effects coral reefs and marine life.
Erosion damages the water-ways and natural landscapes. The effect on water quality affects the
marine resources that the coastal villages depend on.
According to Sandlund et al (1992 p. 10) "...the industrialised countries pursue an economic policy that exploits natural ecosystems globally for short term economic gain. Through their over consumption and wasteful life style the industrialised countries also cause more than a fair share of the environmental change". It is no wonder the governor of the Brazilian state of Amazonia views the global biodiversity treaty signed by 98 countries as a “first world plot” to keep the third world countries poor (Vajpeyi, 1995 p. 66).

2.1.6. Potential threats and concerns about the strict protected area conservation model.

The effort and speed by the global conservation movement to bring many of the forest resources and significant natural landscapes under strict protected areas concepts, especially in developing countries, increased significantly in the later half of the 20th Century (Munro, 1995. p. 14). There are now approximately 8,000 protected areas occupying 5-6% of the world’s land surface. Many of these areas coincide with indigenous tribal peoples land and ecosystems that are required to sustain their livelihood and provide for future development. The tribal indigenous people in 170 countries who live in these fragile ecosystems where this particular conservation model is promoted have been estimated to be at 200-300 million (IUCN, 1984, Furze et al, 1996). Unfortunately, the implementation of the Yellowstone model has been responsible for many of the displacements of tribal indigenous people from their land and the resources that sustain their livelihood (McNeely and Miller 1984).

In the last century, the ‘Yellowstone’ model (the USA national park model, in which local and indigenous people and uses are excluded from parks) was promoted with great intensity in many of the former colonies of western industrialised countries. The concept was embraced by the governments of these countries without much consideration to the local, social and economic impacts that such a model would have in their society in the long run (Gurung, 1995). McNeely and Miller (1984), McNeely et.al. (1990), McNeely (1992), Barraclough et al, (1995) and Stevens (1997) argue that a strict area protected management concept restricts access and often displaces the local indigenous communities, whose social, cultural and economic well being is dependent on their natural ecosystem (Chapter 1.). Barraclough et al. (1995) report that communities surrounding these protected areas have, in many cases, lost traditional rights of access to resources. They argue that this has also become a problem for reserve management as the local people encroach upon the reserves seeking to harness these resources. The primary purpose, being for the maintenance of their socio-cultural and economic activities that have existed for millenniums.
According to Schelhas and Shaw (1995 p. 206) such decisions are influenced by socio-economic factors, such as returns to labour, availability of labour, risk availability of cash and create security of land tenure, market factors, off-farm employment, knowledge of cultivation techniques, and cultural preferences. Metcalf (1995 p. 27) claims that "...interventions by the European colonial powers in the 20th century in Africa had a radical impact on traditional land tenure systems. Statutory laws were promulgated that alienated local people from grazing, forest and wildlife resources. Rural people lost access to wildlands as protected areas were established and lost legal access to wildlife on their own land". There is now a growing recognition that protected areas or conservation and development areas cannot be managed without considering the people who live in or near them.

2.2. Integrated conservation and development projects (ICDP) approach as an alternative global conservation model.

The new conservation approach embraces the theory of community participation and the theory of rural development, two inter-related theories developed during the 1960s and 1970s. The theory of community participation in the developing world emerged within the theory of rural development (see Chapter 1). The theory of rural development represented a response to the failure of development programmes based upon modernisation theory to deliver improved living conditions for the majority of people in the third world countries (Chambers, 1993; , Midgley, 1986; Buller and Wright, 1990; and Gabriel, 1991). The biggest set back to the modernisation theory is that it is centrally controlled and the wealth meant to be distributed to the bulk of the rural communities remains in the hands of the few wealthy and powerful and much of this wealth is spent on services in the urban centres.

The integrated conservation and development model promotes rural development in many developing nations of the world. The aim of rural development is to ensure that there is an adequate participation in the decision making process of a given development activity by the affected communities (Jones and Rolls 1982). Jones and Rolls (1982, p. 1) claim that this type of "development among rural people involves not only changes in their technology and economy, but also in the social and political structures of their local environment". Buller and Wright (1990) believe that rural development should result in improvements to people’s wellbeing. This happens when people have access to the means that enable them to sustain improvement of well-being which in turn leads to self-determination.
2.2.1. World conservation strategy as the basis of integrating conservation with development.

The new conservation concept recognises the inclusion of social and economic incentive packages and considers participation by resource owners as crucial to the conservation of biological diversity (Wells and Brandon, 1992). Under the new strategy, conservationists have since embraced the ideological concept of rural based community development approaches as the means to involve and empower the local indigenous communities to realise conservation ideals with opportunities for self-improvement. The world conservation strategy emphasises that humanity must exist as a part of nature, and conserve natural resources for future use. It asserts that conservation cannot be achieved without development to alleviate the poverty and misery of hundreds of millions of people. This strategy, in general, emphasises three main objectives:

- essential ecological processes and life-support systems must be maintained;
- genetic diversity must be preserved;
- use of species or ecosystems must be on sustainable basis (IUCN, 1991)

In essence the Strategy is intended to stimulate a more focussed approach to resource conservation and to provide policy guidance on how this can be carried out. It also concentrates on the main problems directly affecting the achievement of conservation’s objectives and on how to deal with them through conservation. In particular, the Strategy identifies the action needed both to improve conservation efficiency and to integrate conservation and development. The new conservation and development initiative, described by Wells and Brandon (1992) as Integrated Conservation and Development Projects (ICDP), has also been reviewed by other reviewers especially in relation to the success and failures of such initiative as a conservation model. This new conservation and development strategy is already tested in over 50 different countries. In 1987 on the basis of the reviews done on these case studies, The World Commission on Environment and Development produced the report known as ‘Our Common Future’. This document then laid the basis of the environmental perspective for 2,000 and beyond, which defined a broad framework to guide national action and international cooperation for environmentally sound development (IUCN (1991). In this new paradigm, conservation areas are viewed not only as a major tool in the global efforts in preserving endangered species, habitats, ecosystems, and valued natural and cultural landscapes but also as an important bridge contributing towards the economic and social well being of local communities (Stevens, 1997). This paradigm is critically significant because McNeely (1992 p. 19) claims that "...under the strict protected areas model local people do not gain any economic benefit". This is despite the fact
that income from tourism operations in national parks in a number of countries has proved to be significantly high. Yet in actual fact income generated from parks tourism often benefited by the state and the private sector that runs various programmes and services to the omission of local communities. As in the case of Africa this bias is discussed in Marks (1984) and Leader (1990).

2.2.2. Relevance of integrated conservation and development project approach as an alternative conservation model.

In an attempt to ensure that conservation is no longer a centralised, top down state agency controlled management activity, conservationists now see the need to involve greater participation by the broader sector of the community from all walks of life. In particular, the involvement of indigenous communities, who have in the past been displaced and resettled elsewhere as a result of the strict protected areas conservation model, is sought. Projects linking conservation objectives with development activities have been established in many sites, particularly in developing nations. In describing the ICDP model, Wells and Brandon (1992) point out that one of the common objectives of these projects is to incorporate economic and social development packages into the development and management of protected areas, as incentives. This approach aims to reduce the pressure by the local people to deplete the plant and animal resources within the protected areas.

However, in their evaluation of ICDP model Wells and Brandon (1992) found that the critical linkage between economic development and conservation is still generally missing or unclear. According to Wells and Brandon (1992) the types of economic and social development incentive packages perceived for the affected communities have not worked. As a result, the aim of projects to reducing the pressure on the use of resources they are supposed to protect has failed (see Box 3). Reasons for this failure are believed to be ambiguous project goals that fail to promote viable socio-economic incentive packages that could truly substitute the dependence these communities have on the natural resources for their livelihood.

2.2.3. Concept of sustainability as the focus for integrating Conservation with community development in the 21st century.

Sustainable development has been defined by the World Commission on Environment and Development (1987) as “development that meets the needs and aspirations of present without compromising the ability of future generations to meet their own needs”. Yet according to Jacobs (1989) these very needs have been heavily mortgaged by past development activities and practices many of which have been conceived, financed and controlled by development agencies, multilateral development banks and consultants who are only marginally affected by their
strategies and decisions, however well meaning. Jacobs (1989) suggests that needs and aspirations must now be built upon a heritage of devastating loss of forestland and the desertification of other land and calls on the global community to recognise the potential of common resource management practice as a possible alternative model for resource management.

Miller, (1980) and Stevens (1997) suggest that the parks strict concept of protection and promotion of tourism, which has existed for more than 100 years, must now be managed consciously to contribute to modern social, ecological and economic demands. Such calls have influenced the conservation movement to trial conservation approaches within the concept or theory of rural development with greater emphasis on community participation. Dixon & Sherman (1990 p. 70) suggest that local residents should participate in protected areas and be allowed to profit from the protected area by giving them the right to continue harvesting resources if such uses are sustainable and not detrimental to the objectives of the area.

In Africa, centralised governance systems are challenged by the 'Communal Area Management Programme For Indigenous Resources' (CAMPFIRE) to link the authority, management benefits, and costs in the community (Metcalf, 1994). According to Metcalf (1994, p. 92) negative incentives and sanction-based approaches must be replaced, in the main, by real positive incentives.

2. 2. 4. Problems of integrated conservation and development projects model.

The publication of the World Conservation Strategy in 1980 by the World Commission on Environment and Development was hailed as setting out the essential ingredients for better global conservation and development approaches. The publication was based on 25 worldwide case studies. This set of ingredients was additionally boosted by the 'Man And Biosphere,'(MAB) programme under UNESCO in 1986 and the publication of, “Our Common Future” by WCED in 1987 as a global policy guide to pursue conservation and development of natural resources on a sustainable basis (IUCN, 1991). Unfortunately the much-publicized perception of improved community, participation, recognition of traditional knowledge and the provision of social and economic incentive packages to improve living conditions within and around the conservation boundaries have had very little success (Wells and Brandon, 1992; Furze, et. al 1996; and Stevens, 1997).
According to Stevens (1997, p.285) “new approaches to protected areas based on recognition of indigenous rights and on consultation, co-management, and indigenous management are jeopardised by entrenched, old-style conservation thinking that continues to see protected areas in terms of Yellowstone-model approaches”. Many of the integrated conservation and development projects have often failed to incorporate economic and social development packages chosen by the local communities. In many instances the incentives offered are not suitable for the local situations, in terms of market accessibility and technical know how.

**Box 1: Reasons why many integrated conservation and development projects fail.**

- lack of political support and non-existence of appropriate legislative and policy frame work provided by the governments of many developing countries.
- large scale of the project to be implemented in a very short period of time.
- the complexities of dealing with many participating organisations with differing perceptions of what, when and how it should be done.
- the site selections are often large, remote and involve many tribal groups. This makes issues of adequate incentives for all difficult.
- the limited financial resources that expect to produce results in a short period of time, with no long term funding arrangements.
- lack of culturally insensitive project designs due to insufficient local input that also guarantees continued monitoring system.


2. 3. **Community participation in conservation and development.**

The historical perspective of people’s participation in conservation was not clear until the 1970s when participation was seen as a tool to achieve the voluntary submission of people to protected-area schemes. During that time participation was no more than a public relations exercise, in which local people were passive actors. Participation by the local inhabitants in the management of the protected area was limited prior to the 1980s. According to Stevens (1997), one exception is in New Zealand where a Maori chief gifted land on which the first National Park was established in 1884. The Maoris have since been involved in the decision making process of the Tongarero National Park at management level by having a fair representation on the parks board. The other is the Serengeti National Park, which is the first national park in East Africa, established in 1940. At Serengeti National Park the Maasais were initially allowed to herd until the strict protected area concept was enforced primarily due to external international pressure. It has taken almost 100 years for the global conservation movement to recognise settlements or existence of tribal communities and come up with guidelines that recognise settlement of
indigenous people within national parks and wilderness areas in all six categories of protected areas (Stevens, 1997).

2.3.1. Defining local community.
Community is best described as localism referring to a group of people living in a given area with a shared sense of place and their feeling of belonging to a community (Wikinson, 1991). But, as Furze et al. (1998, p. 8) caution, communities do not exist in isolation but reflect and are influenced by broader social, economic and political factors. As such, they reject the harmony model of rural community life and recognise the different ways in which factors like class, race and ethnicity, gender and age impact on individual’s or groups’ experience of community life.

2.3.2. What is meant by participation?
Participation refers to many different things to different people. Uphoff (1985) describes different levels of participation, and how they might be appropriate in different circumstances. He believes that the level of participation by the beneficiaries of a project should be determined at the project’s development phase during the consultation process with the intended beneficiaries. In recent times ‘popular participation’ is viewed as part of the normal language of many development agencies, including many of the non-governmental organisations (NGOs), government departments, bilateral and multilateral organisations including the banks (Adnan et al. 1992; Pretty, 1994). In the 1990s people’s participation has been seen by some as a means to conserve biodiversity on a sustainable basis (Pimbert and Pretty, 1997). Uphoff (1985), Kottak (1985), Midgley (1986) and Hobart, (1993) have argued that many failures of these well-intended projects have resulted from the lack of genuine community participation (see Box 2).

The adoption of western-conceived, species-driven and socially, culturally, and politically incompatible project designs is based on inadequate analyses of community life, social institutions and the complex characteristics and dynamics of local aspirations. Wells and Brandon (1992) also point out that two decades of rural development experience suggest that projects rarely succeed without people’s participation. The application of western conservation models, which do not incorporate socio-economic benefits for local communities, have proved to be a failure in many developing countries. In response to this problem, projects linking conservation objectives with development activities were established. Many of these projects have not achieved their objective of preventing encroachment and depletion of natural resources because effective local participation is not there. McNeely and Pitt (1985) also argue that participation is ineffective because the outsiders have never given local people the opportunity to
play a major role in all the stages of the development of the project. They suggest that outsiders have to come out of the habit of telling the people what to do and begin to recognise the wealth of knowledge local inhabitants have developed over the past millennium to manage these resources.

In order to win support from both the governments of the north and the south global efforts through the action plan of the Caracas declaration, the conservationists have been urged to **review the existing protected conservation areas model globally** and begin to address pressing issues such as rehabilitation of degraded marginal lands. Such an approach would reduce pressure on the need of the people to enter protected areas to harness the resources to sustain their livelihood in those regions. In response to such calls the UNESCO sponsored Biosphere reserve conservation concept aims to see that the existing protected area conservation model broadens its borders to include human needs, especially those living near the protected areas and the protection of all natural resources, which includes renewable and non-renewable resources for the benefit of humankind. (This conservation concept is discussed under the PNG conservation strategy in Chapter 4).

The Conference on Environment and Development (Rio de Janeiro, 1992) endorsed the new paradigm, which is basically the new global order for conservation and development to be integrated to meet the needs of the human population and create mechanisms for greater participation by people from all walks of life. This was done soon after the whole global strategy for protected areas was reviewed in February 1992 at the Fourth World Congress on National Parks and Protected Areas, held in Caracas, Venezuela (McNeely, 1993). The new paradigm, embodied in the Caracas Action Plan and rectified at the UN Summit, called for integration of protected areas into wider planning frame works to address the following:

- Need to identify products and how these products could provide economic and social services or benefits to the local communities to win their support for conservation;
- Need to recognise the priority of the local communities and actively support those in favour of conservation of particular protected areas;
- Need to increase international cooperation to maintain the protected area.

The new policy recognises the need for partnership with all sectors of the community in countries, and especially the communities in the localities, where national parks are located. This approach aims to place protection responsibility on those living in and around the protected areas. According to McNeely (1992 p. 15) “the primary cause for loss of biodiversity in tropical countries is the inequality between the rich and the poor countries in distribution of power, information and
resources'. This inequality thrives when global trade under-values national resources, and while poor countries only produce the biological raw materials. The only certain way to save tropical biodiversity is to use it sustainably. To use it sustainably it has to be saved first and then determine what it contains before promoting its use for monetary benefits.

Janzen (1992 p. 27) supports this view and suggests that local human resources and home grown scientific and administrative systems must carry out both of these steps. However, it is recognised that the development of human resources and national institutions requires facilitation and support from the international scientific community. To do that the international scientific community has to abandon its view of tropical biodiversity as largely an intellectual resource only to be harvested by the extra-tropical academic community. It is confirmed by numerous literature that money for conservation is in the North while most biodiversity is in the South. Therefore, Colchester, (1994. p. 11) suggests that, from the policy of ‘global triage’ which tends to select priority areas for conservation on the basis of technical criteria, efforts must be made to identify local institutions. However, according to Colchester (1997 p. 124), one of the most difficult aspects of working with indigenous people has been in identifying the appropriate indigenous institutions that can mediate with outsiders.

Despite this difficulty Paul (1987 p. 40) believes effective community participation is crucial because it is an "active process by which beneficiary or client groups influence the direction and execution of a development project with a view of enhancing their well being in terms of income, personal growth, self-reliance or other values they cherish". Ghai (1990) also sees participation as a process of empowerment of the deprived and the excluded. This view is based on the recognition of differences in political and economic power among different social groups and classes. Participation in this sense necessitates the creation of organisations of the poor, which are democratic, independent, and self-reliant that can represent their views. The World Bank (1994) define participation as a process through which stakeholders influence and share control over development initiatives and the decisions in relation to the management of the resources which affect them.

In terms of development perspective, OECD (1994) argues that participation is essentially a ‘partnership which is built upon the basis of dialogue among the various actors', during which the agenda is jointly set, and local views and indigenous knowledge are deliberately sought and respected. This implies negotiation rather than the dominance of an externally set project agenda. Thus people become actors instead of being beneficiaries.'
2. 3. 3. Benefits of participation.

One of the biggest problems in maintaining and managing effective conservation programmes in developing countries the world over is the lack of adequate financial resources to do so. To overcome financial problems Metcalf (1995, p. 278) suggests that governments in many developing countries need to empower local people to manage their own resources on a voluntary basis. At the same time governments can effectively use the protected areas to supply further benefits and yet still continue to play the lead role in policy and landscape planning.

The people who own the land and live closest to the resources have often developed specific ways and means of managing these resources. It is important that they should be recognised and given conservation responsibilities. For these people, the forests, plants and animals provide them with food, medicine, hides, building materials, income and the source of inspiration. The rivers provide transportation fish, water and fertile alluvial soil, and coral reefs together with coastal mangroves provide a permanent source of sustenance and building materials (McNeely, 1988 p. 57).

The other important factor is that local participation from the beginning reduces potential conflicts over the use and control of the resources they consider as rightfully theirs and see as a duty to continue to protect the resources, before passing it on to the next generations. According to McNeely (1988 p. 57) the present biological resources are often under threat because the responsibility for managing these resources has been removed from local domain and instead transferred to the government agencies located far away in a capital city.

When this happens social institutions that plan and manage these resources on a collective basis over many centuries are weakened. Bruce (1988) cited in Perrings (1995, p. 110) claims that when "...the security of tenure over user rights diminishes with the weakening of institutions of collective control and the collapse of new regulatory institutions, the potential for over-exploitation of the resource base opens up by enabling resource users to ignore part of the social opportunity cost of resource use". The new partners like the conservationists and the development management agencies do not have the same social or cultural obligations to the land and other resources, as the traditional custodians feel about their land (Baines, 1989). Perrings (1995 p. 110) has observed that '..replacement institutions have often failed to exercise the authority vested in them in protecting these resources.' In recent times participation is seen as an effective mechanism to achieve conservation of biological resources. This is achieved when the local communities through their participation are able to:
- identify their social and economic needs that influence the types of activities that deplete the biological resources in the protected areas; and
- contribute to the project their wealth of traditional knowledge on natural resources management.

Apart from the two main reasons for participation, from many of the global indigenous communities there are other valuable reasons for participation and these are listed in below in Box (2).

### Box (2) Arguments used for participation:

<table>
<thead>
<tr>
<th>Argument</th>
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<tr>
<td>People's participation can increase the efficiency of development activities in that, by involving local resources and skills, better use of expensive external costs;</td>
</tr>
<tr>
<td>it can also increase the effectiveness of such activities by ensuring that, with people's involvement, they are based upon local traditional knowledge and understanding of problems and will therefore be more relevant to local needs;</td>
</tr>
<tr>
<td>participation helps to build local capacities and develop the abilities of local people to manage and to negotiate development activities in their social and cultural context;</td>
</tr>
<tr>
<td>participation can increase coverage when local people are able to assume responsibility and thus help to extend the range of activities of a development activity;</td>
</tr>
<tr>
<td>participation can lead to better targeting of benefits to the poorest via the identification of key stakeholders who will be most affected by the activities;</td>
</tr>
<tr>
<td>crucial participation can help to secure the sustainability of the activities as beneficiaries assume ownership and are willing to maintain its momentum; and</td>
</tr>
<tr>
<td>participation can often help to improve the status of women by providing the opportunity for them to play a part in development work.</td>
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The advantage of participation is drawn from past failures and lessons learnt yet the global rhetoric is primarily based on different cultural and social perspectives of what exactly real participation is. The arguments against participation are listed in Box 4 and are discussed under Problems of Participation. The researchers perception of what participation is and is not, from the Melanesian perspective, is discussed in chapter 6.

### 2.3.4. Traditional Indigenous Knowledge.

Participation by the local or indigenous communities in conservation and development is very important. This is because the indigenous people throughout the world have, through various trial and error and through some painful experiences and careful observations, accumulated a vast
wealth of knowledge about their environment, the local biological diversity, seasonality and how to survive in extreme climatic conditions. Indigenous peoples have long had a significant interdependence with the lands and environments in which they live. These lands and environments are vital for their survival, providing a wide array of substances for food, shelter and implements. They also provide a source for a variety of objects for both ritual and everyday use. The land and environment is also significant in Indigenous peoples’ cultural, religious and social systems. Indigenous people are custodians and stewards of their land and environment, and have been entrusted by ancestral charters to care for these through successive generations.

There has been a renewed interest in traditional management systems, partly from the past failures of development projects, and the search for viable and sustainable alternatives to current models of resources use and management practices (Regier et al 1989) and Goodland et al (1989). Indigenous people have a vast knowledge of, and capacity for developing innovative practices and products from their environments including their seas. Klee (1987) discusses how the Pacific Islanders are able to manage their marine resources. The author recognises that the elements of traditional knowledge base, as presented below in Box 3, allude to the fact that resources are utilized and conserved by a series of interrelated social beliefs and responsibilities that are put in place to manage these resources. These beliefs are in turn guarded by fears of what is likely to happen to them if custodians break or disobey the culturally accepted taboos.

**Box (3) Showing distinctive features that characterise indigenous knowledge.**

- collective rights and interests held by Indigenous peoples in their knowledge;
- close interdependence between knowledge, land, and other aspects of culture in Indigenous societies;
- oral transmission of knowledge in accordance with well understood cultural principles; and
- rules regarding secrecy and sacredness that govern the management of knowledge.

Source: Klee, (1987)

Knowledge is a fundamental component of Indigenous culture, and must be considered in terms of both its sacred and secular dimensions. As far as indigenous people are concerned, knowledge is not considered independently from its products and expressions, or from actions. These all form part of a closely integrated cultural system. The physical products and expressions of Indigenous cultures are intimately connected to the knowledge from which they derive, or with which they are associated. Products and expressions of indigenous knowledge systems include ceremonial and ritual objects and performances; artistic designs, works and expressions; song, dance and story; and subsistence and land and environment management activities (such as hunting, fishing and gathering, and the use of fire). The global biodiversity
strategy identifies the rates and magnitude of growth, and the eventual size of the global population as critical for biodiversity. As human population grows, resources need to increase, and most agree that the present rates of resource use are unsustainable (WCMC, 1992). Furze et al. (1995 p. 28) point out that, generally, the integration of local people into the conservation equation provides a means by which the protective function of areas can be enhanced. What has to be aimed for is a process of consultation, negotiation and participation that is based on the meaningful exploration of needs and issues. This has to be undertaken in an atmosphere of partnership and mutual trust.

Biological resources are very important because individual species of plants and animals provide the raw materials for many human uses. Domesticated and wild plants and animals provide the majority of food for the world’s population. In addition to foods presently used, and food for potential uses, other species are becoming increasingly important as sources of genetic diversity, which may provide resistance to disease or improve productivity in agriculture. Biodiversity also provides medicinal resources. Traditional medicines based on plant and animals species form the basis of health care for 80% of the world’s populations, in many nations, while a quarter of prescribed medicines in the USA, for example, contain active ingredients derived from plants (McNeely et al. 1996).

2.3.5. Resource ownership and land tenure.
The land, its features, environments and products form cultural landscapes, which are given significance by Indigenous belief systems. These cultural landscapes are both the result of, and provide the focus for, ancestral events. Together with Indigenous peoples’ social, political and religious systems, land and environment are inter-woven into a tightly integrated cultural system. This integrated cultural system forms the basis of Indigenous knowledge (Baines, 1989). According to Baines (1989 p. 275) it is difficult for persons of western cultures to understand the close identification of Pacific islanders with their resources. The issue of common property and how natural resources are managed is also discussed in Bromley and Cernea (1989). Christopher et al. (1989, 2006) have defined the term ‘resource’ as ‘those components of an ecosystem that provide goods and services useful to man’. The advantages and disadvantages of land tenure in Papua New Guinea and other Pacific Island countries are discussed in Chapter 4.
2.3.6. Democratic process.

In many traditional societies the democratic process of decision making, as seen in the western countries, is non-existent. Instead, there is an age-old institution that has functioned well in terms of resource control and use. The question of who has the final say on how the resources are used and managed are in the hands of the few traditional leaders. Any effort to **exert foreign concepts of the decision making process** in natural resource management may prove unacceptable (Colchester, 1979). However, McNeely (1988, p. 59) claims that traditional systems of Natural Resource Management are dispersed and decentralised; as a result traditional systems are often far more effective and sustainable than those devised by government. In contrast the central government control has **seldom been accompanied by sufficient resources**, including funding, trained personnel and political will. It is suggested that if a central government assumes stewardship for biological resources of national importance, then it needs to use economic incentives to encourage the local people to respect the new regulations and initiatives. Metcalf (1995) has reported that in pre-colonial Zimbabwe, traditional authority at each level of the hierarchy regulate decisions on how resources, such as wildlife, water, firewood and grazing are used and practiced. The top-down projects approach which work through the local elite may sometimes be very successful in conservation terms but may reinforce and even exacerbate class and gender inequalities (Ntshalintshali and McGur, 1991; Hannah, 1992).

2.3.7. Problems of non-participation.

Programmes to protect areas rich in biodiversity have led to tensions between economic development proponents and the poor. Tensions are common on the fringe of protected areas (Agwarwal 1992). According to Sandlund et al. (1992 p. 10) the lesson to be learnt from a number of case studies all over the world is that to ensure long-term conservation of any natural area, neighbouring communities must be involved in its management. At the same time benefits provided by the conservation area in terms of income opportunities, water supply, the protection of land surface from excessive run off and other benefits must be carefully explained to the local communities to enable them to appreciate what is happening. Authors like Watson (1989, p. 55) believes that when new concepts of resource management are introduced into the society it is likely to create environmental and social concerns if the development or conservation projects does not keep pace with the changing social, and economic conditions in less developed nations. This view is supported by Agwarwal (1992, p. 293) who argues that **failure to involve the local people and to take into account the needs of the poor** by assisting the restoration of the degraded lands to meet their subsistence needs, will often **run into tensions around the protect areas**. Stevens (1997, p. 284) outlines the critical issues and problems underlying the
notion of participation by indigenous people in conservation. He suggests that decentralisation and empowerment must be more than a token involvement. As for indigenous communities participation should mean restoring power and resource management authority that was appointed by governments and parasitical agencies, not devolution of authority from the center, where the power seems to be remaining. Stevens (1997) claims that, when a central bureaucracy removes control and management of resources, the village control system breaks down. It is better for local villages to retain a control system that works best in traditional societies.

This view also has the support of the following authors; Gaudi (2001); Abaza and Baranzini (2002); Dalal-Clayton, Swiderska and Base (2002); Filer, Dubash and Kalit (2000), Garnaut (2002) and Brown (2003). According to Brown (2003, p. 109), involvement of local institutions in ICDP from the beginning is important as they are able to deal with heterogenous interests, especially equity and gender. He also admits that it is often dominated by powerful individuals in the community. Filer, Dubash and Kalit (2002) argue that there is a fine line to follow when it comes to negotiating with resource owners in Papua New Guinea, particularly to understand the complexities of ownership, user rights and how the resources are to be equitable distributed. This makes important the issue of being involved in the decision making process on what happens to the particular resource under negotiation.

2.3.8. How is participation being approached?
Partnerships between protected areas and their neighbours are often hampered by substantive conflicts over natural resources that cannot be resolved by process-oriented approaches. Schelhas and Shaw (1995) suggested that when such conflicts arise adjacent land uses must be promoted to meet both conservation and development needs. These land uses can be more successfully promoted by better understanding of how people living around protected areas make land and natural use decisions. Many ecologists, social scientists, lawyers and development advisers, working with indigenous communities to help them achieve any form of conservation or development transition, often see their roles as directors and instructors. Others then become passive by-standers in terms of decision-making. Colchester (1992; 1994) and McNeely and Pitt (1985) suggest that outsiders should see their role as advisers to indigenous managers rather that directors of indigenous ventures.

In Pakistan, a country with three national parks that cover 570,369 hectares of forestland, the involvement of local leaders is seen as a critical step towards conservation. Roberts (1990, p.
283) has reported that the appointment of local residents of high social standing, such as tribal Sirdars and heads of land owning families, to Honorary Game Warden positions with considerable legal powers in each district, proved to be very successful. These wardens did more to control poaching and protect the sanctity of National Parks and Wildlife Preserves than was possible before with enforcement only by low paid officers of the Wildlife Department staff. A similar case has been reported from Sri Lanka, where rapid human population increases have caused serious problems to wildlife conservation. Rudran (1990, p. 253) has reported that conservation efforts have improved because of the integrated conservation and development approach where there is an increase in the involvement or participation by the private co-operations towards better environmental protection and conservation. According to Rudran (1990, p. 258), given a past filled with unhappy environmental experiences, a future full of promises should be viewed with cautious optimism. Kwapena (1984) and Eaton (1986) discuss the community or resource owner participation in biodiversity conservation under Wildlife Management Areas (WMA) in Papua New Guinea. Under the wildlife management area concept the land remains in the possession of the customary landowners. Under this model the local clan leaders or their appointees are assisted to form their own wildlife management committee that makes rules to control the hunting and other activities within the designated boundaries of the conservation areas. So far, 30 wildlife management areas have been declared and many more have been proposed but not yet gazetted. The participation approaches being undertaken in the number of integrated conservation and development projects (ICAD) in Papua New Guinea in the 1990’s is discussed in Chapter 4.

2. 3. 9. What is viewed as an effective participation? According to Uphoff (1985, p. 379), real participation occurs when the beneficiaries are involved to consider the actual project document and given the opportunity to ascertain whether the proposed activities are feasible and acceptable by the majority of the community. This involvement may require some modification to the project design, which may include seeking flexibility of time frame to implement the project from the funding agencies and to ensure that there is financial commitment to what the community considers as vitally necessary. Kottak (1985; 1991) also argues that real participation occurs when the communities are empowered and supported with the necessary resources (financial and technical) to have a major say in how they want their forest to be managed. He emphasises that the local people should be the ones to decide on what should be included in the project design and what they expect to gain from the conservation driven projects. Cernea (1985) also argues that the local people must be able to
make decisions and control the activities that affect their lives. Chambers (1991) suggests that to achieve effective participation the conservationists should be addressing and promoting the complexity of issues that the poor people want to see. The other important reason for seeking effective local participation is that resource owners have a wealth of traditional ecological knowledge that can contribute towards effective planning and implementation of conservation of biological diversity (Kolawole 2001, Laird 2002, Larmour 2002).

It is better to present local people with the baskets of choices on what they prefer rather than imposing a package of out-dated, culturally inappropriate practices from somewhere else. According to Chambers (1991), outsiders should stop lecturing to local communities as to what is best for them and reverse the usual practice by sitting, listening and learning from them. Cernea (1991, p. 2) supports this view with a reminder that the theory of rural development which gave rise to a global shift in development emphasis was basically to come away from centrally controlled, urban based, top down approaches to that of people oriented, decentralised forms of development. This is the type of development where the majority of the members of the rural communities can directly participate in the decision making process that effected their lives. To achieve this form of development, community participation is seen as a critical issue and not merely a theory.

Despite the fact that such arguments have been advanced in the last two decades of the existence of ICDP in developing countries, there is the other rhetoric that is often being quoted that “Community Participation is an active process,” by which beneficiaries/client groups influence the direction and the implementation of a project (Paul, 1987, p. 2 and James 1995). Similarly, Little (1994) argues that experiences have found that most communities throughout the world cannot be left alone with the expectation that they will be able to defend and conserve their resources in a sustainable fashion.

2.3.10. Problems of Participation.
According to Colchester (1979, p. 120) a widespread problem facing conservationists and aid agencies alike is that local political elites strongly object to their client groups, with whom they have long-established and profitable ties, benefiting from targeted development initiatives. The elites do not recognise the prior rights of the people. The arguments against participation are listed in Box 5. Some people argue that participation enables advantaged groups in the community to be more involved than others and does not necessarily involve all the community in the process of participation to express their views on what, when and how things should be done.
Sandercok (1989) and Martin et al. (1992) support this claim and argue that the participation process favours advantaged groups in the political process. The reasons why some people argue against participation are outlined below in Box 4).

**Box (4.) Arguments used against participation:**

- Participation costs time and money; it is essentially a process with no guaranteed impact upon the end product. Participation can greatly add to the costs of a development activity and therefore its benefits have to be carefully calculated;
- processes of participation are irrelevant and a luxury in situations of poverty and it will be hard to justify expenditure on such a process where people need to be fed and their livelihoods secured;
- participation can be a destabilising force in that it can unbalance existing socio-political relationships and threaten the continuity of development work;
- participation is driven by 'ideological flavour' and is less concerned with seeking to secure direct benefits for people from development activities than with promoting an ideological perspective into development; and
- participation can result in the shifting of the burden onto the poor and the relinquishing by national governments of their responsibilities to promote development with equity.


In view of such arguments against participation Stevens (1997, p. 285) believes that new approaches to conservation and development cannot work with such a negative perspective about participation (see Box 5). This is because the success of the new model is based on recognition of the indigenous rights and on consultation, co-management, and indigenous resource management practices. The author claims that progress is impeded by entrenched, old-style conservation thinking that continues to see protected areas in terms of the Yellowstone model.

**2. 4. The role of social and economic incentives and disincentives in conservation and development.**

Incentives are defined here as "...any inducement that is designed to incite or motivate local and state governments, local people and international organisations to conserve biological diversity" (McNeely, 1988). Incentives are used to divert resources such as land, capital and labour towards biological resources, and to facilitate the participation of certain groups or agents in work that will benefit these resources. According to Sorensen et al. (1984) cited in McNeely (1988) a major objective of using incentives is to smooth the uneven distribution of the cost and benefits of conserving biological resources, rather than suppressing the symptoms of resource misallocation.
They are intended to address the cause of such abuses through providing a means of reaching compromise on substantive environmental conflicts.

Disincentives, on the other hand, are any inducement or mechanism designed to discourage governments, local people, corporations and international organisations from depleting biological diversity. Disincentives include taxes, fines and penalties of other types administered through legislation (McNeely, 1988). McNeely (1988, p. 60) suggests that "...to compensate for lost resources, they may be provided directly with cash in various forms or given access to some of the biological resources of the protected areas, including such things as building materials, thatch grass, meat and other animal products but may vary in situation’.

Dixon and Sherman (1990, p. 70) on the other hand suggest that protected areas can be managed to provide a number of incentives for the community. When management plans are designed it is important to consider how to maximise the direct economic benefits to the local community. They suggest that employment opportunities and eco-tourism are incentives to promote conservation. In terms of employment opportunities the community could be involved in the construction of visitors tracks, nature trails and daily maintenance. This involvement gives employees the incentive to look after the protected area. The second incentive is to engage them into income generating activities, like promoting eco-tourism and operating spin-off activities themselves. **Eco-tourism or nature based tourism provides jobs** in restaurants and accommodation facilities and as guides. It provides a market where **local artisans and craftsmen can sell their handiwork** ( Whelan ,T. (1991) cited in Dixon & Sherman 1990, p. 70).

McNeely (1988, p.,58) believes that the **use of incentives and disincentives may serve to ..’rekindle traditional ways and means of managing biological resources**, which have been weakened in recent years due to economic pressures at the national and international level.’ In general, villages want to conserve, and seeking greater conservation action from a villager requires that real benefits be provided to him or her, often in the form of alternative sources of income or any other acceptable means. The concept of economic incentives and disincentives is one of the mechanisms designed by IUCN to encourage NGOs, Governments and development assistance agencies to promote conservation of biological diversity. The global concern for biological resources is now more focused on the tropical forests. This is mainly because these are the habitats that hold rich and diverse species of plants and animal life, species that are being threatened by development policies of the governments of those countries. The development policy, being driven in poor countries by the desire to raise much-needed revenue to service their shrinking economies, is said to be destroying the ecosystems that contain many of the species not known to science and may be of significance to humans.
McNeely (1988, p. 58) suggests that "...providing local communities with viable alternatives for earning a living will also require education opportunities, equitable land tenure and access to credit so that decision makers at the household and small farm level are able to respond effectively to incentive systems". MacKinnon et. al. (1986) cited in McNeely (1988) believes that the traditional way of life of poaching and illegal shifting cultivation are all hard work, and uncomfortable. Therefore, many villages will be willing to adopt a more sustainable way of earning a living if they are given the opportunity to do so.

2.4.1. Major types of incentives offered in conservation driven projects.

Incentives and the types of incentives vary from place to place and from project to project. Incentives can include grants, accelerated development aid, education, improved health care, and a whole range of other mechanisms to compensate villages for any losses they may suffer from being denied resources that were previously theirs. The range of incentives is summarised in Table (1).

<table>
<thead>
<tr>
<th>Type of incentives</th>
<th>How it is administered</th>
<th>Reliability and its effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct cash</td>
<td>Payment in cash for goods and services to individuals or for community projects from sale of biological products. I.e. meat, insects, artefacts &amp; seeds</td>
<td>shortage of cash / theft of cash but effective means of reward.</td>
</tr>
<tr>
<td>Visitors fees</td>
<td>Generate income from collecting fees from visitors to the conservation sites.</td>
<td>non-affordable, and inaccessible</td>
</tr>
<tr>
<td>Rewards</td>
<td>Rewards for outstanding tasks in conservation among local communities</td>
<td>discourages the community spirit of duty &amp; voluntarism</td>
</tr>
<tr>
<td>Fines</td>
<td>High fines for offences for illegal activities. Part of the payment goes to community or individuals for policing</td>
<td>nepotism, cultural reasons may lack cash</td>
</tr>
<tr>
<td>Compensation</td>
<td>paying compensation for food crop damage by wild animals or for human casualties</td>
<td>effective and can be cash or food.</td>
</tr>
<tr>
<td>Grants</td>
<td>Provided on the basis of project proposal, for income generating activity for short duration</td>
<td>very effective if additional income raised improves lives.</td>
</tr>
<tr>
<td>Subsides</td>
<td>Financial provision by the state in recognition for contribution made but not sufficient fund to continue.</td>
<td>state recognition encourages conservation efforts but also tends to create dependence.</td>
</tr>
<tr>
<td>Land Banks</td>
<td>Provided when agricultural land reduced and set aside for conservation. In countries where land degradation is high and scarce, land mobilisation program help landless.</td>
<td>land retirement attractive to those cultivating marginally poor land.</td>
</tr>
<tr>
<td>Loans</td>
<td>Provide assistance to groups by providing guarantee at banks for commercial loan</td>
<td>effectively creates jobs, help income sustainability but also create group conflicts.</td>
</tr>
<tr>
<td>Revolving Funds</td>
<td>This is when initial capital is established in the community to provide short-term loans to villages.</td>
<td>ineffective if lack of skills.</td>
</tr>
<tr>
<td>Daily wages</td>
<td>Payment to community or individuals in return for activities like reforestation, or efforts towards conservation of biological diversity.</td>
<td>effective but short lived. only few benefit.</td>
</tr>
<tr>
<td>Direct incentives in kind through food</td>
<td>Food for work is provided to community to complete certain conservation task.</td>
<td>helpful in some places but not sustainable.</td>
</tr>
<tr>
<td>Direct incentives in livestock</td>
<td>Provided to reduce pressure on hunting by introducing better animal stock.</td>
<td>effective in some places not all.</td>
</tr>
<tr>
<td>Access to resources</td>
<td>Personnel provide sustainable harvesting is a management problem.</td>
<td>very rare.</td>
</tr>
</tbody>
</table>

2.4.2. Benefits of incentives at the community level.
According to McNeely (1992, p.19) the perception that, under protected areas management model, tourism from will bring greater economic benefit to the local communities has not really benefited the local communities most affected. For example it is reported that in Zambia’s Luangwa valley national parks & hunting areas are managed primarily for the benefits of outsiders, in particular the tourist and safari hunter operators. Much of the earnings from these activities goes direct to the central government and private sector in Lusaka. The result is that local residents become increasingly impoverished and resentful (Leader, 1990; Marks 1984). Therefore a more meaningful incentive at village level should aim to address issues such as:
• building local capacity to enter into other productive activities that produce alternative resources, reducing the pressure on the need to deplete the biological resources.
• reduce agriculture pressure on marginal lands that could better be set aside for conservation.
• concentrate agriculture productions on best agriculture land.
• Need to revive traditional knowledge and facilitate common property management institutions that were effective in the past.
• compensate villages for possible income lost through restrictions on utilisation of protected biological resources or damages done to crops to harm to human beings.

Jeffrey McNeely (1992, p. 19) has reported that under the strict protected areas tourism project, local people do not gain any economic benefit. There are few bright sports globally where the perception to bring economic benefits to the local communities have reached that objective. In reality relatively few direct benefits have flowed to the people who live closest to over 3,000 protected areas, established in tropical countries over the past 50 years.

2.4.3. Benefits of incentives at the national level.
MacNeely (1988, p. 59) suggests incentives work best when they are well integrated and implemented as a large-scale rural development efforts, requiring considerable cooperation between government agencies involved in conservations. According to Wells and Brandon (1992), the critical linkage between economic development and conservation is generally missing or unclear, and the economic and social development incentive packages have not reduced pressure on the resources they were supposed to protect.

2.4.4. Benefits of incentives at the international level.
Agwarwal (1992, p. 301) suggested that 'international environmental programmes must be developed to support employment generation for ecological regeneration. Unless programmes are developed that aim to reduce the level of poverty that today exist in the third world, the efforts to conserve biological diversity in the third world will be viewed with suspicion.'

2.4.5. Problems of incentives at all levels.
The problem with employment or jobs creation schemes is that the beneficial incentives to the local communities is only there as long as the project funding is there. Besides, for most rural
people especially for the weak and vulnerable, employment is only one component of livelihood and does not benefit the majority (Agwarwal, 1992).

2. 4. 6. How is incentives being presented?
Dixon and Sherman (1990, p. 71) observed that few protected areas generate sufficient revenues to support substantial management activities and community development. This outcome is despite the fact that there is some potential for increasing the revenue generated.

2. 4. 7. What is viewed as beneficial and appropriate incentives?
A direct cash incentive program is one possibility. There is often a shortage of cash but productivity could generate cash. Table 1 (p. 49) of this thesis shows that the controlled harvesting and sale of biological resources could generate money which should be put towards services of common goods to be provided by the local level ward councils. For example in Zimbabwe ‘operation windfall’ provided proceeds from culling elephants including meat, skin and ivory to local councils for development projects. Under this scheme Martin, et.al, (1992b) reported in McNeely (1992), poaching dropped so dramatically the wardens were removed.

2. 5. The Perceived role of various stake holders in conservation and development.
The publication of the world conservation strategy set out the criteria and called for the urgent need for public effort to protect the global biodiversity and simultaneously address environmentally disruptive forms of developments. Authors like McNeely et al . (1990, p. 49) argue that traditional players in conservation must realise that more effective efforts are required from everyone to ensure that conservation and local people can work together as partners rather than antagonists. The various stake-holders include appropriate government institutions, non-government organisations, the corporate sector and the resources owners. This particular argument is still relevant even after a decade where authors like Dalal-Clayton Swiderska and Bass (2002) argue that lots of opportunities exist when there is sufficient dialogue on how to achieve sustainable development. This happens when planned development strategies are carefully screened from lessons learned from past projects.

2. 5. 1. The role of the Governments.
The national parks have been one of the most universally adopted mechanisms for protection that has been devised in our era, and national/state governments have often determined that it is
necessary to take a centralist approach when questions of national interests supersede local aspirations McNeely et al. (1990). According to McNeely et al. (1990, p. 49), more effective means are required to ensure that conservation and local people can work together as partners rather than antagonists. The government institutions tasked with conservation must provide conservation and development policies and ensure the legal framework for the protection of biological diversity is in place in order for local communities to benefit from the protected areas (Metcalf, 1995).

In the 1970s state governments operated in isolation, so then the way to deal with the world environment was to get world governments together to officially endorse decisions as was done in Stockholm in 1972 for the first UN conference. However, since then there have been greater global efforts by governments in producing conference papers, enacting national laws and signing international agreements, but these steps often produce very little achievements (Holdgate, 1996, p. 297). Holdgate’s frustrations stems from the recent reaffirmation to ensure actions by highest level of delegates from many of the Worlds Governments at the UN Earth Summit in Rio in 1992 but this Summit has not led to real action to save the world environment and the biological and natural resources they contain, resources that governments are pledged to protect. The state or government agencies often tasked with the lead role for the protection of biological diversity often lack adequate financial resources and skilled personnel, and jurisdictional conflicts occur between conservation and development (Wells and Brandon 1992). These outcomes have forced other stakeholders such as international NGOs to be critical at the third world governments.

2.5.2. The non-government organisations and their role in conservation and development.

The non-government organisations are often formed to address particular issues of concern to human societies. In some cases organisations are set up to rally public support to pursue issues or address concerns of common good, as initiated by a noted individual. Many of these organisations are voluntary movements. Micklewright (1993, p. 321) defines voluntary movement as.. “a group which is a registered charity with a membership which is open to anyone, where key decisions about future directions are made from a council of management elected from the membership.”

Their main strengths of NGOs are that they are tax-free organisations without government or corporate control, and with much free labour, that can quickly move to support their organisations
to act on major national or global issues. Most of the environmental groups operate as oligarchies where decision making and power are held by a self-perpetuating elite (Lowe and Goyder 1983). Global sustainability will only be achieved if it is perused by individual, community, inter-governmental, non-governmental and business groups on a collective basis. International or global efforts must be supported by strong national alliances that draw together committed groups of all kinds. Inter-governmental, non-governmental and business groupings must develop better methods of collaboration if they are to be truly effective (IUCN, 1991). According to IUCN (1991, p. 85), the non-government organisations can form partnerships with IUCN or can enter inter-governmental partnerships to do a wide range of things including:

- convening forums at national and regional level involving the governmental and non-governmental sectors, and business sectors;
- organising workshops and groups of experts to evaluate key issues and provide reports, including information for media;
- developing methodologies and strategies for sustainability;
- providing suggestions for actions to governments or local communities, which they can take up and develop further for themselves;
- undertaking demonstration projects, in partnership with governmental agencies or local communities as appropriate.

2.5.3. The role of local communities and traditional institutions.

According to Agwarwal (1992, p. 301) conservation groups play an important role in supporting the government to deal with pressing environmental and conservation issues by building up public opinion in favour of total protection of global or local biodiversity. This is often done at the expense of the local communities whose livelihood is derived from the utilisation of such resources in those areas. Gurung (1995) claims that external pressures often force the local conservation organisations in many developing countries to embrace strict protective conservation notions without questioning their relevance to their economics, social and cultural contexts. This has often been the case in many of the former colonies. Metcalf (1994 p. 96) believes that ‘the role of local NGOs and institutions should be facilitative and not promotive towards conservation and development.’ According to Marcus Colchester (1997, p. 120), traditional decision-making is sometimes vested in leadership structures, which marginalise women and lower castes, classes, or lower status ethnic groups. In recent times authors like Brown (2003, p. 109) have come to recognise the role of local institutions in that they are best able to deal with heterogenous interests especially in relation to equity and gender.
2.5.4. The role of international non-government organisation. The international NGOs actively see their role now as global watchdogs for environmental protection and conservation. The powerful global campaign actively engaged by the international environmental organisations has started to force multilateral funding agencies and UN agencies like FAO and UNDP to redirect financial resources allocated for developing countries to develop their natural resources for national building. The argument used is to hold governments of developing nations accountable to many of the international treaties in relation to environmental protection and development agreements that they sign. As a result many of these countries have to come up with national sustainability policy guidelines and to have environmental safety requirements built into national development plans. In recent World Bank Review, it was revealed that many NGOs see themselves as Bridge-Linking project beneficiaries through project objectives and various activities to meet needs of environment of beneficiaries (Salmen and Eaves, 1989). According to Salmen and Eaves (1989) many NGOs have limitations; promoting development has proved difficult even for NGOs experienced in managing rural development projects. Doing so for the ICDP would likely to prove extremely challenging for international conservation NGOs with limited experience in projects targeting poor rural people or for national conservation or environmental NGOs that were originally established to lobby Government to raise money mainly for awareness and specific protected-area management functions.

West and Brechin (1991) cited in Gurung (1995) claim that international conservation organisations, in their all-out effort to conserve the natural wonders, wildlife, genetic resources and ecosystems around the globe, have become the main advocates to remove the local communities in the protected areas without any proof that their presence does actually prevent any effort to protect biological resources. Ghimire and Pimbert (1997, p. 22) claim that;"International Conservation Organisations often involve themselves as acting technical advisers or implementers of National Protected Area Strategies, and usually spend a large proportion of their funds on expatriate salaries, planes and helicopters for survey work, international travel and meetings. A very small part of the funds secured under the name of the project concerned is managed by these institutions, is vested locally in capacity building and actual field-based conservation activity."

The role of the international conservation organisations in many of the developing countries is beginning to be questioned. This is not because they are not needed, but because of complex, different social and cultural perceptions between the north and the south. These differences have
blocked any meaningful partnerships to achieve sustainable conservation objectives among the developing nations of the World. Gurung (1995) believes that the international non-government organisations have the tendency to convince the government of countries in Africa and Asia to remove people and resettle people elsewhere to protect large areas of natural landscape and wildlife. The author believes this approach is rooted in the colonial tendencies to transfer their concepts and ideas about protected areas to conservation to the new colonies.

2.5.5. The role of the multilateral and international funding organisations.

In discussing the analysis of the historic role of the aid giving agencies in shaping and influencing ecological policy formulation in the third world Vajpeyi (1995 p. 24) observed that:

- Policy makers in the third world countries are often in conflict with the ever increasing demands to satisfy basic human needs – clean air, water, adequate food, shelter, education and to safeguard the environmental quality due to relentless economic and political pressures from the aid-giving agencies.
- Given the scarce economic and technical resources at their disposal, most of these policy makers have ignored long-range environmental concerns and opted for short-range economic and political gains.
- Frequently, development projects undertaken to improve economic and natural resources were the direct or indirect causes of environmental damage.

According to Vajpeyi (1995) the shift in the policy directives towards global aid by major international actors, like the US Agency for International Development (USAID), International Monetary Fund, the World Bank, other Regional banks, and the Organisation for Economic Co-operation and Development (OECD), was partly due to domestic and international public opinion and pressure. Economic development, mainly measured in per capita income growth without ecological development, does not necessarily contribute to the overall improvements of the quality of life and often results in imbalance, distribution and control of economic wealth.

According to Colchester (1997, p. 125) conservation organisations have traditionally derived their funding from the establishments such as Banks, UN agencies and Bilateral agencies, establishments that have sought to impose their visions through the power of the state. Colchester (1997, p. 125) claims that globalizing conservation only strengthens this tendency since the highly motivated conservationist consultants funded by these organisations come to
occupy the political space within the state. This is the place where many indigenous representatives have been striving to enter.

According to Colchester (1997, p. 125), the so-called consultants are appointed as links between the funding agencies and the institutions in the host countries and see their role in playing a major part in the bidding process for lucrative consultancies for protected area projects, and adjust their management style to the exigencies of the international agencies that fund them, rather than the indigenous communities whose territories they are seeking to conserve. Conservation budgets are allocated for lavish satellite mapping systems, helicopters, jeeps, officers and official salaries, while the indigenous peoples and their home grown organisations are increasingly marginalised from decision making.

In an effort to move away from such inappropriate monetary policy influence from the multi-lateral and donor agencies and their agents, the government of Papua New Guinea has made a bold effort in 2002 to develop environment and development policy in line with a strategy for development and economic recovery. This policy statement (NEC Decision No. NG 1000/202, 2002) basically embraces the development aspirations of the people of Papua New Guinea, indicating that we should not run the country with borrowed money but instead build financial institutions in the country that can support the government’s development policy. The policy statement on the strategy for environment and development recovery is also supported by the Consultative Implementation and Monitoring Council. CIMC, (2000). The authors basically emphasize what the title says, “Let’s Act Locally.”

2.6. The Future Prospects of Biodiversity Conservation and Sustainable Development Effort.
While the debate on how best to conserve natural resources and perhaps more particularly biological resources or biological diversity, Holdgate (1996, p. 41) states that the concern to speed up the conservation drive is imminent primarily due to the human realisation that:

- There are still many species in the world today that have not been described by science,
- These species are being lost at an alarming and accelerating rate, especially as a consequence of rapid habitat destruction caused by growing extractive forms of development,
There is greater and new realisation of the value of biological resources to people and of the need to conserve them as a foundation for sustainable development. In Africa there has been an overwhelming number of pilot projects that have big plans to involve the people. According to Lusigi (1994, p. 81) the 'overall conservation picture has not been bright as wildlife continue to dwindle under mounting human pressure. The problem is not due to lack of awareness campaign but due to lack of a multi-sectorial development approach and lack of the authoritative participation by the affected people themselves.' Lusigi (1994, p. 86) suggests the need for a multi-sectorial or holistic approach for Africa where there is an integration of agriculture, livestock, forestry, fishery and other natural resources based activities into a single system.

According to McNeely (1988, p.14) people support conservation because they believe it to be valuable, particularly if they consider it to be threatened or in short supply. People are usually most positive and active in their support if the values that they perceive accrue to themselves. These values may be concrete and easy to quantify, such as the provision of jobs, income from tangible activity, or for pure recreational value such as wilderness experience. McNeely (1992) has reported that under the old paradigm there are few bright sports, globally where the perception to bring economic benefits to the local communities have reached that objective. In reality, relatively few direct benefits have flowed to the people who live closest to over 3,000 protected areas, established in the tropical countries over the past 50 years. McNeely (1988, p. 70) suggested the combination of appropriate incentives and disincentives, applied in conjunction with a system having a range of different levels of protection, may be the best means of addressing such problems.

The current problems and concerns about the global ability to achieve sustainable conservation and development model into the 21st Century.

The concept of sustainable development, as compared with previous development concepts, not only takes on the need to improve welfare of the present generation but also recognises that world resources are finite and that wasteful use of existing resources today will cause an unnecessary sacrifice of income and wealth in the future. It does not imply that all national resources should be preserved; however it recognises that successful development will have some impact on the natural resources (World Bank. 1992). Respetto (1989) defines sustainable development as a strategy that manages all assets, natural resources and human resources, as well as financial and physical assets, for increasing long-term wealth and well-being. Sustainable development as a goal rejects policies and practices that support current living standards.
by depleting the productive base, including natural resources, leavings future generations with poorer prospects and greater risks than our own.

After the Brundtland Commission paid extensive attention to aspect of sustainability, the term ‘sustainable development’ has become a common topic in the international policy debate. The Brundtland commission (1987) defines sustainable development as... “meeting the needs of the present generations without comprising the need of future generations.”

Agwarwal (1992, p. 300) has reported that globally there is growing consciousness about environmental economics and the need to incorporate ecological costs of production into national income and wealth accounts. However the question is, what is the point of doing this in a developing country if rich and powerful consumers of the world are not prepared to pay the true cost of their consumption? This view is shared by authors like Jacobs, (1991, p. 181) and Davidson (1993, p. 347) who argue that sustainability is meaningless if it does not apply on a global basis. This is because much of the environmental degradation in the South is the consequence, through international trading relationships of economic activity of the North. Environments in the south are often degraded in the process of producing primary commodities for export to the north.

Besides, there are other existing realities that have to be overcome first before genuine effort is made to achieve global sustainability. Holdgate (1996, p. 297) observes that ..’.at the international level the inter-governmental groups like the G7 industrialised countries and inter-regional groups of nations like the European Union and ASEAN tend to influence decisions that protect certain image and pride which erodes consensus on important economic issues that in turn effects the less powerful to be indifferent on environmental issues.’

A reason for inaction globally is due to the fact that many national governments do not interact among themselves sufficiently on a regional basis, and they lack any meaningful interaction with the supranational institutions like the UN agencies, multinational corporations and global non-government organisations (Holdgate 1996). Holdgate (1996, p. 297) also claims that internally most of the governments have defective political theory and centralised administration that has little dialogue with the other sectors of the community and levels of governments. Officers who are insufficiently trained to have effective inter-governmental communications between relevant agencies of government worsen the sectorial nature of administration in the governments of these countries. In addition their inadequate laws and economic concerns produce corruptions that leads to breakage of international commitments. Holdgate (1996, p. 301) suggests among
other things that the \textit{internal national governments should place commitment to sustainable development} at the top of their political agenda. This be done across political party lines to ensure legal and administrative mechanisms are put in place to ensure an effective governmental consultative process and greater public involvement and participation in actions towards a sustainable society.

In view of the current global situation there is very little evidence to show that there is serious effort at the global level to show that sustainability can be achieved, despite numerous international deliberations (Davidson, 1993). For this reason Davidson, (1993, p. 347) suggests that sustainable development should be \textit{defined at the local level, because it is about conserving natural resources, reducing wastes and caring for the environment}, while bringing social and economic improvement for the local people. The problem is what is development and at what level should development be defined. This is because ‘development’ means different things to different people and can even mean different things to the same people.

At it's barest, development could be described as the process of intervening in existing forms of society, which includes social, political and economic structures, in order to achieve desired social, political and economic goals (McNeely, 1988). According to McNeely (1988, p. 58) there are already numerous conflicts between protected area management and local economic development aspirations. The conflicts are intensifying in many parts of the world, demanding new approaches to protecting biodiversity as well as the rights of people, living in and around the protected area. Buller and Wright (1990) suggest that development should be community based in some regions where there is conflict. The authors claim this because community development is self-help process supported by change agents and involves only limited financial aid to support self-help services or infrastructure development. To address these concerns a number of authors argue that sustainable environment can only be achieved if effective international and national environmental laws are put in place, with clearly set-out mechanisms to administer. Authors like Bosselmann (2002) argue that the problem of weak and strong sustainable development aspirations could be addressed through the design of laws that ensure that the corporate sector pursues sustainable development criteria and cause all arms of government at various levels to adhere to these laws when pursuing national or regional agenda on environment, conservation and development issues that ultimately aim to achieve sustainability. This argument is also supported by authors like Dalal-Clayton et.al. (2002) and Birnie and Boyle (2001) who generally argue that unless we have wider stakeholders participation the drive and effort for sustainability approach towards development and conservation will continue to remain fragmented. This is because numerous case studies have shown that when the sectorial demarcation of responsibilities is removed from lined agencies, and becomes manadatory by instruments of
legislative and policy framework all sectors will make genuine approach to support the state agencies through dialogue and consultation process. Brown (2003) have also recognised the role of local institutions in that they are best able to deal with heterogenous interests especially in relation to equity and gender. This is significantly important particularly for the Pacific Island countries, where they have developed over time sustainable mechanisms to management their resource.
CHAPTER THREE

3. Methodology - Introduction:
This chapter defines the research problem, objectives, research design, social science and fieldwork methodology employed and the rationale for focusing on three Integrated Conservation And Development (ICAD) projects in Papua New Guinea. It also describes the social science research methods and the various research techniques that were used, and why they are used in this way to collect the data for the three ICAD projects in Papua New Guinea. A discussion of a culturally appropriate protocol to contact people in the respective project areas, and how to approach them, is given particular emphasis.

Integrated conservation and development projects initiated in Papua New Guinea are based on a partnership between the United Nations Development Program (UNDP) and the Department of Environment and Conservation (DEC) through the Global Environmental Facility, a funding mechanism set up by the World Bank after the Earth Summit. The underlying objective of the ICAD initiative is to promote the PNG Government's desire to discharge its international obligation to promote biodiversity, conservation and better environment management by embracing the Integrated Conservation and Development Project (ICDP) models that are being promoted globally.

In a country such as Papua New Guinea where 98% of land and most natural resources are owned by the community (protected by the PNG constitution), the state and the conservationists have to design a conservation package that is attractive enough for the local people to be attracted as an important partner in assisting the government to discharge its international obligation. For this reason the national and international stakeholders in conservation were invited to come up with conservation packages. A typical package included elements of social and economic development opportunities with the brand name, Integrated Conservation And Development (ICAD). Key components for establishing conservation areas in communally held land using the ICAD model have been described by James, J (1996, p. 8) and are discussed in Chapter 2.

Since 1993, there have been about 10 ICAD projects initiated in Papua New Guinea. These projects aim to secure biodiversity conservation on communally held land (Figure. 2).

Key Components for ICAD Projects.
The key components for establishing conservation areas using the ICAD process include:
Key components of ICAD project processes clearly state that there shall be a negotiated social and economic benefit package for the resource-owning communities.

### 3.1. Research Problem

Integrated Conservation And Development projects are based on the theory that "effective community participation with acceptable social and economic benefits will ensure the success of the ICAD project's initiatives in a developing country such as Papua New Guinea (Wells and Brendan 1992)."

In reality, since the introduction of the ICDP conservation model in the 1980s, there is a big gap between what are perceived benefits in many of the past conservation-driven projects globally and what is actually achieved or delivered in practical terms (Stevens, 1997). The main reasons for such failure according to this author are:

- Lack of effective participation by the local communities;
- Lack of recognition of traditional institutions and decision making processes;
- Inadequate social and economic benefits to facilitate changes of life style, dependent on the subsistence way of life.

This research is designed to analyse the effectiveness of the participatory process, the recognition of traditional and nationally based conservation institutions and if there have been properly-negotiated social and economic benefit packages for the affected communities in each of the case studies under the ICAD model as they are called in Papua New Guinea. The outcome of the research will contribute towards the objective of identifying an effective conservation model that could be applied to other regions or countries of similar, political, cultural and economic settings. The researcher does not begin this task with a view, idea or conclusion about the outcome. Instead this research will allow the process of conducting and analysing
interviews in conjunction with field observation. The project documents produced by the implementing organisations to secure external funding are used as a checklist to review each ICAD initiative.

The research employs qualitative research methods using several techniques, including interview techniques and documentary information sources to guide field observation and to collect field data. The interview techniques applied to collect the field data differed between case studies. In a situation where communication between the researcher and the key informants was difficult, translators were used and emphasis was placed on the focus groups interview. This has meant that interviews on a one to one basis with key community leaders were minimised. In areas where communication through a common national language, “tok pidgin”, was spoken and understood widely, more individual contact was made. In some cases, individuals have been repeatedly contacted to ensure cross checks, triangulation and verifications. Social science research methodologies and the techniques used in data collection are discussed in the section below in more detail (under section 3.5, pp. 72-81).

This research is very much driven by the researcher's immediate and long term involvement and contact with many of the national stakeholders in the field of ICAD. The research is designed to address key research questions and other questions pertaining to the participatory process in each of the case studies. The researcher employed qualitative research methods involving several techniques to acquire the research data as described in Furze et al. (1996). Research techniques included Participant Observation, and semi-structured and unstructured interviews were used to collect field data from each of the project sites.

3. 2. Research Site Selection.

The study site for this research is Papua New Guinea. This country was selected for this study because it has not been exposed to western forms or concepts of conservation ideals and modernisation for many years. Papua New Guinea gained political independence from Australia in 1975. The country inherited a Westminster, democratic form of Government that now services 4 million people. It is indeed a country that is similar in culture to many of the other smaller Pacific Island countries in Oceania, where the indigenous people have not been removed from their traditional rights to land, the sea and natural resources. The traditional patterns of use and preservation of their resources is still governed by the traditional laws and customs and is guaranteed by the Papua New Guineas' constitution. In fact the fourth national goal of the PNG National Constitution relating to natural resources and environment states:
"We declare our fourth goal to be for Papua New Guinea’s natural resources and environment to be conserved and used for the collective benefit of us all, and be replenished for the benefit of future generations.

We accordingly call for:

| wise use to be made of our natural resources and environment in and on the land or seabed, in the sea, under the land, and in the air, in the interests of our development and in trust for future generations; and |
| the conservation and replenishment, for the benefit of ourselves and posterity, of the environment and its sacred, scenic and historical qualities; and |
| all necessary steps to be taken to give adequate protection to our valued birds, animals, fish, insects, plants and trees" (PNCC, 1998, p. 14)

It is interesting to note that Papua New Guinea’s fourth national goal provides the fertile foundation for the application and testing of the new paradigm in conservation and development. This is one of the reasons why PNG was chosen as one of the countries to receive Global Environmental Facility (GEF) funding for pilot case studies in biodiversity conservation soon after the earth summit in Rio De Janiero, Brazil, in 1992. This research will attempt to establish if conservationists have learnt from past lessons of non-effective community participation and modified their habit of offering non-acceptable social and economic benefit packages.

Prior to the official initiation of the GEF-funded first pilot project known as the ‘Lak ICAD Project,’ by the United Nations Development Program and the Department of Environment and Conservation, a number of different NGOs had already started to develop their own community based, integrated conservation and development projects. The three ICAD projects selected for the case study were among the ten officially recognised by the government as having the necessary components of the ICAD projects described above (Jamie 1996, p. 8). The third reason for selecting these projects is because, unlike many others, they have been developed around the same time. With time as a crucial factor there is no point comparing projects when they are at different stages of development. The three ICAD projects selected were the Crater Mountain, Lakekamu and Kamiali projects.

Table (2) below shows, for each project, the number of ethnic tribal groups, number of people in the area and the total area of forest land and marine areas brought under protection.
<table>
<thead>
<tr>
<th>Project</th>
<th>Habitat</th>
<th>No. Of Tribal Groups</th>
<th>No. People</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crater Mountain</td>
<td>Highlands &amp; Coastal inland</td>
<td>2</td>
<td>3800-4800</td>
<td>2,700 sq km</td>
</tr>
<tr>
<td>Lake Kamu</td>
<td>Coastal inland</td>
<td>4</td>
<td>1775</td>
<td>2,500 sq km</td>
</tr>
<tr>
<td>Kamiali</td>
<td>Coastal</td>
<td>1</td>
<td>521</td>
<td>69,000 hectares</td>
</tr>
</tbody>
</table>

3.3. **Research Sites Selection and Description**

This section gives a brief description of each of the case study areas presented below. Background information on the physical, biological and socio-economic conditions of the respective project site and the community profile is discussed further in Chapter Five.

Figure 2 below shows the 19 provinces in Papua New Guinea and the approximate location of the 10 ICAD projects in the country.
3.3.1. Case Study One: Crater Mountain ICAD Project

Project Locality

This project is located in an area that is under the administration of three provinces, namely the Eastern Highlands, Chimbu and the Gulf Provincial Governments. The first part of the project is within the eastern highlands, and the second is in the Chimbu Province and phase three of the conservation area is in the Gulf Province, where the logging is the major development threat. Location map Figure 9 shown in chapter 5 has additional information.

Transportation and Accessibility

This project is located in the area that is described as the most difficult project site to reach. The communities in the area are spread across vast forested land and are separated by some of the most difficult terrain in the country, which makes it very inaccessible and isolated. The communities in Herowana, Maimafu and Haiya are all serviced by church-run air services, which are infrequent and often very unreliable, due in part to bad weather conditions and in part to the lack of major economic activity in the area. Flights into Maimafu, Hubaigubi, and Herowana are frequent during coffee seasons. Ubaigubi is the only area included in the project area that can be accessed by road. There is a seasonal road that turns off from the Highlands Highway into Ubaigubi, but due to the prolonged wet season and non-maintenance of the road it is impassable most of the time. There is a very good co-operation between the management of the Rainforest Conservation Foundation (RCF) and these church-based aviation operators which means when it comes to priority, they serve the RCF’s customers.

The main field research station at Wara Sera is about two days walk from both Haiya and Herowana (from the opposite direction). The tracks are virtually non-existent, crossing deep, fast-flowing rivers and climbing over steep hills that can sometimes take hours to climb. For the field station that expects to bring in people not used to walking in such conditions, the tracks seem only suitable for the local communities and there is a dire need for well-supervised and constructed track. There is no proper track as one would find in the protected area management systems in many developed countries.

The research base at Herowana is set up on the side of an airstrip and the field research sites are easily accessible from the base camp. To improve and maintain communication links between the field bases the communities and the field research station a two way radio communication network system is already in place. Rainforest Conservation Foundation management from its head office in Goroka maintains regular contact with the field officers on daily basis during working hours.
Health and Education Services

The Pawaian community resettled at Haiya has a primary school, health centre and an airstrip. The school faces constant closure due to teachers running away after a term there or refusing to go there because it is quite remote with no after hours social activities to attend. The health workers or teachers who go to these areas are also asked to meet their own airfares, which is why some of them are reluctant to go to serve among such communities. Children between the ages of 13-16 are known to repeat various grades to make it to year six in primary education. When they eventually make it through they are usually in their mid-teens.

Poor educational opportunities in the area can also be blamed on the community. The children are often absent from school by going back to their land with their parents without permission from their teachers, missing class for several months. One primary reasons for absenteeism is because of the shortage of land for most families to make gardens at Haiya to feed their families, apart from the need to be out in the forest protecting their resources.

As for the Gimi communities living in Mamafu, Herowana and Hubaigubi, there is a primary school and clinic in each community. The airstrip that the communities themselves built makes link with the outside world possible with air transportation. In a way Gimi people are lucky being in the Eastern Highlands. Their Provincial Government is one of the few provincial governments in the highlands region and in general PNG has supported its’ education and health services as a priority since the leadership of premier James Yenepa during the early 1990s. However despite the good intention of the government, many officers are not doing their jobs. Some Health workers are also known to abandon the Health Centre at Haiya for months before returning. Under these circumstances the new tribe missionary couple there are often seen to be providing such service in the absence of the government workers. Infrastructure facilities at Haiya for both the school and health facilities are better than the other ICAD project sites.

Level of Literacy

Literacy level amongst the Gimi community of the Eastern Highlands is between 35-50% where majority can speak and write in Tok Pisin. In areas where churches have greater influence, adult literacy is high as many were taught to read their Bibles in their languages. However, because of the poor educational opportunities, the literacy level of the Pawaia community is below 10% in comparison to their neighbours, the Gimis.

Socio-economic Characteristics

There is no major economic development activity seen in these communities at present apart from the proposed mining and the logging projects, which are discussed later in chapter five under project evaluation. Traditionally Pawaia people traded shells from the coast, lowland cassowary chicks, plumes of various lowland parrots, plume of Raggianna bird of paradise and
tapa cloth processed from the bark of a tree with the Gimi people, in exchange for string bags, head
dresses, bows and arrows and the traditional salts which the Gimi people obtained from the
Maruwaka area of the Eastern Highland Province. At present, the Pawaia people have not
entered into any modern economic activity such as coffee growing or any other cash crop. Only a
handful of people from Haiya own a few plots of coffee.
In the early 1980s the Chimbu Provincial Government initiated a spice growing and marketing
company with some external funding. The community at Haiya was engaged to grow cardamom
and chillies but it collapsed when the Chimbu Provincial Government-owned company went broke
only a few years after being in existence. There is not much information in Haiya about this
development initiative. A request to obtain additional information during the fieldwork from
sources in Chimbu was unsuccessful.
The Gimi communities run trade store businesses and are engaged in maintaining small family-
based coffee plots and raising of pigs as means for raising cash used for paying for the education
of their children and obtaining store goods. Until recently, the Eastern Highlands has been the
major coffee producing province in the highlands or the country. Recently, the Western
Highlanders have slightly taken over the lead in coffee production.

Community Profile
Two ethnic groups that occupy the Crater Mountain ICAD project area are the Pawaia people and
the Gimi people. Gimi people occupy the mid montane area of the north eastern and western
part of the Crater Mountain area while the Pawaia people occupy the southern or the lowland part
of the conservation area. Pawaia people were discovered in the 1970s towards the end of the
colonial era and built a resettlement station on land traditionally occupied by the Haia community
of Pawaian ethnicity to resettle them in one central location for administrative purposes. There
are now between 600-800 people of Pawaia ethnicity living at the Haiya resettlement station,
sometimes known as the mission station. The Community profile is discussed in detail in Chapter
5 under this particular case study.

Project Implementing Organisations
The Wildlife Conservation Society (WCS), an international non-governmental conservation
organisation within the New York Zoological Society, was the first conservation agency to
sponsor research and fieldworkers in the project area, as early as 1975. The WCS was also
instrumental in the establishment of the national non-government organisation which is called the
Research and Conservation Foundation of PNG (RCF) in 1986, and which now functions as the
lead agency in the Crater Mountain project. Over the years, numerous national and international
governmental and non-governmental agencies have provided financial and technical assistance
to the RCF and the WCS in the implementation of the project.
3.3.2. Case Study Two: LakeKamu ICAD Project

Project Locality.
This project is located in the area that includes three provinces in Papua New Guinea. The Lakekamu Basin is the southern watershed of eastern Papua New Guinea, and lies almost exactly between Port Moresby and Lae and includes parts of the Gulf, Central, and Morobe Provinces. The basin is 60 km due east of Kerema, Capital of the Gulf Province and 50 km south-southeast of Wau, in the Morobe Province. The Lakekamu basin is formed by the watershed of the upper Lakekamu River, which then after rising through country breaks into four major tributaries – the Gunimaipa, the Oreba (Biaru), the Avi Avi (Eloa) and the Indiwi. The flat lowland basin and the upper watershed encompass the unbroken 2500 km of vegetation of all types, from sago and nypa palms to swamp forest, hilly forest and steeply dissected montane forest. The location map is presented in Chapter 5 under case study two, Lakekamu ICAD initiative.

Transportation and Accessibility.
Transportation in and out of the area is mostly by air and is often unreliable due to low economic activity that makes airline operators consider these areas as uneconomical routes to service. At times the grass-covered airstrips are not maintained which prevents the planes from flying into the area, until the grass is cut and kept in order. Running of trade stores there has proved uneconomical due to high freight costs and constantly increasing airfares between, Wau, Takadu and Kakaro. In recent years, especially between 1997 and 1999, there has been an unusual increase in the freighting service into the area, according to Ben Gawi (pers. comm. 1999), the officer in charge of North Coast Aviation in Wau that is licenced to operate in the area. The demand for betel nuts in the highlands have created a countrywide search from buyers particularly the wholesale dealers from the highland regions.

River Transportation.
The Kovios are the only ones who are more accessible to the outside world due to river transportation. The Kovios now have between four and six river dinghies and three people now run the diesel supply business to service these operators. The recent road link through the Gulf-Hiritana highway and the cheaper river transportation cost seems to be opening up more opportunities for the villages to travel in motorised dinghies and canoes to catch public motor vehicles (PMVs) to get into Port Moresby. This has now provided more opportunities for greater access to markets in Port Moresby. Kovio people with the motorised outboard motorboats are able to reach the Kameas from the Nukeva village along the Teveri River and the community in Kakaro, along the Biaru River. Over the past three years the river transportation to and from Kakaro has become difficult as a result of non maintenance of the river passage due to lack of
funds to clear the river from the fallen logs and trees caused by flooding during wet season. At present it seems obvious that cheaper routes to access store goods in bulk is from Port Moresby even though it may take longer to go there and get back if there is constant increase in airfreight.

**Health and Education Services**

Community services such as health and education are quite poor in the project locality. For instance the Kakaro Community school, which receive children from the four community groups in Kakaro is very badly run down and the school hardly remains open for the entire school year. The classrooms and teachers’ houses are constructed from semi-permanent untreated materials that have now been infested with white ants and as such they could fall down any time. The school for Kamea children at Takadu is in the same situation. Two of the lower grades do not have proper desks for the children, who have been seen by the researcher as sitting on the floor. The teachers in both schools do not have proper tables and chairs for use. Instead they have constructed makeshift furniture out of bush material which will not last long.

The Okeva community school for the Kovio community have only one double classroom that is constructed with permanent material; the other double classroom is constructed out of bush material. The desk for the school has recently been constructed out of rough sawn timber using a chain saw and is unprofessional in nature. This school has had continuity in it’s existence and it remains open yearly compared with those in Kakaro and Takadu, partly because the community scrutiny and support is better there. Besides, the Kovios themselves have more influence in Gulf politics which ensures that teachers sent there actual teach there and do not decide to abandon teaching and run away while still on full salary.

Yet the Kakaro Aid Post does not have a regular supply of medicine and lacks essential furnishings. During the dry season there is no tank water for patients’ use which means medication is difficult to administer. The Water tank at the Takadu aid post has been out of use due to leakage for months or years. The biggest killer disease in the basin is malaria, which is on the rise because the authorities have done very little to improve this situation. The clinic at the Okeva is better managed as the sister in charge is from the area and feels pride in serving her people despite the fact that drugs are not well supplied like many rural clinics and aid posts in many remote parts of Papua New Guinea.

**Level of Literacy**

The continuous poor educational facilities and lack of commitment by responsible authorities continue to contribute to the basin's low level of literacy among its inhabitants. The Kovio people have a higher level of literacy than the three other groups. The reason for this situation is discussed above.
Socio-economic characteristics

In terms of large scale economic development, the basin does not have any major economic development activity, although several major development plans are in place including a recently proposed Agro-forestry Development Project. At present most people rely on the sale of betel nut, alluvial gold and crocodile skins in Port Moresby for much needed cash to buy store goods to supplement their diet and meet the cost of other essential goods and services like paying for their children’s school fees.

Community Profile

In the late 1940s and 1950s the Australian patrol officers into the area banished tribal warfare and required many of these people to move to a central accessible location for administrative purposes. As a result of the wholesale translocation of these communities, no proper historical ownership of land tenure could be established. This lack has since made the compilation of land tenure histories very difficult and land issues still pose a major threat for tribal stability in the basin. The Kakaro station was established in 1970 by the Gulf Provincial Government, which encouraged representatives from the four ethnic groups to settle there in satellite villages. This encouraged the people who have been living in makeshift huts across the basin with no evidence of permanent villages to move in and settle around the government station for administrative purposes. As a result the community of Kakoro is made up of the four different ethnic groups. Additional information is discussed in Chapter 5 under this case study.

Project Implementing Organisations

The Foundation for People and Community Development originates from the Foundation for the Peoples of the South Pacific, Inc., the parent organisation of the FSP International network that is founded in 1965 in the United States by two Australians. The organization was founded because it was felt that there was not enough attention being given to serious human development problems of the South Pacific (http://www.oneworld.org/fspi/index.htm#bkgrd 27th June 2000). The initial objective of FSP/USA was to assist the people of the South Pacific to determine their own future by organising education and training programmes, as well as sourcing small scale project funding. As the reputation of FSP/USA grew the need became obvious to set up regional offices in the South Pacific Island countries, which included PNG.

Over the last 15 years most of these field offices have become autonomous. In a similar move FSP/USA encouraged affiliates in Canada, Australia and the United Kingdom to become autonomous for the purpose of liaising with country-specific bi-lateral program and access non-government funding and technical assistance opportunities in their own countries that are available for the Pacific People. As early as 1990, FSP groups based in independent countries were encouraged to be united by a formal network under the name FSP International.
incumbent National Director Yati Bun just before the departure of former Director David Vossiler of USA first registered this initiative in Papua New Guinea as a Pacific Regional NGO in August 1991. The FSP network first began to work in Papua New Guinea in 1967. In 1992, the organization was registered as an NGO under the legal requirement of PNG in order to be autonomous. It still maintained the name FSP-PNG until 1997 when it applied to the registrar of companies for change of name to its current name, known as The Foundation for People and Community Development (FPCD) (Source: http://www.oneworld.org/fspi/index.htm#bkgrd, 27th June 2000).

One of the reasons for registration was for this particular NGO to convince the NGO community in PNG that has branded its existence as an international NGO. This view has existed since the formation of the National Alliance of Non Government Organisation (NANGO) and the mobilization of NGOs in PNG between 1990 and 1992. Many newly-formed community-oriented development and awareness NGOs have not come to accept FSP-PNG as a national NGO with the genuine mission in the country. The Lakekamu ICAD project is jointly implemented with Conservation International, which is the US, based NGO that has become very active in the Conservation of Biodiversity in many developing countries, especially in Latin American countries and the Pacific and the Asian region. The form of partnership is discussed in detail in Chapter 5, under case study two.

3.3.3. Case Study 3: Kamiali ICAD Project

Project Locality
The location for this project is centred on the coastal village of Labubia, 60 km south of Lae in the Morobe Province of Papua New Guinea. Project land is communally owned by the whole village, which consists of two major clans and six sub-clans from one (Kela) language group. This group share the Kela language with Longui, Laukanu, Buso and Kui villages. This project attempts to involve only the community of the Labubia village, unlike the structure of other ICAD projects. In the case of Crater Mountain and Lakekamu projects, several different ethnic groups and villages occur over a large area of land with more than two clans involved. Location map and additional information is discussed in Chapter 5 under case study three the Kamiali ICAD initiative.

Transportation and Accessibility
There is no road link between these coastal villages to Lae and it is likely to remain this way for a long time. This is partly due to the rough terrain and many big swift flowing rivers that make bridging of their fans difficult. Direct coastal link by road is going to be coastly due to swampy conditions and stagnant lagoons that stretch for several kilometres especially near two major rivers, the Markham and Waria. These factors have made any future plans to built a road link
from Lae right through to the Morobe patrol post almost impossible. The only way to get to the project site is by a speedboat that is operated by the people or the Village Development Trust (VDT). In the past the Lutheran church shipping agencies that call into the area once in a while served the communities in the area. Several families are known to own a speedboat that is used primarily to transport people and local produce for Lae market and back to Lababia for Kina 25.00 per person each way or it could be hired for Kina 200.00 plus the cost of fuel for the two hours round trip. Kamiali ICAD project has a speedboat that comes into Lae at least once or twice a week to pick up supplies. With the project in the area Lababia village community is now able to communicate with the outside world through a two way radio network set up by the project at the training centre, which is only six kilometres along the beach from the main Lababia village.

Health and Education Services

This community is very fortunate in that both the local clinic and the local school that serves the five villages in the area are both located at Lababia village. The local school and the clinic serviced by the Morobe provincial government has much better infrastructural facilities with a regular supply of medicine than some communities further along the Morobe coast or in the interior of the province. Community members who have a major illness are usually referred to the Lae general hospital. Since the inception of the project, VDT has already assisted number of seriously sick patients with a free transportation service to Lae hospital and back (Gewa pers.comm. 1998). Many of the younger generation have the opportunity to go to high school but, because of the *quota-system that only allows the top 10%-15% of year six children from each primary* to enter high schools in Lae, many of them cannot go beyond primary education. Salamaua High School, established in 1994, is expected to provide more opportunities for the children from these areas to enter their local high school.

Many of the educated people who have held whitecollar jobs elsewhere are now back in the village. It is this sector of the community that is vocal on what should take place in their community under the ICAD project initiative. The majority of the young people in the community are literate with at least primary education and several have been to high schools and have worked in places like Bougainville Paguna mine, the police force, army and other office jobs but have returned home.

Level of Literacy

The literacy level at the Lababia community is around 60% as many of its members can at least read the Bible in Yabem or Tok Pidgin. This is partly because many of the local elders were trained at Lukaweng literacy school to read and write in the local Yabem language. Lutheran church in the past used two local languages, Yabem and Kote of Morobe province, to propagate its evangelical work throughout the country.
Socio-economic Characteristics
Cash cropping activities in Lababia is next to nothing, with the exception of a few betelnut plots and garden produce such as taro banana and sago sold through Lae market. The main income earning for the community is through fishing activities. A trial study carried out by the German Government Aid Agency (GTZ) showed that the average catch per year from 1989-1992 was 11,779 kg (Zibe per.com 1999). This study was done on part-time basis whenever it was necessary. It showed that the Lababia community could increase their fish catch four times per annum. In the past, few people in Lababia village have raised sufficient funds through fishing ventures to set up trade stores and a speedboat. Village trade store businesses play an important role for the community by providing store goods such as tin fish, beef and sugar and other food to supplement their diet. The Kamiali area is rich in marine products but any efforts on the part of the responsible government authorities to promote fishing as a business venture have been either minimal or non existent.

Community Profile
The Kamiali people depend on cooperation for their everyday livelihood and must make an effort to maintain close ties with those belonging to their kin group in order to secure access to their social and natural resources. The Kamiali people inherit a right to land and it's natural resources through the matrilineal kinship and associations. Kamiali has a resident population of 521 made up of 270 males and 251 females as of 30th July 1997. Additional information is discussed in Chapter 5 under the case study three.

Implementing Organisations.
The Village Development Trust (VDT) is the implementing national NGO for the Kamiali ICAD initiative. At the initial stage of this project, VDT went into partnership with the World Wide Fund Pacific Program (WWF) from 1991-1993 to get the project started. This partnership ended in 1993 when VDT could not agree with WWF on a number issues including how the project should be approached. However, the Village Development Trust was then timely rescued by a new funding organization known as the Inter-church Organisation For Development Cooperation (ICCO), a non- government organisation of the Netherlands that solicits European Union Funding to participate in community-based development projects in developing countries. The Village Development Trust, being a development-oriented NGO with the main goal to train rural communities to conserve their forest and promote eco-timber business as an income generating activity, saw this as a genuine partnership and dissociated itself with any western NGOs that approached biodiversity conservation with research as its main focus.
To accommodate ICCO’s funding requirement, VDT began the restructuring of the organisation in 1996. Kamiali ICAD project is one such specific program that is headed by a Director, who happens to be the former Secretary of Environment and Conservation Department. When he retired from serving the government in 1988, he joined the organisation to help create the RCF and become its first director. In 1995 he left RCF due to differences of opinion with WCS of New York on how community-based projects should be implemented at the Crater Mountain ICAD project.

3. 4.  Research Duration & People Involved.
This study involved a total of six months and two weeks of fieldwork made over a period of two years. It is supplemented by more than twenty-five years of previous work with this selected area of conservation and development. The first fieldwork commenced at the beginning of March 1998 and continued to the end of May 1998. The second period of fieldwork commenced in April 1999 and ended in mid-July 1999. Case study selection of a site firstly involved writing to the project implementing NGOs. It was only after their confirmation that the actual project sites were selected before flying to Papua New Guinea.

In Papua New Guinea contacts were immediately made personally with the respective NGOs implementing the project, and interviews were arranged with senior executives and administrative officers of the project proponent in order to seek support and approval. Apart from seeking their approval and interviewing the senior officials, key written information on major funding approvals contained in the project documents relating to the respective ICAD projects was collected. These project documents are used as the basis for a benchmark assessment of perceived program objectives and the perceived socio-economic benefits for the local communities.

During the fieldwork the researcher spent about three weeks to a month in each of the project sites or in the province where the project was established. In many cases more time was spent trying to track down a few of the key individual informants who have, over a period of time, either moved to live and work in urban areas or have gone there to visit relatives working in town. The interview was never forced on the village community or other informants. It was important to get to know the people through the observation of customary protocol that is usually expected of that particular society before these procedures took place. The researcher is familiar with these protocols.

With the researcher being a Papua New Guinean, the informants were more relaxed when interviewed. The interview was conducted through the course of what seemed to be normal
conversation. This was designed to create an atmosphere necessary for them to express their views and responses according to their perceptions of issues relating to the project. The informants in the interview ranged from project field officers, project committee members selected to represent their interest group, church leaders, representatives of youths and women groups, other recognised community leaders, ward councillors, noted individuals in the community, provincial government officials, administrators and key players in the NGOs, implementing the project. The interview also included key personal of the Department of Environment and Conservation in Port Moresby. **A total of 250 people were** actually contacted and interviewed either as a focus group, individually, or during a general interest group discussion session. Only the names of the stakeholders with some form of key position in the project or community were recorded (See **appendix 3 for names and list of people contacted**).

3.5. **Research Methodology for data collection**

There are two basic research methodologies employed in research. The quantitative research method concentrates on the collection of data that can be qualified and numerically analysed. The qualitative research method employs the evaluation of a range of criteria which are either non-qualitative or where qualification would lead to a loss of crucial information. Both methods employ several techniques to collect research data in the field. According to Patton (1990, p. 14) there are three main differences between qualitative and quantitative research methods.

One is that in the quantitative research it is possible to measure the reactions of a great many people to a limited set of questions, thus facilitating comparison of statistical aggregation of data. Whereas qualitative research methods produce a wealth of detailed information about a much smaller number of people and cases and reduces generalisation. Two, the validity of quantitative research depends on the careful construction of instruments like a questionnaire, to be sure that the instrument measures what it is supposed to measure, whereas in qualitative research, the researcher is the instrument. The validity of the research results depends on his skills, competence and understanding on how to probe for quality, useful information. Three, quantitative data are systematic and standardised, and are easily presented in a short space. By contrast, the qualitative findings are longer, more detailed and variable in content.

A qualitative approach to this project was chosen because the research is theory-driven and designed to systematically describe and analyse the participatory process in the selected case studies. The research also aimed to achieve a broad and integrated understanding of the
cultures of the people associated with land management issues and process. The qualitative methods are first and foremost research methods. They are ways of finding out what people do, think, know and feel about issues surrounding them. Field observations, interviewing stakeholders and analysing written information like project documents, is part of the qualitative research method approach chosen. Qualitative research contributes to practical problem solving, decision-making action research, policy analysis and organisational or community development efforts. Authors like Patton (1990, p. 47) cited in Furze et al. (1996, p. 87) describe qualitative research approaches as the type of research approach that emphasise the importance of getting close to the people and the situation being studied, in order to personally understand the realities and minutiae of daily life. This author also points out that many qualitative methodologists fail to ground their findings in personal qualitative understandings. The long familiarity of the researcher with these issues minimised the danger of this.

The application of the qualitative research method used in this case study research is also useful here because it allows a researcher to study each case study separately. For a country like PNG with vastly complex social and cultural values, this approach is essential. This research approach leads to an understanding of how different communities manage their resources, and how they go about protecting them from any form of outside intervention. In this case it is inappropriate to employ a social science research method that assumes generalities in the way people react to conservation and development issues. It is important to know that, apart from social complexities, perceptions of economic and social development issues also differ between people in remote communities and from those closer to urban centres that are better educated. Rather than studying people, this research emphasises the importance of learning from these people about their views and perspectives (Spradley, 1979). The use of the qualitative method is chosen to achieve a broad and integrated understanding of the cultures of the people associated with land management issues and how they want the respective ICAD project to be implemented on their land in each of the case study sites.

3.5.1. Appraisal of Research Techniques

Relationship between local protocol and interview respondents.

Being a Papua New Guinean enabled the researcher to follow an appropriate social protocol to maintain a lively discussion, as well as to create a relaxed atmosphere. A traditional gesture to create such an atmosphere is for the host or the sponsor of a particular gathering to distribute betel nuts and rolled tobacco. People will become more relaxed and are often drawn into conversation if they can chew betel nuts and/or smoke some rolled tobacco. In a local setting, discussions are best held sitting around a fire without much formality. There were times when
some fathers had brought along their small children to the informal discussion. After some time, these children became uneasy and distracted their fathers who were, in most cases, key members of the group. In this case, lollies were given to the children to quieten them down. According to Sarantakos (1993, p. 262) interviewers are more likely to develop a positive and effective relationship with the respondent if they come from a similar background.

In this situation, it builds trust, understanding and cooperation, and allows the development of a close and rewarding relationship between the interviewer and the respondent. It is also equally important how the interviewers present themselves, e.g. their dress code. Arrogant and intrusive persons are not successful. For this reason the researcher found it useful to sleep in the same house and eat the same food as the community to ease the social apprehension the people had of an educated outsider, before getting down to interviewing them formally.

**Structured and Unstructured Interviews**

Different academic disciplines within the social sciences have evolved different names for, and forms of, the interview process. Furze et al. (1996 p. 70) describes an interview as a basic form of conversational interaction between a researcher and an informant. The three types of interview are structured, semi-structured or focused, and unstructured interviews. The structured interview is used in the quantitative research method where the researcher has a standardised survey instrument consisting of a set of organised questions, which are then presented orally to the respondent. This type of interview may prevent the respondent from expressing his or her views or concerns about the issue freely.

The semi-structured or focused interview refers to interviews in which the researcher uses a set of organised pertinent questions as interview guides. These questions are organised before the interview is held, and are used by the researcher in the conversation interaction with the informant in order to obtain more accurate information. It allows the informant to explain, describe or express his or her views on the issue concerned within his or her social reality. Unstructured interviews use a conversational process whereby the researcher learns from the informant and eventually gains an understanding of the informant’s perspective in the context of the informant own social reality. This method can be very useful if the researcher comes from a similar social context (Minichiello et al. 1990 cited in Furze et al. 1996, p. 70).

The semi-structured interview technique is employed when applying the focus group interview. In particular this interview technique was applied in the Crater Mountain and Lake Kamu project sites, as the researcher could not communicate with the local people in Melanesian Pidgin, the common lingua franca in Papua New Guinea. In this situation interpreters were used. This meant research questions were systematically asked in order to explore fully the responses of
those being surveyed. At times illustrations were used to assist the informants to get a clear understanding of the questions being asked, and as a means of stimulating discussions. When the informants showed signs of boredom, the subject matter was changed to a joke, or they were asked if the issues that lightened their mood and made them amenable for further discussions and conversations were covered.

**Focus group interview**

The Focus Group interview technique, which is employed in qualitative research, is described by Furze, De Lacy and Birckhead (1996, p. 75). It is an interview technique, which allows social science researchers to gain an insight into the underlying beliefs and values of particular groups within a community while obtaining detailed information regarding a specific topic. These authors argue that focus groups achieve this by promoting the discussion of a topic by representatives of targeted groups in the community within the context of the issues facing the community at the time. It is called a focused interview because it focuses on a specific topic, which respondents are asked to discuss, thereby providing their views and opinions on the research question (Sarantakos, 1993, p. 252).

**Case study technique**

Since the purpose of this research was to evaluate the social and economic incentive packages offered to the community, and to analyse and describe the participatory process that was being employed by various stakeholders of the respective ICAD projects, several methods used for data collection in qualitative research were employed, as several research techniques were appropriate for the nature of this study. For instance, a case study approach was adopted, and the primary source of field data is from secondary sources like project documents, progress reports and mission statements. The information from written sources is supported by actual field observation where rapid rural appraisal techniques were used to collect additional data. This information was further strengthened by interviewing key players or stakeholders involved in the project. The case study approach was adopted because this research method is best able to capture the richness and complexity of individual settings that are too complex to be studied solely through surveys or experimental strategies (Yin 1989). Integrated conservation and development projects are new entities in PNG. A case study approach also prevents generalisations when a uniform set of criteria is applied to all the case studies (Patton 1990).

Patton (1990, p. 99) has pointed out that internationally, the value of case studies is now widely recognised by development agencies such as the World Bank, as reported in (Salmen 1987; Casley and Kumar 1987, 1988), and is also recognised by the United States International Agency for Development (1987a, 1987b). The author has further cited the international evaluation experts like Michael Cernea (1985, 1989, 1991, 1993) of the World Bank and Nena Vreeland.
(1993) of the United States Agency for International Development as some of the main advocates for greater use of the case study research methods. For instance, case studies are manageable, and it is more desirable to have a few carefully done case studies with results one can trust, than to aim for large, probabilistic and generalised samples with results that are dubious because of the multitude of technical, logistic and management problems in the third world settings. In supporting this view Sarantakos (1993, p. 192) describes case studies to be a valid form of enquiry in the context of descriptive, as well as evaluative and casual studies, particularly when the research context is too complex for survey studies or experimental strategies, and when the researcher is interested in the structure, process and outcome of a single unit.

**Documentary research approach**

The documentary research approach is also adopted as the data from the secondary source of information is basically used to assess achievement on the field. The benchmark assessment technique is adopted as an evaluation tool for the analysis of the proposed social and economic incentive packages for the land owning communities in the respective project sites.

**Rapid and participatory rural appraisal.**

This field research also employed aspects of the Rapid and Participatory Rural Appraisal techniques. There are many techniques, which can be used in PRA as suggested by McCracken et al. (1988, p. 18-49) cited in Furze et al. (1996, p. 57). Rapid and participatory rural appraisal techniques are useful in that they involve secondary data reviews, direct observation, and allow researchers to use key indicators to get an insight into the particular issue or subject under study. The researcher uses this information as a checklist during his actual field observation to confirm the implementation of the proposed activities. Additional data is collected from the field, employing several interview techniques, which include focussed group interviews as well as individual interviews. According to McCracken et al. (1988, pp. 9-10), PRA can be used to assess the rural and other development needs of a community. Secondly, it identifies priority areas for further research and development intervention. Apart from these, it is also used to assess the social and technical feasibility of planned interventions in the rural development process. Participatory rural appraisal is also useful to implement and monitor development interventions.

**Usefulness of Secondary Sources of information**

The information from secondary sources, such as the project design document is used to help determine whether the implementing agencies had successfully achieved what they had planned to achieve in the project documents. The field visits and unstructured interviews with various key
informants provided insight or on-the-ground information on actual achievements of the proposed activities by the project proponents and the various parties involved in the implementation of these activities. The field interviews with key players in the community were conducted to give opportunities for these people to express their views about what they saw as the actual project’s major achievements and failures. The project’s impact on the local community was determined from views, concerns and the level of satisfaction achieved by noted key individuals from within the project community and from other villages. The news of success and failures of one village was usually known by the nearby villagers, because relatives who through marriages now live in other villages easily convey such perceptions.

By interviewing the business community, information on the type of the business initiated in the project, as well as their views on the local people’s ability to carry out and further sustain the project after the implementing agency had left the project was communicated. The type of questions put to government officials and the political leaders helped generate information about their involvement and possible guarantee for future support to the ICAD initiative as a developmental tool in PNG.

Assessment of the Program’s Effectiveness

This research employed four criteria to assess programme effectiveness. The criteria were employed to further ensure that there was no bias in the information presented and discussed, and that each of the three projects included in the case study was measured by the uniform criteria. For these reasons the project effectiveness was better analysed through benchmark assessment criteria.

Benchmark Assessment

The research was designed to be descriptive in nature as a way of presenting the degree or the level of community participation, and to evaluate the type of social and economic benefits offered to the land-owning communities. The process of evaluation was done to assess the delivery of perceived social and economic benefits contained in the project proposal documents that were approved by the respective funding agencies for the period 1995-1998. The purpose of the assessment was to confirm with the communities if verbal promises or commitments were made to these communities by the project proponents to access their forest for biodiversity conservation in PNG. The outcome of these finding is presented in a table form under each case study where a ranking ranging from 0-5 is graded or awarded (see Tables 2, 3, 6, 7, 10, 11).

The data for the analysis of the three ICAD projects is collected from three different sources, which are the Government Departments, the head office of implementing NGOs and the project field offices in respective provinces, for official information (legislation, official reports, project
design documents and progress reports). Project officers of implementing organisations in the respective provinces and the field officers were contacted for information on project sites, project design documents, progress reports & memos between various parties. Additionally, information on the village communities is collected from various interviews with the male elders, female groups, youth groups, village councils, church leaders, business houses, individuals from nearby villages and the members of the project committee that represent various interest groups involved in the project.

**Selection of Benchmark Criteria**

This research selects the following as benchmark criteria:

- Appropriate Community Entry and Mobilisation for Wider Participation.
- Provide Opportunities for Learning through Various Socio-Economic Programs (Adaptive Management).
- Delivery of Perceived Social and Economic Incentive Packages and Future Sustainability.
- Securing of Local Interest to Continue Biodiversity Conservation Once Funding Ends.

**Description of Benchmark Criteria**

**Mobilisation for the participation by a large and representative landowner group** that has the potential to:

- secure endorsement for the forest or marine land proposed for biodiversity conservation;
- provide effective community based support and decision making body of the project;
- play a leadership role that is appreciated by their community and the project proponents;
- provide effective group administration that can accomplish tasks on the ground;
- establish good working relationship with provincial, national and outside partners;
- involve key stake holders (including females) in activities that are socially compatible.

**Providing opportunities for learning** likely to:

- increase greater awareness for conservation and sustainable development opportunities;
- to take up leadership role in the future;
- increase local level skills to participate in more meaningful social and economic activities;
- to improve literacy at all level of the community;
- assist rural female members in the awareness for better hygiene and home making.

**The ICAD project being likely to endure and sustain itself** in terms of:
people retaining interest in working for collective benefits rather than for self or family
members;
people’s commitment to maintaining the conservation status at the end of the funding
period;
people’s likelihood to reject destructive form of development in exchange for
overwhelming benefits that exceeded those provided by ICAD project.

Empowering the local community to maintain long term interest in conservation as a result of:

- tangible long term and sustainable development benefits it has brought to the community;
- very well trained and coordinated community-based administrative mechanism;
- tangible long term social services that has improved their collective well being;
- being able to attract additional support from the government and other sources;
- ability to pursue social and economic activities to enhance group or individual well being.

Benchmark Ranking

This is done by employing a score ranking system where success of perceived benefits as
described in the funding document is measured by a score ranking out of 5. The score of 0
implies non existence, 1/5 implies zero achievement but people have been told, 2/5 implies some
attempts have been made, 3/5 implies implemented but failed to continue, 4/5 implies
implementation on-going, and 5/5 means this particular activity has been successfully
implemented.

3.5.2. Limitations of Techniques

There is no one social science research method or research technique that is universally agreed
to as having no limitation. This research recognises such and in no way states that the research
methods and techniques employed in the research and described in this chapter have no
limitation.

Limitation of qualitative research methodology.

The validity and reliability of qualitative data depend to a great extent on the methodological skill,
sensitivity, and integrity of the researcher. Systematic and rigorous observation involves far more
than just being present and looking around. **Skilful Interviewing** involves much more than just
asking questions. Content analysis requires considerably more than just reading to see what’s
there. Generating useful and credible qualitative findings through observation interviewing, and
Content analysis requires discipline, knowledge, training practice, creativity and hard work. Qualitative research is not appropriate for every program evaluation or action research question. Besides there is the limitation of what one can learn from what people say (Patton, 1990). Limitation to various research approaches as discussed above.

**Research data bias and generalisation.**

To minimise the possibility of research data bias and generalisation, several different sources of information are used and the information is obtained using several methods and techniques used in qualitative research methodology. Using such a combination of methods is called “triangulation”. Sarantakos (1993, p. 168) describes triangulation as a concept that has been discussed very intensively in the area of social research, and which is equally employed by quantitative and qualitative researchers. Sarantakos (1993, p. 168) in citing Denzin (1989) further describes triangulation concept to be of two types. These are the inter-method triangulation, which includes two or more methods of different methodological origin and nature; and intra-method triangulation, which employs two or more techniques of the same method. For example, surveys and experiments, experiments and observations or observations and documentary. In relation to this approach, authors like Crawford and Christensen, (1995) argue that it is not unusual for researchers to employ mixed-method designs to investigate different aspects of the same phenomenon. In this research, secondary information from project documents provided by the project proponents provide the basis of information with regards to planned social and development intervention for the communities in the project sites. The information in the documents was written by the project proponents well before the research took place and therefore the information are non-biased in terms of its accuracy in relation to the planning and implementation of the project. The tape recording of the interviews and taking hand-written field notes and photographs assist to minimise any possible misconception of factual information with regards to what the local people feel or think about the community participatory process employed in the project. Cross examinations of the project documents, including discussions with the key individuals of the implementing organisations before and after the field observations, further validates the information collected.
Chapter 4

4. Overview of natural resource conservation and development approaches in Papua New Guinea before and after the introduction of the ICAD model.

4.1. Introduction.
The primary focus of this chapter is to provide background information on the social, cultural, economic and political issues as well as the conservation and development situations in Papua New Guinea. This overview begins from first western contact in 1526 to political independence in 1975. The second important aspect of this chapter is to look at what has happened in terms of conservation and development of PNG natural resources and why this has happened despite all the best intentions to develop a socially and economically holistic and balanced society. This examination establishes the basis for an overview of conservation and development aspirations from independence leading up to the introduction of the ICAD project model in 1993.

In addition this chapter focuses on the constitutional, political, administrative, policy and legislative frameworks that exist in the country to support the conservation and development effort. Discussions of various ICAD initiatives plus some of the lessons learnt from the first ICAD pilot project initiative, lessons that are not discussed in the three case studies, are also highlighted here. This material is then tied into the PNG situation with the global perspective of the alternative conservation paradigm of ICDP model as opposed to the old paradigm of strict protected areas systems discussed in Chapter 2. In particular the issues of community participation, relevance of traditional social values and cultural institutions and how they influence natural resource management practices will be examined. This Chapter also looks at the relevance of indigenous knowledge and why and how tangible, income generating opportunities are crucial for the success of biodiversity conservation in Papua New Guinea.

Like many third world countries driven by the desire to earn much-needed hard cash to maintain the government’s treasury and to provide the much-needed social services like health and education, successive PNG governments opted to encourage large scale environmentally disruptive forms of economic development projects, which have failed to adequately address the
local community’s development needs and aspirations (Sakulas et al. 2000). It has become obvious that the urgent need to conserve the rich biodiversity of PNG was never on the top of the government priority list, at least until the publication of the World Bank sponsored report on the status of forest industry by a committee tasked to come up with the Tropical Action Plan (TFAP) in 1988. The UN charter signed in June, 1992 in Rio de Janeiro, Brazil, on global climate development, population, with the eventual signing of the *Earth Charter including Convention on Biological Diversity* by 150 countries and rectified by more than 30 countries including Papua New Guinea, influenced the national policy makers and planners to revisit the rural based development model (Sekhran & Miller 1996, p. 2).

4.1.1 Historical Background.

Papua New Guinea has six million inhabitants that speak between 750-800 different languages. A similar number of cultural differences exist over a land area of 462,842 square kilometres of which 73% is still forested, rich in mineral deposits and possessing 5% of the world’s total biodiversity (Saulei 1990b; AIDAB 1994). Papua New Guinea is today considered one of the most resource-rich countries per capita in the world. The state of Papua New Guinea occupies the eastern portion of the island of New Guinea, the second biggest island in the world (McNeely et al. 1990, p. 98). Some development is taking place but the nation still has the largest tracts of mature rain forest in the Asia/Pacific region. The ethnic people are known as the Melanesians.

4.1.2 Prehistory.

The early people of the island of New Guinea are thought to have migrated from Asia about 50,000 years ago. Communities were self-contained, often with little contact with other groups; there was never a central or dominant group. In the highlands, there is evidence of substantial gardening traditions in place over 10,000 years ago, indicating the presence of stable and enduring communities. In New Guinea the early inhabitants hunted the wild animals and ate wild vegetable foods while all the time moving inland through the actively forming and changing terrain (Stoneking, et al. 1986). Swadling et al. (1989) emphasize that the archaeological evidence is scant for the human activities during the Pleistocene but argue that human presence is possible after the land bridge to Australia subsided and the climate became warmer and the tree line receded to the higher altitudes. Changing climatic conditions soon made it possible for the people to pursue game further into the interior. According to Swadling et al. (1989), people moving into the interior eventually settled into the fertile mountain valleys. Lakes that formed as a result of volcanic or tectonic activity had begun to drain off due to on ongoing active folding and uplifting of the central cordillera.
The authors claim that the current extensive grassland found in several areas throughout the highlands testifies to the human use of fire for clearing and hunting purposes. These two activities probably represent the first man-induced environmental change. The new settlers later invented a drainage ditch-based agriculture system, probably for taro cultivation nearly 9,000 years ago. This region soon became heavily populated with the arrival of sweet potato with much improved cultivation techniques and the malaria-free environment (Swadling et al. 1989).

4.1.3. Early Contact with western cultures (role of plumes and paradise).
Western intervention began in 1526, as Jorge de Meneses being the first European to sight the mainland of what is now Papua New Guinea. Meneses named it 'Ilhas dos Papuas', which means ‘the land of the frizzy haired people’. Later in 1545 another sailor, Inigo Ortiz de Retes, followed the coastline of the island and gave the name “New Guinea,” as the humans he saw resembled those of Guinea in Africa. The island remained undisturbed by Europeans until 1884 when Germany and Great Britain colonised the northern and southern coastal areas of the island respectively.

4.2. Physical and climatic conditions.
‘New Guinea is a fantastic island, unique and fascinating. It is an area of incredible variety of geomorphology, biota, peoples, languages, history, traditions and cultures. Diversity is the prime characteristic, whatever the subject of interest. To a bio-geographer it is tantalising, as well as confusing and frustrating when trying to determine the history of its biota. To an ecologist, and to all biologists, it is a happy hunting ground of endless surprises and unanswered questions. To a conservationist it is like a dream come true, a flash back of a few centuries, as well as a challenge for the future.” (Gressitt1982, p. 3).

Located in the tropics and surrounded by warm seas over which its winds blow, the country has a generally hot and humid climate. However, conditions vary greatly from one area to another because of the effect of the mountainous topography on the two major prevailing air streams, the southeast trade winds and the north western. Monsoon rainfall is characteristic and differentiates the seasons. There are distinct wet and dry seasons, the timing of which varies from one area to the other. The temperatures remain fairly constant throughout the year in most regions. The annual daytime mean temperature for most of the lowlands is 27°C, accompanied by extremely high humidity of about 75-90 percent. It is however; very pleasant in the highland valleys where
the annual daytime mean temperature is 20 °C with a pleasant level of humidity of about 65-80 percent (http://julian.dac.uga.edu/docs/asia/png.htm 27th June 2000).

4.3. Natural Resources and Biological Diversity of Papua New Guinea.

The fourth national goal sets the prerequisite that resource development must equally benefit the people of Papua New Guinea. It provides the guidelines on how to promote economically viable, ecologically friendly, community driven form of development where the resource owners can expect to mutually benefit from the development of their resources. Similarly the second national goal sets the preamble for natural resource development to benefit all sectors of the six million people (Peutalo and Howlett 1993).

4.3.1. Significance of Biological Resources.

In terms of biological diversity, Papua New Guinea probably harbours more than five percent of the world's biological diversity within some of the world's most diverse ecosystems. Many of these species are endemic to PNG, although the Island of New Guinea shares several biological affinities in both flora and fauna with Australian and Southeast Asian species in particular those of Borneo.

The island has 725 species of birds, 180+ species of mammals, 200+ species of reptiles, 3,000 species of fish (about 300-400 fresh water spp.), 20,000 species of vascular plants or 7.5% of the world spp., and 200,000 species of insects. The island boasts the largest pigeons in the world, the largest bird wing butterflies, largest stick insect, the largest and smallest parrots, 42 species of birds of paradise (two thirds), two of the world's three monotremes and all of the tree kangaroos (http://julian.dac.uga.edu/docs/asia/png.htm 27th June, 2000).

4.3.2. Significance of Forest Resources.

The variety of topographic land formations and varied micro-climatic conditions have played a major role in the evolution of complex and diverse ecosystems, a variety that has contributed to the species richness of both plant and animal life. Altitudinal variations and physical barriers have also played a part in species endemism. This is why New Guinea boasts the world's largest and smallest parrots, the largest doves, the longest lizard, some of the smallest frogs, the largest butterflies and moths, some of the longest stick insects, the widest-headed (stalk-eyed) flies, the
tallest tropical trees, the largest rhododendron flowers, the richest mangrove and sea grass flora
and many other forms and habitats that are unique and fascinating if not extreme (Gressitt, 1982
p. 3).

4. 3. 3. Significance of Marine Resources.

In most areas of the Pacific, fishing and gathering of shellfish, the hunting of different kind of sea
mammals and the capture of turtles constituted an important source of proteins which
supplemented a diet of terrestrial plants and animals. These aquatic resources were
safeguarded by a variety of means and there were:

- A high degree of environmental awareness.
- Skilled conservation officers and master fishermen.
- A complex system of marine tenure.
- A variety of magic-religious taboos.
- Strict fines and punishment.
- A variety of methods to conserve seafood (Klee 1987).

Klee (1987) has argued that environmental knowledge was central to most forms of traditional
conservation practices in Oceania. The native islanders by necessity lived close to nature and
had the ability to read the diurnal, monthly and seasonal cycles of their environment. To the
Polynesians, Micronesians, and Melanesians, the heavens and the phases of nature served as a
clock and calendar to be read and sometimes acted upon. A common pattern in coastal
Melanesia for traditional access to these resources is through marriage and adoption. A village is
made up of a number of different lineages and that lineage may have as many as ten or more
sub-lineages. The proper identification and definition of the social unit that has primary rights to
these resources is crucially important. Particular care is needed so as to clarify various
secondary rights and their origins from the primary rights.

While the arguments by Klee (1987) still hold the truth about past traditional beliefs and practice
to environmental sustainability, authors like Rolls (2003) dispute that by saying the small size of
population and the simple technology used at that time contributed to the best practice towards
the sustainability of the environment. However, from the indigenous perspective, much of what
Klee has stated is about the environmental management practice at that time and cannot be
replaced with arguments presented for a different technological era.
4. 4. Socio-economic, cultural and political landscape for natural resource management.

An outstanding feature of PNG’s social landscape is its diversity. The PNG Language Atlas lists over seven language groups; in them there are over 750 languages, a remarkable statistic given that the nation accounts for less than 1% of the world’s land mass and less than one tenth of one percent of the world population. There are some 10,000 traditionally autonomous “political groupings” (tribal groupings) in New Guinea.

Another compelling feature of the social landscape is the fact that land in PNG remains largely un-alienated. Some 98% of the population live in rural areas and 97% land is held and controlled by traditional communities. This situation has its parallels elsewhere in Melanesia, and in Polynesia and Micronesia, but otherwise is unique in the developing world (Klee (1987), Baines (1989).

4. 4.1. Political complexities.

In comparison to Indonesia and the rest of Asia, Papua New Guinea had less than 100 years to establish the basis of its economic and political destiny while still subjected to various administrations and occupation of parts of the island. It is realistic to say that the independent state of Papua New Guinea has probably undergone more profound social and economic change within one generation than any other country on earth. Within less than 40 years a nation was formed out of a multitude of remote communities which were not only isolated by Papua New Guinea’s mountains and rainforests but also by deeply entrenched hostility and distrust between tribes (Sakulas et al. 2000, p. 90). This was quite an achievement, particularly considering the fact that there are some 10,000 traditionally autonomous “political groupings” (tribal groupings).

Another significant feature of Papua New Guinea is its politics where the nation’s democracy is not built strictly on party lines but on the basis of personality and ability of party leaders to manipulate elected leaders to constantly change party affinities in search for what they can get for their constituencies. Until recently no one political party has ever achieved an absolute majority in parliament and party alliances are volatile – loss of government by a vote of no confidence has been the characteristic of Papua New Guinea politics since independence. To certain extent, this volatility has abated since the introduction of the new legislation on the integrity of political parties in 2001. The overall system of government is thus one of responsible parliamentary democracy.

Kinship interests versus national interests.

One major concern for the new democracy in PNG is that many national leaders are still very loyal to their regions, right down to kinship ties (wantok system). In many instances this has affected the desire to promote a new generation with nationalistic ideals to see a collective good
for the country. Prior to 2001 there is evidence of political leaders often switching party lines saying their electorates have wanted them to do so. It is also seen in the appointment of departmental heads and heads of various cooperate organisations and statutory institutions. The best person for the job is not necessarily appointed to the nations bureaucracy. The result is that there is difficulty in tribal integration under elected leadership, even for the management of natural resources in one set locality where different ethnic groups are found.

Authors like Stuart and Sekhran (1996) argue that the relationship between the contemporary State and civil society is weak because the government’s ability to intervene in the land use decisions of traditional landowners and delimit private rights in the broader public interest is circumscribed. They believe the jurisdiction over land rights is vested firmly in the hands of local communities, who jealously guard proprietorship and access rights. However, such a view fails to understand the Constitutional guarantee of rights for the people of Papua New Guinea that makes it difficult for the government to intervene.

4.4.2. Cultural Setting.

It has taken over thousands of years for the people to learn to relate to their environment and develop a system of beliefs and customs that governed their lives. By a process of random screening and selecting of various species of plants, they were able to determine those most suitable for domestication and cultivation as basic food crops. Some plant types were brought in with them from outside areas while others were harvested from the wild as medicines and seasonal foods and only assisted in their propagation through enrichment plantings. Traditional taboos and fines were put in place to determine how these resources should be used and sustained and the taboos and fines differed from one society to the next (Klee, 1987).

Humankind in traditional PNG has always been an integral part of their environment. Rough and mountainous terrain isolated the people to develop separately unique cultural and social institutions and beliefs that govern social perception as to how they manage their natural resources. Isolation no doubt gave rise to the evolution of 700-800 different languages and the similar number of cultural practices that existed before the arrival of Europeans. The introduction of western cultural values and traditions of modernisation and Christianity and various western democratic institutions began to remove and destabilise these traditional institutions and their belief systems on how people today view their environment.

A recent report on the ICAD practitioners views from the field highlights this concern, where the, traditional system says ‘all the spirits live in the bush’ but the church says ‘there are no evil spirits in the bush, there is only one big God. His Spirit will protect and not hurt you’.
Consequently people can now go anywhere into the bush, where they would have never gone before (Ellis and Saulei 1998, p. 212). The once powerful spirits that have operated through the spiritual elders of the society to punish who made gardens or hunting in "Ples Masalai" (ecologically sensitive places) are no longer viewed to be in existence.

**Traditional Laws versus Western Laws on the PNG Society.**

Many communities in the remote parts of PNG have no idea of western laws and what is happening in their own provinces and the nation. These communities are still under the traditional rule. The Churches are seen to be the major catalyst to destabilise the traditional laws giving people freedom from fear of all kinds of superstitious beliefs that govern their every day living. Allen (1993) cited in McCallum and Sekhran (1997) have reported that rural communities have never accepted the government or western democracy as the legitimate authority over them from the colonial era. Recently this perception towards the government has increased due to provincial and national governments’ inability to provide improved economic and social services and break up the isolation from the outside world that existed since the nation’s political independence.

4.4.3. **Social and economic situation.**

PNG’s economy is dual in nature, including a ‘modern’ formal economy and a large informal economy where subsistence farming accounts for the bulk of economic activity. The formal sector provides a rather narrow employment base, consisting of workers engaged in mineral production, a relatively small manufacturing sector, public sector employees and service industries including finance, construction, transportation and utilities. The bulk of the population is engaged in the informal sector, although migration to major city centres in the past decades has contributed to urban unemployment and acute social problems. Papua New Guinea's social indicators, in general, are well below those of lower middle-income countries, particularly in rural areas. Papua New Guinea's per capita GDP was equivalent to around US$900 in 1998 (EIU estimate).

4.4.4. **Access to Western Democratic Process.**

Prior to World War II, both Papua and New Guinea had separate Legislative Councils. In 1951, the first Legislative Council for the combined territories was inaugurated. The first major constitutional step came in 1964 when a House of Assembly of 64 members came into being. Everyone over the age of 21 was entitled to vote and for the first time the legislative body had a preponderance of indigenous members. The House of Assembly was enlarged to 94 members in
1968. It was further enlarged for the elections of 1972 to a House of 100 elected members. The Papua New Guinea Constitution adopted at Independence in 1975 increased the number of members to 109, which has remained since then. Self-government was declared on 1st December 1973 and the Independent State of Papua New Guinea came into being on 16th September 1975. During the immediate post-independence period, political pressures from a number of regions, not least the threatened secession from Papua New Guinea of the island of Bougainville, led to the introduction in the Constitution of regional provincial government. By 1978, all 19 provinces had been granted provincial government status, until its review in 1995. An Organic Law on Provincial and Local Level Government was passed in 1995. It modified the system of provincial government that had attracted increasing criticism due to its inability to deliver services in the regions. The new law resulted from deliberations over a number of years headed by a Constitution Review Commission. The change in the Organic Law has created provincial assemblies and local level governments that now assume a number of the central government's functions and responsibilities (Allen.B.J.1992).

4. 4. 5. Traditional Institutions and community participation in natural resource management in PNG.

While this issue has been discussed already (in Chapter 2) it is important to emphasise again that people who live closest to the resources have often developed specific ways and means of managing these resources. Biological resources are often under threat when the responsibility for managing these resources are removed from their domain and instead transferred to the government agencies located far away in a capital city (McNeely 1988, p. 57). Detailed discussion is made in Chapter 2 (pp. 100-101).

This issue has been noticeable to the researcher in the form of the case of the MacAdam National Parks, between Wau and Bulolo in PNG. The Biangai people who claim to have traditional landownership are concerned that the national park officer who lives in the area does not seem to have the power to remove people from Kaiwa, Kumalu, Sepik and Garaina who are encroaching on to the National Park. Fingleton (1993) and Holzknecht (1994b) had reported that land is held by corporate kinship groups, with membership determined largely, though not solely, through decent. Individual resource access and control is codified through a series of direct claims and subsidiary rights, which control use, including planting and harvesting, the transfer of rights, and reciprocal obligations.

According to Stuart and Sekhran (1996, p. 38):

*Access and control to land is usually governed by corporate kinship groupings, individuals may wield considerable influence. Decision making within clans may be*
controlled by local power brokers who assume, by decree or default, a mantle of leadership and who craft decision making outcomes to suit their own vested interests. By positioning themselves as vehicle of patronage, such individuals consolidate their decision making power by establishing a network of reciprocal obligations.

According to Baines (1989, p. 288) ‘There is a tendency to talk loosely of rights, the implication being that all residents of a particular village have rights to use adjacent common property resources.’ Baines (1989) emphasises that primary use rights are inevitably held by only one of those lineages, and that lineage alone has the power to allocate use rights in the marine area adjacent to the village. The lineage then allocate secondary use rights to others who have been accepted as resident of the village or some times, temporary visitors or residence. Kuluah (1988 p. 62) argues that:

*Given the historical and cultural weight on the traditional ownership of forest life, the State under no circumstances can assume upon itself the ownership of the forest life. Forest life like land, belongs to the traditional rightful owners. The manner in which the present state of PNG goes about acquiring or assuming itself the right of ownership of land, forest and other natural resources is at best foreign in origin and at worst alienative.*

The author further stresses that the function and the responsibility of the state is to provide guidance, protection and assistance in both the preservation and the exploitation of the natural resources such as forest to improve social services at all levels of the community. This oversight where the state seemed to be taking control of the forestry sector derived from Carsons’ (1974) White Paper on Forest Policy. This report is described by Barnett (1992) as the states’ “misconception” of the White Paper on Forest policy. Contrary to the state’s view the Carson report pointed out that the state should not be given the power to exercise central control of forest resources which was not legitimately under its control.

**4. 5. Emergence of Papua New Guinea as a Modern State.**
Papua New Guinea’s ninety years of foreign intervention and colonisation began in 1884 until it achieved independence in 1975 from Australia who succed from Britain in 1906. Prior to World War 1 the Germans took control of the northern part known as New Guinea while Britain occupied the southern part known as Papua. After the Germans were defeated at the end of World War 1, Australia took over the former German territory for a while but it was soon taken over by the advancing Japanese army during World War 11, until they were defeated by the Americans and the Allied forces in 1945 who took over the southern part. After the Second World War Australia
was given the mandate to administer Papua New Guinea by the United Nations in 1946. By various Acts of the Australian Parliament the Australian territory of Papua and the Trust Territory of New Guinea were integrated into one administration. During the 1950s Papua New Guineans were mainly employed as cheap labour for the copra plantations originally set up by the Germans mainly on New Guinea Islands of New Ireland, New Britain, Bougainville and Manus. The country was under the direct rule from Australia and as such there was no formal political or legislative institutions in the country. This type of administration continued until early 1960s when the United Nations put pressure on Australia to think seriously at training Papua New Guineans to enter into civil service and make efforts towards home rule (http://www.niugini.com/profile1.htm#5, 20th May 2000).

It is reported that the Australian colonial administration did very little to educate the people and encourage them to enter into the civil service until after 1962. After gaining political independence from Australia in 1975 the majority of the country’s population remained illiterate and had very little access to decent schools and health services. The principle of equal development in all the provinces was never promoted as the colonial administration only developed those provinces that had major economic enterprises such as the copra plantations on New Guinea Island and coffee in the highlands of PNG.

4.6. Development of Economic and Social Policy at Independence. Soon after gaining independence the government initiated the National Expenditure Programme (NEP) which was developed to control and co-ordinate growth of infrastructure and government services and to ensure that it did not outgrow the capacity of the economy to support them (Allen, J. B. 1993). To do this a central planning and coordination mechanism was created known as the National Planning Office (NPO). This office was tasked in 1974 to administer new economic development strategies including the Eight Aims, the principles upon which future development was to be based, as shown in Box 5 below.

**Box 5. The Eight Aims of Papua New Guinea at Independence.**

<table>
<thead>
<tr>
<th>Aims</th>
</tr>
</thead>
<tbody>
<tr>
<td>to increase the proportion of the national economy under the control of Papua New Guineans.</td>
</tr>
<tr>
<td>to achieve a more equitable distribution of the economic benefits of developments and greater equalisation of incomes and a more equal distribution of services throughout the country.</td>
</tr>
<tr>
<td>to decentralise economic activity, planning and Government spending.</td>
</tr>
<tr>
<td>to emphasise small-scale artisan services and business activities.</td>
</tr>
<tr>
<td>to achieve a more self-reliant economy that is less dependent on imported goods and services.</td>
</tr>
<tr>
<td>to meet government spending from locally raised revenue.</td>
</tr>
<tr>
<td>to increase the participation of women in all forms of social and economic activity.</td>
</tr>
</tbody>
</table>
and to use government control and involvement where necessary to achieve the desired kind of development.


4. 7. Subsistence Economy and the Cash Economy.

In Papua New Guinea there are basically two distinct economies that exist side by side, the traditional economy and the modern economy. Authors like Lea and Chaudhri (1983) in their book on the analysis of rural development and the state in developing countries, describes Papua New Guinea as a ‘lost paradise’. The book highlights various trends of rural development since the Germans and the British administration of the country and the local peoples’ perceptions about these rural based development attempts. The book also describes how these attempts were made and the consequences of such attempts to ensure benefits of modernisation to trickle down to the rural communities in Papua New Guinea. They also argue that in the process of finding a suitable economic development concept the people’s social and cultural wellbeing has been disrupted from that of ‘equality among men’ to that of inequality within tribes and between the rich and the poor regions of the country.

In a traditional PNG society men had to out-compete their rivals to be recognised as leaders, while everyone remained equal and lived a communal life. People have over millennia lived on the land and have sustained the quality of land and the entire ecosystem kept in balance. Agricultural systems were (and still are) dominated by the cultivation of root crops such as taros, yams, bananas, sweet potatoes and sugar cane. Occasional planting of sago, coconut palms and breadfruit trees were done to ensure important additional sources of food were available during certain seasons.

Most coastal people supplemented their diets by fishing, gathering and hunting. Besides hunting, in many PNG villages pig husbandry is a wide-spread activity and is seen as a source of wealth for many highland communities. Agricultural systems ranged from extensive shifting systems to the intensive, composted continual cultivation of grassland. As a result Papua New Guinean subsistence economies have been called ‘affluent’. Today the traditional economy is supporting 82% of the population who live in the rural areas and is involved in subsistence food production, raising of pigs, fishing and hunting. Only 28% of the population live in towns under a cash economy. About 8% of the rural population participates in the cash economy through cash crop production of such crops as coffee, copra, cocoa, and even small scale alluvial gold panning. The country’s 14% of GDP comes from subsistence activities (Allen, B.J 1993).
4. 7. 1. Cash economic sector.
The cash economic sector that is the agricultural production-based economy is fairly recent and attempts for rural change have not altered predominantly the subsistence-based lifestyle of the people. The development of cash cropping is seen as a supplementary activity to earn much-needed cash to pay for basic goods and services like school fees, store food, clothing and other necessities and not necessarily seen as an adoption of different form of life style. The author further argues that PNG exports are mainly primary products, such as gold, copper, coffee, cocoa, forest products and fish that provide foreign exchange earnings and alternatives for the country. The country's economy is built on export-oriented agricultural commodities.

To encourage rural Papua New Guineans to participate in the country's economic development in order to bring about rural change, various development programmes were initiated. For instance the Village Economic Development Fund (VEDF) was set up to assist small rural businesses in the villages throughout Papua New Guinea. Co-operative ventures were set up in some provinces while business development officers were encouraged to promote and encourage micro enterprises for family groups who were able to mobilise themselves and register as a business group. The business development officers would develop a proposal with the cash flow projected and submit the application to the commerce department to release funding to the approved projects (Allen, B.J. 1993).

There were only two major developmental projects prior to independence. They were the Paguna copper mine on Bougainville and JANT chip mill in Madang. Both developmental projects were initiated and agreement for their development was singled out as a priority by the colonial administration on behalf of the people of Papua New Guinea. Successive Governments, like many third world countries driven by the desire to earn much needed hard cash to maintain the government treasury and to provide the much-needed social services like health and education, had opted to encourage large-scale development projects. Instead of applying the income raised from these development projects to these much needed services, the revenue was spent on wages perks and privileges of a large public sector.

As a result Papua New Guinea is at the moment placed in the low life expectancy and human development category of the United Nations Development Programme, Human Development Report (UNDP 1991; PNCC 1998). This lowly position is despite the development of several large world-class mining projects expected to increase the internal revenue base. However, the
present gloomy economic outlook is not reflective of the economic policy of the 1980s. Papua New Guinea’s economic policy in the 1980s was based on the assumption that large-scale natural resource developments will generate greater internal revenue to fund various infrastructure development programmes and essential social services such as education, health the public utilities.

Similarly the theory behind the development of major resource projects like mineral, forestry and fishing in the 1990s is seen as an attempt to generate taxable income to fund the education, health, transport and communications infrastructure, agricultural extension and other forms of government services which have been regarded as essential for economic development. This revenue has also been expected to replace development assistance from Australia on a gradual phase until the country becomes self-reliant. However; this theory had a major set back when it was shaken by the massive cut in the internal revenue from the Paguna Mine when it was forced to close by the armed militant group on Bougainville. The government then, in a desperate attempt to get an alternative income generating stream, bypassed its environmental regulations as contained in the Environmental Planning Act 1978 and the Environmental Contaminants Act 1978 when issuing a mining permit to OK Tedi Pty Ltd to begin mining without the reconstruction of a tailings dam after the first one came down with a landslide (Tjamie and Sakulas 1992).

To further boost the National Treasury the Government through the Department of Forestry made every effort to ensure the forestry sector was sufficiently mobilised to contribute towards this revenue shortfall. Again, since the objective is to increase internal revenue very little effort was made to force the large scale Industrial Logging Companies, mainly from Asia, to observe environmental guidelines stipulated under the Environmental Planning Act 1978 and the Environmental Contaminant Act 1978. Many of the Asian-based companies took advantage of the ignorant landowners and capitalised on the Forestry (Private Dealers) Act 1971, which allowed for customary owners to sell their timber direct to outsiders without any environmental or development plan but with only a simple approval from the Forest Minister. As a result there were obvious instances of corruption occurring at all levels of the government and the forest industry. This led to the public outcry, which forced the government to set up a commission of inquiry into forest matters (Barnett 1992; Hotznecnkt 1996). Since the swearing in of the Somare/Temu-led Government in 2002, many of the loopholes in the forestry Act are being addressed.
4.8.1. Forestry Sector.

In the forestry sector, the export of round logs accounts for about 15% of all exports and export taxes on logs account for around 6.6% of the country’s GDP. According to PNCC (1998, p. 23) forestry development projects provide major social and economic benefits to the resources owners in the country. PNCC (1998, p. 23) has reported that ‘unsustainable and poor environmental practices and the alleged corruption within the sector in the past have contributed to the real concern that unless this industry is managed properly it will become one of the major contentious issues with the growing environmental sensitive global markets.’

In fact, in May 1989, the Papua New Guinea Government responded to the global pressure by requesting the World Bank and UNDP through the global Tropical Forestry Action Plan (TFAP) to review the forestry sector and propose an Action Programme for management of the forest resources in PNG. At the same time in response to a growing chorus of complaints about corruption of various kinds in the forest industry, the Government set up a commission of Inquiry into Forest Matters in 1989 (known as the Barnett Commission of Inquiry) to review the operations of the industry. Hotznecnkt (1996) has pointed out that the results summarised in Judge Barnett’s reports were unequivocal and in turn lead to PNG’s involvement in 1990 in a World Bank sponsored Tropical Forest Action Plan programme to the evolution of a National Forestry Policy in 1991 and to the drafting and approval in 1991 of a new forestry legislation and the establishment of the PNG Forest Authority in 1993 as a statutory body. Barnett’s report found that in many instances the landowner spokespersons were paid and accommodated by companies in hotels in Port Moresby to stage well-organised lobbying success from the highest office, which is the National Executive Council, to appropriate Government Ministers before going down to the heads of Departments. Senior technical officials of both the Department of Forests and Environment and Conservation were often put under tremendous pressure until they gave in to their demands as political decisions were often made against their technical advice (Barnett, 1992).

The result of the investigations, including those by the Barnett Commission and the World Bank, into forestry matters in PNG found that the Government did not have a legitimate forest policy. Instead it was using an out-dated, ‘Forest Policy white paper’ based on the Carson Report just before independence in 1974 (Hotznecnkt 1996). Indeed the Carson report (1974) was used as a policy to give the state the power to exercise central control of forest resources that was not legitimately under its control. Like many other developing countries, forests in PNG are particularly vulnerable during the take-off process of industrialisation, when the rural sector is
heavily taxed to generate a surplus for industrial growth and while a protected industry generates very few jobs for the induced ‘surplus’ rural labour.

Papua New Guinea is described as one of the mineral rich countries of the world. While this may be true, many Papua New Guineans would like to think of it as a potentially wealthy country with lots of poor people lacking any meaningful social and economic services. Since the beginning of the post independence era the mining and petroleum sector has contributed to PNG’s economy significantly. In fact this growth is only seen in the major urban centres like Port Moresby and Lae. It is currently the dominant sector in terms of exports, contributing to about 30% of GDP. The Mining/Petroleum sector contributes to 13.2% and petroleum contributes 16.8%. This sector is reported to be highly capital and skill intensive with input requirement unavailable from the domestic sources and is responsible for up to 2.7% of the total formal sector employment (PNCC, 1998 p. 23).

4.8.3. Agriculture Sector.
Over the last 10 years agriculture has contributed less than 30% to the nation’s GDP. Yet the agriculture sector is where 85% of the population earn their livelihood. It has the potential to absorb most of the labour force, but it suffers from low productivity and high domestic costs. According to PNCC (1998, p.22).

‘The agriculture sector is primarily dominated by small enterprises primarily in the subsistence sector and contributes about 45% of total agriculture output. The current agriculture export is dominated by the production of traditional tree crops such as coffee, cocoa and copra and oil palm and accounts for 23.1% of total employment.’

The principal PNG agricultural research and extension need, identified over the years suggest the need to promote sustainable land use systems which halt land resource degradation and enable agricultural intensification through innovative soil management practices which restore structure, fertility and stability over relatively short periods of time. Such needs, however, are hindered by limited practical research and extension activities oriented towards culturally viable agronomic practices and inadequate government extension operations in the subsistence sector (Allen B 1993 and Bourke, R.M (1990).

4.8.4. Fisheries Sector.
Papua New Guinea’s Declared Fishing Zone is one of the largest in the tropical Pacific at 2.3 million square kilometres. It is co-extensive with the Exclusive Economic Zone proclaimed under
the National Seas Act of 1978. There is also a 12-mile Territorial Sea. Papua New Guinea is host to a tuna resource of global significance. PNG is part of the central-western Pacific region that, since early this decade, has contributed in excess of 50% of the world's annual demand for canning grade tuna. What is more significant is that scientists maintain that there remains a potential to expand this harvest within sustainable bounds. In the 1970's and early 1980's, live bait pole and line fleets operated from various sites in the country. In 1978, the best year for catches by domestic fleets on record, 48,000 tonnes of tuna were landed in the country. The pole and line fishery closed due to a combination of depressed tuna prices in the early 80's, and pressure by the PNG Government to establish permanent shore bases to support their operations and increasing competition from the rapidly expanding fishing fleet.

In 1995 the PNG Government placed a prohibition on licensing foreign-owned tuna long liners, seeking instead to promote opportunities to become involved in the industry. Although the potential for this sector remains significant, growth in domestic involvement in the industry has not progressed as perhaps the Government may have expected (PNCC, 1998).

4. 8. 5. Tourism Sector.
This sector is currently under-developed and is very much suffering from the bad global image which portrays PNG as a crime-ridden country. National policy is generally broad and does not have a well-organised coordinated effect towards a specific target market. Three main themes that have so far been developed by the private sector interest group include; Adventure tourism, Cultural tourism and Scuba Diving. Two main operators, the Melanesian Tour Services based in Madang and the Trans-Niugini tours based in Mount Hagen, mainly coordinate adventure tourism. Melanesian Tours own and operate a mini-expedition ship that caters for up to 42 passengers in air conditioned comfort. Major adventure destinations include travelling up the Sepik River to Kerowagi Lodge, Trobriand Islands, East and West New Britain and New Ireland provinces. Trans-Niugini Tours is quite often responsible for organising a 13-day tour package that coincide with major cultural events such as the Highlands Show, Port Moresby Show and direct visit to famous cultural groups in the country such as the Huli-tribesmen in Enga and Asoroka mud men in the Eastern Highlands.

Papua New Guinea's National Constitution and its Eight Point Development plan of 1974 spell out the principal of Participation, Sustainability, and Equal distribution of wealth from development of its natural resources to it's citizens. The first two and the fourth National Goals and their Directive Principles in the PNG National Constitution recognise the significance of people's participation,
and how the country’s natural resources should be developed on a sustainable basis. It also stress that the benefits from any major development projects should be equally spread across the country and also provides equal opportunities for its citizens to participate in such developments. The country’s National Constitution further recognises the traditional communal ownership of the country’s resources and sees their actual involvement in the decision-making process, as well as the actual participation as an equal partner in the development of such resources, as an essential means to human liberation, fulfilment and well being of all Papua New Guineans (Peutalo and Howlett, 1992). For example the first National Goal states that:

“We declare our first goal to be for every person to be dynamically involved in the process of freeing himself or herself from every form of domination or oppression so that each man or woman will have the opportunity to develop as a whole person in relationship with others.”

The Second National Goal of the country’s constitution provides for equal opportunity for participation in the development of natural resources by stating that:

“We declare our second goal to be for all citizens to have an equal opportunity to participate in and benefit from the development of our country.”

Fourth National Goal of the constitution provides for sustainable use of the natural resources to enhance the livelihood of the communities through out PNG by stating that:

“We call for wise use of our natural resources in a sustainable manner to ensure that they provide sound living for the whole community now and replenished for the benefit of our future generations.”

Papua New Guinea’s Environment and Conservation Policy was adopted by the National Parliament in 1977, two years after achieving political independence. This policy recognized that development must be ecologically, socially and culturally suitable for Papua New Guinea. The policy on the natural resources is geared towards environmental protection and the conservation or preservation of plants, animals and all other resources including land, the natural resources underneath the land, the seas, sea beds and water for the collective benefit of all PNG citizens. This is a direct response to the fourth goal that clearly calls for;

- Wise use of Natural Resources;
- Conservation and replenishment of the Environment;
- Protection of fauna and flora for the benefit of present and future generations.

4. 10. Integrated Conservation and Development.
In Papua New Guinea the Global Environmental Facility (GEF) funded project, as well as other privately funded Integrated Conservation And Development projects under the ICAD model, is
based on the principle that successful conservation must reach beyond enforcement activities and address the social and economic needs of local communities in and around a designated conservation area (Kula G, 1998, Kula G. Jefferies, B. 1995). In other words the ICAD project model aims to secure biodiversity conservation on communally-owned traditional land by promoting alternative sources of income-generating projects which are environmentally sustainable and do not threaten the flora and fauna of the conservation area.

What is obvious is that in other parts of the world the ICDP model is promoted through the Biosphere Reserve concept or The World Heritage Sites concept, which are incorporated into the existing National Parks protected system concept that is often held and managed by the state. This is not the case in PNG where less than 10 protected areas exist under various categories of the National Parks Act. Most of the currently existing conservation areas have been declared as wildlife management areas. The ICAD conservation model promotes conservation-driven development projects that seem to follow the rural development theory, which was developed, to involved greater participation by the rural poor (see Chapters 1 & 2).

4. 10. 1. Introduction of the model.
Two years prior to the signing of the new global order under the UN-sponsored Earth Charter, Papua New Guinea was selected as one of the countries to introduce the new conservation paradigm under the ICDP model as opposed to the strict protected areas system commonly known as a national park. The new integrated conservation and development project model (ICDP) has existed in other developing countries for the past two decades. A conservationist-centred discussion forum was held in Port Moresby on 1st April 1990, where major stakeholders in the country were invited together with donor communities, global conservation fraternity and academics to receive the World Bank sponsored report on the state of PNG environment in relation to forestry development, provided a venue for consensus to introduce new ideas in conservation and development. In July 1991, the Department of Environment and Conservation made a bid for US$10 million to assist with the establishment of a Conservation Resource Centre and initiate two pilot ICAD projects under the umbrella of the PNG Biodiversity Programme. The bid was accepted and approved although the funding was reduced to US$5 million. This Funding was used to initiate both the Lak and the Bismarck-Ramu pilot ICDP or ICAD projects.

4. 10. 2. Reasons for the introduction of ICAD model.
The UN charter signed in June, 1992 in Rio de Janeiro, Brazil on global climate and biodiversity had influenced the national policy makers and planners to develop a set of national strategies as
guidelines to promote economically viable, ecologically friendly, community-driven forms of
development. Several approaches have been made since 1992 to produce a workable model
that could be replicated elsewhere in PNG. The integrated conservation and development
projects were initiated in Papua New Guinea on a partnership basis between the United Nations
Development Program (UNDP) and the Department of Environment and Conservation (DEC)
through the Global Environmental Facility (GEF) a funding mechanism set up by the World Bank.
The ICAD initiative was tasked to promote PNG Government's desire to discharge it's
international obligation to promote biodiversity conservation and better environmental
management through a rural-oriented developmental approach, which is being promoted globally
through ICAD model.

In a country like Papua New Guinea where ownership of land and natural resources is vested in
the community and is constitutionally protected (PNG constitution), the state and the
conservationist had to design a conservation package that is attractive enough for the local
people to be drawn in as an important partner in assisting the government to discharge it's
international obligations. For this reason both the national and international stakeholders in
conservation were invited to come up with a conservation package. This package includes
elements of social and economic development opportunities with the brand name Integrated
Conservation And Development (ICAD). Key components for establishing conservation areas in
communally held land using the Integrated Conservation and development model includes:

- A relatively large area of land or marine/coastal environment (at least 50,000 hectares)
  zoned by agreement for biodiversity conservation and development objectives.
- A negotiated package of social and economic benefits linked to the long-term
  maintenance of the conservation area (James 1996, p. 8).

4.10.3. Current Status of ICAD Projects.
The urgent need to conserve the rich biodiversity of PNG was never on the top of the government
priority sector, until the World Bank sponsored tropical action plan (TFAP) report tabled in April
1990 drew global concern on how PNG was managing it's forestry sector. Other events, such as
the Caracus Declaration in April 1992 and the eventual signing of the convention on biological
diversity in Rio de Janeiro, Brazil in June 1992 by 150 countries, convinced PNG to consider
seriously the global financial facilities that were becoming available to assist conservation mission
in the country. The convention came into force on 29th December 1993 after it was ratified by
more than 30 countries including Papua New Guinea (Sekhran & Miller 1996, p. 2).
Papua New Guinea was one of the first few countries that received funding under the GEF for biodiversity conservation. That funding enabled the initiation of Lak ICAD project as the first major Government/UNDP sponsored project in 1993. That first ICAD project failed to compete with the already established logging company and as a result forced the implementers to consider defeat who then decided to close it down in 1995. This was only two years after it was started McCallum and Sehkran (1996). In discussing the reasons for it's failure McCallum and Sehkran (1996) argue that lessons learnt from the Lak experience should be incorporated into future project designs. Their review on the lessons learned from the Lak ICAD project show that biological significance alone should not determine the selection of conservation sites without equal consideration given to the socio-economic aspirations of the local communities. The authors suggest that cultural and social diversities must be recognised as major obstacles to conservation efforts in countries like Papua New Guinea. Saulei (1993) emphasises this by arguing that conservation models must be compatible to traditional practice of land use that included shifting cultivation, hunting and fishing. More importantly conservationists nowadays should look at how traditional societies protect, conserve and control the harvesting and use of the natural resources and how their social and cultural values have evolved around them.

Besides Lak, there are nine other ICAD projects that have been initiated by the national and international non-government organisations (NGOs). These projects aim to secure biodiversity conservation on communally held land by encouraging community participatory process with the introduction of social and economic development packages as incentives for conservation (James, 1995), see Figure (2). The international NGOs involved in the projects include WWF, Green Peace, Conservation International, Nature Conservancy, and New York Wildlife Conservation Society (WCS). James (1995, pp. 13-19) describes the status of these projects, the implementing organisations and the type of activities promoted by these projects. All of these projects are promoted in partnership with an international NGO except for Kuper Range project promoted by Wau Ecology Institute. In describing the activities of different stakeholders and the status of these projects the author argues that ICAD is not a product but an evolving process, which requires dedicated strengthening. It is not a new classification for protected areas. It is an experimental process designed to achieve and sustain conservation areas; components of an ICAD can address a range of conservation contingencies and interpretations, from sustainable resource use on one end of the spectrum to total protection on the other.
4. 10. 4. Lessons learnt from the ICAD pilot project.
Lessons learnt from the ICAD pilot initiative show that land management requirements of biodiversity protection mechanisms practised elsewhere are not compatible to traditional tenure systems in Papua New Guinea. For instance no one single group owns large areas of land that is continuous and non-fragmented by land ownership of other groups in between. This makes difficult the issue of incentives for conservation land and the issue of who gets what and who holds the position of power to make decisions that might affect the project outcome. McCallum and Sekhran (1997) have also reflected on the following list of major lessons from the failed first Lak pilot project.

**Box 6 Lessons from Lak ICAD**

<table>
<thead>
<tr>
<th>Lack of community input into the design and development plan of the project. The evaluations politely admit that project design was highly technically charged and lacks sensitivity to local social institutions, cultural values and the roles they have on the society.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of adequate linkages and partnership with a wider NGO community with experience in community development ability and community oriented educational skills. The provincial government and its officials were not empowered to make decisions on what was going on with their people.</td>
</tr>
<tr>
<td>Lack of sufficient infrastructure and logistic support as accessibility to urban centres like Kavieng and Port Moresby was very difficult. The central control from Port Moresby made it difficult for the project field team to address issues on the ground from early stage.</td>
</tr>
<tr>
<td>Inability to compete with the development agencies that had plenty of resources to win support from local leadership with better short term social and economic benefits.</td>
</tr>
<tr>
<td>Incentives offered by ICAD programmes must match or exceed perceived benefits from unsustainable short-term development projects such as logging.</td>
</tr>
<tr>
<td>Conservation planning in PNG must be a bottom up approach and not top down.</td>
</tr>
</tbody>
</table>

McCallum and Sekhran (1997) suggest that conservation planning in PNG must be a bottom up approach and not top down. This matter has become obvious in Lak where a top down, remote planning approach is seen not to be sensitive to social, political and institutional factors. This aspect is very crucial in view of the nature of the relationship between the state and civil society. Lessons learnt from the first ICAD pilot project in Lak are identified and addressed in the second ICAD pilot project being implemented in the Bismark- Ramu conservation project and the major working hypothesis for the Bismark-Ramu ICAD project initiative is described in Ellis, (1997, p. 16).

4. 10. 5. Administrative and Political Support for ICAD Initiatives.
The Department of Environment and Conservation was initially set up as an Office in 1974. Prior to this it was under various departments, like the Department of Agriculture and Livestock when some of the legislative Acts like the Fauna (Protection and Control) Act 1966 was
legislated. The initial objective was to have the department deal with the conservation and the regulatory role of biodiversity conservation only. However with the integration of the former Bureau of Water Resources (BWR) it now has three main divisions, Division of Environmental Protection and Pollution Control, Division of Nature Conservation and the Division of Water Resources. Figure 3 below shows the Administrative Structure of Department of Environment & Conservation in 1993 prior to major restructuring in the Conservation Division in order to accommodate the global conservation interest in PNG soon after the Rio UN Conference on Environment, Climate Change, and Biodiversity Conservation among others.

![Diagram of administrative structure of the Department of Environment and Conservation](image)


Figure (3) shows administrative structure of the Department of Environment and Conservation.

The global and national interest to conserve biodiversity with overseas funding started in PNG in 1989. In 1990, Conservation Needs Assessment (CNA) was carried out. The outcome of that assessment was a production of a Map (Figure 1 in Chapter 1) that identified biodiversity hot spots or areas of "very high" and "high" priorities for wetland and forest habitats. Nearly 46% of the PNG land mass falls within these categories. From Papua New Guineas’ perspective it is unrealistic to expect all this area to be assigned to conservation land use in the light of the national need for industrialisation and economic growth. In 1991 the Minister for the Department of Environment and Conservation secured the national government’s endorsement for declaring 20% of the nation’s terrestrial and near-coastal marine areas be managed and maintained as
natural ecosystems and protect the nation's biodiversity. The department was then given the task to locate these sites in each of the nation's 30-40 biogeographical zones (DEC 1989). Immediately following that declaration in 1992, a protected Areas Review Programme was initiated in which WWF & DEC conducted an evaluation of existing protected areas. The results of that evaluation show that the existing protected area system did not adequately represent all the biogeographical zones present in PNG and that most sites are too small for effective long-term conservation of biodiversity. The report also shows the existing conservation areas covered only 23% of PNG terrestrial ecosystem (WWF & DEC, 1992). As a result of this finding, an area prioritisation exercise was undertaken by DEC in 1995. This was done in an effort to identify a potential site to initiate the second GEF-ICAD conservation area project after the first one in Lak, southern New Ireland Province in 1993. Apart from the prioritisation exercise the biodiversity conservation division of the Department underwent administrative restructuring as shown in Figure 4. Besides the Department of Environment and Conservation also initiated the Biodiversity Rapid Assessment Programme (BioRAP) that involved the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Centre for Resource and Environmental Studies (CRES) at the Australian National University, the Environmental Resources Information Network (ERIN), and the Great Barrier Reef Marine Park Authority (GBRMPA). BioRAP is a twelve-month project aimed at assisting in the initial steps of assessing priority areas for the conservation of biodiversity at the national level. This programme (BioRAP) was funded by the World Bank and AusAID as part of the institutional strengthening project to cater for the country's ICAD initiatives (DEC 1989). The Department has at numerous times undergone various structural changes to various divisions but the Conservation Division as shown below has not been affected by those changes and is still the same in 2004.
4.10.6. Legislative framework for Biodiversity conservation and environmental protection.

In order to implement the constitutionally based policies, various laws have been introduced. These laws provide the basis for the establishment of protected areas such as National Parks, Nature Reserves, Historical Sites, Provincial Parks, Wildlife Management Areas, and Conservation Areas. The Environmental Division administers two sets of legislation, the Environmental Planning Act, 1978 and the Environmental Contaminants Act, 1978. The Division of Water Resources only administer one Act, which is the Water Resources Act, 1982. The recently introduced ICAD conservation initiatives in the country fall under the responsibility of the Division of Nature Conservation (Figure 4). This division administers the National Parks Act, 1982, Fauna (Protection and Control) Act, 1966 and the Conservation Areas Act, 1978, in addition to the National Executive Council directive call for 20% of the total land area to be set aside for protection (IUCN 1991, AUSAID 1995; Whip, K1996a; Saulei and Genolagani 1998). Kwa, E. L. (2004) recently had put together, these various Laws relating to conservation of biological diversity in Papua New Guinea in sequential order, with relevant ammenments.

**Fauna (Protection and Control) Act, 1966.**

Biodiversity Conservations areas now declared under the ICAD projects fall under the Fauna (Protection and Control) Act, 1966 as Wildlife Management Areas (WMA). The main piece of legislation specifically protecting wildlife is the Fauna (Protection and Control) Act 1966. This
piece of legislation provides for the declaration of protected fauna, which can only be hunted by the indigenous inhabitants, and then only by traditional methods and for traditional purposes. The Act also provides for the establishment of sanctuaries, protected areas known as Wildlife Management Areas. Under the *Fauna (Protection and Control) Act*, which is the PNG-developed conservation model, land remains in the possession of the customary landowners who then form their own management committee which makes rules to control hunting and gathering of the forest products for traditional ceremonial purposes within the designated boundaries of the protected areas (Eaton, 1985; 1986). The Act in essence involves the customary landowners to protect the biodiversity and management of their resources. The procedure for the establishment of WMAs is fully described by Kisokau and Lindgren (1984), Kwapena, (1984), Asigau (1989) and Babo, (1998).

The conservationists argue that the existing conservation model under the Wildlife Management Areas system did not cover large areas, and is not representative of various biological zones (WWF&DEC, 1992). At present the National Parks Act, 1982 replaces the amended 1971 Act, which in turn supersedes the original National Parks and Gardens Act, 1966 (IUCN, 1991).

**Conservation Areas ACT 1987.**

The Conservation Areas Act 1987 has similar objectives to the National Parks Act but is more comprehensive and, to some extent, remedies deficiencies in the other legislation. For example, provisions include the establishment of a National Conservation Council to advise on the identification and management of protected areas, and the formation of a management committee for each area to be responsible for the production of the management plan. This means conservation may be established on land under public, private or customary ownership. The Act awaits implementation due to financial constraints (SPREP, 1985b).

4.10.7. Significance of customary land tenure and community participation in biodiversity conservation.

The traditional tenure systems permitted limited transfer of usufructuary rights. Secondly the usufructuary rights were collectively controlled to meet social and environmental goals. This is similar to the modern concept of a quota system. As discussed in Chapter 2), authors like Ault and Rutman (1979) cited in Perrings (1995) believe that traditional rights and patterns of resource use have been static. However, this belief is disputed by Bruce (1988) cited in Perrings (1995). They argue that work in sub-Saharan Africa confirms that traditional rights have evolved in response to changing institutional, economic and environmental conditions. Amhed and Doeleman (1995, p 108) believe this is consistent with the historical tendency observed
elsewhere for property rights in resources to develop when the gains from so doing become manifestly larger than the costs.

Land Tenure and Resource Ownership Rights in the Pacific and in particular PNG have been discussed by various authors, including Eaton (1985), Kuluah (1988), Baines (1989) and Holzknecht (1994b). Baines (1989, p. 273) argues that traditional natural resource management systems of the indigenous communities of the Pacific Islands, based on communal property concepts, is continuing to function in the face of many changes in the circumstances in which they operate. The author also raises concerns about the viability of such indigenous resource management systems against the development pressures put on the communities to accept changes in their societies and shift towards the cash-oriented market economy. Similar pressure is now being applied to the communities by the conservation movement. Many South Pacific islanders possessed and continue to possess a wealth of environmental knowledge, including traditional conservation practices of many South Pacific cultures that were once highly effective. This knowledge could be supported or adapted to modern conditions (Klee 1987 p. 193). The types and importance of marine conservation in Oceania dwarfs all other forms of traditional conservation practices, as one might expect of peoples who live along the margins of the sea. Indigenous systems for the administration and allocation of land and sea resources have long prevailed in the Pacific region. There is a strong interdependence between an individual and his or her group and the land with which the group is traditionally associated (Baines 1989, p. 273). According to Baines (1989, p. 275).

“It is difficult for persons of western cultures to understand this close identification of Pacific islanders with their resources. Land and reefs are not viewed as commodities to be sold or exchanged, although resource ‘custodians’, ‘guardians’, or ‘owners' might grant certain use rights. The word owner, though widely used, is misleading since it indicates a possessive and dominating relationship, rather than the sense of an individual having an intimate association with land, reef, and all that grows upon them.”

Kuluah (1988, p. 62) argues that given the historical and cultural weight on the traditional ownership of forest life in PNG, the state under no circumstances can assume upon itself the ownership of the forest life. Forest life like land, belongs to the traditional rightful owners. The manner in which the present state of PNG goes about acquiring or assuming to itself the right of ownership of land, forest and other natural resources is at best foreign in origin and at worst alien. The function and the responsibility of the state is to provide guidance, protection and assistance in both the preservation and the exploitation of the natural resources such as forest to improve social services at all levels of the community.

Only a minority (28%) of the population live in urban centres and depend on wages. It can therefore be expected that given the market opportunities and technology to extract the resources on their land, desire for economic development will be obviously high which means any attempts to prevent this right will not survive. In pursuit of such development ideals, many landowner groups in PNG have permitted logging and mining activities in exchange for economic and social benefits offered by the companies involved (Eaton 1992).

Eaton (1992) claims that local people often make these decisions to allow companies access to their traditional lands because of the offer of easy cash benefits and an opportunity of getting other services like roads, schools and aid posts. If conservation-oriented development projects are to succeed, the initiatives offered must match the substantial benefits available from other activities. Kula and Jefferies (1995) in their policy paper on introduction of ICAD projects in PNG to the Department of Environment and Conservation also emphasise that if conservation is to be successful in PNG it must reach beyond enforcement activities and address the social and economic needs of the communities in and around a designated conservation area and allow greater participation by the local communities.

In the recent report of ICAD practitioners in Papua New Guinea, several authors have reported that perceived economic enterprises, expected to generate much needed cash, are not at all working. According to Kula (1998, p. 121).‘For a long time we have claimed that economic incentives for conservation such as eco-tourism, butterfly farming, crocodile farming and other eco-development activities will improve the lives of the rural people. We must now agree that it is easier said than what is achieved.’ Kula (1998) believes that bringing such perceptions to the community have created more problems without having any substantial benefit to these communities.

Saulei and Genolagani (1998, p. 9) argue that.’empirical evidence at this stage of ICAD demonstration projects suggest that ICADs may not work in PNG, mainly due to the fact that not enough financial commitment is made to help the local communities to achieve tangible economic and social benefits.’ The above view is supported by Sengo (1998) and Van Helden (1998), who argue that social and economic incentives are important and should be based on what the people perceive as tangible and beneficial.
4.10.9. Funding and Financial Transparency

To initiate ICAD projects in Papua New Guinea, the government of PNG secured US$5 million of the US$10 million initially applied for. This funding has been to initiate two pilot projects. After the earlier closure of the Lak project field program, the Bismarck-Ramu project was officially begun in 1995. Additional funding to this project has been research specific, keeping a low profile on the social and economic incentives issues (Ellis, J A, 1998; van Helden 1998).

The exact total amount of funding secured for each of the ten ICAD projects nationally between 1993 to 19998 is not known due to the secrecy policy of NGO’s, failing to release funding information even for research purposes. According to the researcher’s own understanding, the main funding organisations that sponsored biodiversity projects 1993 to 1998 included the Biodiversity Conservation Network (BCN) funding which ultimately comes from USAID. Biodiversity Conservation Network contributed an amount of US$355,487 and the project proponents contributed a further US$152,575 to make a total amount of US$508,0620 for the LakeKamu projects for the period 1st August 1995 to 1st July 1998. The Crater Mountain project received US$498,107 to match its own means of US$76,950 which made up the total of US$575,057 for the same period while the East New Britain eco-timber project received from BCN US$451,738 to match project’s own means of US$559,825; the total for this project was US$1,011,563 for the period 1st October 1995 to 30th October 1997 (BCN, 1997).

Other major funding agency from the United States of America has been the MacArthur Foundation. The MacArthur Foundation sponsored ICAD projects which include Kuper Range, Kamiali ICAD, Crater Mountain ICAD and the Hunstein ICAD initiatives. Kuper Range project received US$320,000 between 1990-1998 to match its own means of US$100,000. Kamiali project received similar funding for the period 1995-1998 on top of about US$2 million from Inter-Church Cooperation Organisation (ICCO) through the Netherlands Government for the same funding period 1995-1998. In addition VDT secured US$85,000 from the World Bank under the rural development grant scheme (Chapter 5). The Oro ICAD or Butterfly research project was funded by AUSaid for the amount of US$3.5 million. This project was terminated in 1998. In general the information on funding sources is difficult to verify in all the ICAD projects as some projects get several sources of funding for the same projects, in some cases to make up own means to get other grants. It is not clear how much ICAD projects such as Kikori ICAD, Maisin ICAD and the Bismark Ramu ICADinitiatives received respectively.
4.10. 10. Benefits of community participation in conservation and development in PNG.

Benefits of community participation have been discussed in (Chapter 2. under 2. 3. 3.). However it is crucial to stress that communities in traditional societies live very closely in small groups with tight communal control over the resource base. In contrast, the communities in western societies live with very little contact even with their neighbours. As a result it is often very hard for western-trained, urban-based resource managers and scientists to understand and not to overlook the potential of sustainability of resource management in these societies (Berkes 1989).

In a situation where the land is communally owned, conservationists should ensure that the resource user rights and expectations in return for their land are clearly understood (Saulei and Genolagani 1998). Besides conservationists should incorporate as much as possible the traditional resource management knowledge and practices based on local social and political institutions and want as benefits (Sengo 1998). Traditional institutions should be promoted where the local elders are encouraged to play a major role in the decision-making processes (Saulei 1993). Conservation models introduced in the country that do not recognise traditional practices and knowledge of dealing with the management of natural resources of the local area are likely to be met with resistance. In fact the feeling of resistance has already been observed, expressed and extensively discussed in a report of the presentations of the second ICAD conference (Saulei and Ellis 1998). Eaton (1997), in discussing the relevance of Wildlife Management Areas (WMA) system in PNG, also argues that to some extent conservation initiatives under the existing Wildlife Management Areas concept, which is aimed at giving the landowners the management and enforcement responsibilities of the conservation areas, have been successful in areas like Bagial Karkar Island and the Pokili WMA in West New Britain. Grant (1996) has discussed the issues and process of community participation and community entry. Although PNG has spelt out in its National Constitution and the white paper containing the nation’s eight aims setting out the strategies on the type of economic development it wants for its people, the country’s leadership has continued to overlook their responsibility to defend the very constitution they are elected to uphold on behalf of the people of Papua New Guinea. Instead the successive Governments have been misleading to pursue the outdated development concepts of capitalist economy based on the massive reliance on the natural resources. Unfortunately, Papua New Guinea has taken this path not knowing that the publication of World Conservation Strategy (IUCN 1980) and the report of the World Commission on Environment and Development (Brundtland 1987) was about to create a new global order that in fact embraces the development and conservation model that reflects the very ideals raised in the country’s constitution and the directive principle. Effective
community participation is a must for PNG ICAD projects to become successful. Lessons from Lak project shows clearly that sufficient background information on the social institutions, community history, social and political structures, economic development opportunities and potential threats for various forms of development are important considerations to be included in the actual project design (McCallum and Sehkran, 1997).
CHAPTER FIVE


Approaches and Definitions.

This chapter presents the analysis of the findings of the three (ICAD) projects included in the case studies of this research. The chapter looks at the historical background of how each of the projects is conceived, planned and implemented by the respective organisations and their stakeholders. The analysis is based on the key research and other research questions aimed at understanding various participatory roles, played by the different stakeholders included in each of the project and the types of social and economic incentives packages being proposed for the resource owners.

In particular the analysis attempts to show the viability of the types of economic incentives and social and economic programmes and how they aim to convince these communities not to accept seemingly bigger and better benefits from the potentially large-scale development threats proposed for the same area. Benchmark criteria as discussed in Chapter 3 (p. 85) are applied to each of the case studies to establish if the perceived activities, especially the perceived benefits, have actually been achieved on the ground. Other aspects analysed in this chapter include the projects’ present and future administrative plans, and the measures taken to train the local leadership to assume management responsibilities in both the conservation tasks and the social and economic development programmes.

The term stakeholder is used in the context as defined by Born and Sonzogni (1995), which describes stakeholders as people and organisations with a stake or concern in the management outcome of these ICAD projects. In this case they include participating non-government organisations (NGOs), landowners or resource owners, resource users, community leaders, church leaders, ward councillors, government officials at national and provincial levels and concerned individuals. In essence, Chapter 5 presents the findings from field interviews conducted with the stakeholders based on key research questions and other questions (see Chapter 1 under 1.5.2, p. 12). The term landowner is interchangeably used with resource owners.
CASE STUDY ONE:
THE CRATER MOUNTAIN INTEGRATED CONSERVATION AND DEVELOPMENT PROJECT (CMICAD)

5.1. PROJECT BACKGROUND

5.1.1. Physical Characteristics
Crater Mountain Wildlife Management Area (WMA) also known as the ICAD project area covers the territories of two language groups, the Gimi and the Pawaia speakers who occupy parts of the three provinces, the Chimbu, Gulf, and Eastern Highlands. The project encompasses an area of approximately 2700 square kilometres of which 98 percent is covered by primary forest stretching from the lowland rainforest of Purari at 50 m above sea level to cloud covered montane forest of the Crater Mountain at 3,100 m above sea level (Alcorn and Beehler, 1993).

Project Locality.

Figure (5) shows the location map of the CMICAD project in PNG.

Local climatic conditions.
The local climatic conditions vary between the two project sites, the lowland and the highlands regions. The lowland areas near Wabo, which is about 50 m above sea level through to Haiya at 500 m above sea level, are very humid often rising to over 80 percent humidity with a daily temperatures range of between 25-30 degrees Celsius. The rainfall in the lowland area is influenced by two factors, the south-easterly wind system from the Gulf of Papua and the orographic rainfall descending from Crater Mountain Ranges. The Gimi country of the highlands area has cool and pleasant climate with daily temperatures ranging from 16-20 degree Celsius with daily humidity of less than 60 percent. Maimafu at around 1,900 m above sea level often experiences a typical high altitude climate of cloud-covered skies for most part of the day and cool nights especially during the non-rainy seasons, which is often during the months June and August. A daily misty condition is typical especially in the mornings and in the evenings.

Ecology and Biological Significance

The ecological and biological significance of this project site is the inclusion or representation of various ecosystems from coastal marine marshland to swampy sago and nypa palm dominated environment through to a typical lowland tropical rainforest all the way to cloud-covered montane oak forest. The number of endangered species found in the area includes over seven species of birds of paradise, New Guinea eagle, southern crown pigeon, Bolens python and a mountain duck (Salvadori teal). The mega fauna in the area include both the mountain dwarf cassowary and the southern cassowary, spotted cuscus, silky phalanger, forest wallaby and brash bush turkey. Crater Mountain area is included as one of the biological hot spots in the country (Figure 1 Chapter 1).

The Project People (Ethnicity, territorial history and relationships).

The two ethnic groups that occupy the Crater Mountain ICAD project area are the Pawaia and the Gimi people. The Gimi people are from the Easten Highlands province. They occupy the mid-montane area of the north eastern and western part of the Crater Mountain area, while the Pawaia people occupy the southern lowland or as often referred to as the coastal part of the conservation area. The Pawaia people are semi-nomadic who basically live off the land with make-shift gardens built around sago patches while spending most of the time sago making. Sago is their main diet, which is more or less supplemented through forest vegetables and game. They lived in small family units consisting of up to 20 people and roamed this vast lowland forests until they were "discovered" in the 1970s towards the end of the colonial era. For administrative purposes they were rounded up and re-settled in a resettlement camp on land belonging to the Haiya community. The Haiya people themselves are of Pawaia ethnicity. There are now between 600-800 Pawaia people living at the Haiya resettlement camp also known as “Haiya mission
station” run by the New Tribe Missionaries who have moved into the area to study the local language and translate their version of the Christian Bible, which can be read by some of the local people.

In terms of administrative purpose the idea to settling these people in a resettlement camp was a way forward, particularly to assist them into adopting western civilisation through the provision of basic government services like the school, the health centre and an airstrip to link up with the outside world. In terms of sustaining their subsistence livelihood, these people were forced to leave their traditional land and the food resources they rely on. The field findings confirm that because they do not have the food resources they continually move between the Haiya resettlement camp and their traditional land, as the land surrounding the station belongs to the Hayia people and there is not enough land close by for them to be given access to make gardens (Johnston, 1997, pp. 395-396).

The Pawaia People may best be described as a patrilineal society that is built around a male leader with as several families forming a clan. Leadership structure is simple with little leadership control and little mobilisation and coordination of the community and control over the use and management of natural resources. Single-family units may be widely dispersed over a large area with few occasional meetings. Traditionally Pawaia people traded shells from the coast, lowland cassowary chicks, plumes of various lowland parrots, plumes of Regina bird of paradise and tapa cloth processed from the bark of a tree. They traded these articles with the Gimi people in exchange for string bags, head-dresses, bows and arrows, and the traditional salts which the Gimi people obtained from the Maruwaka area of the eastern highland. Issues relating to socio-economic conditions of the project area has been discussed in Chapter 3.

The Highland Gimi People

The Highland Gimi population consists of 3,000 members that live in a socially structured society that is built around a traditional headman or male leader as a typical highland society of Papua New Guinea. In this society a leader must be a skillful warrior, know how to distribute resources amicably to his subordinates and have the charisma as well as the ability to mobilize his members for a tribal fight to defend their land if necessary. He initiates special events to settle disputes such as compensation payments, and coordinates ceremonial activities to create the occasion to bring together his clan members and to publicly announce certain decisions regarding the well-being of his members. During cultural activities each member of the clan contributes food, pigs and other goods to demonstrate the wealth and power of the clan.
The Gimi people are a cohesive communal society whose members will provide support in time of need, defend, fight and die for his clansman if necessary. This mutual bond and practice makes tribal fighting a normal practice in this typical highland society. They are subsistence farmers whose main food crop is sweet potato. Gardening activities are slowing moving up hill and, due to a population increase in recent years, much of the oak forest has now been cleared for gardening purposes. Gardens are made not only for the human population but also to feed the increased number of pigs of clan members, which are raised to demonstrate their wealth and status. The relatively rigid social structure of the Gimi people with a recognized clan leader that exerts high control over its clan members makes communication between the Gimi community and outsiders including the project field officers very difficult.

Tok Pisin (Melanesian pidgin) is not fully understood or spoken well. The Gimi communities run trade store business and are engaged in maintaining small family-based coffee plots and raising of pigs as means for raising cash used for paying for the education of their children and obtaining store goods. Eastern Highlands until recently has been the major coffee producing province in the highlands or the country. Recently Western Highlanders have slightly taken over the lead in coffee production.

Landownership and Tribal relations

The Gimi People occupy the northern half of the wildlife management area and live in the villages of Herowana, Ubaigubi and Maimafu and located in the Eastern Highlands province. The Pawaia ethnic group owns most of the conservation area. This ethnic group occupies land areas that come under Chimbu and Gulf Provinces. Individual communities of Pawaia ethnic background speak different dialects but share similar culture and land use practices. Traditionally each group fought with each other to possess more land for their tribe.

Development Activities

There are no major economic development activities seen in these communities at present apart from the proposed mining and the logging project, which will be discussed later. Traditionally the Pawaia People traded shells from the coast, lowland cassowary chicks, plumes of various lowland parrots, plume of Regnina Bird of Paradise and tapa cloth processed from the bark of a tree with the Gimi people, in exchange for string bags, head dresses, bows and arrows, and traditional salts which the Gimi people obtained from the Maruwaka area of the eastern highland.

5.1.2. The Crater Mountain Integrated Conservation And Development Project (CMICAD)
5.1.2.1. PROJECT HISTORY

The Crater Mountain conservation initiative dates back to 1973, when two Australians, namely David and Gillian Gillison, arrived to study the Gimi people of Ubaigubi. Gillian Gillison developed a particular interest in the intricacies of cultural rituals derived from avian life, in particular traditional dances depicting the courtship display of male birds of paradise. After the production of a documentary, fascination over the influence of birds of paradise on the local cultures turned to concern over the reckless killing of these birds which fetched high prices on the markets in Goroka and Chimbu provinces. These personal interests and concerns led the Gillisons to campaign globally to raise funds to protect these birds and their habitats. This campaign eventually enlisted the support of New York Bronx Zoo and the New York Zoological Society, which are it's affiliates.

The Bronx Zoo is one of the major zoos in the United States and actively involved in the captive breeding of endangered species. It saw this as the opportunity to establish its own research base in New Guinea similar to that of Hawaii-based Bishop Museum and the Smithsonian Institution at Wau, Morobe Province, Papua New Guinea where they set up the New Guinea Field Research Station which later became the Wau Ecology Institute, a regionally very significant research body. By becoming aware of this possibility the Bronx Zoo initiated research grants to support Gillisons's research at Hubaigubi and funded the Australian couple as their link on the ground. This funding enabled in particular David Gillison to travel to each of the Gimi communities and talk to the people about the importance of protecting the birds of paradise. His effort finally convinced the Hubaigubi elders to allocate a land site in the forest to set up the first research base. When the research base was completed the collaborating sponsors, Bronx Zoo, New York Zoological Society and the Wildlife Conservation Society of New York began to contact other collaborating institutions to sponsor researchers to come to Crater mountain area to conduct field research.

While working out of this area they saw the opportunity to set up a lowland field station as a second research base. The presence of the researchers at Hubaigubi and the short-term employment opportunities they were creating for field assistants and porters further attracted the interest of other Gimi elders in Herowan and Maimafu. This interest was further boosted when the project leader was able to attract the interest of a Goroka-based businessman Mal Smith and his Pacific Helicopter Company to go into eco-tourism business partnership with the Hubaigubi community. After ensuring this partnership, wealthy Americans who were members of the Bronx...
Zoo, New York Zoological Society and the New York Wildlife Conservation Society were encouraged to travel to New Guinea to visit the conservation project, stay at the guesthouse and experience the people living in their traditional lifestyle. These tourists were flown in from Goroka by helicopter to Hubaigubi where they stayed for a few days before being flown out again. Tourists also brought cash into the community by buying artefacts produced by the local people.

The tangible economic opportunities now seen in Hubaigubi community eventually won the interest of other Gimi elders, to also allow their forested land to be included as part of the Wildlife Management Area. The Gillisons hired male youths from other Gimi areas to come and observe what was happening at Hubaigubi. After a short attachment they were employed and sent back to campaign and further solicit the endorsement of their elders for the conservation area to expand and to include their forest. The US Peace Corps volunteers later joined this effort by local male youths from Gimi community to add momentum to the conservation drive to achieve the first phase of the Wildlife Management Area (WMA) on land owned by the Gimi people.

The establishment of the first phase of the WMA and the obvious alternative economic opportunities that were now becoming available among the Gimi people attracted the Pawaia people who occupy the southern lowland area of the conservation area. Consultation and conservation awareness with the Pawaia community began when researchers like Andrew Mack, and Debra Wright-Mack moved into the lowland forest to conduct research in the area and began exploring the possibilities of setting up the second conservation site but with the intention to build the first major Field Research Station at Wara Sera, a lowland area owned by the Pawaia community. This field station is between Haiya mission station and Herowana and was built in the 1980s (Ericho 1999, unpublished). This vigorous effort for conservation and economic development boom at Hubaigubi was brought to ruin when the community in 1986 burnt down the eco-tourism facilities and eventually forced the Gillisons and other expatriates to leave the area. The incident happened after the WMA management area was officially declared, and tourism business was targeting the rich members of the conservation groups and was beginning to see results of their effort.

The reason for such an act of resentment by the community is not fully clear however social tensions within the community as a result of the campaign seemed to have played a role. The campaign effort which initially had received recognition and the moral support of the elders shifted when elders’ names were not included in the list of names of people to be on the Wildlife Management Area Committee, as required by law. Instead the young males and members of expatriate staff group nominated themselves to the committee and made rules as to
how to protect the species under threat and protect the area; they sent the committee list away to the Government for approval. Although these efforts led to the first part of Crater Mountain conservation area to be officially gazetted as a Wildlife Management Area (WMA) in 1986 under the Fauna (Protection and Control) ACT 1966 of Papua New Guinea, this breach of requirement for the selecting of Wildlife committee members might well have been its downfall.

Other reasons for failure may lie in the perceived benefits. It is understood that people were not seeing the financial benefit from their land. The business was expatriate run and controlled and they were led to believe that their land was being taken away from them and earning money for other people.

The Second Conservation Movement (CMICAD since 1993)

The result of the incident and the obvious set back at Hubaigubi encouraged the Pawaia people to support the establishment of the second field research station on their territory. After the first attempt, many researchers including the sponsors, Bronx Zoo and the Wildlife Conservation Society of New York saw the need to incorporate a locally based non-profit research and conservation based organisation to take over the responsibility of running the project. This structure would allow the local NGO to deal with local issues and still maintain the official link for the organisations involved in the United States. The Department of Environment and Conservation was approached to become the local sponsor and partner in Papua New Guinea. This organisation is now known as the Research and Conservation Foundation of PNG (RCF). The organisation was initially under the auspices of the former Secretary of the Department of Environment and Conservation who later became its first director in 1993 after it was fully registered as non-profit research oriented organisation. Prior to 1993 the lead agency of this project was the Wildlife Conservation Society of New York. It was only in 1994 that the Research and Conservation Foundation of Papua New Guinea for the first time with its own director became the local partner for a joint project submission to the Biodiversity Conservation Network (BCN) funding.

The BCN funding enabled the former project proponent and the leader of the Wildlife Conservation Society to transfer the project responsibility to its newly established organization (RCF) to pursue the conservation ideals under the newly introduced ICAD model. The Crater Mountain Research and Conservation project was recognized by the Government for its interest in the following,
• To pursue the research and conservation objective by integrating development aspects and taking on a broader approach to address the social and economic well being of the various communities, of the two ethnic groups in the project area.

• To establish links with the local communities, and to ensure that the project proponent is sensitive to the fears and concerns of these two communities.

This integrative programme approach is reflected in the project’s business Plan (Figure 7) and programme objective (Box 6) for the Crater Mountain ICAD initiative as submitted to the Biodiversity Conservation Network in 1995. The project has a community participatory mechanism put in place to administer the project. The project committee is mainly made up of former male youths employed by the researchers as field assistants and carriers who have been selected to represent their respective clans on the committee. This is because it is hard to find replacement of young people who are willing to leave their families to live away from them. Secondly it is hard to find people who are able to speak pidgin and a bit of English to be able to converse with foreign researchers who do not speak the local pidgin. The overseas project partners who work with the local NGO RCF to implement the project through the wildlife committee know that the youths selected are also the landowners of the specific area. The project administrative mechanism to administer the project is shown below in Figure (6).

**Project Administrative Structure and funding arrangement**

![Project Administrative Structure](image)

Figure (6) Shows Funding & Administrative Structure of CMICAI

Under the new partnership approach the Crater Mountain ICAD initiative seeks to combine, land-use planning, biodiversity conservation, capacity building, and enterprise development. To achieve the integration of conservation with development the RCF has a new project approach,
especially with regards to local involvement in both decision-making and enterprise participation. This is reflected in the goal and objective as shown below (Box 7).

<table>
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<tr>
<th>Box 7: Goals and Objectives of Crater Mt. ICAD Initiatives.</th>
</tr>
</thead>
<tbody>
<tr>
<td>➢ To increase the average annual per capita income of clans (landowning groups) from the establishment of locally owned research and eco-tourism enterprises in the WMA;</td>
</tr>
<tr>
<td>➢ To increase the level and range of understanding and skills of community residents who work in the research and eco-tourism enterprises in the WMA;</td>
</tr>
<tr>
<td>➢ To increase the number of decisions and actions which integrate the results of enterprises, biological and socio-economic monitoring programs in a WMA management plan;</td>
</tr>
<tr>
<td>➢ To increase national involvement and human resources exchange within the WMA as teachers, trainers and consultants working towards conserving natural resources in the WMA.</td>
</tr>
</tbody>
</table>

5. 1. 3.  PROJECT FRAMEWORK ANALYSIS

5.1.3.1. Identification of Project Phases

In order to better understand and evaluate the outcomes of this project a framework of the project is being developed and discussed. Components of this framework will be assessed by a benchmarking system, which was developed for this study. At this stage it seems to be particularly useful to develop a timeline and progress of social engagement of the community with this new vision. It would appear to be that project was developed during a number of phases and stages. Like every other donor-driven country-based activity, the duration of donor funding into the ICAD model of conservation drive is not possible for project proponents to determine.

PHASE I: The First Conservation Movement

Three clear stages can be identified for the first movement. These stages lasted around 10-13 years and were completed with the development of an eco-tourism venture. They can be described as follows.

Stage 1: Enlistment of Elders

During the first stage, contact between the Hubaigubi community and an Australian photographer, David Gillison, was made in 1973. His association with Gimi elders lead him to document the displays of birds of paradise from which the cultural theatre of this community had evolved. The bond and friendship the researcher built with these male elders led him to meet with other Gimi male elders from Maimafu and Herowana. It was through these meetings that he suggested to the elders to consider the protection of the forest in order to save these birds.
Stage 2: Enlistment of Youths
The younger male members of the community who were sceptical were hired to be involved with the researchers. Through the course of their association, they also began to see the importance of conservation and of course the benefits it might bring to their position. In particular, the notion of scientific tourists who would to continue to come to their area to see, study their forest, bring money and create job opportunities for them was an attractive one.

Stage 3: The Conservation Awareness Programme
The conservation awareness program carried out by the hired male Gimi youths of Hubaigubi, Herowana and Maimafu won the endorsement of their elders. The alternative of not conserving the forest to save these birds meant they would lose their cultural duty to protect these resources, a duty they had inherited from their ancestors. Tasked with this responsibility of duty, the elders gave their consent for the conservation of their forest including the birds of paradise. This is when Gillison selected the youths representing various clans of the respective Gimi community and others to become members of the Wildlife Management Area Committee as required under the Fauna (Control and Protection) ACT 1966. Their names were submitted to the Minister for Environment and Conservation as legitimate landowners and leaders of their respective clans together with the enforcement rules to protect the endangered species. In 1986 the Gimi area of the current Crater Mountain project was declared as a Wildlife Management Area.

PHASE II: The Second Conservation Movement- CMICAD
A phase two of this project began when, after the rather disastrous end of the first one, a similar relationship developed between the Paiawan community and the next generation of researchers, Andrew Mac and Deb Wright. This phase has now been underway for 16 years.

Stage1: The Enlistment Process
These field researchers operated from 1987 onwards on the southern border of the project (Johnson,A 1997, p. 139) and were supported by an increasing number of researchers, all influencing the thinking of the people about conservation. In particular Jamie James, a researcher funded by the Wildlife Conservation Society of New York, followed the approach taken by Gillison by visiting and talking to respective groups of Pawaia community and seeking their consensus for a research-based conservation approach to proceed.
Stage 2 and 3: The Conservation Campaign

This community consultation and awareness seeking took the same approach to the previous phase. The community perception of benefits to be derived from conservation objective convinced resource owners to agree to support the initiative. Their significant part in the project planning and implementation was to agree to surrender their right of land use but not ownership and their resources to outside parties in anticipation of perceived social and economic development packages presented to them through the community awareness campaign. This campaign had a greater influence on the respective clans of the Gimi and Pawaia community’s decision to include their land as a Wildlife Management Area. The biggest distinguishing factor however between the first and second conservation movement however was the establishment of the Wildlife Management Area Committee. This committee was to provide a mechanism to better present various groups and demographic segments within communities. Their structure and role is described in some detail in the following chapter.

5.1 3.2. Stakeholders and Stakeholder Relationships

The Internal Stakeholders

The relationship between internal stakeholders was formalized by the establishment of The Wildlife Management Area Committee (WMAC) which was established as the community based project implementation mechanism involving respective clan groups in the decision making process. Usually called the mouthpiece of the community, these committees are also seen as the link between national and overseas partners with the respective community on the ground. They have been selected to represent the views, concerns and wishes of the communities of the Hubaigubi, Maimafu, Herowana, and Haiya all of whom owning tracts of the WMA. The four areas in the WMA have committees consisting of individuals (male youths) representing their clans in that project area. A field officer coordinates each project area and it is his duty to pursue the project's overall objective with the local committee members of his area.

The project proponents convene an annual meeting to bring together committees from the four project area to review past programmes, discuss issues, concerns and reach new resolutions for the following year. The programmes offered to respective communities are identical for each area. It is expected that they be implemented by the WMA committee members, under the guidance of their respective project officers located in their area. Their perceived role involves implementation of decisions reached during the annual general meeting, enforcement and monitoring of the conservation area. It is the committees’ responsibility to initiate income generation opportunities for their community based on what the project proponent has
recommended. These activities are discussed under the objective of the *Crater Mountain ICAD project (Box 7)*.

The involvement of the community who are non *WMA Committee Members* is nil or is not clear and is only obvious under the social and economic programme incentive activities. How the communities of the two respective ethnic groups are perceived to participate in the development of Crater Mountain ICAD project is presented in Table (2) below.

**Table (3) showing participatory roles, role characteristics and problems of various members of the community in the CMICAD project.**

<table>
<thead>
<tr>
<th>Ethnic Groups</th>
<th>Stakeholders</th>
<th>Participatory Role Played by Various Members of the Crater Mountain ICAD Project Community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pawaians</td>
<td>Adult Males</td>
<td>Gave their consent for the conservation project to include their forested land. Mainly tendering their morale support in anticipation for the delivery of goods and services. Never anticipated their land to come under legal framework of WMA that recognized young committee members as official leaders on land matters in their community.</td>
</tr>
<tr>
<td></td>
<td>Adult Females</td>
<td>Much more concerned with daily subsistence and house keeping activities. Only involvement is production of string bags for sales at the gift shops.</td>
</tr>
<tr>
<td></td>
<td>Adult males</td>
<td>Major players in this project are the young males. Prior to being selected or in this case appointed by expatriate facilitators to be on the WMA they were paid to travel to their respective communities to discuss about protecting their forest. Especially being the only sector of the community that can speak Tok Pidgin and ability to get around with outsiders especially expatriates coming into their community to renew their campaign for purely research based conservation project to go ahead. Wildlife Management Area Committees. Young male members of the community who have been selected to represent their clan on the basis of their campaign effort on the WMA committee were expected to play the following roles; Attend workshops and implementation planning meetings; Liaise between clans and project proponent (views, concerns) Enforce conservation rules and collect fines; Initiate social and economic activities in their communities under program;</td>
</tr>
</tbody>
</table>
Legal representation of landowners to WMA committee.

Female youth members within the Pawaian community are not involved in many activities mainly due to cultural restrictions and communication difficulties. There is little differentiation between old and young female members of the community.

Male adults among Gimis command leadership and stewardship and control natural resource management. The realization of the rapid decline of birds of paradise and the seeking of outside assistance and protection consent was their major role.

Adult females’ role is limited but a more significant change has occurred where a female now sits on the Herowana WMA committee.

Planning and Community networking was left to the youth (males) and expatriate facilitators. Young females are involved in this also. This made them become the main players representing their respective clans within their communities.. Their roles are;

- Community awareness campaign for resource protection;
- Field assistance to researchers and Committee representation on the WMA committee.

The Inclusion of External Stakeholders

In many traditional societies in PNG where ownership of natural resources and the decision-making process is often reached on a collective basis, each society or ethnic group has developed a system of protocol required to reach major decisions that would ultimately affect their respective society. In some societies the right to influence a decision especially on land matters is earned by contributing more than ones’ share towards a common cause such as contributing more pigs towards settling land disputes for compensation payment to opposing clans. The other is inherited by being born as a first female or male of a clan leader depending on whether society is maternal or paternal.

In modern PNG society, consultation has started to reach beyond the traditional community members. Churches play many indirect roles in the lives of many community groups. Church pastor’s views, are considered important even if they are working with different tribes and they are often consulted. If there is any government influence or involvement in a community it is usually through the district secretary or ‘kiaps’ as they are still referred to by most rural communities. The Office of the district secretary is now often briefed and made aware of what is
happening in the community by a village councillor. The most recent stakeholders are now **Non Government organisations** that often present themselves as representing the communities and promise to provide the social and economic benefit that is often not provided by the government. In this way a number of quite different external players have started to influence tribal communities. Their respective roles are summarised below in Table (4).

**Table (4) showing participatory role played by various external (national and outside) Stakeholders of the CMICAD project.**

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Description of Participatory Role.</th>
</tr>
</thead>
</table>
| Church (international) | Churches in PNG have significant but often *behind the scene* influence on the lives of many rural communities in the country. They have been present in the area before the ICAD initiative started. Most communities view expatriate missionaries of Anglo Saxon origin with a high degree of respect. If a church encourages conservation the community will give its unwavering support. Other roles played by church in this project includes:  
  - Control of air services and assistance to locals for airstrip maintenance  
  - Running of Schools and clinics (recently government is doing this in some cases)  
  - Provide adult literacy courses (e.g. at Haiya by the New Tribe Mission).  
  Churches present in this area include Seventh Day Adventist, Lutherans and the New Tribe Mission. The latter have more influence on the Pawains and have groomed young males now in the leadership role of the project. Seventh Day Adventist and Lutherans have had similar influence on the Gimis. |
| Research Conservation Foundation (national) | Initial role of the project implementing NGO, RCF was basically providing the link between WCS and the project community. Recent role under the current director is to address on tangible social and economic services to the community. Present roles involve:  
  - Monitoring and review of various programmes in the areas;  
  - Seek funding to support these programs;  
  - Provide technical and leadership role to the WMA committee members who also act as project committee for setting up business enterprises with their community;  
  - Responsible for the overall administration and implementation of the project. |
| Wildlife Conservation Society (US) | This organisation is the lead agency that had much influence on the type of programs seen under the current ICAD initiative there. Much of research and conservation objective was achieved under the sponsorship of WCS and its overseas partners, Bronx Zoo, New York Zoological Society in collaboration with San Diego Zoological Society. Since 1994 the roles of this organisation involves:  
  - Promoting Crater ICAD project image overseas;  
  - Grant soliciting e.g. BCN funding and MacArthur Foundation  
  - Provide technical support in biodiversity research by engaging scientists for research |
5.1.3.3. Project Ownership
The issue of project ownership exists at two levels. The notion of how the project should be run and managed is indicative of who has the control and final say as to what type of program should be introduced into the community. At the institutional or organizational level the *Wildlife Conservation Society (WCS)* through its technical program director is driving this project. The local partner NGO RCF is the link to the communities for the implementation of the project and link to the national network with other NGOs, both provincial and national governments and the donor agency in Papua New Guinea.

5.1.3.4. Project Activities
The Marketing Aspects of the Project Nationally and Internationally
This project has developed a home page which has relevant information about the project and has also been in the Biodiversity Conservation Network (BCN) publication with other projects around the world that have been funded by the BCN grant initiative. Several write-ups have been
made about the project and include Bickford (1998), Johnson (1997), Johnson (1998); and Ericho (1998). All-in-all this is a well-publicised ICAD project in the country.

CMICAD Economic Programmes

The first business partnership to demonstrate alternative income generation from artefact sales and eco-tourism activities was set up in Hubaigubi under the leadership of WCS of USA where the community went in partnership with Mal Smith of Pacific Helicopters to take a bank loan and get the business going between 1983-1986 (1st conservation phase). This business was successful for a number of years but the community soon began having concerns as to who was receiving the monetary benefits from the joint venture. Unfortunately they blamed their partner for misappropriating the money and burnt the place down in 1986. Little did they know that part of the money raised had to pay for the bank loan and the expenses that were incurred by his company servicing the community as the visitors were flown to the area on helicopters at most times.

To correct this past approach of non-involvement of the local community to participate in the social and economic opportunities, the current project leader, RCF, intends to assist local landowner groups to play a leading role to establish small scale enterprises based on attractive field opportunities for rainforest researchers, ecologists, anthropologists, adventure tourists and bush walkers. To achieve the current project objective, the new lead agency RCF relies on existing facilities and opportunities created by WCS of US, its official sponsor. Infrastructure facilities and logistic support of these projects already exists in each of the community groups within the existing conservation area. The researchers' field quarters exist at Herowana, and Haiya. Project field officers are based at Herowana, Maimafu, and Haiya. The field officer at Maimafu did not have their own living quarter up until the end of 1999. There is now no-one posted at Hubaigubi since the burning down of the first research centre and the community study base was also burnt down. The business plan below (Figure 7, showing CMICAD project Business Plan.) shows the structure of the current set-up and the activities.
Figure 7: Showing Business Plan for Crater Mountain 1995

The Type of Enterprises

The main enterprise developed here is the sale of artefacts produced in the area. Wildlife Conservation Society has established links with a number of art dealers in the US to buy artefacts from the Crater Mountain ICAD project.

Business Marketing and Sale Centres (Handcraft).

The setting up of handicraft storage centres at each major community is one of the new commercial activities. Local resource owners through their WMA committee members run such activities under the guidance of a national field officer. Main activities under this operation involve the promotion of local products to awaiting orders from outside and from individuals visiting specific communities. Handcrafts are produced by individuals and brought to the WMA committee to store them at the artefact centre. When the orders from the established outlets are received they are packed and dispatched. When the payment is received the producer is paid for that specific item. About 10% of the sale amounted is deducted and kept in the WMA operational passbook account. Apart from the development of income-generating opportunities the project proponent is also promoting socio-economic programmes as tools to address existing social conditions such as a low level of literacy, poor health care and living conditions.
5.1.3.5. Types of Funding and Funding Arrangements
Since the inception of this project the funding of researchers to do field work in the project area has come from research grants made available either by the project collaborating partner institutions in the US or individuals who have obtained independent research grants from various sources in their country to specifically conduct field research at the Crater Mountain ICAD project site. Initiatives to support the local community included funding to ensure that there were market links with major artefacts dealers in the United States. Such effort had encouraged the production of local artefacts by the local community, which were bought in local kina currency and sold overseas in US dollars. The major funding to the project was not available until 1993 when the opportunities for international funding towards biodiversity conservation became available for Papua New Guinea, especially when PNG was recognised as one of the four remaining tropical rainforest in the world (the interest and reasons for a shift of global community opinion to support biodiversity research and conservation in PNG are already discussed in Chapter 4).

Crater Mountain received two major grants during the period 1993-1995 when donor agencies and the international NGOs were keen to fund conservation of biological diversity in PNG under the ICAD model. This funding occurred soon after the signing of the UN Convention on Biological Diversity in Brazil in June 1992. One grant came from Biodiversity Conservation Network over three-year period and the other from MacArthur Foundation for the same period as a complementary support grant. It is understood by the researcher that the local NGO RCF had also secured a number of smaller grants from various donor agencies in Papua New Guinea, but the NGOs in general have the tendency not to release information on where they get their funding from.

This is particularly the case if the person seeking the information is from another NGO or a competitor in the community or country. The two major funding agencies and how much they contributed towards the ICAD initiatives in the country has been discussed earlier (see Chapter 4, under 4.10.9, p. 116). Despite the level of funding as shown below the project proponent WSC and RCF has a policy that no funding will be given to any community based projects or services such as water supply unless the local community agree to come up with their own means. That own means could be allocating land free of rent, free labour and local bush material that could be found from their forest. According to the Haiya field officer Paul Igag (pers. comm.1998) this provision is done to ensure that people do not just expect to get a free hand out.
<table>
<thead>
<tr>
<th>Grant Funding Base</th>
<th>Time Frame</th>
<th>Total Grant Value (US$)</th>
<th>Grant Income/year</th>
<th>Grant Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>McArthur Foundation USA</td>
<td>3 years</td>
<td>US$380,000</td>
<td>US$126,667 Approx./yr.</td>
<td>1996-1998</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6 years</td>
<td>US$955,057</td>
<td>US$155,509 Approx./yr</td>
<td></td>
</tr>
</tbody>
</table>

Table (5) showing Funding Source for CMICAD Project (Johnson 1997)

5.1.3.6. Project Initial Interaction with Provincial and National Government

There is little or no coordinated government role or even adequate moral support either at provincial or national level in all ICAD projects including Crater Mountain. The National Government through the Mining Department is instead closely working with the proposed developer of the Crater Gold Mine and the Forest Authority has already approved a Forest Management Plan by the developer Rimbunan Hijau (PNG Limited). Senior officials at the recently downgraded Office of Environment and Conservation insist that the Crater Mountain ICAD project is officially gazetted. This means the Minister will register his opposition to the proposed development but the Cabinet might not accept his recommendation based on the perceived benefits to the community and the country from the proposed mining and forestry development projects. The local community has mixed feelings about the pending large-scale development projects in the WMA. They have seen their area remain undeveloped since the nation's independence 25 years ago. There is no major infrastructure development linking their respective communities. The people themselves built the three airstrips at Maimafu, Herowana and Haiya. One of the outspoken wildlife committee members Atima Seau of Witoua clan of Hiaya believes that Pawaia people want to protect their wildlife. The proposed mining is on the Gimi land, but some WMA committee members from the Pawaia community will be tempted to allow mining exploration to take place inside the conservation area within their forestland.
5.1.4 PROJECT EVALUATION

5.1.4.1. Project Threats
There are a number of potential threats to this project and they include both internal and external threats. Problems faced by this ICAD initiative are similar to those faced by other ICAD projects and are quite fundamental.

Internal Threats:
The social and economic condition of this area is very poor. The people are still waiting for any real change in terms of better social and economic development opportunities to come to their area. The ICAD initiative is being implemented with the assumption that people will continue to live on their land if only they could get bit of cash injection into their community. Yet the Crater Mountain ICAD project proponent is fully aware of the real potential threat of the two major development projects being proposed for the area. The final decision on the fate of these development projects, which could make a real change in the area's current socio-economic status, rests with the local communities and not the state or anyone else. In an attempt to maintain the confidence of the people and to win their support in the ICAD project area, project proponents have undertaken a number of educational and developmental activities.

Community Expectations
Historically the project has been in the area for quite sometime and the pace of delivery of perceived goods and services to the affected communities is significantly slow and the patience of the affected communities concerning any significant benefit is running out. The small amount of income generated by activities such as artefact sales and accommodation and visitors fees are too small to be of real benefit to all the resource owners. Initially the idea of protection of the birds of paradise and their habitat was something that could be viewed as desirable to gain popular support for the concept of working with an expatriate group, with the view that westerners from the Anglo Saxon origin are going to deliver goods and services to their communities. Besides it is a cultural habit that whatever one ethnic group does others must do the same, without much thought to the consequences of the decision. A westerner’s perception of what conservation can bring to their communities was not necessarily what the local perception was at the height of the decision to allow their forest to come under conservation ideals, a step that removes the custodian role from the rightful dependants.

External Threats
The Crater Mountain ICAD project has two major development threats. The first is in the southern end, north of the Purari River, where the National Forest Authority has already awarded
timber permits to a logging company; part of the Turama Extension Timber Permit TP2-12A and Forest Management Area (FMA) Block 3 are held by Rambunan Hijau of Malaysia. In the northwest of the WMA, there is a prospect of gold mining.

5.1.4.2. Implication of Legislative and Policy Environment

Stage one and stage two of the Crater Mountain Conservation Project had already been registered as WMA, but there is no guarantee that the proposed conservation site will be free from any development intervention. Currently in PNG, the majority of conservation project areas are targets for development projects mostly from the mining and forestry sector. Such projects threaten biodiversity conservation approach and compete for the attention of the community. Until such time where there is greater coordination and recognition by both the resource conservation and development-oriented arms of the National Government in Port Moresby, the environmental protection and conservation efforts of the country are going to be viewed as of no significance for some time. Questions must be raised about any Department’s right to the role of executing National Parliament-enacted legislation. Currently, in the case of the Office of Environment and Conservation, mining and logging companies are given every assistance to develop the same area and resources that are proposed for conservation.

Similarly the conservationists must be challenged to prove themselves by tangibly delivering alternative forms of development that match the benefits or exceed the benefits offered to the community and the nation by mainstream development sector. Until proof is available, conservationists cannot use mere lip service to justify their genuine contribution to alleviating poverty and improving the living standard of the rural communities in developing countries like PNG.

5.1.4.3. Implication of Large Development Activities

The Department of Mines and Petroleum had already issued a mining exploration lease. Macmin Mining is the company currently holding exploration lease number 115 since 1995. The junior miner, Macmin NL of Australia, believes its Crater Mountain gold prospect in the Eastern Highlands has the potential to yield a major ore body. It has been quoted as saying Crater has geological similarities to the very large mine sites like Porgera and Mt. Kare. This information is supported by one drilling hole with a long gold intercept of 118 metres at 1.83 grams of gold per tonne with high-grade gold intervals to 14.16 grams of gold per tonne. The company on 15th October 1998 announced to the Australian Stock Exchange that it would raise additional funds to
finance more exploration work at Crater Mountain. As a result the company proposes to issue up to 40 million new shares at seven cents each (Robert Bino, 2003 pers.comm). According to (Robert Bino, 2003) this company is 30% owned by PNG through a shareholding and is expected to increase this to a much higher percentage at a later date. For the time being it’s current exploration licence expires on 28th February, 2001. As for the logging project the logging company has already conducted the genealogy survey and had paid the state the access fees and is now in the process to develop the project developmental and environmental plan for the project to go ahead. Tuarama Forest Industries (Concord Pacific) is the company interested in this project. The latest development is that the local people at Maimafu has decided to go into partnership with a new foreign company known as International Aerospace Technology (IAT) to mine on their land.

5.1.5. Evaluation of Perceived Benefits

The social and economic condition of this area is very poor. The people are still waiting for any real change in terms of better social and economic development opportunities to come to their area. The ICAD initiative is being implemented with the assumption that people will continue to live on their land if only they could get bit of cash injection into their community. Yet the crater Mountain ICAD project proponent is fully aware of the real potential threat of the two major development projects being proposed for the area. The final decision on the fate of these development projects that can make any real change in the areas current socio-economic status rests with the local communities and not the state or anyone else. In an attempt to maintain the confidence of the people and to win their support in the ICAD project area, project proponents has undertaken number of educational and developmental activities.

The primary goal of the project as shown in the document, submitted for the Biodiversity Conservation Network funding of US shows that the ICAD initiative is designed to test the hypothesis, that the establishment of economic enterprises which rely on the viability of site biodiversity and provide direct socio-economic and environmental benefits to resource owners at the local communities will result in conservation of site biodiversity. To achieve this aim, the project has five objectives and clearly defined activities that would in turn provide the expected output. These perceived activities are expected to produce certain outputs, primarily in monetary terms and social benefits that would capture the community’s interest to ensure that conservation of site biodiversity is achieved or secured.
The Benchmark Rating based on a Field Evaluation of the proposed business activities, is shown below in Table 6. A ranking system using a scale of 0-5 is awarded to each of the perceived activity where:
0 = non-accomplishment
1= attempted
2 = started but failed
3= moderately achieved
4= achieved and functional
5= very successful with potential for sustainability.

The benchmark ranking criteria as discussed here and Chapter 3 (p. 80) is applied to all three of the case studies.

Table 6 Shows nature of economic activity intended in 1995 and the actual status of these activities in May 1998.

<table>
<thead>
<tr>
<th>Perceived Economic enterprises</th>
<th>Infrastructure Requirement</th>
<th>Implementation of perceived activities</th>
<th>Economic Viability</th>
<th>Trained personnel</th>
<th>Financial input &amp; Return</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research and eco tourism business or scientific and nature tourism.</td>
<td>Research field station exists at Wara Sera community groups within WMA. Quality trail linking each WMA base nil.</td>
<td>Further improvement to existing bush material lodging facilities required. Nature trails built hardly exist. Transportation into WMA is unreliable. Good two way radio network to WMA field office is good. There is no scientific library at field station.</td>
<td>Will only remain viable if WCS continue funding scientists to go there.</td>
<td>Local management abilities minimal or absent</td>
<td>Income generated very small No specific injection of funds from RCF Slow turn over</td>
<td>3/5</td>
</tr>
<tr>
<td>Hand craft production storage and &amp; marketing</td>
<td>There is no permanent storage production and marketing</td>
<td>Continuous sale of small quantity of crafts with demands for specific products</td>
<td>Direct financial benefit spread over the community. It is viable if Few young lads trained but yet capable of managing it.</td>
<td>Again there is need for initial capital injection. Concept of</td>
<td></td>
<td>3/5</td>
</tr>
</tbody>
</table>
Table 6 Shows nature of economic activity intended in 1995 and the actual status of these activities in May 1998.

<table>
<thead>
<tr>
<th>Perceived Economic enterprises</th>
<th>Infrastructure Requirement</th>
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<th>Trained personnel</th>
<th>Financial input &amp; Return</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>facilities.</td>
<td>increase production for items of demand and better quality encouraged</td>
<td>on their own.</td>
<td>turn over from own small funding new.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage in bush material houses at WMA committee sites mouldy and unsafe.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To support the proposed income generating enterprises shown in table 5 various activities were put in place. This would in turn contribute towards achieving the expected outcome. This outcome is shown below in table 7.

5.1.5.1. Proposed Activities versus Actual Achievement.

Table (7) Showing Benchmark Assessment of Proposed Activities Versus Actual Achievement at CMICAD.

<table>
<thead>
<tr>
<th>Proposed Activities</th>
<th>Perceived Benefits</th>
<th>Actual benefits</th>
<th>State of Implementation</th>
<th>Recognition and Acceptability</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Run eight informal enterprise workshops, out of expected eighteen Unspecified on-site activities by project staff to train three WMA communities to manage business and monitoring skills &amp; National tour for WMA committee.</td>
<td>To bring the level of understanding and readiness required for the proposed activities to be managed by the local WMA committees’ members as leaders for each WMA area.</td>
<td>WMA committee training, as basis for Development of local environmental and economic knowledge to manage the eco-enterprises and natural resources decisions. Non-tangible benefits to people Long term effort.</td>
<td>WMA committee had national tour, six workshops eighteen activities more in some communities those others. Not even.</td>
<td>Gimi people seemed more ready as business minded than Paiawan people. Training without specific funding guarantee no use. Currently dependent on RFC officers.</td>
<td>2/5</td>
</tr>
<tr>
<td>b) Setting up socio-economic and biological information database. Produce land use map of WMA. Monitor land use, resource extraction, and enterprise benefits and impact on communities’ living standard.</td>
<td>To have an idea of the species abundance. Status on user demand per specific resources enterprise impact on people’s activities and well being.</td>
<td>Put in place biological and socio-economic monitoring system for each community in the WMA for planning purpose. Not beneficial to WMA communities as short-term gain non-tangible.</td>
<td>This is being done, in fact better than tangible enterprise development effort. Land use plan in progress.</td>
<td>Hard for people to accept as relevance. Scientific justification useful to funders not people.</td>
<td>3/5</td>
</tr>
<tr>
<td>c) Data Analysis Incorporate results in to planning. Convey information by various means to WMA committee members at annul meetings. Create resource consciousness and enterprise status.</td>
<td>Community realisation and changes in attitudes and resource user practice. Financial turn over report encourages participation.</td>
<td>Instil conservation ethics Each community learnt of others groups efforts.</td>
<td>This is on going and on track.</td>
<td>Communities and some WMA members’ funds are given to start real business besides craft shops.</td>
<td>2/5</td>
</tr>
<tr>
<td>d) To market the idea of scientific and adventure tourism in PNG and overseas</td>
<td>Tourists come to Crater Mountain Income from accommodation and visitor fees &amp; jobs</td>
<td>There is no guarantee of scientific and Adventure tourism.</td>
<td>Publicity exist over the inter net and reports &amp; publication of BCN, WCS and RCF</td>
<td>Local people not convinced of benefits. Seeing greater turnover is believing. Uncertainty if it will work</td>
<td>5/5</td>
</tr>
<tr>
<td>e) Monitoring and Evaluation of Impact on the traditional</td>
<td>Improve economic well being minimise adverse effects.</td>
<td>Local youths to be trained as guides &amp; field assistants, and to record local</td>
<td>Coordinated supervision impossible between WMA</td>
<td>People do not see research and science as something that</td>
<td>3/5</td>
</tr>
</tbody>
</table>
5.1.5.2 Benchmark Evaluation of Mainstream Development Projects

Development projects proposed for the Crater mountain area are still at the project initial planning phase. Major development projects do not release their development plans and social and economic development packages until these are negotiated and signed by all the stakeholders, which in this case includes the national government, the provincial government and the resource owners. Projects are only officially recognized to go ahead when the resource owners officially sign the project document. This procedure is standard for all major development projects in the country including the mining and logging projects. The only form of benefits the communities can expect to receive at the project panning and development phase of these projects is what is known as occupational fees for the land. For this reason it is not possible to compare the projects at this stage with the ICAD social and economic package for the Crater project case study.

5.1.5.3 Comparison of Benefits with ICAD Projects

The only comparison of benefits with these development projects is that both of the proposed development projects have already given out much bigger cash benefits to these communities as part of land occupational fees. Information on the actual amount has been difficult to obtain. An approximate amount of kina 20,000 has been paid to the Solibelo tribe of the Pawaia community at Haiya as occupational fees by the forest developer. Similarly mining the mining company in the area has also paid an occupational fee to the Kela landowners of the Gimi community. The actual amount paid is not known, but a conservation committee member has reported that an
amount of Kina 50,000-80,000 has been paid as mineral exploration fees to the landowners of Kela and other villages who claim land ownership of the Gimi community near Mamafu.

In comparison the ICAD conservation project has so far not given any substantial amount of cash to the resource owners or to the project wildlife committee located at each location either directly or into initiating larger income generating opportunities. Prior to 1994 the highest amount of cash brought into the community out of Herowana stemmed from artefact sales (under the Peace Corps volunteer) for about 7000 Kina. The artefact storage centres which are set up to make money for the people are constructed out of bush material and, as a result a number of them already having leaking roofs, are causing damage to the artefacts awaiting orders from the buyers.

5.1.5.4. SWOT Analysis of the Crater Mountain ICAD Project

An overview of this project is best described by the swot analysis presented below which in a nutshell outlines the strength, weakness, opportunities and threats that exists in this project.

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified national staff located to major communities;</td>
<td>Loss of faith in the role of conservation enforcement as in recent court case in Goroka;</td>
</tr>
<tr>
<td>Infrastructure facilities set up near communities linking the research field station;</td>
<td>Low literacy level within the two communities;</td>
</tr>
<tr>
<td>Official declaration of WMA and existing of functional WMA committee members;</td>
<td>Low level of commitment to goals and objectives of the project by WMA members;</td>
</tr>
<tr>
<td>Current management’s receptive to views and concerns of the communities well being;</td>
<td>Vibrant village politics between different clans;</td>
</tr>
<tr>
<td>Income generation ability from the sale of local crafts.</td>
<td>Lack of political commitment &amp; support to the project from provincial and local level governments; particularly Gulf and Chimbu provincial governments;</td>
</tr>
<tr>
<td>All the communities in the project areas are included and represented on the WMA committee;</td>
<td>Funding uncertainties;</td>
</tr>
<tr>
<td></td>
<td>Decline in numbers of overseas researches coming to Crater ICAD area.</td>
</tr>
<tr>
<td></td>
<td>Young WMA committee members not recognised by traditional leaders.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>People’s commitment especially the Pawaia people who owns bulk of the lowland forested area;</td>
<td>Potential threats is expected from the logging and mining development projects;</td>
</tr>
<tr>
<td>Growing interest in the income generating opportunities of the enterprises;</td>
<td>Internal threats is likely to come from shifting cultivation practices and harvesting of the natural resources from the resources owners;</td>
</tr>
<tr>
<td>RCF’s commitment to promote social and education benefits through the school subsidy system.</td>
<td>Desire for cash cropping such as coffee plots require</td>
</tr>
</tbody>
</table>
5. 1.6. DISCUSSION

5. 1.6.1. The Historical Perspective

The effort to establish Crater Mt. Wildlife Management Area (WMA) or conservation area under the existing PNG community based conservation model had a very informal beginnings. It developed from a contact between expatriate researchers and the resource owners in the area. The proposed conservation area under the current ICAD initiative is spread over two decades from the first contact with the community in 1975 to actually having part of the area occupied by the Gimi community declared as a WMA in 1986. The second part of the conservation area, which was gazetted in 1993, included a much larger area that occupied by the people of Pawaia ethnicity. All these were achieved under the leadership of expatriate researchers prior to the official involvement of any national leadership and the current PNG based and lead NGO, the Research and Conservation Foundation of Papua New Guinea. It is obvious that the presence of the peace corps volunteer or foreign researchers with the Hubaigubi community to promote the conservation objectives, compelled other communities to believe that they also had to invite an expatriate from the Anglo Saxon origin to live among them on their land, because the perception was and still is that Europeans have lots of cargo and are expected to bring lots of cargo to their area. This perception or myths of goods and services going to their respective communities convinced them to invite the Peace Corps volunteers and other researchers to their area to talk them about the conservation of their forest and how goods and services could also be delivered to their community as a result of such partnership or deal under the conservation arrangement. The excitement of such possibilities was shattered when the Hubaigubi community in 1986 burnt down a booming eco-tourism project and the artefact shop.

The reasons for such action by members of the community are not clearly discussed by the project proponent, Wildlife Conservation Society of New York. Current national leadership with the Research and Conservation Foundation believe that the people felt that they were cheated in the name of doing well for them. The business partnership with Pacific Helicopters failed to inform them of how much money was raised and spent and why they were not entitled to any monetary benefits. There were no nationals or local people trained to be involved in the management aspect of the business partnership who could alert their superiors to address such
looming concerns before they eventually got out of hand. After the Hubaigubi incident the initial project proponent Wildlife Conservation Society (WCS), an international non-governmental conservation organisation within the New York Zoological Society saw the urgency to establish the national non-government organization in Papua New Guinea. For the New York Zoological Society it was becoming obvious that it could not continue to use or rely on it's foreign researchers to run such a program in the country with complex social, cultural and development issues. These events lead to the establishment of the Research and Conservation Foundation of PNG (RCF) in 1994. The Research and Conservation Foundation has since 1994 functioned as the lead agency in the Crater Mountain ICAD project in partnership with its sponsor WCS of the United States of America. The project is now faced with lots of setbacks, particularly to readdress the issues facing the community's original perceptions or expectations of the flow of goods and services, plus deal with various misconceptions as a result of their association and dealings with the Anglo Saxon. This is discussed in the following section.

5.1.6.2 Project Establishment and Program Objectives-The Human Element

Crater Mountain ICAD project's primary goal has been the long-term conservation of biodiversity in the Crater Mountain area through the integration of conservation and development components, to achieve the product of a functional national Wildlife Management Area as described under the national legislation. In terms of the infrastructural facilities and logistical support of this projects, they were set up prior to the inception of the current ICAD initiative. In fact the southern portion of the conservation area, occupied by people from Pawaia ethnic group, was declared as a WMA in 1993. The researchers' field quarters which exist at Herowana and Haiya, were built under the current funding with a handful of full-time national project field officers based now at these places, including Maimafu. The field officer at Maimafu did not have his own living quarters up until the end of 1999.

There is no one posted at Hubaigubi at present since the project decided to pull out of the area after the burning down of the facilities there. The community burnt down the first research and visitor facilities of the project set up at Ubaigubi. The Research Base Station now at Herowana was set up in 1992 by researchers Debby and Andy Mac of WSC. The field research station facilities consists of a semi-permanent building on high posts, with upstairs being used as a meeting room and living quarters and down stairs equipped with kitchen and storage facilities. The toilet (flush) and bathroom facilities are modern but typical of field camps set up for research purposes. Back at both the Haiya station and Herowana field base there is a gift shop that sells
the artefacts for the people of the local community. The shop is managed on behalf of the wildlife management committee who either buys the artefacts from the individual producers or they arrange a credit basis – when sold they are sold the committee retains the commission and pays the producer on the originally agreed price. A bush material house has also been completed for its field officer recently.

The facilities at Haia set up in 1995 include the field officers' residence constructed in the same style as the Wara Sera field station but has a solar panel to power the small generator to charge the laptop computer for the office. The visitor guesthouse with 10 beds is constructed out of bush material. Recently the project's business development officer has moved into a permanent house belonging to the failed and abandoned small business rural development project initiated by the Chimbu provincial government. In Maimafu, for a long time the field office there stayed at the home of one of the influential committee members. His own house, built out of bush materials, has was completed in 1999. In terms of the communication network, each of the bases are connected by two-way radio and maintain constant daily contact with the main RFC office in Goroka.

5.1.6.3. Project Objectives and Changing Expectations
This project has three main hurdles to overcome in order to become sustainable over the long term. First, is the issue of institutional sustainability. The project’s ability to remain viable depends on how much funding the Research and Conservation Foundation of PNG is able to secure without any input or support from it’s United States sponsors. Secondly, the viability of the income generating activities will be crucial as they are set up to raise enough funds to engage the services of the wildlife management committee members to carry out their task of protecting the biodiversity within the protected area. A third and very important issue will be to get people to accept the fact that there are no goods and services coming to them in huge volume for conserving their forest. Since the inception of this project in the 1980s, the fund raising efforts in the US for biodiversity conservation in the Crater Mountain area were primarily directed to protect the endangered species with some urgency. Ecological and taxonomic studies of such species seemed paramount and sending of researchers to the area to help these local communities to conserve and protect their natural resources was the main response. However, in the campaign to help the local people to look after their natural resources, the individuals from the area were hired and put on the payroll to take the responsibility of assisting the people to conserve their resources. This approach has instituted a system of payment for any public
awareness work amongst the Gimi and the Paiwa people by the male youths that were hand picked. These youths were later appointed by outsiders to represent their clan on the wildlife management committee. This particular approach of paying the resources owners to do anything to protect and conserve their own resources has eventually created the perception in the minds of almost all of the existing wildlife committee members, that they must be paid to carry out conservation duties even as WMA committee members.

The setting of such a precedent is now very difficult for the current national leadership in the organisation to get the local committee members to realise that such thinking is not correct and not typical of the PNG traditional society. In fact most of the field officers talked to at Haiya and Maimafu agree that expatriates involved in the project in the past have misled the wildlife committee members to believe that they have to be paid to carry out their duties as wildlife committee members. Apart from this belief, non-committee members have started to think that since they are not paid like the WMA committee members it is not their duty to protect their own natural resources.

There are other misinformation events and misconceptions, such as the expectation that goods and services will be coming to their land without they having to work for it other than by simply agreeing to have their forested land protected, misconception that is now the biggest mind set for RCF nationals involved in the project to re educate. Now that conservation of Biodiversity is already achieved under the conservation laws of Papua New Guinea, there is a feeling of relaxation for the collaborating institutions. The sense of achievement by the project’s collaborating partners is not only for the official declaration of the WMA but also because of the institutionalisation of a local NGO to pursue their efforts. The Wildlife Conservation Society (WCS) is still responsible for the PNG based non-government organisation, ‘Research and Conservation Foundation of Papua New Guinea’ (RCF).

Initially the WCS or researchers themselves employed locals as porters or local guides and employed a number of these people. For some, their involvement in liaising with their people to reach an understanding for creating a WMA on their land was part and parcel of their employment tenure with WCS. Others were paid to do a conservation campaign and enforce conservation rules. Now that the conservation objective is already achieved they have been laid off from such casual engagements. At present the local coordinators and wildlife committee members for their respective WMA will not do their respective duties unless they receive stipends from RCF. The money to pay them has to come from the various enterprises. The community receives money into their common fund from visitor’s entry fees and 10% of the income collected from various
business activities. The intended programme objectives, highlighted on the Box (5) page, are more academic propositions than the tangible output of each of the seven objectives.

Status of Crater ICAD Objectives:
The number of researchers under scientific tourism going into the area has decreased since 1996 and as a result income generation has slowed down but a fair bit of artefacts are still being sold in PNG.
Most of Pawaia community is illiterate and therefore, their effective participation at the decision making level could take many more years.
Many of the young males initially involved in the campaign for conservation and who eventually could have their names included in the WMA committee will no longer do their job voluntarily until they are actually paid. This is unique only to this project.
The capacity of communities to manage the eco-enterprises in their respective area is going to take a long while to enhance because only very few of them are able to do things on their own.

5.1.6.4 The Role of the Community Identification and Consultation Process

The Project proponent of the Crater Mountain ICAD project has taken a three-phase approach to reach all the community groups in the area to establish this project. Community entry, consultation and identification process adopted by the project is diagrammatically shown in Figures 6 & 7. Phase one of this project involves the Hubaigubi community and the subsequent official registration of the first WMA conservation area that was occupied by the Gimi ethnic group. Following that the local community got into business partnership with Goroka based Businessman Mal Smith to set up eco-tourist facilities and artefacts shop. The successful partnership with Mal Smith of Pacific Helicopters did not last long when the community soon became concerned when they could not see any monetary benefits from such joint venture and burnt the place down in 1986. The major concern is the repetition of the process where young people who are not the traditionally recognised leaders are on the government recognised Wildlife Management Committee.

Under the law only those who are clan leaders or their nominees are allowed on the WMA committee. The project here has seen an easy way out by enlisting the names of young men who could be easily questioned by clan leaders on the committee. When this is found out, the elders could easily blame the project proponent especially the expatriate researchers and force them out of the area with the possibility of shutting down the project. In fact the national NGO RCF which took over the project from its predecessor WCS of New York, which has been
trying to initiate program activities towards the re-assessment of the nature of the socio-
-economic benefits for the resource owners and their meaningful participation as an integral
component of the ICAD initiative, is alarmed at the potential for breakdown of the project. Wildlife
Area Committee Members for community participation is diagrammatically presented below in
Figure (8).

![Diagram of major partners involved in the implementation of the CMICAD project.]

**Figure (8)** showing major partners involved in the implementation of the CMICAD project.

From the two consecutive field assessments, it is noted that the local elderly community is
isolated from the decision making process as only the young males are involved. Haiya based
field manager Paul Igag, when asked why the elders are not present in the meeting, confirms this.

*According to Paul Igag (pers. comm. 1998) the committee members in Haiya were basically
formed before the national RCF officers arrived* and were already hand-picked by a number of
the expatriates who worked there as researchers.

5.1.6.5 Community role in project planning and implementation

The major sector of the community that is involved in this project includes the male youths.
These male youths, converted to conservation ideals, were initially hired on special pay as
porters and research assistants and they were expected to rally support and further visit their
respective community groups, among the people of Paiawa and the Gimi communities. Their
primary task is to secure their elders' support to declare the area as a Wildlife Management Area.
Others were purely hired on regular wages as conservation awareness campaigners to convince
their respective clan members. These fellows were later recognised by expatriate researchers
including Jamie James for their efforts to secure verbal permission from their respective elders.
Besides, their names were listed and sent to the Department of Environment Conservation to be
included as Wildlife Management Area Committee Members. This particular approach is illegal
as a process of nominating WMA committee members, who are usually the traditional clan
leaders with the traditional obligation to decide what happens to the community’s land.
The Crater Mountain ICAD project under the new national director sees local community leadership as critical to determine the future success of the project. His primary concern is that low literacy in the community attenuates the leadership problems faced by the project. Therefore to develop future leadership of the project area in a manner that meaningfully participates in the planning and implementation of the project, both formal and informal programs need to be put in place. Informal education programs include community workshops on health issues, eco-tourism, business management skills, plus numerous informal training workshops for the wildlife committee members. Programs such as video shows on development and conservation issues are used to inform the community as well as the WMA committee members because many of them either have no education or have only done two-three years of primary education. Field assistants that have been trained by previous researchers now teach new ones on how to collect field data or record field observations for minimal fees. Many young lads in the area have natural talent but need some formal education to understand what they are taught. Male youths from selected observation sites are also trained to build nature trails for visitors.

The Research Conservation Foundation has also launched a support programme known as a school subsidy scheme. This Scheme is being established to assist the top 5% of the students from the project communities to further their education at community and secondary levels (Erico 1998, p. 172). The researcher was present on 20th June 1999 to witness the subsidy payment handed over to the Headmaster of the Lufa High School for students from the Herowana community. Besides, the Research Conservation Foundation of Papua New Guinea has recently secured funding to offer internships in Biological Field studies for PNG University of Technology students.

In terms of formal conservation status the Crater Mountain ICAD project was gazetted as a Wildlife Management Area in 1993, after names, representing each clan together with the rules and fines for the designated areas were submitted to the Conservator of Fauna. As a result this project became the first Wildlife Management Area (WMA) to come under the newly promoted ICAD conservation model in PNG. Discussions held with the recently appointed Field coordinator indicate that some elders who played the wait and see attitude in the past are now concerned that their names are not gazetted as traditional leaders of the land involved. They now question the right to have the young fellows names as clan leaders representing them. Besides some of the rules formulated and included have proved difficult to implement and have to be removed or reworked.
5.1.6.6. Participatory roles played by various stakeholders

The need for community or stakeholder participation in this project was advocated over a period of time. This was mainly done by expatriate researchers who have come to conduct biological research in the Crater mountain area at different locations and at different times. Amazed by the richness and spectacular nature of the biodiversity of the rainforest, with imminent opportunities for new species discovery to science on the site, these researchers played a pivotal role in approaching various communities in the area to agree to link up a very large area to come under an existing community based conservation area model known as WMA in Papua New Guinea.

This project is very much conservation-driven from external research and conservation agents and is based on the socio-cultural significance of biodiversity to the communities of the Crater Mountain. The project evolved from the concern for the decimation of certain populations of biodiversity such as the birds of paradise as their plumes were on demand and fetching quick cash from illegal trade throughout the province. The second and most convincing factor striving in the minds of the two ethnic groups is the assumption based on the perception that if birds of paradise were not killed and sold for money there will be provision of goods and services plus cash payments as compensation for not trading these biological products or specimens for earning quick bucks.

The Crater Mountain ICAD project took a major concern for the integration of development of social and economic incentives to be managed by the locals as of 1994 during the third phase of this project. Since then it has tried to alter the strongly-held perception from previous involvement with the outsiders that led the local people to believe that cargo was going to come to each one of the clans, once birds of paradise and their forest was protected under the WMA (Erico, per com. June, 1998). The many years of expatriate involvement and the type of perception created in the minds of the local people is going to be a difficult task for the national director and his officers in RCF to tell them to accept the reality that no cargo is going to come to Crater, unless the people themselves get out there and get involved in the income-generating activities. Besides any major changes to the selection process of the committee members and refusal to pay any stipend for protection of their own forest is likely to be the sticky issues for the national NGO and its national team.

5.1.6.7. Current Status of Project ownership

An honest outright opinion from the current RCF Director (pers. comm. 1998) is that Ubaigubi is slipping away from the conservation partnership with the rest of the area recently included in the
newly proposed WMA. The communities there seem to have less enthusiasm in the current partnership than at first. There was a different meaning to conservation by the local people than those held by the western scientists initially involved. Now that many of the expatriates have left, it is hard to get these people to change their original perception of receiving cargo after allowing their land for conservation. The Gimi communities especially from Hubaigubi believe that what was purely their project has now been taken away and given to the people of Pawaia which means the goods and services meant for them will no longer be received.

One obvious reasoning to this argument is that the main field biological research facility is set up at Wara Sera on Taiyube clan’s land of Pawaia. It is considered as the project’s most significant enterprise development initiative. Facilities include a main building (14.5 m X 11 m), a cottage/office (6 m X 4 m) and a workers house, all constructed out of local hand-hewn timber and a corrugated iron roof. The two-bedroom house is connected to running water, which serves the toilet and the kitchen. It has essential field equipment for biological or ecological studies. This facility is between Herowana and Haia and is two days walk from either community. At the organisational level the current team of national officers with RCF feel that they have the duty to re-educate these communities to understand that there is no free goods and services coming from the westerners. Conservation of their natural resources is part of their cultural responsibility to protect these resources they have inherited from their ancestors.

5.1.6.8. The Community’s role in social and economic programs

Communities in the project area are expected to participate in social and economic benefits from the implementation of the business plan presented in Figure (7) through the leadership of their WMA committee or the project committee. Community members of the project area in general will benefit from the production and sale of the artefacts as a result of the market arrangements put in place by the project proponents. The handicraft production and marketing is the major small-scale business venture that aims to provide income-generating opportunities across gender lines. The female members of community, who have a natural ability to make many string bags or ‘bilums’, can now sell their bags to the cooperative venture for sale on their behalf. The adult male members also have the opportunities to sell their spears, bows and arrows and other handcrafts they are able to produce. The success of such activities for each member of the community depends largely on the willingness of the RCF to employ the WMA committee members to do their duly appointed responsibility. At present the setback is that the community-
based Wildlife Committee Members will participate fully only if they receive cash benefits as stipends for their engagement and involvement in the managing of their resources and the affairs of their respective communities.

5.1.6.9. Measures Towards Project sustainability and Funding Arrangement

The Research Conservation Foundation is now the lead agency in the Crater Mountain ICAD project. Since 1993, RCF has officially functioned as a national NGO in PNG. Under such status it has started to raise its own funding both internally and abroad. Many international governmental and non-governmental agencies have already provided financial and technical assistance to the RCF since 1994. This has meant that the its official sponsor WCS can now begin to gradually withdraw its direct financial contribution to the promotion of research-based conservation project of the Crater Mountain area.

The current leadership of RCF sees the future viability of this project as very crucial. To ensure that viability continues, the project proponent has taken the initiative to make sure the local community through the leadership of WMA committee members take their own initiatives to initiate income generating activities and take advantage of the already existing opportunities like the artefact production and marketing links and business. Based on the past 15 years experience this project has already started to encourage the community to look at alternative means and ways of raising funds to pay for the services of those involved in activities directly relating to the maintenance of the wildlife conservation area.

The funds raised are to pay an allowance for the coordinators as well as to meet the cost of wildlife committee members who carry out special protective or conservation enforcement tasks in relation to the project. Besides the funds raised from economic enterprises from each group, it is expected they meet the cost of travel by their committee members to attend the annual general meetings and other important meetings relating to their WMA. In fact the Field Officer at Haiya has reported that 10% of all artefact sales and visitors accommodation fees is paid into the account of the WMA committee. This fund is to finance travel costs for Wildlife committee members to attend annual meetings while some portion of the funds is used by the committee members to initiate new business ventures such as trade stores.

This approach is taken to reduce the dependence from outside funding. The staff members from the project have since 1994 worked with management committees to develop mechanisms
to collect fees to finance the WMA operations in each community. These funds are raised through a 10 percent surface charge on all expenditures made by clients of WMA eco-enterprises (researchers and tourists who pay accommodation, guides, carriers and research assistants), WMA entry fees for researchers and tourists and fines collected for violation of WMA laws by the local communities and the visitors. In addition, in-kind community contribution of land, labour or bush materials are requested before any external input is considered by RCF for WMA infrastructure development (Johnson A. 1997, p. 108).

To strengthen this activity there is now an ongoing training programme carried out by the project officers in each of the project area to train and assist the wildlife committee members to understand the basic skills or knowledge in principles of financial planning and reinvestment plan, so that all funds do not get run out as stipends. In each of the WMA area there is an enterprise development officer whose specific role is to help the local people, through their committee members, to decide on ways and means of improving their current business and to initiate new businesses in their area. The Crater ICAD project is one of the well-documented and well-promoted projects in the country. Like other case studies, the data are collected from both the field and from the documentary source. How the interest earned from such an activity is equally spread over a larger sector of the community is not clear. Lack of information on such issues during the past business activities run by the researchers or field managers of these sites is one of the reasons the Hubaigubi people decided to burn the place down in 1986.

5.1.6.10. Interaction with Provincial and National Government

Interaction with the National Government is minimal apart from being one of the national stakeholders in the ICAD initiative through the Office of Environment and Conservation. Crater Mountain ICAD project, having achieved the conservation status as officially declared, ‘Wildlife Management Area,’ can expect the support of the Minister of Environment and Conservation in objecting to potential development threats. Similarly the project interaction between the project proponent RCF and the three provincial governments who administer the community in the project area is minimal. An informal association established with the Eastern Highlands Provincial Government through the various line Departments or divisions is basically one of information briefing and exchange.

To assert its contribution towards the education of the future generation of the project area, the project proponent RCF has embarked on a school subsidy support scheme for children entering high schools. The amount contributed by the project depends on the community where these children come from. In general RCF has started to maintain Kina 100.00 school fee subsidy
to all high school students from CMWMA project area. If they are from very poor communities such as that of *Pawai ethnic group then the amount is higher* than those from the Gimi group. This is because of better income-earning opportunities that exist among the Gimi people. The Project also enjoys the links that RCF has with various Government Institutions such as the University of Goroka, through its *Vice Chancellor* who is now the chairman of RCF Board of Directors.

5.1.7. CONCLUSIONS

Over the years, apart from those mentioned, numerous national and international governmental and non-governmental agencies have provided financial and technical assistance to the Research and Conservation Foundation and the Wildlife Conservation Society in the implementation of the CMICAD project. The future viability of this project hinges on the ability of RCF to secure funds to remain as an active research and conservation NGO and develop long-term viable income generating opportunities for these communities. The second critical issue facing this project is the *continuing partnership* between the implementing NGO RCF and the technical overseer, a major player in terms of overseas fund raising and soliciting of researchers to maintain and support the programme objective of the project. The third issue is the mining development threat in the Gimi area of the conservation area and the *expected attractions of tangible monetary and infrastructural facilities expected to be provided by the company.*

The local NGO partner RCF and its first national director (the former Secretary of the Department of Environment and Conservation) was forced to resign in 1995 over conflicts of views on how programmes should be run to address the local peoples’ views and concerns about the project. The current director appointed to replace the former director is a professional biologist and an educator from the Eastern Highlands Province itself and is very much aware of the local communities social and economic aspirations. With the final departure of the technical program director placed there by WCS in 1998 he is now caught up in a situation where he has to lead RCF implementation of the project according to the project submission developed by the former WCS technical director. Failure by national led management of RCF to implement the program under the funding guidelines will have serious repercussions for future funding and association with its sponsor, *Wildlife Conservation Society of New York, USA.*

RCF is fully aware of the fact that the clans like *Tojo* or the *Jare* community, who own the land occupied by the Ware Sera field station, often feel that they have the first right to get the temporary jobs or portering jobs whenever the researchers go there. This is despite the fact that
other clans have also included their land towards the same cause. Perhaps many of them would have thought a similar infrastructure was going to be set up on their own land over time. For this reason many elders who gave the consent for their land to be included in the WMA now feels the goods and services promised to them by the researchers from Anglo Saxon origin is now received by RCF and is not delivering them to the resource owners on time. Such conceptions are strongly held by these communities and cannot be easily overcome by the current national director of RCF and his team of qualified national officers. The future success of this project would seem very much to depend on the ability of the present leadership to maintain and possibly increase the dialogue between the communities, develop even more transparent procedures in project implementation and perhaps most importantly enter constructive dialogue with forestry and mining proponents.

With changes in National legislation on the sustainability of forestry and mining, the development of compulsory Environmental Impact Assessment Procedures PNG government is now in a better position to implement environmentally sustainable mining and forestry operations. However, the government will need the support of local communities which in turn, at least for the time being, will desperately need the knowledge of visiting researchers and trained national personnel involved in this project, in order to identify threats proposed to the project, bring them to national and if necessary international notice, and in this way become important guardians for occurring development activities.

The authorities have brought local communities forward in this environment, they have bought some time and they have allowed the development of capacity, which will allow communities better to assess these threats in future. Mining can produce a lot of income and the communities will need this income. What is important is that they are now in a position to better negotiate social, ecological and economic outcomes through the knowledge and capacity of this past project. This also applies to forestry development and rumoured oil exploration.
Case study two:

Analysis of the Lakekamu Integrated Conservation and Development Project (LKICAD)

5. 2. Project BACKGROUND

Introduction:

The Lakekamu basin is geographically close to PNG’s largest cities (Lae and Port Moresby) and yet it remains virtually undeveloped. In terms of rainfall the basin is relatively seasonal, with significant rainfall coming every month of the year. According to Beehler (1994) the combination of habitats, hydrology and physiographic relief make the basin one of the remarkable geographic features in Papua New Guinea. The spectacular Wartime Bulldog road, now just a walking track, winds through the jungles of the lower Avi Avi River which rapidly descends from the watersheds of the cordilleran highlands forest of Kuper Range where the Wau Ecology Institute Field Station is located at 2,020m above sea level, along the Wau-Biaru-Garaina road.

The most striking aspect of the Basin and its highland water zones is that they constitute a huge humid forest tract with a very small population of about 2,000 most of whom are now relocated at small central government station at Kakaro since 1972. Apart from the natural watershed, the area includes large undisturbed tracts of rainforest, swamp forest, hill forest, and steeply dissected montane forest extending to the summit of Papua New Guinea’s central cordillera that in places exceeds 3,000 metres above sea level.

5. 2. 1. Physical Characteristics.

As briefly discussed in Chapter 3, the location of the project is an area that is bordered by three provinces of Papua New Guinea. According to Bruce Beehler (1994), the Lakekamu Basin is the southern watershed of eastern Papua New Guinea, and lies almost exactly between Port Moresby and Lae and includes parts of the Gulf, Central, and Morobe Provinces. The basin is 60 km due east of Kerema, Capital of the Gulf Province, and 50 km south-southeast of Wau in the Morobe Province, west of Central Province.

Lakekamu is formed by the upper watershed of the Lakekamu River, which after rising from the coastal plain breaks into four major tributaries – the Kunimaipa, the Oreba (Biaru), and Avi Avi (Eboa) and the Indiwi. The flat lowland basin and the upper watershed encampus the unbroken 2,500 square kilometres of vegetation of all types, ranching from sago and nypa palms to swamp
forest, hilly forest and steeply dissected montane forest. The project location and circuit track linking Kuper Range ICAD project with Lakekamu ICAD project is shown in Figure (9) below.

Project Locality.

Local climatic conditions

The local weather conditions of Lakekamu basin is marked by high humidity in the basin and cool montane climate near the base of the Kuper range to the northwest near Takadu and Yanina and
Mt. Lawson northeast of the Biaru settlement at Kakaro. Local rainfall is influenced by the coastal south-east trade wind system and the northwest monsoonal rain is often experienced between the months of November-January every year. The orographic rainfall, caused by warm ocean current rising over the mountain ranges and cooling off before precipitating, usually causes seasonal rainfall in the area throughout the year.

Ecology and Biological Significance

The Lake Kamu basin has been classified by the PNG Conservation Needs Assessment project in 1992, as having a very high priority for conservation. According to Beehler (1995) the area is rich in potentially vulnerable PNG mega-vertebrates, which include threatened and endangered species like Southern Cassowary, Southern Crown Pigeon, Vulturine Parrot, Blyth’s Hornbill, Lowland Wallaby, Olive Python, and Freshwater Crocodile. The large unbroken tracts of forest are also rich in forest tree species. Results from a one-hectare plot sampling of tree species indicate diversity that is higher than 280 species per hectare.

The bird life is rich with 300 species recorded so far, including 9 species of Bird of Paradise (Beehler 1995). Despite the abundance of natural resources in the area, there is only a small population of less than 2,000 people in total, spread across an area of about 2,500 square kilometres. This low density means that population pressure on the natural resources use will be kept at minimum for quite some time.

The People (Ethnicity, territorial, history and relationship)

In the late 1940s and 1950s the Australian patrol officers into the area banished tribal warfare and required many of these people to move to a central accessible location for administrative purposes. As a result of the wholesale translocation of these communities, no proper historical ownership of land tenure could be established. This situation has since made land tenure histories very difficult and still poses as a major threat for tribal tension in the basin.

The Kakaro station was established in 1970 by the Gulf Provincial Government, which encouraged representatives from the four ethnic groups to settle there in satellite villages. This encouraged the people who have been living in makeshift huts across the basin with no evidence of permanent villages to move in and settle around the government station for administrative purposes. As a result, the community of Kakoro is made up of the four different ethnic groups with the Biaru Language Group consisting of about 600 people, the Kamea Language Group consisting of 600 people, the Gunimaipa Language Group consisting of 400 people, and the Kovio Language Group consisting of 175 people (National Census figure in 1990).
Historically the friendship and partnership between respective trading partners, built out of the traditional trading systems, led the native people to develop a conspiracy plan to get another ethnic group to kill their rival clan within their own ethnic community, or otherwise inform their allies to escape the pending attack. The taking or giving of wives for marriage to other communities has also been possible in such traditional societies in order to maintain long-term ethnic ties and land claims. Further detailed studies into landownership claims between ethnic groups will shed light to these possibilities, as such sensitive issues are not what many people want to talk about freely with outsiders, due to fear of possible retaliation. In all of the four groups who live in the basin, women form the heart of subsistence activities such as gardening, fishing and gathering of forest products. Men are said to be more involved in clearing the forest for shifting agriculture and hunting. Nowadays, many of the men folk are involved in gold panning spread across the basin.

The coastal Kovio people

The Kovio people who live along the lower reaches of the Lakekamu River basin in the southern portion of the basin are lowland dwellers, whose subsistence activities involve partly living on the coastal marine resources and moving back into the inter land a long the rivers making sago and hunting, fishing and living on wild games. This group of people are said to have moved into the basin from Mekio District from the Central Province (Kirsch,S. 1995, Beehler 1995). The Kovio people through their enterprising skills, with better education opportunities, see their role as representing the interests of their traditional allies in terms of what happens upstream, in the way of natural resource extraction and preservation. Besides, their strategic location, in terms of water transportation along the Lake kamu River to the gulf provincial capital in Kerema and the nation’s capital, Port Moresby, is important. This location gives them an advantage to access more modern goods and services through marketing of various natural products like crocodile skins, betel nuts, fish and sago from the basin to the markets in Kerema and Port Moresby. Their lifestyle is very much that of hunting; fishing and making of sago along the Kunumaipa, Biaru and Tiveri Rivers. The Kovio have five licensed short guns for hunting.

Kamea or Watut People

The Kamea or Watut people originally migrated from the Kaintiba District and settled along Tiviri and Aviavi rivers which is now part of what is called Lake kamu basin, which borders with the Moveave territory in the west, all the way to the north-eastern part of the basin at the headwaters of the Tiviri River. It is from here that they recently moved up hill along the Avi Avi River to Takadu, Yanedea and Kujeru near Wau. The people of Kamea in this part of the basin are unlike
those living in the Watut and Bulolo valley in that they are *still semi-nomadic* as opposed to those in the Watut and Bulolo valley who live in large permanent villages.

**The Gunumaipa People**

Stuart Kirsch (1995) has reported that the Kunumaipa or Kurija people moved in from the mountains in the east of Kakaro, at the headwaters of the Kunimaipa River as well as living in the Lakekamu basin itself. Their origin is within the Goilala District of the Central Province. They have over the years spread across the basin, especially along the Sii and Nagore Rivers making gardens and raising pigs in addition to living off the land. The land ownership or allocation is not clearly divided between clans, the reason being there is only one major clan that represents several families. In the past Kunamaipa people traded tobacco, dog’s teeth, and bows and arrows with the Kovio people near the coastal areas in exchange for the shells. Today this ethnic group basically claims most of the land from east of Biaru River near Kakaro to Kunumaipa River including the Sii and Nagore Rivers. The Kunumaipa people are very good naturalists who are also good hunters. They live in organised groups in permanent villages or camps under a recognized leader like the Biaru people and make very big gardens by clearing lots of forest at the lower end of the Biaru and Kunumaipa Rivers; they have been described by research and project team leader as ‘talented naturalists’.

**Landownership and tribal relations**

The four ethnic groups who now occupy the basin have originally moved in from the Gulf, Central and Morobe Provinces. As a result of this ethnic make-up, the Lake Kamu basin is now socio-politically complex, with four ethnic groups, each group speaking a distinct language and with a distinct culture. The question of land boundaries and actual land ownership is also very complex. Three of the four groups of people living in the basin are *actually mountain people* with no definite historical settlements in the basin. These are the people of the Kamea, Gunimaipa, and Biaru ethnicity.

The historical encounters and building of long-term trade partnerships between the various inland ethnic groups has elevated the coastal-dwelling Kovio people to a strong, influential position. The traditional ties and bonds built between the Kovio people and their inland counterparts were recently tested, when the Kovio people invited their inland trade partners of Kamea, Biaru and Gunimaipa ethnicity as *traditional witness to a land court dispute between the Moveave people from a coastal Gulf village and Kovio people of Lake Kamu basin.*
The Biaru people who live near the base of Mt. Lawson and the watershed of the Biaru River belong to a larger cultural linguistic group known as Biaru. This ethnic group is located in the mountains of Morobe Province, northeast of Kakaro station. The local Biaru community in the basin now live in a row of organised villages or camps north of the Kakaro government station on the western side of the Biaru River. Their settlement there, after moving down to the Lake kamu basin, has enabled them to act as the ‘middle-man’ in this trade between the Kovio people and the seven Biaru villages in the mountains of the Morobe Province.

Development Activities

In terms of large-scale economic development, the basin does not have any major economic development activity, although several major development plans are in place including the recently proposed Agro-forestry Development Project. At present, most people rely on the sale of betel nut, alluvial gold and crocodile skins in Port Moresby for much needed cash to buy store goods to supplement their diet and meet the cost of other essential goods and services like paying for their children's school fees. The local markets which run for half an hour every Saturday morning in Kakaro and recently in Takadu is hardly big enough for the people to sell their garden produce. Particularly when there are virtually very few salaried workers in the area except for the few teachers.

5.2.2. The Lakekamu Integrated Conservation and Development Project (LKICAD).

5.2.2.1. Project History

This project has been initiated and promoted by a noted ornithologist Bruce Beehler, a long time researcher who was based out of Wau Ecology Institute during 1970s and 1980s during the tenure of his PhD field research programme at Kuper Range near Mt Missim. He had visited the Lake kamu basin and had carried out several field studies on the ecology of lowland forest birds between 1978 and 1982. In 1982 Beehler led an ecological research team to several sites in the Lake kamu basin and was personally fascinated by the richness of the plant and in particular the bird life of the area. As a result of this fascination there was some interest to link the basin research sites with the on-going montane forest research sites used by Wau Ecological Institute to complement the high altitude field research station. This was not possible in the 1980s as there was not much money made available for biodiversity research and conservation by the global community. Despite this setback the researcher, who was then an Associate Director WEI
was convinced that a lowland field station should be established. A brief visit to the Lake kamu basin was then made in 1984 to explore such possibilities.

Since that trip nothing was done until 1991 when WEI decided to engage John Sio of Kunumaipa ethnic group from Kakaro on the institute’s insect farming and trading project. Under the insect ranching project one of John’s activities was to promote insect farming among his people. With this objective the officer often travelled between Kakaro and Wau to buy insects from the people. The officer then used this opportunity to convince his people about the value of conservation. The obvious monetary value from insects collected from the forest demonstrated to the people in the basin that non-timber forest products could fetch more money than from industrial logging that destroyed their forest. This particular project activity facilitated the public a awareness drive towards biological conservation and the promotion of environmentally friendly forms of development in the Lake kamu basin.

The awareness drive in the basin towards biological conservation through the economic potential of non-timber forest products was timely with regard to the national and global biodiversity conservation movement. In the same year (1991), the Minister for the Department of Environment and Conservation declared that 20% of the nation’s terrestrial and near coastal marine areas should be managed to maintain natural ecosystems and protect the nation’s biodiversity. The nation’s commitment through the Minister for Environment and Conservation was based on a conservation needs assessment put together by a team of prominent biological researchers who have conducted research in PNG. This document listed 30-40 biogeographical zones as biologically rich areas in the country and recommended that they be given priority for conservation (DEC 1989).


The project team leader and proponent (Beehler) was one of the researchers contacted to nominate biologically-significant sites for protection. Due to his knowledge and research interest in the region, the Lakekamu basin and Kuper Range were recommended along with other areas as biological hot spots that required immediate action for protection. As a result, these two areas were included in the Conservation Needs Assessment Report produced in 1989. It is understood by the researcher (Sakulas) that the project team leader was later approached by many international NGOs in the United States including Conservation International (CI) to join their organisation as a biodiversity conservation team leader to participate in an ICAD project in Papua New Guinea. As it turned out, Beehler joined Conservation International and he chose Lakekamu basin as an ICAD project site and immediately initiated several partnership programmes for
graduate students with a number of universities in the United States of America for a quick field study.

After soliciting such support he moved into the basin to conduct preliminary field research in the Lake kamu basin to further justify biological richness in terms of species density and endemism in early 1992. He was accompanied by a group of graduate students from USA and a number of students from the University of Papua New Guinea. This was done **without first making any formal contact with the gulf provincial authority** including the officer in charge of the Kakaro station and even without first seeking any form of endorsement from the four communities living in the area. The research permit clearance was only secured from the Central Provincial Government, despite the fact that the Kakaro station that administers the area is part of the Gulf Provincial Government. The project team leader arrived at Kakaro with the group of graduate students, contacted his past associates and made arrangements with them to take the team to the Nagore site, where he had previously conducted fieldwork. The **Kurija clan leader and councillor (Joe Dumoi) and his clansman (Matai Kai) from Mirimase village at Kakaro were convinced that their clan had the ownership of the Nagore research site.** Logistically Nagore research site is 15km south east of Kakaro and is geographically closer to Kunumaipa country, which is within the central province.

One failure by the research team leader was that a copy of the application to conduct research in the Lake kamu basin was not sent to both the Morobe and the Gulf Provincial Governments. Naturally the practice in the past has been for the National Research Institute or the researcher himself to inform appropriate research institutions close to the research area and to seek their endorsement as well as getting the approval from the provincial district administration. In this case the Wau Ecology Institute and the Kakaro District Officer were not informed. Instead the project team leader on behalf of Conservation International had applied for a research visa through the Central Provincial Government in Port Moresby with the endorsement of the Biology Department, University of Papua New Guinea.

When the research visa was granted the team slipped into the basin without any form of contact with the locally recognised institutions and the relevant provincial authority. The inappropriate entry protocol soon became politically apparent and the tension became high between the Gunumaipa people, who supported the research team, and the Kovio and some members of Kaurun clan of Biaru, who also claim land east of Biaru River. The Kovio had rallied support from the Gulf Premier, who was from Kovio ethnicity, to deport the research project team. According to Councillor Joe Dumoi (pers. comm. 1998) the escalation of the tension between the
Gunumaipa, and the Kovio people was as a result of misinformation to the premier on what the team was actually doing in the basin. The information was biased in that the Kakaro District Officer and the Headmaster of the Kakaro community school were also from Kovio ethnicity. To avoid any tribal conflict the research team decided to pull down the camping gear and decided to pull out of Nagore research base. Most of the field gear were brought into Kakaro and stored at the Gunumaipa camp or village, while the rest was taken care of by the Gunumaipa youth, who awaited further instructions. The team leader and the research students returned to the USA to sort things out with the appropriate institutions including Conservation International.

**The second conservation movement (LKICAD since 1995-1996)**

The second attempt to initiate the Lakekamu ICAD project involved formation of a project partnership consisting of the Wau Ecology Institute, the Foundation for People and Community Development and Conservation International of the United States of America. To make this partnership work in 1993, the project team leader while in the United State made several attempts to raise funds to initiate some income-generating activities and promote wider community awareness in the basin. The first grant came from the New Guinea Biological Foundation. This particular funding enabled Wau Ecology Institute to organise Kuper Range youth to work on the upgrading of the Bulldog walking trail to Takadu and into Kakaro (Figure 9). The youths were also involved in the awareness campaign that promoted environmentally friendly projects, such as the butterfly ranching project and the possibility of nature tourism project aimed at bringing in the tourist to pass through their communities and staying at the guesthouses, if they built one in their community.

The planning grant further enabled WEI to facilitate the basin forum in September 1993, which resulted in the ICAD initiative being moved to the Morobe side of the political border on land own by two clans from the Kamea and Biaru ethnic group. While this was happening in early 1993, Conservation International sent in its Melanesian Country Programme Director Tim Werner, to formalise a project partnership team that consisted of Foundation for the People and Community Development, Wau Ecology Institute and Conservation International. After the formalisation of the project partnership, a funding proposal was submitted to Biodiversity Conservation Network (BCN) on behalf the project partners in early 1994. As soon as approval for both the new project location sites and the major funding was secured, the research students from USA and UPNG returned to the Lakekamu basin and moved to a newly selected research site and not to the previous Nagore research site. The new research site at Kor is within the Morobe side of the basin and is only two hours of walk east of Takadu airstrip, along the bulldog trail and links up with Kuper Range ICAD Project site.
Project Administrative Structure

This committee’s primary responsibility is to ensure the overall coordination and implementation of the project is on schedule and within budget. Besides, the committee is to be seen as an official channel of communication by the funding organisation, provincial and the national government institutions and the landowner community. This committee would also ensure that financial accountability and transparency existed in the project. The project manager and the project staff are to be responsible to this committee for any issues relating to the ICAD project. Similarly it was perceived that representatives of each of the four ethnic groups would be involved in the decision-making process at the project level to ensure a larger part of the Lakekamu basin was brought under the ICAD project initiative.

Figure 10 shows the perceived project administrative structure in 1993.

The Foundation for People and Community Development is seen in this project as a country-based project implementation organization, while Wau Ecology Institute is merely tasked to provide on-site logistic support and to ensure that the technical staff available at the institute are used to implement certain programme activities. The implementing organization FSP/FPCD identified five (5) distinct but interrelated programme activities in the project document, which it expect to offer to the basin community as the means to execute the ICAD Project. Programme activities includes:

- An Awareness Community Theatre (ACT) which is expected to use art or village based acts or plays as a communication medium to convey awareness messages on conservation, health and nutrition related issues to rural villages and certain sectors of the urban communities.
• The second Eco-Forestry Programme activity aims to educate and help resource owners become aware of the need to conserve and sustainably harvest their forest resources, towards the betterment of the quality of life in the respective communities.

• The third programme activity aims to create awareness towards self-motivation for better health.

• The fourth programme activity is to promote self-employment at village level through the Grass Roots Opportunity for Work Programme (GROW).

• The fifth-programme activity is to initiate incentive programme for Integrated Conservation And Development (ICAD) projects that expects to secure biodiversity conservation in the Lakekamu basin by offering social and economic development incentive packages to landholding communities.

Project Goals and Objectives

At the core of the Biodiversity Conservation Network (BCN) grant initiative, the project proponents have proposed to assist local landowner groups establish small scale enterprises base on providing attractive field opportunities for rainforest researchers, such as ecologists, anthropologists, adventure tourists and bush walkers, along the track linking various communities in the Lakekamu basin (Figure 9). The major activities to achieve the project objectives are shown in Box 8 below.

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<tr>
<th>Box 8: Shows Goals &amp; Objectives of Lakekamu ICAD Project Initiative</th>
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<tr>
<td>These enterprises requires</td>
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<td>Firstly building of a rainforest field station as a focal site</td>
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<tr>
<td>Secondly, link various communities with nature trails that</td>
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<td>cut through their forest to reach community owned and</td>
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<td>managed bush material lodges and huts meant to cater for</td>
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<tr>
<td>eco-tourists and bushwalkers.</td>
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<td>Thirdly, to assist the community to build and keep well</td>
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<td>marked and maintained hiking trails, to facilitate</td>
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<td>adventure tourism to visit biological, cultural and scenic</td>
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<td>sites in their areas for reasonable fees.</td>
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<td>After their brief stay the visitors are guided to the next</td>
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<td>stop-over and handed over to the next hosts included in the</td>
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<td>package</td>
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5. 2. 3. Project Framework Analysis

5. 2. 3. 1. Identification of project phases
To better understand and evaluate the actual processes and the outcome of the Lakekamu ICAD project, the events that took place leading up to the actual establishment of project in the basin are presented in two stages or phases below. This project took a slightly different approach to access entry into the local community than that of Crater Mountain ICAD Project. The community approach in this project, in terms of establishing contacts with various sectors of the community such as the elders and the youth, is also different. This is because the original proponent of the Lakekamu ICAD project, Conservation International (CI) had expected to conserve a large part of the Lakekamu basin in one single initiative without any local NGO partnership. The decision to conserve this area dates back to the early 1980s. A positive decision to conserve the basin only commenced in 1992 and is described below.

PHASE 1: The First Conservation Movement

The project proponent Conservation International through the team leader had several contacts in the basin prior to the introduction of the ICAD initiative in 1992. His past contacts were specifically with the Gunimaipa ethnic group due to their hard-working habits and their naturalist skills and their knowledge of the forest. What happened in the first conservation movement can be described as follows:

Stage. 1. Enlistment of Elders

In this project, a community identification and consultation process took place after the project team leader flew into the basin with the group of students. It is understood that the project team leader had written letters to his personal past contacts informing them of the pending project and the trip he was to make. The first consultation meeting took place between the project team leader and the Gunumaipa community, to whom he had written letters and had previous acquaintances. After this brief consultation with the community councillor as well as the clan leader, the team was given approval to conduct research in the forest at Nagore. The ad hoc approach instead of a proper identification and consultation process later caused delays and forced the project research team to pull out of the basin until a proper dialogue was reached with the Gulf Provincial Government and the issue of land claim was cleared between the respective ethnic groups and between clans within an ethnic group.

Stage. 2. Establishment or Enlistment of Youths

After setting up the research base, the team began to employ a couple of male elders and male youths from Gunumaipa as field assistants and camp-site workers. Soon the news of people getting employed spread to other ethnic groups from Biaru and Kovio, especially members of clans from the two groups who claim land west of the Biaru River. To ensure fairness, the team
leader employed some of them, but later found that they were not hard-working and were not familiar with the forest to assist the research team. As a result, the employees from Kovio and Biaru were sacked for not working up to expectations. When that happened they became dissatisfied and wanted to stop the research team by seeking political and ethnic support from the Gulf Provincial Government to remove the research team from the area.

When this particular complaint reached the provincial authorities, they found out that there was no authorisation of any kind by the Gulf Provincial Authorities for the research team to be in the Lake kamu basin. The lack of any legal form of authorisation from the province meant the Kovio youths had the legal basis to ask the research team to leave the area. However, this unfortunate situation did not give them the legal right to go out to the campsite to harass the students and the team leader. Kovio male youths also threatened the Gunumaipa assistants at the research site and demanded its closure.

Stage. 3. The Conservation Awareness Program

The Conservation awareness campaign conducted by Wau Ecology Institute through the insect ranching project in 1990-1991 prompted an interest for conservation especially among the Gunimaipa ethnic group. It was natural for this particular ethnic group to offer their forest for conservation when the project team entered the Lakekamu basin in 1992.

PHASE. 11: The Second Conservation Movement (LKICAD)

The second phase (or attempt) of the conservation movement was made as a result of political intervention plus the community’s desire to know what the biodiversity research and conservation project had to offer them for access to their forested land. The Kovio peoples’ forthright stand behind their Premier had created the urgency for the conservation partners to vigorously address the social and economic considerations for the resource-owning community groups of the basin, as a priority. To address this concern the project proponents had to actively seek special funding as part of the project-planning grant from smaller funding organisations, to initiate awareness programmes that informed the community of the benefit they were likely to receive as a result of allowing conservation of biodiversity in their area.

Stage. 1. The Enlistment Process

The Forum chaired by Daniel Ifu, Kakaro station manager and former National Parliamentarian, provided the project partners with an opportunity to gauge the view of the groups on what their concerns and aspirations were and to establish whether or not this project should be relocated somewhere in the basin or pull out altogether. To establish their views, three options were put to the broad community during the forum as part of the dialogue process are;
• To amicably rectify the problem and to win the entire community’s support including the Kovio people to have the project remain in the basin and to include greater portion of lowland forest under the ICAD initiative.

• To secure a research base on the Morobe side of the political boundary first while still pursuing the mission to cover a larger area that would include the forested land owned by the four ethnic groups.

• To pull the project out of the area altogether.

When these three options were presented to the community at the forum, an immediate invitation and expression of interest came from the Kamea representative from Takadu and the Elka clan leader of Biaru for the research base to be built on their land within the Morobe side of the boundary, west of the Biaru River. The significant outcome of this forum created the basis for the relocation of the project within the Morobe side of the border. This has meant the Gulf Provincial Government and the Kovio people could not interfere with the project. However, to further secure the confidence of the four community groups and to respond to the aspirations of the political administration of Kakaro, especially the political leaders who demanded a long term commitment for an infrastructure set-up from what they see as purely a research project, a commitment was made on behalf of the project partners to build the permanent project coordination office on Kakaro station.

Stage 2 & 3. The Conservation Campaign

After the first incident in 1992 where the research team was forced to leave the basin after inadequate consultation with the four ethnic groups in the area, the first major effort to involve the four ethnic groups and to establish a proper process of consultation came during the September 1993 forum. The primary purpose of the forum was to listen to the peoples’ concerns and fears and to determine the fate of the project in the basin. Besides, it was also incumbent on the project partners to explain to the people why it was important to conduct biological research first by a group of expatriates who went to their forest.

5.2.3.2. Stakeholders and Stakeholders Relationship.

The Internal stakeholders

All four ethnic groups in the basin are not involved in the project, even though their involvement was seen as critical from the start. The initial objectives of including the four community groups and covering a larger area of Lakekamu basin have been marred by political interference, plus ethnic segregation and disputes on the basis of land claims.

Wildlife Management Area Committee
The Committee to run the Wildlife Management Area (WMA), or at least be involved in the decision making process of this project, has not even been formed. The Lake kamu ICAD project initiators, even after the second attempt to properly involve the resource owners, have yet to put in place a clearly visible project committee whose members could eventually be included in the Government Gazette as Committee Members, as is required by law for the designated Wildlife Management Area (WMA). The participatory role in the project planning and implementation process by selected Kamea and Biaru clans is presented in table (8) below.

Table (8) showing participatory role played by Lakekamu ICAD project community by gender.

<table>
<thead>
<tr>
<th>Ethnic Groups</th>
<th>Stakeholders</th>
<th>Participatory Role Played by Various Members of the Lakekamu ICAD Project Community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only two clans from Biaru community are involved and they are the Kinggari &amp; Elka clans</td>
<td>Adult Males</td>
<td>Make decisions by giving their consent for the conservation project to include their forested land. Mainly talking to their male children and tendering their moral support in anticipation for the delivery of goods and services. Taking care of politics and social responsibilities with other clan leaders by ensuring the leadership is in order and clan members carry out instructions. Take time to talk with project officers to encourage and assure project on their land will proceed as agreed. In the process additional demands are being made as part of the trade offs. No WMA committee or and project committee formed. Informal structure is still in place which is built around the project officers as focus point. Project officers also in limbo unless authorise to act from Port Moresby FPCD &amp; CI officers from Port Moresby and Washington US. Similar to adult male members of the community. They are much more concerned with daily subsistence gardening and house keeping activities. In kakaro station the adult females of the two clans who are partners in the project led the young females in collecting grass used as thatching material for the roof of the guest house. Number of them led by woman leader known as Marie involve in nutrition awareness and cooking lessons with interested women at Kakaro for few weeks under the direction of a Peace Corps volunteer couple from US.</td>
</tr>
<tr>
<td>Adult Females</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Female youth members within the Biaru community are not involved in many activities. Mainly due to cultural restrictions in that decision making process in this nature of activity belongs to adult males and young men. To share the benefits in wages young females are hired as carries together with male youths between the airstrip and the Kor field station whenever people travel in to the project site.
Male youths from Biaru provide support labour to project team. Ricky and couple of his brothers and cousins from Elka and Kinggari clans are employed as local field assistants to researchers whenever they arrive in the basin. They together with those selected from Amphia clan of Kemea do this job on rotation basis.

**Kamea ethnic group of Takadu.** Other clans like Nauti are not involved. Only Amphia clan lead by Peter Kokipago and his children are involved.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult males</td>
<td>The true leadership to lead a clan in Kamea is weak and missing. Peter with his brothers and sons seem to be the only people from Kamea involved in the project. A different style of leadership to Biaru community. Nauti and Totiama clan leaders had only one meeting about how they could participate. Amphia leader Peter did not accept their participation. His role is basically talking to project officers and relating the discussions to his brothers and children. Nothing more than that. For some time he decided not to deal with national project officers and dealt only with an American researcher (Kurt Merg). This caused a lot of delay in getting things done, as national officers were actually in charge of the project purposely delayed things, just to show that they were in charge.</td>
</tr>
<tr>
<td>Adult Females</td>
<td>Females are involved in growing vegetables and selling to the field station at Kor. They are hardly present in the men’s meeting with the officers when ever that happens on occasional basis.</td>
</tr>
<tr>
<td>Youth Males</td>
<td>The male youths of Amphia clan play the role of guides to project officers and researchers by taking them to observe forest boundaries of their land and being employed as field assistants. Besides they provide manual labour and security at the field station ion rotation with their counter part from Biaru Elka and Kinggari clans. The role of female youth is small and informal. Like their Biaru counterpart, they are often there to support the adult females.</td>
</tr>
</tbody>
</table>

**The Inclusion of External Stakeholders**

The initial partnership in the BCN grant application included Conservation International (a USA-based internationally active conservation NGO), the Foundation for People and Community Development (FPCD) formerly known as Foundation for the Peoples of the South Pacific (FSP-PNG) and the Wau Ecology Institute (WEI) Papua New Guinea, as shown in Figure. 10. This partnership did not exist soon after the grant was secured. Instead what has transpired since the decision to relocate the project is represented in Figure (11) below. The partnership is
built on an informal basis with the resource owners, as there is no project committee even in 1999.

Figure (11) shows perceived new project administrative structure after change of location.

Table (9) showing participatory role played by various external stakeholders of Lakekamu ICAD project.

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Description of Participatory Role.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church</td>
<td>There are now six church groups in the lakekamu basin and they include, Lutheran, American Baptist, United Church, PNG Rival Church and Penticostal churches and the Catholic Church. Some of them play significant roles but often behind the scene influence on the lives of many rural communities in the country. They have been present in the area before the ICAD initiative took place. Many communities have developed a high degree of respect for many expatriate missionaries of Anglo Saxon origin. If the church encourages conservation the community will give their unwavering support. Other roles played by church in this project includes; Air service to the area on occasional basis by the Baptist Missionary. Literacy programme through “tok ples skul” organised by Lutheran church. Takadu School was started by the Lutheran church and is still the mission school. Leaders of various church groups have had informal discussion with the project staff but have not been involved in any major way.</td>
</tr>
<tr>
<td>Foundation for People and Community Development (FPCD)</td>
<td>Under the initial partnership agreement between, Wau Ecology, Conservation International and FPCD. The primary role of FPCD in the project is: To provide technical and administrative support to field activities and supply manpower as agreed to under provisions of the Biodiversity Conservation Network (BCN) implementing grant allocation. To be a primary communication contact point for all PNG activities. To be responsible for filling in the country project managers position.</td>
</tr>
</tbody>
</table>
To act as an in country manager for BCN funds and to oversee expenditure and acquit quarterly financial reports

| Conservation International (CI) | This organisation is the lead agency that has much of the influence on the type of programs seen under the current ICAD initiative in this project. CI’s roles are:
|                              | Take lead on project and programme concept, including drafting, and final submission of project proposal to BCN.
|                              | Project liaison with BCN
|                              | Overall manager of BCN project funds
|                              | Provide progressive reports to BCN on all matters of the project
|                              | Provide necessary fiscal channel between PNG and BCN.

| Wau Ecology Institute (WEI) | Wau Ecology Institute role at the beginning of the project is to:
|                            | Provide technical and administrative support for field activities at lakekamu basin
|                            | Provide on site logistic support for personnel travelling to and from the project site
|                            | Provide technical personnel to accomplish certain programme task that could easily be carried by officers at WEI

| National Government | The national government’s role through the department of environment and conservation has been that of endorsement and facilitation for ICAD initiative to accomplish it’s international obligation and commitment through the effort of the NGO stakeholder

| Provincial Government | Out of the three provincial governments overseeing the people in the basin only the Morobe Provincial Government had released the community welfare officer in Wau District administration to conduct two nutrition workshops in Takadu and Kakaro for the adult and youth female community members. The Gulf Provincial Government made available the officer in charge of Kakaro to be involved in relevant consultation process for the project. Central provincial has no role except for the endorsement of the research permit.

| Local Level Government | Wau–Biaru Local Level Government had financially contributed to the project by making funding available for the two nutrition workshops being conducted in the area. Nukeva-Kovio Local Level Government Council has no funding to improve the schools and clinic in the area.

| Business Community | Few business community have shown interest in the area, except the North coast Aviation which is the airline serving the area. The perceived agro-forestry project is still in the pipeline and as yet no developer has come forward with the funding to implement the project.
|                   | PNG Forest Products, a logging company in Bulolo, had been approached to the area but to date the company had not made any commitment.

| Funding Agencies | Funding agencies have no direct role except their funding guide lines and funding time frame often influence the type of program being administered and their out come. This project was no exception. Conservation international administered the requirement placed in grant funding. PNG NGO FPCD at the later part of the project found that it was made to advance it’s own funding to the project to maintain continuity but found that the transfer or re-imbursement did not get released on time by the funding agency, Biodiversity Conservation Network (BCN). This issue caused conflict between implementing partners CI& FPCD after WEI had pulled out of the partnership deal.
5.2.3.3. Project Ownership

The project ownership of this project is seen from two different perspectives. The first is from the perspective of the resource owners in the basin especially those selected clans from the Biaru and Kamea ethnic groups that are actually involved in the project at present. It seems obvious that the event that determined the project proponent to abandon the original research site at Nagore and the issue of confrontation has still not been amicably resolved. The two groups who have jointly agreed to allocate an area of land between the Avi Avi River and the Kakaro station west of Biaru River now see themselves as owners or the only legitimate partners of the ICAD initiative. The Kinigari clan of Biaru is also included in this partnership because of the members decision to take their own initiative to built the first and the only bush material guest house at Kakaro near the airstrip over looking the Biaru river. The rest of the Kamea and Biaru community from the other clans will only involve themselves at the invitation of the members of the clans involved. Basically this means other clans from Kamea who have land adjacent to the field station are not recognised by the project. The problem results from the fact that so far no conservation boundary has been clearly established or identified.

Besides, there is a limited public awareness drive on the current and long term issues of the ICAD initiative. According to Tony Kaia former Biaru councillor (per. Com. 1998) there is no good community link between the project field staff and the people from Kovio. Tony Kaia believes that the current land owners from the Elka and Kinigari clans of Biaru community and the Ampia clan of Kamea will not be happy if the project manager (Sengo) gets too close to the people who chased the project team out of the Nagore site in the first place. This belief is supported by Sengo (pers. coms. 1999) who feels that members of the three clans now involved in the project are often suspicious if other members of the community spend more time talking to project staff or visa versa. They want to see what they can get out of the project for their land, before further help is extended to other groups.

Secondly the issue of ownership is evident from the perspective of the project implementing NGOs, namely the Conservation International and the Foundation for People and Community Development. The issue of project ownership particularly in relation to the delivery of tangible social and economic benefits is continuing as a major threat to the future viability of the Lake kamu ICAD initiative. The local NGO Foundation for People and Community Development feels that BCN grant secured primarily under Conservation International is not contributing meaningfully to the social and economic aspirations of the resource owners.
5. 2. 3. 4. Project Activities

The Marketing Aspects of the Project Nationally and Internationally

The timing in relation to the marketing of the guesthouse and the research base has been crucial. The project should have started the marketing aspects of the nature and scientific tourism package before getting the people to build the guesthouse and the research base. A biological inventory carried out in the Lakekamu basin in 1998 has been widely publicised in the BCN network and ecological publications. The Project officers, Paka Thomas (1998) and Sengo John (1998), have also written about the project, expressing their concern that not enough had been done in terms of marketing the eco-tourism and scientific tourism aspects of the project.

The LKICAD Economics Programmes

The Lakekamu ICAD project is being implemented with the knowledge of a pending threat from the major resource development projects being proposed for the basin. In recognising this pending threat, the conservation-centred, species-focussed and research-driven ICAD initiative attempts to convert the cash-stricken, development-anxious community to accept biodiversity research and conservation as means of bringing social and economic benefits to the basin by;

- Developing a small enterprise based on a landowner-managed rainforest field station for study and training in ecology, wildlife biology, and conservation science.
- Developing an adventure tourism based enterprise featuring the Bulldog- Biaru Circuit Trek, which is a spectacular walking track that combines mountain scenery and vistas, remote back-country communities through uninhabited white water river gorges, relics from World War II, and remarkable wildlife (Figure 9).
- Developing biological and socio-economic monitoring systems to determine the impact of the enterprises on the Basin's economy, biodiversity, and traditional cultures.
- Promoting education and outreach programmes for the landowner groups in the basin and share lessons learned there with landowner groups with the broader conservation and development community in the country.
- While the funding organisations were initially not keen to consider the social and economic activities in the biodiversity and research project, they were later convinced to realise that it was imperative to include social and economic incentive package as an integral part of the funding. The message being there will not be any conservation in PNG unless the people’s social and economic needs were met.

The Type of Enterprises

Nature and Scientific Tourism.

The nature of economic activity included in the economic incentive package as perceived by the project proponent and leading NGO in the project, Conservation International, is diagrammatically
presented in Figure 11. Figure 11 is actually the **perceived business plan** that is geared towards all of the scientific, scenic and cultural tourism activities, linking various ethnic groups in the basin. The arrows show two nature trails to go into Lakekamu basin after flying into Wau and overnighting at the Wau Ecology Institute. The hiking is expected to **start out of the Kuper Range Field Station** as shown in the location map Figure 9. Trail one follows the famous World War 11 track to get into the **Ivimka Field Research Station**. Trail two goes via the Biaru community living up in the mountains of Morobe, then into Kakaro project’s administrative centre. Visitors who intend to come into the basin by **road from Port Moresby to Malalaua** could do so and then be picked up by a dinghy to proceed to Okavai–Kovio village, and then choose to go to the project administrative base at Kakaro via three different routes, as shown in Figure (12) below.

**Figure (12 ) shows hiking tract linking basin communities and represent business plan.**

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**Business Marketing and Sales Centres**

Under the Lakekamu project initiative, the business marketing and sales centre of the research and nature tourism business plan (Figure 12 above) is to be set up with major tropical research institutions abroad and the selected travel agencies, especially in the United States. In Papua New Guinea, partner institutions are expected to market the package within their network system. In terms of the local community involvement each of ethnic community groups along the nature trail were told to build guest-houses consisting of bush material to receive and house the visitors. So far only two guest houses have been built, one at Kakaro and the recent one at Takadu.
5. 2. 3. 5. Types of Funding and Funding Arrangement

Lakekamu ICAD project is unfortunately one of those projects that has had very little local input so far as the project design, community participation and the scheduling of the implementation plan is concerned. In 1995 this project applied to two funding sources for funds to implement the ICAD initiative in the Lakekamu Basin. The first application was submitted for a Biodiversity Conservation Network (BCN) Grant of US$355,484 for the three year period starting 1st May, 1995 to 30th April, 1998. This Fund is set up by the US Government and administered by the USAID, an American Government Aid Agency. The actual grant approved was US$300,000.

The partners in this application included Conservation International (US based NGO), Foundation for People and Community Development (FPCD) formerly known as Foundation for the Peoples of the South Pacific (FSP-PNG) and Wau Ecology Institute (WEI), Papua New Guinea. The Wau Ecology Institute gradually pulled out of the partnership due to non-reimbursement of funds already advanced by WEI towards its specific role in the project. This expenditure included an awareness campaign for insect ranching activity as a possible development option for income generation, and a visit made by the head of the education programme and the Subsistence Agriculture Improvement programme coordinator. The second reason why the institute was pulling out had to do with the management’s decision to down-size the number of staff at the institute from 15 professional staff to only seven due to financial difficulties and the anticipated departure of the director (researcher). The incumbent caretaker administration was not expected to play a role in the partnership due to lack of experience.

The second application was made in March 1995 to the John D. and Catherine T. MacArthur Foundation of USA. The project document was written up by Bruce Beehler of the then Conservation International. The amount of funding requested from MacArthur Foundation was US$467,500 over three years from 1st July, 1995 to 30th June 1998. The actual grant approved was US$365,000. The Partners for this project included Conservation International, Foundation for People and Community Development and East New Britain Social Eksen Komiti, both PNG local NGOs. Under this grant application, some of the funding would have gone towards creating an East New Britain ICAD project while approx. US$265,000 formed part of the own means to match the BCN funding discussed above, Sengo (pers. comm. 1998).

It is important to realise that the funds provided for the yearly programme below (Table 9) is only an approximate amount. According to personal experience on Kuper Range, the bulk of the funding is usually spent in the first year and the amount decreases in the years over the duration of the funding period. The main component of the funding that stretches to the end of the funding
period is in relation to salary. Other major programme area in the project document that receive funding in the first year or so, are office equipment, materials publication and various training programmes.

Secondly, it is important to realise that many NGOs change funding categories or items once funding is secured. At the time of writing up, I am advised that project lead agency Conservation International had made alteration to the budgeted items when it realised that it needed part of the funding from the PNG Biodiversity programme to create its own PNG based office; hence the bulk of the funding was withheld for that purpose. The issue has been and is still the subject of dispute between the FPCD director Yati Bun and Conservation international. The figures provided below are intended to give some idea on the level of founding the NGO sector were receiving towards biodiversity conservation in the country. It is not intened to establish how much was spent on research and how much went to the community support programme.

**Table 10 showing sources of Funding for Lakekamu ICAD project 1995-1998 May**

<table>
<thead>
<tr>
<th>Grant Base</th>
<th>Time Frame</th>
<th>Total Grant Value (US$)</th>
<th>Grant Income/year approx/yr</th>
<th>Grant Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>6 years</td>
<td>US$773,062</td>
<td>US$128,911 approx/yr</td>
<td></td>
</tr>
</tbody>
</table>

5. 2. 3. 6. Project Initial Interaction with Provincial and National Government

Project interaction with both the national and provincial government is mainly related to administrative and procedural matters, in relation to research visas and permits. The project made it's first contact with the National Government to seek endorsement from the Department of Environment and Conservation to facilitate the conservation of biodiversity in the Lake kamu basin as part of the ICAD project initiative in 1992. It was later obvious that they needed to secure political endorsement to work in the Lake kamu basin from the Gulf Provincial
Government and not the Central Provincial Government as first thought by the project team leader and the NGO leading the project.

The Lakekamu ICAD project being in three provinces seems complex for administrative purposes. Despite the complex situation administratively, there is a great deal of potential for recognition and support, if the project can demonstrate the viability of and coexistence of scientific research and nature tourism. In terms of the type of support from the three provinces and their local level and provincial government system, there is a slim chance of getting any support from the Central Provincial Government. This is due to the fact that the Gunamaipa people who originally come from the Central Province and now living in Kakaro see themselves as part of the Gulf Province. The Central Provincial Government has not had an effective administrative set-up in the Goilala District and as such it has failed to establish any administrative outpost near the border to serve the interests of the Gunumaipa people.

The Morobe Provincial Government has on the other hand built an administrative post at Takadu to serve the Kamea people on their side of the border. Such an administrative outpost has enabled the Kamea people living at Takadu to seek support for social and economic development needs from the Morobe Provincial Government while those living at Nukeva seek support from the Gulf Provincial Government. This arrangement has enabled the Kamea people of Nukeva village and the Kakaro station to have one councillor who represents them in the Nukeva-Kovio Constituency of the Gulf Province. The Kamea or Watuts living in Takadu, Andia and Kujeru have a separate councillor who represents them at the Wau-Biaru Local Government Council. The president of this council is represented in the Morobe Provincial Assembly.

The Wau local government council also have other Kamea councillors from Takadu living in various mining settlements in Wau on the council. Besides the Wau Local Level Government includes four councillors representing the seven upper Biaru villages on the council. In the 1998-1999 election a councillor from Biaru has been elected as the president of the Wau Local Level Government Council.

5.2.4. Project Evaluation

5.2.4.1. Project Threat
The biggest threat to the basin’s biodiversity is expected to come from the pending large-scale economic development projects discussed below. Like many similar remote and isolated parts of PNG, the people here are so deprived of the modern goods and services that are enjoyed by other Papua New Guineans near the major project sites, towns and cities that these people can hardly wait for the opportunity to see such services come to their door steps. The Lakekamu ICAD project is potentially threatened by both the internal and the external threats.
Internal threat
The internal threat is currently looming from several quarters. One is from the Kamea clan of Nukeva village who are the principle instigators of the pending oil palm project. According to Emo Tam (pers. comm. 1999), the Nauti clan leader, his clan is prepared to prove to Peter of Amphia clan of Takedu that his clan does not have the right to the bulk of the land now included in the conservation project which is near the current field research station. The second threat is coming from the Biaru Clan who claim the land near the Elka clan and Kinigare clan but who are not currently part of the ICAD project. They are talking about bringing in the PNG Forest Products from Bulolo to log their area and open up the road into Kakaro. This means each clan of the four ethnic groups are now keen to participate in opportunities that is brought into the valley, irrespective of their environmental consequences.

Community Expectation
The Lakekamu ICAD project is being implemented with the knowledge of the pending threat from the major resource development projects being proposed for the basin. In recognising this pending threat the conservation-centred, species-focussed and research-driven ICAD initiative attempts to convert the cash-stricken, development-anxious community to accept biodiversity research and conservation as a means of bringing social and economic benefits to the basin by;

- Developing a small enterprise based on a landowner-managed rainforest field station for study and training in ecology, wildlife biology, and conservation science.
- Developing an adventure tourism based enterprise featuring the Bulldog- Biaru Circuit Trek, which is a spectacular walking track that combines mountain scenery and vistas, remote back-country communities through uninhabited white water river gorges, relics from World War 11, and remarkable wildlife (Figure 11).
- Developing biological and socio-economic monitoring systems to determine the impact of the enterprises on the Basin’s economy, biodiversity, and traditional cultures.
- Promoting education and outreach programmes for the landowner groups in the basin and share lessons, learned there with landowner groups, with the broader conservation and development community in the country.

The intention of the two ethnic groups Kovio and Gunumaipa who are currently excluded from the ICAD project is that of waiting for an opportunity to bring in their own developer, one who is prepared to be their partner, which means none of the other ethnic groups currently involved in the ICAD project initiative or the oil palm project. What is seen here is that because the area is so isolated and less-developed the people are so desperate to develop their resources with whomever comes in with the money to develop whatever resources on the land.
**External threat**

The pending external threats are expected to come from the two major developmental projects proposed for the area and this includes the possibility of a mining operation in the basin by a mining company known as the “Wau Alluvial Gold” from Wau and the other is from the proposed Integrated Agro-Forestry Development and Conservation Project. In as far as the mining project is concerned, the impact is going to be limited to the area along the Omio creek, which is south east of the current Field Research Station at Ivimka also called Kor.

There is however a possibility of development threat coming from the Integrated Agro-Forestry Development and Conservation Project. The project will essentially involve partly a clearfelling logging operation, major oil palm cultivation and conserving of certain areas as buffer zones. According to Waiyong Nang of Niugini Forestry Supplies Propriety Limited a consultancy company has been engaged to work on the project plan. This development proposal is being promoted by a group known as Imeah Himanato Farmers Association that is made of of 5,000 Kamea members and other people of the Morobe province who are Oil Palm small block holders in Kimbe, West New Britain. The project is expected to cover an area of 20,000 hectares of the upper Lakekamu basin between Avi Avi River and the Biaru River. The association’s plan is to engage Kimbe based oil palm Company to assist them to develop the project, especially the oil processing plant. The development plan on the 20,000 hectares includes 8,000 hectares of conservation area and 12,000 hectares for agricultural development. The 12,000 hectares will be logged by clearfelling first and only 4,500 hectares of this will be planted with oil palm and the other 7,500 hectares will be planted with native commercial tree species as part of the reforestation programme (Waiyong per.com.1998). According to Waiyong (per.com. 1998) politicians from both the Gulf and the Morobe Provincial Governments have given the political endorsement.

5.2.4.2. Implication of Legislative and Policy Environment

The National Government has very little control in the area except for the purpose of making major decisions regarding resource development. The national departments such as Mining, Forestry Agriculture and Lands are key departments that make decisions when it comes to any resource development. The ICAD projects implementing NGOs are aware of the pending resource development plan being proposed by the Watut or Kamea oil palm growers association of West New Britain. The association want the company there to develop the Lakekamu basin with oil palm. The conservation lead agency, the Department of Environment and Conservation,
can do very little to prevent any development unless the area is officially declared as a conservation area or is in an advanced state of being declared as a Wildlife Management Area (WMA).

Under the National Environmental Planning Act 1987 the Environment and Conservation Minister has the right to refuse any environmental plan presented to him by the developer if he thinks it is environmentally destructive or if the development plan is inadequate. Other than that there is no way he could stop the development from going ahead if the development plan is improved and resubmitted with appropriate political support. For the proposed conservation area to be gazetted and become a Wildlife Management Area (WMA) under the (Fauna Protection and Control Act 1966) it a legal requirement to have the names of the clan leaders with the rules and fines put in place for the proposed conservation area. The mechanism or process to get a WMA set up, as discussed in Chapter 4 (p. 113), is not evident in this project even seven years after the project commencement.

5.2.4.3. Implication of Large Scale Development Activities

There is no definite large Scale Development Activities taking place except for the proposed small scale-alluvial mining project and the proposed integrated agro-forestry, oil palm and conservation project. The development proposal being promoted by a group known as Imeah Himanato Farmers Association of west New Britain is not likely to take place, unless the Kovio people further downstream are actively involved. According to Joseph Mugabei (pers. comm.1999), a spokesman for the Kovio people and a lawyer by profession, the livelihood of the Kovio people is dependant on the natural resources down stream, and as such they will not permit any development to take place upstream, unless the economic returns are in their favour to substitute for living off the land. The development of mining project is unlikely unless there is a major gold discovery there that is going to bring in a major developer with major associated infrastructural development such as the opening up of the road between Wau and the Kakaro station.

5.2.5. EVALUATION OF PERCEIVED BENEFITS

5.2.5.1. Proposed Activities verses Actual Achievement

The main economic benefits offered to the landowners in this project are based on Scientific Tourism and Nature or Adventure Tourism. Adventure tourism includes bushwalking, wildlife watching, village experience and other outdoor activities. The science and research tourism enterprise focuses on providing support services to research scientists who are expected to be
attracted to the basin to conduct research in the pristine rainforest (Beehler et al. 1995, p. 20). The two inter-related income-generating activities were funded under the BCN grant for the period 1 May, 1995 to 30th April 1998. The analysis on the project activity is presented in Table 11 and has a ranking out of five (5).

Table (11) Below shows Benchmark assessment on the types of economic activities intended in 1995 and the actual status of these activities in May 1998 with a ranking out of (5) five.

<table>
<thead>
<tr>
<th>Perceived Economic enterprises</th>
<th>Infrastructure set up</th>
<th>State of implementation</th>
<th>Economic Viability</th>
<th>Trained enterprise management</th>
<th>Financial input &amp; Return</th>
<th>Ranking out of five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adventure tourism</td>
<td>Kakaro bush material lodge</td>
<td>Completed in 1997</td>
<td>Total income derived kina 300 from expected income range of US$ 6,500-11,000. By year 3.</td>
<td>One manager And six Biaru girls being trained to cook and take turns to maintain the lodge.</td>
<td>Very limited financial input by project from budgeted amount of US$19,700</td>
<td>2/5</td>
</tr>
</tbody>
</table>
To support the proposed income generating enterprises shown in Table 8 various socio-economic programme activities is being promoted simultaneously. This would in turn contribute towards achieving the expected outcome. This outcome is now shown in Table 12 below.

Table (12) Below shows Benchmark assessment on the types of economic activities intended in 1995 and the actual status of these activities in May 1998 with a rating out 5 for Lakekamu project.

<table>
<thead>
<tr>
<th>Proposed Activities</th>
<th>Perceived Benefits</th>
<th>Actual benefits</th>
<th>State of Implementation</th>
<th>Recognition and Acceptability</th>
<th>Ranking out of five</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Education and Outreach for the Landowners Groups.</td>
<td>To bring the level of understanding and readiness for the proposed activities.</td>
<td>infant stages</td>
<td>No visible benefits. Long term effort.</td>
<td>One women Nutrition workshop in Takadu in 1998. Two literacy courses in Kakaro. Initiated long distance edu</td>
<td>Current endeavour restricted to Biaru and Kamea selected clans</td>
</tr>
<tr>
<td>b) Establish Infrastructure and Management Plan for Each Enterprise.</td>
<td>To help each of the ethnic groups develop the enterprise of their own choice</td>
<td>Kamea and Biaru landowners receive some income from Field station &amp; Kakaro lodge respectively.</td>
<td>Project implementation mechanism in the field non visible.</td>
<td>Ampia clan of Kamea &amp;Elka &amp; Kiagari clan of Biaru involved Both Kunumaipa &amp; Kovio ethnicity not involved in the project.</td>
<td>2/5.</td>
</tr>
<tr>
<td>c) To actually assist in the development of each of the enterprise that is selected by each group.</td>
<td>Actual financial and technical support for income generating projects initiated by the landowner groups.</td>
<td>No up front financial incentive for all four groups to initiate individual group enterprise to date.</td>
<td>Only the Biarus have built Kakaro lodge. Takadu started theirs in 1998 others not even started, waiting to see profitability of such enterprises</td>
<td>Two other groups not involved in the implementation process of the project.</td>
<td>1/5.</td>
</tr>
<tr>
<td>d) To market the idea of scientific and adventure tourism in PNG</td>
<td>Tourists come to Lakekamu Basin income from accommodation</td>
<td>There is no guarantee of scientific and Adventure tourism.</td>
<td>Publicity exist over the internet and reports &amp; publication of BCN</td>
<td>Local people not convinced of benefits. Seeing believes.</td>
<td>2/5</td>
</tr>
</tbody>
</table>
and overseas
and visitor fees &
jobs.

& CI
Uncertainty if it
will work.

<table>
<thead>
<tr>
<th>e) Monitoring and Evaluation of Impact on the traditional Economy, Cultures and Biodiversity.</th>
<th>Improve economic well being minimise adverse effects.</th>
<th>Local youths to be trained as guides &amp; field assistants. Also to record local knowledge.</th>
<th>Since arrival of Banak in 1998 this is taking shape.</th>
<th>People do not see research and science as something that benefits them.</th>
<th>3/5</th>
</tr>
</thead>
<tbody>
<tr>
<td>f) Information Sharing from model created</td>
<td>New experiences learnt from other places</td>
<td>Not in a position to contribute anything significant nationally</td>
<td>Actual conservation boundaries not known. No WMA committee formed</td>
<td>No new imitative into Community participatory Process.</td>
<td>1/5.</td>
</tr>
</tbody>
</table>

5.2.5.2. Benchmark Evaluation of Mainstream Development Projects
In terms of large-scale economic development, the basin does not have any major economic development activity as yet, although several major development plans are in place, including recently proposed Agro-forestry Development Project discussed above (external threat, p.,192). At present most people rely on the sale of betel nut, alluvial gold and crocodile skins in Port Moresby for much-needed cash to buy basic store goods to supplement their diet and meet the cost of other essential goods and services like paying for their children school fees.

The local markets, which run for half an hour every Saturday morning in Kakaro and recently in Takadu, are hardly big enough for the people to sell their garden produce. Particularly when there are virtually very few salaried workers in the area except for the few teachers and health workers. There is no mainstream development-taking place in the Lakekamu basin except for those proposed projects that do not even have a developer agreement in place. Like anywhere in the country no development will take place unless the developer is actively involved in the negotiation process with the resource owners and both the provincial and the national government.

5.2.5.3. Comparison of Benefits with ICAD Projects.
According to Sengo (pers. comm. 1999) the project had a very bad start and this is why it is way behind schedule. The Lakekamu ICAD project funded by Biodiversity Conservation Network fund had a lot of unreasonable expectations in terms of achieving certain tasks by a certain time.
The Foundation for People and Community Development (FPCD) should not be held responsible for such a delay. Sengo (pers. comm. 1999) thinks everyone is to be blamed for the failure, including the project team leader for his unrealistic project design, the funding agencies including the Conservation International for their non-timely release of funds, and the WEI for not maintaining it's partnership.

The project has not produced viable business activities that can now be easily demonstrated to show some degree of success. The people seemed to be sceptical about the project. The few clans from the Biaru and Kamea community are at least convinced that things can happen after seeing the completing of the research field station at Kor near Takadu with the Morobe Provincial boundary. It is important in the PNG context that some obvious results must be produced by those people whom we have encouraged to get involved in a particular business activity so that those groups who are still in doubt could be convinced to join.

5.2.5.4. Swot Analyses of the Lakekamu Mountain ICAD Project.
The overview of Lakekamu ICAD project is presented below by Swot Analysis. The analysis outlines the Strength, the Weakness, Opportunities and Threats that surrounds this project.

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Project led by a very qualified team leader both in research, conservation efforts and quite knowledgeable about the area and PNG in general.</td>
<td>• Have not identified conservation boundary and wildlife committee members not formed even by year 2,000.</td>
</tr>
<tr>
<td>• Project partners are leading NGOs in this field in their own right. Conservation International in particular is a reputable international NGO that could influence funding organizations and sustain long term funding for the project.</td>
<td>• Does not have in place operational project working committee. Instead project officers act as go in between Kamea and Biaru leaders to reach decisions.</td>
</tr>
<tr>
<td>• Project site is well publicised by CI and FPCD home pages and good linkage with UPNG.</td>
<td>• Clans from Kamea and Biaru whose land adjacent to to Kor Field Station not included in the project.</td>
</tr>
<tr>
<td>• River transportation through barge possible to bring tourists and cargo up to Kakaro station via Lake kamu river and then up the Biaru river.</td>
<td>• Greater and better part of the basin not covered in the current project location and partnership which is restricted to upper watershed of Avi Avi River.</td>
</tr>
<tr>
<td>• Qualified national staff on site and getting</td>
<td>• Kunumaipa people believe they have the right to own the ICAD project initiative as</td>
</tr>
</tbody>
</table>
along well with the local people. they were the first to be contacted by Beehler.

- Pulling out of WEI as partner to the project. Conflict between CI and FSP or FPCD.
- Uncertainty of future funding as result of such conflict.
- No obvious tangible socio-economic benefit package besides bush material guest houses at Takedu and Kakaro.

Opportunities
- Few scattered communities with much of biodiversity intact. Access to outside world in terms of road link will continue to restrict extractive forms of development for a long time to come.
- Potential for river transportation to strengthened eco-tourism opportunities in the basin with historic significance of Bulldog trail out of Wau Kuper Range.
- Easy reach from WEI Kuper Range ICAD project, which links Kamiali ICAD project on the north eastern side of Kuper Range along another historical Salamaua Trial.

Threats
- Potential threat is expected from the pending integrated agro-forestry and conservation project.
- The dissatisfied neighbouring clan such as the Nauti clan of Kamea and other Biaru clans not currently involved.
- Kovio people are political leaders in the basin that could disrupt any effort that does not involve them.
- Volatile situation with regards to land claim between different ethnic groups.
- Promotion of cargo cult mentality among the kamea people with regards to their deep rooted perceptions of people from Anglo Saxon origin moving into the basin for as research & on tourism purposes.

5.2.6. DISCUSSION

5.2.6.1. The Historical Perspective
The mere complexity of the social and cultural background of the four different ethnic groups have contributed to very little achievement, in terms of getting the people mobilised to even set up a visible project implementation mechanism on the ground. In particular the complexities arise from the ongoing dispute over land ownership in the basin. Despite the fact that this is an obvious issue, this project started off with no real consultation effort to identify the land owning
community groups in the proposed ICAD project site. Since the inception of the project the main emphasis of this initiative has been on the urgency to conduct biological studies. Considerations given towards the social and economic development aspirations of the local community are viewed as an after-thought issue. Project funding is largely built around scientific research in the Lake Kamu basin. The community awareness and preparedness is addressed through the adult literacy program, which has so far been aimed at the female members of the Biaru Community – it has had very little impact. Greater participation is minimal and non-consistent, especially now that the project only deals with few clans of only two of the four ethnic groups. The actual role of the various members of the community according to gender is already highlighted in Table 6 above.

5.2.6.2. Project Establishment and Program Objective: The Human Element

The Lakekamu ICAD project did not establish sufficient or adequate consultation with the local communities on the issue of land ownership and the perceived ICAD project before moving into the proposed project site. Instead a foreign researcher, hired by a foreign international NGO as the project team leader, had relied on his past personal contact to determine land ownership. That one-time personal contact led him to believe that the proposed research site at Nagore was well within the land claimed by the Kunumaipa people of the central province, with whom he had a past association. This assumption convinced him to firstly apply for a research permit through the Central Provincial Government and not the Gulf Provincial Government that administers the Kakro government station. Secondly, the project team leader had underestimated the ability of the local people, especially from Biaru, Kamea and Kovio ethnicity, to become increasingly sensitive about their resources, to raise their level of expectation, to become inquisitive about how and why the foreigners got into their forest and to question what benefits were there for them in return for using their forest. The project proponent also did not know that the political leadership of the Gulf Province at that time was from the proposed project area.

It soon became obvious that Premier Apio, being a landowner and Political head of the Gulf Province, had wanted to know from the conservation fraternity what the “Research Project,” had to offer to his people in terms of infrastructure facilities and long-term employment and economic development opportunities. What the overseas researchers, including the project leader, did not realise was that the issue of resource ownership was contested here and was not merely a consequence of the politically boundary as it seemed. The most appropriate approach would have been to engage WEI to establish the community contact and carry out various conservation
and development awareness campaigns before the arrival of the research team to the basin. Instead, the Wau Ecology Institute had only come to know about the project when team leader called into Wau from Kakaro after the confrontation with the opposing groups of the Lake kumu community.

The approach to WEI was done as an after-thought to sound out the idea of partnership as a way of ensuring local institutional and political support before going back to the United States of America. It is unfortunate that this approach came after the problem became obvious and warranted local institutional partnership. The provincial research officer at the Premier’s office at that time had also informed the researcher at WEI that Premier was angry because Beehler had informed him that he had the support from the Central Provincial Government and the landowners from Nagore Camp site.

5.2.6.3. Objective and Changing Expectation

The project up until year 2000 had not produced any viable business activities that can be easily demonstrated with some degree of success. The people seemed to be sceptical about the project. The few clans from the Biaru and Kamea community are at least convinced that things can happen after seeing the completing of the research field station at Kor near Takadu within the Morobe Provincial boundary. The project field officers are also concerned that even by mid-1998, almost two years after the major BCN grant, no other viable income-generating projects has been assisted by the project. This issue is discussed in more detail in chapter 6.

Since the September 1993 forum and the subsequent decision to relocate the ICAD project initiative, this project is now targeting the upper Lakekamu catchment areas of Aviavi and Biaru river systems. The NGOs currently implementing the project have now made a concerted effort to work only with two of the four ethnic groups in the project area and of the two ethnic groups, only three clans are involved. The current concentration and involvement is with the Ampia clan of Kamea of Takadu village and the Elka and Kinigari clans of the Biaru community living at Kakaro. The field station at Kor River is build on land equally claimed by Peter Apiango who is the leader of Ampia clan of Kamea and Kuskom of Elka clan from Biaru.
5. 2. 6. 4. The Role of Community Identification and Consultation Process.

Despite the inadequate approach to seek community support and endorsement for the ICAD initiative at least three consultation meetings were held with the basin community. The consultation meetings with the communities could basically be viewed as a way to apologise for the inadequate consultation process and to inform the already development-anxious communities that the social and economic incentive package is being considered in the second phase of the project. The first phase of the project is mainly aimed at obtaining the ecological and biological information of the area to know exactly what animal and plant species are found in the area and the status that would require urgent protection.

This sudden movement of field biologists and social scientists moving into the basin almost at the same time is said to have created a sense of expectation for an immediate outcome of delivery of goods and services to the local people. This trend of movement is very similar to the sequence of movement of experts and consultants seen moving into the major developmental projects sites such as logging and mining developmental projects. Under this scenario the biological survey team is flown into the area as the first experts on site to carry out biological inventory of the species present in the area. This is later followed by the social scientists who go in to the area to carry out genealogy studies of the resource owners and the economic feasibility study on the capabilities and potential of the local people in the area and how they could be expected to participate in the overall project development. The third major consultation meeting held in September 1993 between the four ethnic community groups and the team representing the project partners enabled the Kamea community representative from Takadu and the Elka clan leader from Biaru to pledge their support and commitment for the project to be moved to the forested land within the Morobe Province.

5. 2. 6. 5. Community Role in Project Planning and Implementation

The mere complexity of the social and cultural background of the four different ethnic groups have contributed to very little achievement, in terms of getting the people mobilised to even set up a visible project implementation mechanism on the ground. In particular the complexities arise from the ongoing dispute over land ownership in the basin. Despite the fact that this is an obvious issue, this project started off with no real consultation effort to identify the land owning community groups in the proposed ICAD project site.

Since the inception of the project the main emphasis of this initiative has been on the urgency to conduct biological studies. Considerations given towards the social and economic development aspirations of the local community is viewed as an after-thought issue. The project funding
allocation is largely built around scientific research in the LakeKamu basin. The community awareness and preparedness is addressed through an adult literacy program, which has so far aimed at the female members of the Biaru Community with very little impact. Greater participation is minimal and non-consistent, especially now that the project only deals with few clans of only two of the four ethnic groups. The actual role of the various members of the community according to gender is already highlighted in Table 6 above.

5.2.6.6. Participatory Role Played by Various Stakeholders
In late 1994 Beehler and the partners submitted a major funding proposal to Biodiversity Conservation Network (BCN), a US AID funded programme, to fund the Lakekamu biodiversity assessment project while he was employed by the Smithsonian Institution. Later Beehler left the Smithsonian and joined Conservation International as CI's principle biodiversity advisor for the Pacific or Oceania Programme. During this time he convinced Conservation International that it needed to form partnerships with locally based conservation NGOs in Papua New Guinea. This was when the head of the Pacific desk Tim Werner came to negotiate formal partnership with Wau Ecology Institute (WEI) and Foundation for People and Community Development (FPCD). While this was beginning to take place Beehler left Conservation International to work for his current job USAID as Biodiversity Programme advisor Asia and Far East. The principal implementing agency Conservation International continued to seek further partnerships with the Foundation for People of South Pacific based in Port Moresby and Wau Ecology Institute in Wau, which is only fifteen minutes by air from the project site.

Since the first group of expatriate students from the Universities in the United States went with some national students from the University of Papua New Guinea into the Nagore Camp site in 1993, there has been a steady flow of the number of expatriate researchers who have gone into the basin before the Lakekamu ICAD project officially got underway. This was only possible after receiving two sets of funding for the same project. The first one was from the BCN grant and the second one was from the MacArthur Foundation also of USA for a similar amount of money.

5.2.6.7. Current Status of Project Ownership
In recognition of the lack of financial resources to address the social and economic concerns of the local partners or communities, FPCD have gone out of it's way to secure a long term partnership with the German NGO, the Association of Protestant Churches of Germany that has undertaken to actually fund various programme activities identified under the ICAD initiative to
achieve the objective of the project. This particular effort to meaningfully address the social and economic concerns of the resource owners makes the local NGO FPCD feel that it has the right to own the project as the local communities begin to embrace their efforts in bringing the tangible benefits (Figure 11).

5.2.6.8. The Community Role in Social and Economic Programmes
The Lake Kamu project proponents did not sit down and ask the people about possible economic enterprises that are feasible for them and that the people themselves are capable of implementing. The financial costing did not even take into consideration actual costing to help people set up several guesthouses. The main reason being the criteria for funding under the Biodiversity Conservation Network (BCN) grant did not allow for or see clearly the significance of incentives for biodiversity conservation in developing nations like Papua New Guinea. Moreover, the local communities views and aspirations were not sought at the planning stages of the project to verify the costing for simple items like how much money is required to buy nails, hammer, saws and even axes to enable them to build the guest houses. In this ICAD initiative, it is perceived that support will only be given after the people themselves have taken their own the initiative to build the guesthouses out of bush material. This perception is far short of the actual socio-economic condition of the people, where even such simple supplies are not readily available to each of the communities. Instead, the leader of the project team who put together the project proposal in Washington USA decided to promote scientific and nature tourism as the best income-generating enterprise for the community of the Lakekamu basin as shown in the business plan (Figure 11).

It is justifiably argued that the tourism business is good for these communities because the tourists are going to come to visit their forest as researchers and nature tourists. This is because adventure tourism and scientific tourism is being promoted in parts of Central America, Asia and Africa. In fact according to the project proposal (Beehler (1995) the target tourist group are the researchers who expect to come to the area to conduct research in their forest. The other tourist groups includes bird watchers and nature tours. The community have been led to believe that researchers and eco-tourists visits to the area are expected to provide them with lots of job opportunities such as portering services and being tour guides. Besides the local people are led to believe that they will have more opportunity to sell various handcrafts and artefacts to these tourists for income. At the start of the project, communities in Anadea, Kujeru Takadu and Kakaro were told to build guest- houses out of bush material as a sign of commitment and an expression of interest and initiative on the enterprise development (Project doc p. 13). In recent
times the number of researchers entering into the Lakekamu basin has dropped from 20 between 1995-1996 to only 5 in 1998. From the only guesthouse built at Kakaro only US$300 has been raised. The people were paid K7,076 for providing site labour for the construction of the research station and mainly for portering (BCN ANNUAL REPORT 1997.)

5. 2. 6. 9. Measures towards Project Sustainability and Funding Arrangement
Lakekamu ICAD project is unfortunately one of those projects that has had very little local input in as far as the project design and the scheduling of the implementation plan is concerned. In 1995 this project applied to two funding sources for funds to implement the ICAD initiative in the Lakekamu Basin. The first application was submitted to Biodiversity Conservation Network (BCN) Grant. This Fund is set up by the US Government and administered by the USAID Agency for an amount of US$355,484 for a three year period starting 1st May, 1995 to 30th April, 1998. The actual grant approved was US$300,000. (Chapter 4.)

The second application was made in March 1995 to John D. and Catherine T. MacArthur Foundation of USA. Again Bruce Beehler of then Conservation International wrote up the project document. The amount of funding requested from MacArthur Foundation was US$467,500 over three years starting 1st July, 1995-30th June 1998. The actual grant approved was US$ 365,000. The Partners for this project included Conservation International, Foundation for People and Community Development and East New Britain Social Eksen Komiti both of PNG.

Under this grant application, some of the funding would go towards creating East New Britain ICAD project. The Lakekamu ICAD project initiative received funding under the Biodiversity Conservation Network (BCN) grant from the US Government; it did not commence until 1st May 1995 and is expected to end in May 1998. Prior to this project planning grant was secured from the BCN grant. Part of this funding enabled WEI to initiate a community support program by sending two of its officers to visit Kakaro to conduct a nutrition training workshop and initiate a staple food gardening programme to involve the female members of the Kakaro community.

While at Kakaro station they were confrontation with the Kovios at Nagore, they were threatening and told to leave the basin immediately. Upon their report the researcher went into Kakaro with two policemen from Wau to conduct the public forum in August 1993 to gage the peoples views on whether or not they want the project to remain. It was during this meeting the Kovios stated that they wanted the project to leave Nagore immediately as they were not aware why it is there. It was during this meeting the representatives from Kamea and Biaru agreed for a project research base to be moved to the Morobe side of the basin between Takadu and Kakaro station.
That meeting set the direction of the project manager John Sengo and Kosmas Masket, the public relations and enterprise development officer present during the forum, to appropriately concentrate their efforts with the Kamea and the Biaru clans that claim land ownership west of the Biaru River.

5.2.6.10. Project Current Interaction with Provincial and National Government.

The National Government has very little control in the area except for the purpose of making major decisions regarding resource development. The national departments such as Mining, Forestry Agriculture and Lands are key departments that make decisions when it comes to any resource development. The ICAD projects implementing NGOs are aware of the pending resource development plan being proposed by the Watut or Kamea oil palm growers association of West New Britain. The association want the company there to develop the Lakekamu basin with oil palm. The conservation lead agency, the Department of Environment and Conservation can do very little to prevent any development unless the area is officially declared as a conservation area or is in an advanced state of being declared as a Wildlife Management Area (WMA). Under the National Environmental Planning Act 1987 the Environment and Conservation Minister has the right to refuse any environmental plan presented to him by the developer if he thinks it is environmentally destructive or if the development plan is inadequate. Other than that there is no way he could stop the development from going ahead if the development plan is improved and resubmitted with appropriate political support.

5.2.7. CONCLUSIONS

The project is miles behind its implementation schedule though they claim to have conducted enough community outreach programmes. Two officers, namely John Sengo and Cosmas Makamet, have been posted to live with the communities while the third Banak Gamui has been recently appointed and sent to the field station in March 1998. He replaces Kurt Merg whose tenure has not been renewed and as a result has returned to the United States. Banak Gamui now takes care of the research station and research programme. What happened before and after the forum and the eventual pull out of the Wau Ecology Institute in the partnership deal is perhaps the significant contributing factor towards the current status and progress of this project.

The concerns and aspirations expressed at the forum were real and justifiable. It seems obvious the researcher has returned to find that this project has since been built on the attitude that the participating NGOs will work with the people who are interested enough to allow the project to remain in the basin and only with those land owners who own the land on which the field station
is built. The issue of lack of progress in setting up actual infrastructure in the basin is seen by
the Gulf Premier and possible land owner from Kovio, John Apio, as one of the main reasons for
doubting the project’s ability to meaningfully contribute to the development of the area. The
ongoing poor educational facilities and lack of commitment by the responsible authorities
continue to contribute to the basin’s low level of literacy among its inhabitants.
Case study three:
Analysis of the Kamiali Integrated Conservation and Development Project (KICAD)

5. 3.  Project BACKGROUND

5. 3. 1.  Physical Characteristics.
The Kamiali Integrated Conservation And Development (ICAD) Project involves a 47,000 hectare area surrounding the coastal village of Lababia, 60 km south of Lae. Of the total of 47,000 hectares included in the WMA at Kamiali, 29,000 hectares of this is terrestrial and 18,000 hectares of the conservation area covers the marine environment. Kamiali conservation area or Wildlife Management Area (WMA) is between the two main rivers, the Saia River south-east of the Lababia Guest House and Training Centre and the Alanta River to the west, towards Salamaua Station. Then it goes up to over 1800 m above sea level and is only 20 km from Mt. Missim repeater station that has the highest peak in the area of 2,800 m.

This area is part of a larger geographical region (approximately 220,000 hectares) starting from Lasanga Island on the Huon Gulf and extending to Lake Trist 1,700 m above sea level. It comprises many different vegetation types: lowland tropical rainforest and tree swamps, low and high montane forest, savannah grassland and dipterocarp forests. The Papua New Guinea Conservation Needs Assessment Report identified this area as consisting of Critical Watersheds areas, Marine Ecosystems and species rich terrestrial environment.

Project Locality
The Kamiali integrated conservation and development project is located along the coastline of the coastal village of Lababia, 60 km south of Lae city in the Morobe Province of Papua New Guinea. The conservation area that is now recognised as the Wildlife Management Area (WMA) covers 69,000 hectare of land that belongs to Lababia village, traditionally known as Kamiali village. The wildlife management area can be characterized as a high relief landscape ranging from 3,092 meters in vertical elevation, from 2,012 meters above sea level at the highest peak down to about 1,080 meters below sea level in the open sea of the Huon Gulf.
Local climatic conditions

The climatic conditions of the area are typical of a tropical rainforest coastal village, where rainfall is quite often determined by the coastal trade wind system and the seasonal orographic rainfall. The heaviest rainfall is said to occur between the months of June through to August, contributing to the annual rainfall of 3-4 meters. The dry period is experienced between September through to May each year, though occasional rainfall is experienced during this period. Average monthly temperatures ranges between 22-28 degrees Celsius.

Ecology and Biological Significance

The ecological and biological significance of the Kamiali area has been reported in Bein (1998 et al., pp. 25-30). The megafauna of the area includes northern cassowary, white billed sea eagle, lesser frigate bird, brown collared bush turkey, pied imperial pidgeon, palm cockatoo and sulphur -crested cockatoo. Besides, the WMA is expected to protect endangered and vulnerable species.
like the green leather back turtle that breeds in the area, little king bird of paradise, Raggiana bird of paradise, Magnificent Rifle bird and crinkle-collared Manucode. The inclusion of the marine areas within the WMA makes Kamiali one of the biologically significant areas for conservation.

The People (Ethnicity, territorial, history and relationship)
This project deals with a single village of Lababia that is made up of only two major clans (Arema and Gara) and six sub-clans. Lababia village is part of a language group that stretches about 10 kilometres along the coast eastward to include Buso and Kui and another 30km westward to include villages like Keila, Longui, and Laukanu. In the past, special birds such as the bird of paradise, parrots and other species were hunted for their plumes for the purpose of the traditional “sing sing”. This practice has considerably declined for the Kamiali people, who have now accepted Christianity as the centre of their social life (Martin, 1997).

The Coastal Kamiali people
The traditional land use pattern is similar to many coastal villages in Morobe where people are mainly subsistence farmers that supplement their diet with fruits and nuts during certain seasons. Fishing and gathering of other marine products contribute the most part of their protein diet. Hunting for forest game is not common except for wild pigs if found to be near the garden site or, more recently, the sago processing site. Kamiali people harvest the fruits and nuts for food only during certain seasons. Sago making is more common after planting season. Extensive sago palm areas are found along the Tabare and Bitoi river areas where they are cut and processed for food and sale in Lae market. This usually happens while waiting for the new garden to be ready. Other edible fruits include breadfruit and Canarium nuts, plus several other green vegetables, are gathered occasionally to supplement their daily diet. The main use of the forest by the Kamiali is collecting building materials for house construction and other general use. The structural materials like the sago palm branches for the walls are obtained by the males, while the females collect sago leaves for roofing and parts of bamboo for weaving wall coverings. A small percentage of canoes are made from trees obtained from the forest; the rest are trees that are cultivated and grow at the edge of the village or near the riverbank or sea for easy entry into water after their construction. ‘Rop dynamite’ or fish poisoning vine is sometimes obtained by youths for easy fish catching but this practice is in violation of the village elders’ restrictive order for non-usage of this plant in reefs that are included in the conservation area. There is also a limited use of medicinal plants for common
illness like common colds and cuts, although most people go to the aid post for treatment and to receive medication.

**Landownership and tribal relations**

Kamiali is a matrilineal society where the inheritance of land is through a maternal linkage. Village marriages are often planned by parents to ensure that third cousins onward could marry to maintain landownership within the family linkage. Lots of marriages nowadays are encouraged with neighbouring villages like Buso, Kui, Keila, Longui, and Laukanu, whose ancestors are ethnically affiliated to Lababia village.

**Development Activities**

There are no major social and economic services provided by the national government since independence in 1975. The Morobe Provincial Government, during its existence as the Government of the Morobe people from 1982-1996 before the provincial government systems were abolished in 1996, has not even provided adequate services and infrastructural support like wharves for cargo barges to dock. The Salamaua district local government services this area. Even then such facilities are not provided at Salamaua. Lababia only has centrally located community schools and an aid post that also serve the villages of Kui and Buso.

The people have not been actively involved in any commercial activity in terms of export-oriented cash crop production such as cacao, copra, and coffee that could have warranted the necessity to provide such transportation services. Consequently the Lutheran Church shipping service has serviced these villages. Those who could afford to do so, from employment outside, have from time to time purchased family owned and operated outboard motorboats as means of transportation to and from Lae over the years, at least for those who could afford to pay.

5.3.2. The Kamiali Integrated Conservation and Development Project (KICAD).

5.3.2.1. Project History

A Village Development Trust first began to get involved in the then Lasanga-Lake Trist ICAD project in 1989 when some of the landowners from the four villages became unhappy with what the logging company was doing to their land. When they realised that they themselves could not stop the logging operation, they approached the Village Development Trust (VDT) to help them stop the logging project, already under full swing, but even VDT could not convince majority of the people from Siboma, Kui, Buso and even Lababia villages to get the company out of their land. This is because the local landowner company, SKB Development Co-operation, had already signed an agreement with the Malaysia logging company ‘Timber Products and Marketing.’ As
a result of this existing agreement it was difficult to confront the issue with the logging company and those supporting the logging project.

Instead, in response to such a development threat posed to the environment, VDT commenced a series of conservation and eco-forestry development initiatives with the community in the area. The community’s approach to VDT actually came at a time when the organisation itself was looking for an alternative site to set up a Training Centre for community based Mobile Saw Milling Training program locally known as the ‘Wokabaut Sowmil’ in the early 1990s. This happened when VDT as an organisation lost its initial facilities set-up along the eastern side of the Huon Gulf towards Bukawa through heavy flooding of the Busu River. This incident had a big set back for VDT which had just boosted its eco-forestry campaign by arming itself with the visually powerful medium, video tape, for monitoring a community-owned logging and marketing trial venture already initiated at Bau village, with funding assistance from the Rainforest Information Centre of Australia. Village Development Trust used this video as a tool to promote village-based sustainable logging and direct marketing of eco-timber enterprise, as a possible alternative development model to that of selling round logs to foreign logging companies.

Several community members from the Kamiali logging project area became interested in setting up community-owned sawn timber projects in their area. Their interest increased after seeing how the community-based group in Bau was directly involved in the harvesting and processing of sawn timber, which they later sold direct to a small overseas market in Europe. Convinced by seeing Bau community get more money for their sawn timber than the five kina per cubic metre as royalty payment for round logs sold to the logging company in their area, they invited VDT to their area to introduce a similar project to actually compete with the logging project.

However the Village Development Trust could not immediately take on the invitation of the lobby group from Kui, Buso, Siboma and Lababia, due to lack of funding. The organisation instead kept it’s contact in the area by conducting an awareness campaign until it was able to sponsor two local representatives by the name of Gebob from Kui and Dusty Gewai from Buso to attend a Conservation Needs Assessment (CNA) workshop in Madang in 1991. It was at that meeting the landowner representatives and VDT former Director Sasa Zibe was able to introduce formally the proposed Lassanga ICAD site. The announcement came after initial discussions with the
representatives of the World Wide Fund For Nature (WWF), South Pacific Programme, who were also attending the meeting and had expressed their interest to become partners in the project.

After returning from the CNA workshop, the Lasanga Conservation committee was formed consisting of two landowner representatives from the villages of Siboma, Kui, Buso and Lababia in April 1993. In recognition of their willingness to form the committee, the international NGO known as World Wide Fund (WWF) sponsored the newly-formed Lasanga-Lake Trist Project Committee to travel to Port Moresby on a fact-finding tour. The tour in Port Moresby visited community-owned and operated guesthouse facilities (ecotourism) at Hisiu. The eco-tourism facility was funded by the European Union. This committee was accompanied by a German Development Volunteer staff memebr, who was engaged by VDT for the sole purpose of setting up the eco-tourism facilities at the Lasaga Island (see Map). The outcome of the fact-finding tour not only broadened the individual committee members perception of opportunities to access funding for environmentally friendly forms of development but also made them aware of the vast opportunities to promote eco-tourism as an alternative business for their communities.

After that trip each village led by their representatives contested to have the tourism infrastructure facility to be built on their village land or part of the Lasaga island. For example, the Kui village was lead by Gebob Kekeng, and Buso and Lababia by Rusty and Benjamin Gigingsu respectively. Each village wanted this new infrastructure or guesthouse facility to be built on their part of the Lasanga Island. Traditionally any activity going on or infrastructure facility that is set up on land owned by one particular clan or family gives that interest group the right to have a major say on who participates in the future. In the end no agreement was reached on the single site for the permanent guesthouse to be built. This conflict ended when the three villages were dropped from the ICAD project initiative, since much of their part of the land included in the original Lasanga-Lake Trist ICAD initiative was being logged by the logging company.

The second conservation movement (CMICAD since 1995-2000)

The second conservation movement began when WWF, the project partner and funding organization, suggested to VDT that villages be given the option either to terminate the logging agreement with the logging company on their forest and join the ICAD initiative or their land be excluded from the initiative and the project deals only with the communities that say no to logging. With that condition the communities from Buso, Kui and Siboma villages decided they could not stop the logging project on their forest. This has meant that these villages had to be
automatically dropped from the project. As a result the ICAD initiative concentrated only with the Lababia village from 1994 onwards. This was a very crucial decision because it was too complex to work with many groups as demonstrated by their disagreement over where to build the eco-tourism facility.

**Project Administrative Structure**

The Director of Scientific Programme of VDT is the overall chairman of a community participatory mechanism put in place to manage the Kamiali ICAD project. This mechanism is known as the Kamiali Project Management Committee (KPMC), consisting of elected leaders representing all major interest groups of Lababia village (Figure 14). The Village Development Trust conservation officer Bing Tope, who is living on site, is the technical officer representing VDT on the Kamiali project committee and he maintains direct link with the people and the VDT head office in Lae. Tope, a trained national parks officer who comes from the local area, is **seconded to the VDT NGO organisation from the Environment and Conservation Department.**

**Figure 14 showing Kamiali ICAD project partnership administrative structure 1998**

![Diagram of administrative structure](image)

**Project Goals and Objectives**

The Kamiali ICAD project goal is to improve the conservation of the natural environment of this ecologically-sensitive region by assisting the customary landowners to use and manage their resources in ways that are ecologically sound, socially beneficial and economically viable. The Kamiali ICAD initiative is a project that is **geared towards assisting the whole community** of
Lababia village to participate in development opportunities and conservation activities of their choice. The project proponent, the Village Development Trust, has now created five (5) distinct but related programme activities, which the organisation considers as its main objectives (Bill Girard per. com. 1997). These activities or program objectives are presented in Box 9 below. The respective programmes are headed either jointly or separately by one of the community leaders appointed to the Kamiali WMA or ICAD Committee (Figure 16 p. 232).

**Box 9 Showing Programme Goals & objectives of Kamiali ICAD Initiative**

The Kamiali ICAD initiative attempts to:

- Promote conservation of biodiversity and sustainable utilisation of marine and forest resources
- Education and awareness on alternative business ventures to industrial logging
- Promote village based eco-timber production for export to overseas green market
- Facilitate gender balanced social and economic programmes towards poverty alleviation
- Establish dual-purpose permanent facilities for eco-tourism and a training centre

The Village Development Trust (VDT) is the implementing national NGO for the Kamiali ICAD initiative. After its' partnership ended in 1993 with WWF on a number issues including how the project should be approached, it was rescued in a timely manner by a new funding organization known as the Inter-church Organisation For Development Cooperation (ICCO), a non-government organisation of TheNetherlands that solicits European Union Funding to participate in community-based development projects in developing countries. The Village Development Trust, a development-oriented NGO with the main goal of training rural communities to conserve their forest and promote eco-timber business as an income-generating activity, saw this as a genuine partnership and dissociated itself from any western NGOs that approached biodiversity conservation with research as its main focus. To accommodate ICCO's funding requirement, VDT began the restructuring of the organisation in 1996 (Figure 15).
5.3.3. Project Framework Analysis

5.3.3.1. Identification of project phases

An analysis of the Kamiali project shows that this project is developed and managed differently in many aspects to that of the Crater Mountain and Lakekamu ICAD project initiatives. Firstly, this project is dealing with a single village with only two clans of the same ethnicity, whose customary land is clearly recognised and managed under the existing traditionally-recognised leadership. More significantly, the resource owners took the initiative to invite the national NGO VDT to assist them conserve their forest and at the same time develop their resources in a sustainable manner. Therefore, a special attempt is made to describe, analyse and compare this project in a similar context as that of the other two projects.
PHASE 1: The First Conservation Movement

There are two stages to this project. The first stage involves VDT’s partnership with three other villages besides Lababia and with World Wildlife Fund (Australia). The first stage began in April, 1993, when WWF approved funding to sponsor the Lasanga-Lake Trist conservation project. The first project committee was formed from four villages, Kui, Buso, Siboma and Lababia (or Kamiali). After the committee was formed, the World Wildlife Fund (WWF) sponsored this committee to travel to Port Moresby on a fact-finding tour to visit community owned and operated guest house facilities at Hisiu, central province. The trip was aimed at motivating the Lassanga project committee to initiate similar projects as an alternative form of development to that of logging, which was going on in their area.

After the trip they were first given the opportunity by the project proponents, VDT and WWF, to decide on whether or not to initiate eco-tourism or eco-timber project as an alternative economic venture to the existing logging project. The first Lasanga-Lake Trist project committee decided to accept eco-tourism as a possible project but were not united on the location of the tourism facility. As a result they were asked to demonstrate if their respective village community was genuine in the ICAD initiative. To demonstrate that genuineness they had to get their village to terminate the logging agreement with the logging company in the area. When only Lababia village was able to pull out of the logging agreement, the project proponents VDT and WWF decided to drop the involvement of Kui, Buso, and Siboma villages.

Stage. 1. Enlistment of Elders

Plans for Lasanga-Lake Trist ICAD project initiative was initially conceived mainly on the idea of setting up a small-scale, economically-viable logging and marketing business that minimised environmental disruption, earned more cash for the people and could be operated by the people themselves. This concept of offering an alternative logging model alongside the industrial logging activity, which was already in full swing in the area, did not seem feasible as it required sufficient funding and the technical expertise to compete with established wealthy Asian logging company, Forest Products and Marketing Limited of Malaysia.

Stage. 2. Establishment of Youths

The interest of youths from Lababia village to enter into a self-managed eco-timber project as an income-generating activity encouraged the elders in the village to designate two logging sites for the project to start. This was done in direct competition with the already established logging company in the next three neighbouring villages. Under the eco-timber project initiative, two areas selected for timber harvesting included forested land along the Saia River banks east of the
village, and near the Bitoi River delta area west of the village where most of the village gardens are located.

Plans to produce roughly sawn timber in slab forms for overseas market did not eventuate due to the departure of the project officer who had major differences with the newly-appointed expatriate Director for Planning and Management of VDT. His departure impacted on the morale of the youths of Lababia, who had developed close ties with him. Besides, there was some major marketing and operational problems associated with this project, including transportation costs for shipment, non-availability of required spare parts for maintenance and operational funds for fuel and youth allowance.

The youths were later assisted with funds secured from the World Bank to service the equipment and were again engaged to cut all the timber required for the construction of the Kamiali training and visitors centre by VDT. Currently the portable sawmill is not in operation and the eco-timber training program at Kamiali has been shifted to areas near the Makham valley.

Stage. 3. The Conservation Awareness Programme
The realisation came to invite to attend some of the representatives at the environmental awareness campaign and workshops conducted by Wau Ecology Institute and the Village Development Trust. Besides, a number of family members from Kui and Siboma who were working for WEI and living in Wau had also approached WEI for help.

PHASE. 11: The Second Conservation Movement (CMICAD)
As discussed above local representatives from the Salamau district took the initiative to approach the Village Development Trust, to assist the local communities to stop the logging operation in their area. However, VDT could not respond quickly to their request since the organisation lacked funding and had to seek international partners to initiate the project that had conservation objectives with development benefits. This project has now gone through two main phases and an assessment is currently being made to see how the administration of the project can be successfully transferred over to the **management responsibility of the Kamiali people**. In this project the local protocol is well observed as the project officer and the committee members are given the task to deal with their people, more so than officers from other provinces. The Kamiali project has very active committee members who know what they are doing.

Stage. 1. The Enlistment Process
The whole Lababia village got involved as soon as funding was secured from ICCO of Netherlands and MacArthur Foundation of USA. The new Kamiali Training and Visitors Centre is
now located east of the previous awareness site set up by VDT in 1993. The Kamiali Training Centre is built on five acres of land which is being leased from the Gala clan. Even though the project is on Gala clan land, traditional village leaders from the Lababia village believe that the project should benefit the whole village and the whole village should participate in all aspects of the project.

Stage 2 & 3. The Conservation Campaign
To instil some hope in the conservation movement, and to convince the resource owners, in 1992 VDT elicited the support of the Australian High Commission to assist Manda Brothers of the Lababia community in acquiring a portable sawmill. The Manda Brothers contributed Kina 3,000 towards this initiative as own means. From 1995-1996, the sawmill project led by Benjamin Gilingsu trained Lababia youths, both males and females, to work on this project. Initiatives such as this convinced Kamiali community to make a decision to set aside most of its land including its coastal environment as Wildlife Management Area under the Fauna (Protection and Control) ACT, 1966.

5.3.3.2. Stakeholders and Stakeholders Relationship.
Internal stakeholders
The project proponent in this project emphasised that gender related issues, and other social consequences of villages generally expanding into the cash economy, pose a potential threat to the achievement of sustainable development. Therefore, awareness training, balanced planning, careful implementation and community support facilities are essential if VDT and its partners are to avoid unbalanced and perhaps detrimental growth. The VDT Gender and Social Issues Programmes are intended to support males and females to work in partnership to achieve an increase in the quality of life for all village residents.

Appointment of a female representative on the Kamiali project committee enables the VDT director for gender and social issues programmes, who is also a female, to plan with the female member on the Kamiali project committee and the recognised female leaders of the community what sort of programmes they should be involved in. One aspect of this planning was to discuss with them about the type of social and economic activities they were interested to participate in under the umbrella of Kamiali ICAD initiative. To do that, female leaders were taken on a tour within the province and outside of Morobe to see various programmes run by other female groups run (Gema Steven pers. comm.1998). This was an important approach taken by VDT, as female
elders are the actual clan leaders in the Lababia maternal community. They have the final consent to what goes on with the land and the natural resources. The community’s role in this project is both direct and indirect. Indirect participation is mainly evident from the community’s involvement in the social and economic issues or programs offered by the project. This includes the drum oven business activity for the female members of the community and eco-forestry project for the youths. Direct involvement by the community is through their Kamiali conservation project committee also known as Kamiali Wildlife Management Committee.

Table 12 showing the participatory role by gender by the Kamiali ICAD project community

<table>
<thead>
<tr>
<th>Ethnic Groups</th>
<th>Stake holders</th>
<th>Participatory Role Played by Various Members of the Kamiali ICAD Project Community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lababia</td>
<td>Adult Males</td>
<td>Attend workshops and planning and implementation meeting. The adult men often met to discuss various issues of the project. This was done after the project committee members also known as the WMA committee had met with the project manager and conservation director. Various decision of the committee was only final after the adult village men had reached various decisions by consensus. The community selected adult males who have been also been appointed to the WMA committee as well as the villages are in agreement that it is their collective duty to jointly enforce the conservation rules and to support fines when these rules are violated. The adult men are also responsible for the planning and implementation of the community based economic and social programmes.</td>
</tr>
<tr>
<td>Adult Females</td>
<td></td>
<td>Kamiali is a maternal society and as such they had very little resistance to elect a female member to the project committee to represent the interest of the female adults of the local community. Though the inheritance of land is through maternal lineage the females are often seen to be quiet during public meetings and are often represented by their brothers or eldest son and are often behind the scene. The female adult group led by Gema Steven are for the time being contented with the drum oven baking project. They are happy that they are able to generate some income for their group by selling the scones sold to the visitors at</td>
</tr>
</tbody>
</table>
Youth Males
The young males like anywhere else in PNG see their role as front line for most of the physical jobs that have to be done on behalf of the community. In the Kamiali ICAD project they were involved in the production of the timber chip used in the roofing and all the posts needed for the construction of the training centre. They were contracted to provide the material as well as the labour force on site.
With regards to the decision making process of the project, they have not been effective participants. As a result they have interfered in certain decisions of the project committee alleging that the project committee were just the rubber stamp to the VDT management.

Youth Females
As female members of the youth, their role is that of helping the adult female members of that community. With the establishment of the training centre they have been trained and rostered to work in the guesthouse or the training centre under the supervision of the Canadian CUSO couple, who have been brought in by VDT to manage the centre.

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Description of Participatory Role.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church</td>
<td>Lababia people like the five other villages in the region are Lutherans and have a very strong association with the church and the church activities. Unlike other provinces much of the rural Morobe is predominantly Lutheran which means other churches have had little</td>
</tr>
</tbody>
</table>
success in competing with them until recently. In many ways the Christian values has replaced traditional beliefs, rituals, sorcery and black magic in the area.

Church impact in this village is especially noted when the villages next to Lababia organised the annual church gathering. The whole village including the project committee members spent much of the time making gardens for this specific event and preparations of the site to host the church gathering for the entire synod or region of Salamau District. The church activities have influenced the organizational aspects of the adult female groups and youth programmes in this community. They have groomed leaders and the church also plays the role of over seeing community togetherness and in still honesty and integrity.

<table>
<thead>
<tr>
<th>Village Development Trust</th>
<th>Village Development Trust Primary role is the planning coordination and implementation of the ICAD initiative, which involves conservation of the marine and forest ecosystems and the flora and fauna of the Kamiali area. In assisting the local community conserve their biodiversity VDT as an NGO has taken steps to initiate number of tangible social and economic activities for the community as incentive for conserving biodiversity on their land and seas. As an implementing organisation of this project, its other roles includes fund raising and providing technical support and guidance. The Village Development Trust has taken a proactive role in promoting various income-generating activities as part of the ICAD programme for the Lababia community. Such programmes includes gender and social issues, eco-timber project, eco-tourism, facilitation of various workshops and training at the Kamiali training centre.</th>
</tr>
</thead>
</table>
National

Department of Environment and Conservation (DEC) had assisted in facilitating the

Government

declaration of the Kamiali Wildlife Management Wildlife Management Area.
DEC had an important contribution to this project because it seconded its conservation
officer who is from the local area to be attached to the project with no salary obligation to
VDT.
Finance Department also endorsed the World Bank Funding received through UNDP for
the construction of the Training centre at the cost of kina 250,000. This makes Kamiali
ICAD initiative the only project that is able to provide to the community a major
infrastructural facility.
The support from the national government is also seen from the various support provided
by the PNG University of Technology, especially through the agreement VDT has entered
in with the Lae Timbers Training college.

Provincial

Provincial Government has not been involved or invited to play any major role in this

Government

project. The only input from the provincial government is through the Huon Development
Authority that is very much responsible for the administration of the Salamau District.

Local

The Lababia councillor is part of the Salamaua local level government. He is seen to be in

Level

close contact with the village, mainly because the project has provided the village water

Government

supply to the Lababia community and has helped to build a teachers house for the
Lababia community school.
Number of business communities had been contacted, to use the training centre or

Business

tourism facilities. The Lae tourism board has been invited to go to Lababia to witness the

Community

one-day show festival of the village. The game fishing group in Lae has also been
approached to use the Kamiali facilities.
VDT has also entered into a business contract with Lae Timber college to produce
shakes. This is the production of a timber based roofing material. Shakes are produced
by first cutting timber into pieces with a hand tool called froe. The split pieces are then
pressure treated at the Timber Industry Training College facilities resulting in a high
quality, long lasting roofing material.

Funding

The role of funding agencies in the planning and the implementation of the project is

Agencies

minimal, except at the initial phase when WWF was involved. The current funding
organization such as ICCO does not interfere with the project administration.

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5. 3. 3. 3. Project Ownership
Concern of ownership of this project is quite complex and is coming from several quarters and is centred on the ownership issue of the expensive modern training facility in Kamiali. The question is who has the right to benefit from the infrastructure set up in Lababia? Several members from the initial environmental lobby group from the other three villages not included in the current project are concerned. For example, Gebob from Kui believes he played an instrumental role in mobilising the community in the area about the alternative forms of development. He believes even some relatives at Lababia who at first did not support him often ridiculed him. Now that his village Kui is not involved, he feels that all his past effort in bringing an NGO partner VDT to the area is being benefited only by Lababia village. Members of the Gala sub clan who own the land leased by VDT feel they should have a major say and be the only group to go into joint venture with VDT in this eco-tourism project. Also, the younger members of the Lababia community feel they are left out in the decision making process dominated by village elders. They believe VDT is not serious or genuine in training some of them to take over the management of the centre.

5. 3. 3. 4. Project Activities
The Marketing of the Project Nationally and Internationally
The main economic benefit offered to the landowners in this project is centred on the eco-timber training production and marketing centre. The project proponent VDT has however altered the perception of the original training centre meant for the above purpose to be viewed in general term as a Training and Visitors Centre, for all kinds of training. The two inter-related income-generating activities are the eco-timber business and the training and visitors centre or more realistically eco-tourism centre. These were funded under the World Bank grant fund and ICCO of Netherlands. This project is well advertised, marketing its programmes through a home page and its quarterly bulletin. It also has a series of video clippings on eco-forestry project.

The KICAD Economics Programmes
The nature of economic activity included in the economic incentive package as perceived by the project proponent (VDT), is diagrammatically presented in Figure 18. The people from Lababia village who are the resource owners of the Kamiali ICAD Project initiative are known to be participating in the number of income generating projects, as discussed separately below. The project proponent and the resource owners decided to take a practical approach to initiate the
project with limited funding from a number of sources before seeking major donor funding to enhance the perceived activity.

**Eco-Timber Project.**

In 1992 VDT secured a funding support from the Australian High Commission to assist the Manda Brothers led by Benjamin Gilingsu of Lababia to purchase a walkabout sawmill for the eco-timber project. This group also raised some of its own funds of kina 3,000 towards the project. By taking this initiative Lababia village was able to prove to the other villages that it could cut its own timber with the walkabout sawmill and get more money for the sawn timber like the Bau community. From 1995-1996 the sawmill project, which is led by Benjamin Gilingsu who is also a member of the project committee, was contracted to cut timber for the construction of the training centre facility. During the construction of this facility the Lababia community earned more than K 8,000 of cash income. This was primarily through the earning of income by workers at the construction site and the purchase of sawn timber for construction from the portable sawmill. In addition, certain individuals improved their prospects for future employment developed skills such as carpentry and saw milling.

**Community Fishing Project.**

In July, 1993 VDT took the initiative to apply to Profitable Environment Protection (PEP), a US NGO, to secure small funding to set up a community-owned and operated fishing venture. The initial funding solicited from PEP was only able to provide US$1,500 for the communities to buy eskies to catch and store fish and take them to the buying centre for sale. This particular US based NGO regarded the funding of something big and tangible, like the motorboats, the deep freezers and generators as requested by the Kamiali project committee, as outrageous and typical of a cargo cult mentality. Consequently VDT had to abandon possibilities of future partnership with this organisation and had to look for other alternative funding.

When it could not secure any external grants for the fishing project, VDT management accompanied the project committee to seek a commercial loan from the bank. According to Ninga (pers. comm. 1998), one of the leaders from the Arema clan of Lababia village, VDT management gave a guarantee for a bank loan from the PNG Banking Corporation for the project committee of Lababia to take a bank loan to buy a motorboat, fishing gear, deep freezer and a generator plus operational cash. This project went smoothly until the people started to lose interest with all kinds of conflicts as excuses amongst the community members. This slowed the project down and the loan repayment was not serviced regularly and on time.

VDT was forced to look for money to pay the loan since the organisation had given the guarantee for the bank loan. Recognising the genuineness of VDT management to help do something worthwhile for the communities and the prospect of making the business become viable,
community leader Peter Ninga and family members approached VDT and asked that they were prepared to take over the fishing business from the rest of the community and run it for their family group. Since that takeover, the family-based group has managed to pay off the previous loan of the community but they are now trying to repay the additional loan they took. This project is currently family based and is run by Peter Ninga and his family, who have agreed to pay off the community’s debt and have so far paid back 80 percent of the current loan (Peter Ninga per.com.1999).

**Eco-Tourism Project.**

This project is mainly viewed as a training and visitors centre. For the Kamiali ICAD initiative, this is a major income-generating activity that has great potential and is actually working. As this facility is built on the leased land on normal commercial principles, the project is actually owned by VDT. The project proponent VDT is leasing the one-acre land from the community for Kina 600 per annum. This money goes into the Community Trust Fund managed by the Kamiali conservation project committee. According to Levi Ambio (per. Com. 1999) whose sub clan owns the land on which the training facility stands:

*VDT management’s grip of the facility is because they found out that the chairman of the project committee has secretly been negotiating with a private buyer in Lae to take over the facility. This would mean that the community as a whole would miss out on the benefits as one particular group could claim ownership of the property.*

The Canadian volunteer couple is currently managing the training and visitors centre. They are currently training the young females from the village to run the guesthouse by taking turns to work at the guesthouse. When there is a full house during workshops and training sessions, about six to seven of them are on fulltime. The trainees are trained in various aspects of tourism management and visitor service while paid a full salary for the number of hours they work.

**Village Bakery Project.**

The village drum oven bakery project operated by the female members of the Lababia village started this project by obtaining a loan from the Kamiali community trust fund administered by the project committee. An amount of Kina 300 was initially secured from the trust fund to buy the necessary supply. Scones prepared by the group are purchased by the Training Centre to feed the guests. Depending on the size of the visitors and the duration of their stay at the training centre, this group usually makes over Kina 300 per month. They have so far repaid the loan and have applied for extra loan to go into poultry business. Andrew Gwai, who is a member of the project committee assisting Gema Steven the female representative on the committee, is confident that the female-managed business in the community has a greater potential for success
than those run by the male groups. This is because they function better as a group and very are
careful in how they spend the money.

According to their leader Gema Steven, (pers. comm.1989) ‘...the women’s group will continue to
be successful because there is at present no dispute over the leadership issue and we all know
what is happening. Besides the selected activities like baking and the chicken project which is
next on line, falls within the role of women as daily providers. We do not have to learn
complicated skills to run this business.’

The Kamiali conservation project committee is also responsible for the administration of the
‘Community Trust Fund’. The purpose of the trust fund is to assist the community members to
initiate small tangible income-generating activities that contributes towards the community welfare
of the Kamiali community. Individuals or groups may apply for financial assistance to start a
particular activity on a loan basis. However, due to limited financial resources and the possibility
of individuals not paying back the loan, applications from individuals are often discouraged in
favour of group or community centred projects. As raised above, one such project where the
committee gave total support is the female village bakery project that is basically to raise funds,
to support various women’s programs within the church. Other members of the community
can only apply if those who have borrowed the money pay off their loan quickly, on time and at
the built-in fixed interest. Funding for the trust fund mainly comes from the yearly rental of Kina
600 paid for the land leased land by VDT to set up the current Training and Visitor Centre.

The Type of Enterprises

The Lababia community benefit from the income raised through the Ecotourism and Training
facility through wages earned by facility employees in house-keeping, maintenance and kitchen
staff who are trained and supervised by VDT staff and its contracted partners. Landowners of the
five acre site are also receiving annual lease payments of K600 per annum from VDT through the
long-term lease arrangement that was established almost five years ago. Under a further
agreement with villagers an amount per guest per night is paid into the community trust account
providing the village with income with which to carry out their own development and community
service projects.

Other economic benefits realised by villagers include income from tour guides, transportation of
visitors, sale of artefacts and lectures/demonstrations at the visitors centre. In addition to the
economic benefits, the community also benefits from the educational and management programs
being offered in close proximity to their village. Funding for the Kamiali project was secured from
several sources and they include The World Bank, MacArthur Foundation, National Forestry and
Conservation Action Plan (NFCAP), Inter-church Organisation For Development Cooperation
Business Marketing and Sales Centre: Kamiali Training Visitors Centre

The new Village Development Trust facility known as Kamiali Training Centre and Guest House is an innovatively designed facility, incorporating a combination of traditional styles, local building materials, and village labour along with modern technology and amenities. It provides an education and training venue that offers vivid examples of Papua New Guinea timber, ecosystems, biodiversity and conservation practises essential for sustainable development. The facility was designed by Ken Costigan and Geoffrey Larawin through UDC Architects of the University of Technology in Lae. This group also supervised construction by employing villagers from Lababia and the neighbouring villages. The training centre is the major venue for VDT to conduct its popular eco-timber business training programmes for village residents from along the Morobe Coast and other parts of the country.

5.3.3.5. Types of Funding and Funding Arrangement

This project is well on target to create long-term income generation activities that can sustain both the community based enterprises and the projects over all sustainability plan. The founding director of VDT, Sasa Zibe, argues that we cannot develop programmes that are sustainable for our people if the external partners want to spend more money for short term workshops and costly research information which does not benefit the local people in the long term. In fact, it was for this reason that the Village Development Trust (VDT) approached this ICAD project differently from other ICAD projects that involve international NGO partnership.

According to Sasa Zibe (per.com.1998) .."we made sure that as soon as funding was secured from several sources VDT entered into a lease agreement with the Lababia people for a piece of land to set up kina 250,000 training facilities and the visitors centre. The lease arrangement is for a period of 30 years. Under the arrangement, VDT is to lease the land for the amount of Kina 600 per annum and retain and manage the facilities for over a period of time. Annual rental payment is paid to the member of the Gara sub clan. At present the one-acre land leased by VDT is under dispute between the two major clans and this sub clan. Since this dispute has not been amicably settled by all concerned parties, the annual rental payment is currently held in trust by Gamuga Lawyers in Lae."

The new Village Development Trust Training facility also known as Kamiali Training and Visitors Centre is an innovatively designed facility, incorporating a combination of traditional styles, local building materials and village labour along with modern technology and amenities. This facility is
a *long-term permanent investment*. If managed properly it is likely to provide a continuous means of income generation for the community and the VDT as an educational and training venue.

The Labapia community will benefit from the income raised through this facility through wages earned by being employed at the centre. Labapia village will continue to receive annual lease payments from VDT through the long-term lease that is established almost five years ago. Under a further agreement Labapia villagers will receive 10% income from every guest staying there per night. This income is being paid into the *Community Trust Account*, thus providing the village groups with a definite income base on which to draw from to carry out own development and community service projects. Other economic benefits realised by villagers include income from tour guide transportation of visitors, and sale of artefacts set up at the visitors centre. In addition to the economic benefits, the community also benefit from the educational and management programs being offered in close proximity to their village.

Funding for the Kamiali project was secured from several sources and they include The World Bank under their Social and Rural Development Action Program and from the Swedish Society For Nature Conservation (SNC). Major funding also came from, MacArthur Foundation (USA), National Forestry and Conservation Action Plan (NFCAP), Inter-Church Organisation For Development Cooperation (ICCO) of Netherlands, New Zealand High Commission, Pacific Conservation and Development Trust and the Australian High Commission. The management of the village Development Trust is confident that it has the good track record necessary to continue to attract donor funding for years to come. over the period 1996-2,000, most of the activities has been directed towards the social and economic programs of the community.

5. 3. 3. 6. Project Initial Interaction with Provincial and National Government

The Kamiali ICAD project is fortunate to have engaged a knowledgeable conservation officer from the Department of Environment and Conservation, one who knew exactly what was required to get the proposed conservation area under the WMA status. Bing Tope, who comes from a Sipaia village just behind Siboma, is seconded to VDT to assist them develop the conservation project. Being from the local area, Bing helped the conservation partners to get their cultural protocol right from the start to avoid unnecessary delay in knowing about the local people and their culture, unlike the situation in the Lakekamu and the Crater Mt. ICAD projects. The role of provincial government is limited in this project but an effort is under way to work closely with the Huon
Development Authority, a Morobe government development agency concerned with this area, through the Salamaua district administration and the local level government council. Most of the liaison and support from this project is with the national government. This communication is primarily through personal contact with the former secretary of Environment and Conservation Department, who is now the director of ICAD programs of VDT in which Kamiali is the main focus. Through his contacts, the Kamiali, the University of Technology and the Forest Research Institute carried out the project's biodiversity survey. Other cooperation includes:

<table>
<thead>
<tr>
<th>Box 10 showing Role Played by DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Secondment of the conservation officer Bing Tope</td>
</tr>
<tr>
<td>• Endorsement for direct funding assistance to an NGO from World Bank</td>
</tr>
<tr>
<td>• Official declaration of the conservation area by Conservation Department</td>
</tr>
<tr>
<td>• Financial assistance from the nation forestry action programme</td>
</tr>
</tbody>
</table>

5.3.4. Project Evaluation
The only major development activities these people have ever seen in the area has been that of logging operations in the 1960s and 1970s near Buso village by the then “Commonwealth Timbers,” now known as Papua New Guinea Forest Products. Since then there has not been any other major economic development projects in the area. The Kamiali ICAD project is one such specific program that is headed by a Director, who happens to be the former Secretary of the Environment and Conservation Department. When he retired from the government in 1988 he joined RCF, an NGO he helped create, and became its first director. In 1995 he left RCF due to differences of opinion with WCS of New York on how community based projects should be implemented at the Crater Mountain ICAD project.

5.3.4.1. Project Threat
Under this ICAD project, the VDT as an organisation has addressed the development concerns by introducing into Kamiali various programs in combination with community services like a water supply and have attempted a village fishing project, an eco-timber project and the eco-tourism project. Benchmark assessment of the actual status of the perceived social and economic development package is given a ranking out of five (5) as shown in the Table 13.

Internal threat
Internal threats to the project are expected from several quarters and these include the so-called educated elites of the village who are not directly represented or involved in the major decision
making process of the ICAD initiative. They are not in the position to remove or do away with the traditional process of leadership selection and therefore they are likely to weaken the interest of the young people by ensuring the traditional leader's decisions on the project's various programmes are not implemented on time.

Youth leaders like Ben Naru who has worked as a sales man in Paguna mine, Sammy Wenis a former police officer and Levi Ambio a former sergeant in the police mobile unit, are seen to be leading an elite minority group to taking every opportunity to challenge the current Kamiali project committee who is chaired by Steven Nasa. The pressure group thinks the current project committee is just the rubber stamp for the implementing NGO VDT. They believe the committee does not provide the type of leadership that is capable of understanding the issues as well as having the administrative skills to be able to get formal recognition from VDT to assert financial and management control of the training and visitors centre. This sector of the community believes it is important to get into this closer position and establish better formal working relationship with VDT and get to know how to access outside project funding for the Kamiali ICAD initiative before VDT decides to pull out of the area. The perception is that, with the establishment of the training centre and visitors facility in their area, the Kamiali people through their project committee can access the funding on their own directly, thus bypassing the role of VDT as agents for change. This is why they believe that the village project committee is the only avenue for the Lababia village community to effectively bargain with VDT for management control, both financially and administratively, in order to have greater say in what goes on in the project. The second possible threat is expected from the Gala sub clan who insist that the Training and the Visitors Centre is built on their land and therefore they should be the only one who should collect the annual rental payment and be given job priority. The dispute has already entered the Court House but was withdrawn to be settled by traditional means.

Community Expectation

This project is well supported by the older generation who are recognised leaders of the village and have lived in the village most of their lives. These people had not seen anyone in their lifetime, even from the government, who had come to talk to their community and take an interest in the development of their welfare and even have the interest to assist them to protect their rich natural resources.

The above threats have developed because the villages have not been able to establish how much in actual funds have been allocated to assist the villages towards the economic and social incentive packages and how much is for institutional support. They believe the VDT has not openly discussed the budgetary allocation for Kamiali project and programme priorities with them and therefore are suspicious of VDT using Kamiali project as a front to secure a lot of grant
money for activities that do not directly benefit them. However, a very committed member of the project committee Andrew Gwai thinks that there is no substance in what these young people are saying. According to Andrew Gwai:

‘many of these people are only good at talking. If they get involved in managing the funds they will go off to Lae and spend all that money on beer and female friends. I have been in the village most of my life and have not seen these educated people bring anything good for the community to date.

This view is also supported by Peter Ninga, one of the well respected leaders in the village, who has now taken on the failed community fishing project to be managed by his family. When asked what he thinks about the views of the young people in the community his response was:

‘Young people think it is easy to get financial help from outside world. To start with they are very lazy and only good for talking. The fishing project was working well but these very people started dividing the communities so the project failed. Do they think the outside people know them and can trust them with the lot of money? We are Christians so we must pray to God to convince VDT management to be honest with us. It is not good talking at their back.’

The elder’s views on the project and their support for VDTs effort is firm. However, there had already been several confrontations where the senior project staff had been told that opposing groups will burn down the training facilities and have threaten their safety. Besides, some members of the project committee who apparently have been influenced by this sinister group are campaigning to convince the people that VDT is cheating on them. As a result, some of the elders have started to be cautious of the genuine trust they place on the local NGO.

External threat
The external threat is likely to come from a mining company that has an exploration permit close by. It currently only includes parts of Wau, Mt. Missim and the Black Cut Area, which is slightly north west of the conservation area. Gold is already known to exist at the headwaters of the Sae River and the Bitoi River. There is not sufficient timber in commercial quantity for any logging company to become interested again in the area, at least for the next twenty years. According to Sasa Zibe (pers. comm. 1998), the logging company has left the area in 1996 without properly winding down the operations and adequately paying out any royalties to the landowner company and its members. The people have in turn taken the company to Lae District Court and subsequently the court froze the assets of the company in the area including all the buildings.
5.3.4.2. Implication of Legislative and Policy Environment
In terms of the overall conservation objectives, the Kamiali Integrated Conservation and Development Project has already received official recognition by the Department of Environment and Conservation by declaring the area as a Wildlife Management Area (WMA) in 1996 (Govt Gazettal no. 678). By having the area gazetted in the Government gazette the area is now legally registered as a conservation area. The committee members, who are selected to represent their group and whose name appears in the gazette, are the legal custodians of the land for their communities. The implementing organisation VDT does not own this land as the Lababia traditional landowners own it.

5.3.4.3. Implication of Large Scale Development Activities
The desperate desire to bring in some form of economic development and to earn much needed cash and social benefits such as a new classroom for the school, an aid post and a water supply to their homes, the villages showed no hesitation to invite and enter into a private arrangement under the Private Dealings Act with a Malaysian logging company, ‘Timbers Products and Marketing Limited’ in 1992. The logging company went into partnership with the landowner company known as “SKB” (Siboma, Kui and Buso) Development Corporation. Board members for the company consisted of representatives from Siboma, Kui, Buso and Lababia villages to log the Kui-Buso TRP (Timber Right Purchase Agreement) from 1992-1996. This Logging Company closed down the business in the area in 1996 and moved down to another site along the Morobe coast. For the ICAD initiative now based out of Lababia, there is no immediate threat to any major development. Martin (1997) has reported that Kamiali does not have sufficient timber to attract another logging company. Efforts by a past mineral exploration company failed when the Lababia villages ransacked the exploration base and told them to leave their land Levi Ambio (per. com.1999).

5.3.4.4. Sustainability of Funding Arrangements
Funding for the Kamiali project was secured from several sources and they include The World Bank under the Bank’s Social and Rural Development Action Program and from the Swedish Society For Nature Conservation (SNC). Major funding also came from the MacArthur Foundation (USA), National Forestry and Conservation Action Plan (NFCAP), Inter-Church Organisation For Development Cooperation (ICCO) of Netherlands, New Zealand High Commission, Pacific Conservation and Development Trust and the Australian High Commission. The management of the Village Development Trust is confident that it has the good track record
to continue to attract donor funding for years to come. Since 1996-2000 most of the activities have been directed towards the social and economic programs of the community, particularly the various training programs for community-based groups in sustainable forest harvesting, processing and marketing. According to Sasa Zibe (per.com. 1999) Training Programme Director and Founding Director VDT, the major part of the ICCO funding was for programs towards networking with NGOs in PNG and assisting the rural communities with selected training programs to enter into sustainable natural resource management activities that are aimed at alleviating poverty.

Failure to get VDT management to confirm the actual amount of funding and the period of funding from the funding organizations listed above meant the figures given below are based on verbal communication with the newly-appointed manager John Sengo, formerly of Lakekamu ICAD Project. This NGO had succeeded in receiving major funding for the same program component, in fact doubling the funding in some program areas such as training and biodiversity conservation. This boost is possible and accepted practice among NGOs where the particular NGO recipient can use funding from another source as its own means to satisfy the requirement of the other funding agency. The level of funding is quite high in the limited time frame or life span of the project. The danger is that if these funds are not properly acquitted, the major funding will ensure that they inform other funding sources in the country about the weakness or danger of funding the NGO. In this regard the current trend of funding is not a grantee for funding sustainability in the future. Unless new and innovative programs are brought on the scene, VDT may not continue to secure funding under the same program.

<table>
<thead>
<tr>
<th>Grant Base</th>
<th>Time Frame</th>
<th>Total Grant Value (US$)</th>
<th>Grant Income/year</th>
<th>Grant Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Bank</td>
<td>USA</td>
<td>3 years</td>
<td>US$250,000</td>
<td>US$89,333</td>
</tr>
<tr>
<td>McArthur Foundation</td>
<td>USA</td>
<td>3 years</td>
<td>US$340,000 plus own pub means US$150,000,00 =US$490,000</td>
<td>US$163,000/yr approx.</td>
</tr>
<tr>
<td>Inter Church-organisation for Development Corporation Netherlands</td>
<td>Netherlands</td>
<td>3 years</td>
<td>Kina 3 million</td>
<td>Kina 1 million</td>
</tr>
</tbody>
</table>
## Table 14 showing Funding Sources for the Kamiali ICAD project for the period 1993-1998

<table>
<thead>
<tr>
<th>Conservation Project</th>
<th>Location</th>
<th>Duration</th>
<th>Funding</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pacific Conservation and Development Trust</td>
<td>USA</td>
<td>2 years</td>
<td>US$20,000</td>
<td>US$10,000</td>
</tr>
<tr>
<td>New Zealand High Commission</td>
<td>New Zealand</td>
<td>2 years</td>
<td>Kina 34,000</td>
<td>K17,000</td>
</tr>
<tr>
<td>Profitable Environment Protection</td>
<td>USA</td>
<td>1 year</td>
<td>US$1,500</td>
<td>US$1,500</td>
</tr>
<tr>
<td>Australian High Commission</td>
<td>Australia</td>
<td>1 year</td>
<td>Kina 20,000</td>
<td>K10,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is important to point out that funding from the MacArthur Foundation, the World Bank, Swedish Nature Society and Profitable Environment Protection was in United States dollars with Netherlands guilders, funds that were converted to Kina at the Bank before entering the VDT bank account. Again it has been hard to get the cooperation of the NGO to release vital information with regards to funding and specific funding items. The figures given above are only meant to give some idea on the level of funding the NGO was getting.

### 5.3.5. Evaluation of perceived benefits

Plans for the Lasanga -Lake Trist ICAD project initiative were initially conceived mainly on the idea of setting up small-scale economically viable logging and marketing businesses that minimised environmental disruption, earned more cash for the people and were operated by the people themselves. This concept of offering an alternative logging model alongside the industrial logging project, which was already in full swing in the area, did not seem feasible as it required sufficient funding and the technical expertise to compete with an established, wealthy Asian logging company, Forest Products and Marketing Limited. As a result of this setback the ICAD initiative could not practically implement an co-timber development project. This was because VDT was also waiting for the funds to be released by WWF. Therefore, all they could do between 1990 and 1991 was to continue to conduct conservation and environmental campaigns along
these villages until funding was secured and the people were ready to accept alternative economic venture to existing industrial logging.

Under the eco-timber project initiative only two areas were selected for timber harvesting. This included forested land along the Saia River banks east of the village and near the Bitoi River delta area west of the village where most of the village gardens is made. Plans to produce roughly sawn timber in slab forms for overseas market did not eventuate due to the departure of the project officer who had major differences with the newly appointed expatriate Director for Planning and Management of VDT. His departure impacted on the morale of the youths of Lababia that had developed close ties with him. Besides, there was some major marketing and operational problems associated with this project, including transportation costs for shipment, non-availability of required spare parts for maintenance and operational fund for fuel and youth allowance. Under this ICAD project VDT as an organisation has addressed the development threat by introducing into Kamiali various programs in combination with community service like water supply and have attempted village fishing project, eco-timber project and the eco-tourism project. Benchmark assessment of the actual status of the perceived social and economic development package is given a ranking out of five (5) as shown in table 15 below. Table (15) shows actual achievement of proposed activities with ranking out of (5) five.

5. 3. 5. 1. Proposed Activities verses Actual Achievement

<table>
<thead>
<tr>
<th>Proposed Activities</th>
<th>Perceived Benefits</th>
<th>Actual benefits</th>
<th>State of Implementation</th>
<th>Recognition and Acceptability</th>
<th>Ranking out of five</th>
</tr>
</thead>
</table>
### Informal Education, on Eco-Timber Training and community Advocacy Programme

<table>
<thead>
<tr>
<th>Activity</th>
<th>Comment</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>a). Discourage industrial logging &amp; accepting community based sustainable logging for export to green market.</td>
<td>May not last due to lack of marketing outlets</td>
<td>3/5</td>
</tr>
<tr>
<td>b). Create or link up with community based export market</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c). Earn better return through direct export</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a). Concept in principle had community undivided support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b). Proposed marketing venture fail through</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c). Those involved in the first lot of shipment good better return for their own sawn timber</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a). Awareness and saw milling programme got a good start along Morobe coast.</td>
<td>May not last due to lack of marketing outlets</td>
<td></td>
</tr>
<tr>
<td>b). Problem with even distribution of mobile milling saws to produce required quantity for market consistency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c). Only one or two shipment was made, partly due to no coordinated market in Europe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Gender and Social Issues Programme

<table>
<thead>
<tr>
<th>Component</th>
<th>Comment</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradual assimilation of gender balanced approach in eco-forestry project and decision making process of the project.</td>
<td>Actions taken with appointment of Gender and Social issues director and community female representation on the project committee</td>
<td>4/5</td>
</tr>
<tr>
<td>Role of females identified and administrative responsibility and mechanism set up. Total alteration to community function out of project situation not possible due to cultural restrictions</td>
<td>There is acceptance for female involvement, as it is a maternal society</td>
<td></td>
</tr>
</tbody>
</table>

### Scientific Research and conservation

<table>
<thead>
<tr>
<th>Component</th>
<th>Comment</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>To formerly establish marine and forest conservation area in Kamiali and to promote sustainable</td>
<td>The Kamiali ICAD project is the second conservation area to be registered as WMA under the ICAD initiative</td>
<td>4/5</td>
</tr>
<tr>
<td>Local people have their resources protected and get social and economic benefits at the same time</td>
<td>There is good community support the project especially the older generation</td>
<td></td>
</tr>
</tbody>
</table>

Some good progress But doubtful of succeeding. 

Given the approach by the NGO VDT it gets 4/5 in ranking.
Business Planning and Development
To set up dual purpose permanent infrastructure set up at Kamiali in the pretext of training centre
VDT has a modern training facility set up under proper business arrangement. It is also viewed as a long term income generating facility to sustain some of its programmes
This facility is already completed and running.
There is general community acceptance but as usual gradual jealousy arising from those not involved, especially the youth males.
This aspect of business is the only major success. Receives ranking 5/5

To support the proposed income generating enterprises shown in Table 15 various socio-economic programme activities are being promoted simultaneously. These will in turn contribute towards achieving the expected outcome.

The outcome of economic incentive projects for KICAD shown in Table 16 below.

<table>
<thead>
<tr>
<th>Perceived Economic enterprises</th>
<th>Infrastructure set up</th>
<th>State of implementation</th>
<th>Economic Viability</th>
<th>Trained enterprise management</th>
<th>Financial input &amp; Return</th>
<th>Ranking out of five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-timber project</td>
<td>Portable sawmill set up at Kamiali under temporary shed.</td>
<td>Operated from 1992-1996 produced and sold first batch of timber</td>
<td>Great potential but No longer operational at Kamiali, discontinued &amp; failed mainly due to short term financial support to realise actual potential</td>
<td>Outside persons brought in to train youths, when he left lose of morale by youths &amp; fragmented</td>
<td>Australian High Commission funded portable sawmill. When not operational</td>
<td>Started well 3/5</td>
</tr>
<tr>
<td>Perceived Economic enterprises</td>
<td>Infrastructure set up</td>
<td>State of implementation</td>
<td>Economic Viability</td>
<td>Trained enterprise management</td>
<td>Financial input &amp; Return</td>
<td>Ranking out of five</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
<td>-------------------------------</td>
<td>-------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Eco-tourism project</td>
<td>Eco-tourism facilities very advanced modern facilities set up at the coast of Kina 250,000.00</td>
<td>Completed construction of the eco-tourism facility also known as training centre in 1998.</td>
<td>Tourism/training facility has 20-40 beds. Has long term potential and economically viable if aggressive marketing</td>
<td>A CUSO volunteer couple has been brought in to train the locals, at present only female youths are engaged on the job training</td>
<td>The Kina 250,000.00 facility is now beginning to make money from the running of various courses at the centre</td>
<td>Very impressive 5/5</td>
</tr>
<tr>
<td>Community Fishing project</td>
<td>This project did not have proper infrastructure set up.</td>
<td>Project began in 1996 but community commitment lacking</td>
<td>Project had disagreement amongst community members, went broke Local people are good fisherman, all that is required is commitment</td>
<td>Project picked up by a single family which has pledged to pay off community loan from the Bank. So far loan paid family doing well</td>
<td>There was no cash input but VDT gave Labapia community bank loan guarantee</td>
<td>Good potential 3/5</td>
</tr>
<tr>
<td>Village Bakery Project</td>
<td>Bush material baking house built and drum oven installed in 1997</td>
<td>Project is already operational since 1997 and making money for the female members of the community.</td>
<td>Since the loaned is paid and proper bread is hard to obtain from Lae, the scones made are all sold to the visitors and trainers centre</td>
<td>The female members of the community have attended various training and now able to run the project</td>
<td>The ICAD project trust account loaned K300.00 to the female members of the community Have repaid the loan and doing well for themselves</td>
<td>Adult female group doing well 5/5</td>
</tr>
</tbody>
</table>
5. 3. 5. 2. Benchmark Evaluation of Mainstream Development Projects
The Kamiali ICAD project is in one way lucky in that the likely development threat from the logging project has come and gone. The perceived as well as the actual benefits from the now ceased logging project is discussed immediately below. In terms of mining possibility there is a pending mining PA in place in the north area west of the ICAD boundary fronting the Bitoi River. The Wau based exploration company had applied for a prospecting authority during the late part of 1980s. Gold is likely to occur here and may in the future create anxiety among the local community to change their mind from conservation to mining as means of additional goods and services. In the mean time this area lacks any major economic activity.

5. 3. 5. 3. Comparison of Benefits with ICAD Projects.
The logging company, “Timber Products Marketing Limited” has ceased to operate in the area and have pulled out of the area in 1996. Both the National and the Provincial Government did not have any involvement because the project was initiated by the local people themselves with the company under the repulsive Private Dealings Act, which was repealed in 1992 after the Barnett Commission of enquiry in 1989.

When the logging company went into this area it promised the local people through their local company KSB board of directors that it was going to bring in development benefits to their area. To the local company leaders, development meant infrastructure (school upgrade, aid post, permanent church buildings, water supply, community hall in each village and speedboats for the villages).

The actual benefits provided included a water supply to Buso, Kui and Siboma, but this was not done properly. The community meeting halls were also built in three villages; some sawn timber was provided for church buildings and minor assistance was given to the local school. Each of the villages involved in logging were given a speed-oat as part of the royalty payment.

At the time of its operation the resource owners were also doing well in terms of short-term gains such as employment and having access to company operated boats going in and out of Lae city free of charge. Board members of the landowner company had easy access to store goods at campsites with minimal restrictions. However, what the landowner company directors did not know was that the logging company management were keeping record of all the cost of goods and services they were receiving from them and later deducted this from the royalty pay-out as part of the operational cost.
5.3.5.4. Project’s Future Sustainability

Potential viability of this project is recognised by the national NGO soon after the pull out of its international partner WWF in 1993.

According to Sasa Zibe former director VDT, ‘we can not do things properly for our people if the external partners want to spend more money for short term workshops and research which do not benefit the people in the long term.’

Village Development Trust (VDT) has entered in to a lease agreement with the Lababia people for the piece of land over which the kina 250,000.00 training facilities and the visitors centre is set up. The lease arrangement is for a period of 30 years. Under the arrangement VDT is to lease the land for the amount of Kina 600 per annum. This money is paid to the trust account managed by the village project committee members who are also known as wildlife committee members. As this particular land is under dispute between the two major clans and the Gara sub clan the trust fund is currently held in trust by Gamuga Lawyers in Lae. In terms of future large scale development threats in the area, possibilities are slim. However, there are four main issues that could determine the potential viability of the project. These are as follows,

- Ownership and management issues of the infrastructure facilities at the training and visitors centre;
- Concern over current financial allocation, management and potential financial sources;
- Inter clan rivalry over who should lead the community;
- Educated elite versus traditional leaders elected by the community.

Project implementing NGO VDT has recognised the need to address the issues of management and control that has to be gradually shifted to the resource owners. Village Development Trust management is now working towards securing the support of the village elders in an attempt to isolate the disgruntled members of the young people.

5.3.5.5. Swot Analysis of the Kamiali Basin ICAD Project

The swot analysis of Kamiali ICAD initiative presented below shows the strength, weakness, opportunities and the threats faced by the project. Given the volatile situation of complex social and cultural issues affecting the project, one thing is certain in this project and that is the elders are right behind the project and the community is aware of who has the authority in the village. For some of the elders involved on the project committee their whole reputation and pride is built on this project and its relationship with VDT. For many people, no government officials have had the time and interest to inquire about their well being, even though the communities are simply
located so close to the second biggest city and the industrial centre of Papua New Guinea. The friendship and trust they have built over the years with Sasa Zibe founding director from down the coast in terms of customs is worth more than money can buy.

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good infrastructure set up next to the community;</td>
<td>• Lack of local managers training as practical capacity building to run training centre and visitors service program;</td>
</tr>
<tr>
<td>• Dealing with one single village with small population;</td>
<td>• Lack of adequate leadership and entrepreneur skills within the community;</td>
</tr>
<tr>
<td>• Only two major clans makes up a single community;</td>
<td>• Lack of initiating sub clan based business opportunities;</td>
</tr>
<tr>
<td>• Accessible from Lae by boat</td>
<td>• Lack of aggressive marketing of its facilities.</td>
</tr>
<tr>
<td>• Two way radio communication network between the community, project site and VDT head office;</td>
<td>Minimal link with provincial officials.</td>
</tr>
<tr>
<td>• High degree of literacy within community.</td>
<td></td>
</tr>
<tr>
<td>• Enjoys the support of older generation whose stand is firm.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Promote sustainable logging and reforestation of native species;</td>
<td>• Ownership and management issues of the infrastructure facilities at the training centre;</td>
</tr>
<tr>
<td>• Establish community based formal fishing company with guaranteed market;</td>
<td>• Concern over limited financial allocation for community trust fund;</td>
</tr>
<tr>
<td>• Promote facilities for appropriate community based training activities;</td>
<td>• Lack of knowledge of actual grants secured for Kamiali project and desire to manage them</td>
</tr>
<tr>
<td>• Link Kamiali conservation boundary with Kuper Range conservation area.</td>
<td>• Inter clan rivalry over who should lead</td>
</tr>
<tr>
<td></td>
<td>• educated elite versus traditionally elected leaders by the community</td>
</tr>
</tbody>
</table>

5.3.6. Discussion
This project was initiated in an attempt to stop the Kui-Buso TRP being logged by Timber Products and Marketing Company of Malaysia in partnership with landowner company Siboma, Kui, Buso (SKB) Development Cooperation between 1992-1996. The effort to convince the resource owners of Buso, Kui and Siboma failed when they allowed the company to log their forest. Only Lababia withdrew from having their land included in the logging project and supported ICAD initiative.
The logging company has now closed down business in the area in 1996 and has moved down the coast to another site along the Morobe coast. For the ICAD initiative now based out of Lababia there is no immediate threat to any major development. According to Ron Martin (1997) Kamiali does not have sufficient timber to attract another logging company. Efforts by a past mineral exploration company failed when the Lababia villages ransacked the exploration base and told them to leave their land (Levi per. com.1998).

The Kamiali conservation area, which includes both the marine and terrestrial environment, was officially declared when WMA gazetted in 1996. Since 1996-2000 most of the activities has been directed towards the social and economic programs of the community. Much of this has been supported by funding from the World Bank under its Social and Rural Development Action Program and from the Swedish Society for Nature Conservation (SNC).

5.3.6.1. The Historical Perspective
The ICAD project in the area was initiated by individual representatives of Salamowa district of the Huon Gulf electorate of Morobe Province. They were ordinary individuals from the Lababia (Kamiali), Buso, Kui and Siboma villages. These individuals were part of the disenchanted community members very much concerned about the environmental impact of the logging operation in their area on their rivers and marine ecosystem, an impact that threatened their livelihood. Their knowledge about such alternative logging project compelled the local people to approach VDT in 1989 to initiate the Lassaga-Lake Trist project. The idea behind the decision to approach VDT was to seek their assistance to develop their own timber resources for the external market. However, it was the study tour to Port Moresby that created the interest to get in eco-tourism. This trip has enabled the leaders to recognise the ability and the possibility for VDT to enable their group to acquire similar economic benefits through tourism business ventures. The idea that an alternative source of wealth and success could be demonstrated to those who were supporting the logging company in their respective villages was seen as a single most important factor to the Lasanga-Lake Trist project committee, an idea that is also significantly reflected from the statement by Andrew Gewai who is a member of the current Kamiali conservation project committee.

5.3.6.2. Project Establishment and Program Objective: The Human Element
The Kamiali ICAD project objective is to improve the conservation of the natural environment of this ecologically sensitive region by assisting the customary landowners to use and manage their
resources in ways that are ecologically sound, socially beneficial and economically viable. Kamiali ICAD initiative is a project that is geared towards assisting the whole community of Lababia village to participate in development opportunities and conservation activities of their choice. Interestingly this project is viewing scientific research and conservation as possible outcomes for instilling social and economic development aspirations to the resource owners. The project proponent intends to use the experiences of this project and this community to contribute to both VDT’s own education work and to better understand other ICAD work being done throughout Papua New Guinea and the South Pacific. Similarly, it intends to work in partnership with villages and others to facilitate the development of available resources, to build village capacity and empower villages to develop community services that improve their quality of life (project document).

The Kamiali ICAD project is one such specific program that is headed by a Director, who happens to be the former Secretary of Environment and Conservation Department. When he retired from serving the government in 1988 he joined the organisation he helped created RCF and became it’s first director. In 1995 he left RCF due to differences of opinion with WCS of New York on how community-based projects should be implemented at the Creater Mountain ICAD project.

The project-implementing NGO VDT has recognised the need to address the issues of ownership and threats especially in relation to the management and control of some aspects of the Training and Visitors Centre, which has to be gradually shifted to the resource owners. The Village Development Trust management is now working towards securing the support of the village elders in an attempt to isolate the disgruntled members of the community, especially the young people. According to Sasa Zibe (pers. comm. 1999) the management team has taken measures to include, constant liaison with the village elders to establish dialogue on issues where the majority of the community feel the project should address. One such example is that in 1999 the project facilitated the involvement of the whole village to prepare for a big village fete to receive a big boatload of people from the University and business community in Lae. The Lababia community raised over kina 5,000 in one day from selling their crafts, sold food at food stalls and performed traditional dances to raise money for the community-based activities.

5.3.6.3. Objective and Changing Expectation
Lababia is the only village out of the four villages in the area that were initially involve in the ICAD initiative that has remained involved. This is because the Lababia community decided to withdraw from the logging agreement they had signed with the logging company and instead
accepted to pursue alternative forms of development while at the same time conserving their resources.

In 1995 the Lababia community and VDT undertook to have the **47,000 hectare area surrounding Lababia declared as a Wildlife Management Area (WMA) under the PNG Fauna (Protection and Control) ACT.** This marked the beginning of a new phase of VDT’s work with partner organisations to demonstrate to villagers and others the environmental and economic benefits of taking an integrated approach to the issues of development and conservation. Through this undertaking came the formal adoption of the name "Kamiali Integrated Conservation And Development (ICAD) Project".

In terms of the Management of the **Kamiali Training and Visitors Centre** the Project proponent VDT on the other hand believes that if it allows local management to take over quickly there will be **conflicts of interest** by those involved to have the tendency towards serving the needs of their specific interest group instead of serving the whole community of Lababia village. In this case the project proponent does have a genuine fear that if it hands over the management responsibility to the local communities, they will not manage it properly. Secondly individual family based groups or the sub clan that own the land may even claim total ownership of the property that was set up on their land despite the fact that it was set up to serve all of the Lababia community as well as other communities throughout PNG. Part of this problem is because the project proponent had not informed the Lababia community that the funding of such **training centre is for the rural communities** in Papua New Guinea involved in the development of eco-forestry as a viable income earner and not only for Lababia village.

**5. 3. 6. 4. The Role of Community Identification and Consultation Process.**

The Kamiali ICAD initiative is built on a clearly identified leadership bases that is recognised and acceptable to Lababia village community. Leadership identification, and consultation process within the Kamiali project is narrowed down to members of the two clans and six sub-clans of Lababia village. The ICAD initiative is also built on clearly identified leadership bases that are recognised and acceptable to Lababia village community. The field officer from VDT is only there to explain to them about the decision-making process of the project and how important it is for them to nominate the right person to represent their clan as their names were going to be recognised by the government when their forest and marine area is officially recognised as a Wildlife Management Area under the PNG conservation law. The Kamiali Conservation Project Committee, also known as Wildlife Management Area Committee, and their respective role is shown diagrammatically in Figure 16. The committee members are also structured to be the head
of specific programme activities as presented below in Figure (16). The Lababia community
nominates the local landowner committee members and the committee members nominate the
chairman, vice chairman and they decide in the meeting who should play the leading role in a
particular programme activity.
Figure (16) shows Kamiali ICAD projects administrative structure for project implementation.

The Lababia community have also lined up replacement or assistance to support a particular
leader, based on traditional selection criteria.

5. 3. 6. 5. Community Role in Project Planning and Implementation.
The project proponent emphasises that gender-related issues, and the other social
consequences of villages generally expanding into the cash economy, pose a potential threat to
achieving sustainable development. Therefore, awareness training, balanced planning, careful
implementation and community support facilities are essential if VDT and its partners are to avoid
unbalanced and perhaps detrimental growth. The VDT Gender and Social Issues Programmes are
intended to support males and females to work in partnership to achieve an increase in the quality
of life for all village residents. The appointment of a female representative on the Kamiali project
committee enables the VDT director for gender and social issues programmes, who is also a
female, to plan with the female member on the Kamiali project committee and the recognised
female leaders of the community what sort of programmes they should be involved in. One of
these planning sessions was to discuss with them about the type of social and economic activities
they were interested to participate in under the umbrella of Kamiali ICAD initiative. To do that,
female leaders were taken on a tour within the province and outside of Morobe to see various
programmes run by other female groups run (Gewa Steven pers. comm.1998). This was an
important approach taken by VDT as female elders are the actual clan leaders in Lababia maternal
community. They have the final consent to what goes on with the land and the natural resources.
The community’s role in this project is both direct and indirect. Indirect participation is mainly evident from the community’s involvement in the social and economic issues or programs offered by the project. This includes the drum oven business activity for the female members of the community and eco-forestry project for the youths. Direct involvement by the community is through their Kamiali conservation project committee also known as Kamiali Wildlife Management Committee.

5.3.6.6. Participatory Role Played by Various External Stakeholders

Participation by various external stakeholders in this project is described in Table 11. Leadership in this NGO is very sensitive to associating themselves with international NGOs that do not see conservation and development issues in the local community’s perspective. VDT does however have a very good network with development oriented NGOs that believe in the delivery of tangible goods and services to rural communities. This is why prior to the formal commencement of this project, in 1991, the VDT organized a three-day workshop in the Lababia village to get the whole community to do the resource mapping exercise and to hear from leaders of several national and international NGOs including WEI to talk about the importance of conservation and the opportunities available for alternative forms of development.

The business sectors role has been minimal but progress is being made towards a joint venture with the Timber Industry Training College to find an industry partner to go into commercial venture to produce shakes. The director of training and the eco-timber program, Sasa Zibe, has reported that production of a timber roofing material called shakes is being considered for commercial use. Shakes are produced by first cutting timber into uniform short lengths then splitting them into thin pieces with a hand tool called a froe. The split pieces are then pressure treated at the TITC facilities resulting in a high quality, long lasting roofing material.

The commercial advantage of shakes, in addition to their durability, is that they utilise timber which does not fetch a high price when used to produce sawn timber. Also, shake production is providing additional employment for villagers around Lae and is serving as an alternative to imported sheet iron roofing. More than 1600 bundles of shakes were produced for the roof of the Kamiali Training Centre and Guest House in addition to the 50 cubic meters of sawn timber that were produced by the village youths of Lababia.

As for the funding organisation in this project, their role is also minimal as most of the European based NGOs rely heavily on the local national NGOs to implement the project according to project plan – there is more flexibility to alter programs than in other developed countries. The increased and continued activities at Kamiali are very much dependent on the level of funding to
this project. This NGO has been reluctant to disclose the level of funding and the duration of those funding.

The church is a silent player but has an enormous amount of influence on the yearly programme of the Lababia community. The Lutheran church is the only church serving the Lababia committee. Lababia village have yearly church events, which often conflicts with the ICAD project especially when VDT does not inform them of programme activities in advance.

5. 3. 6. 7. Current Status of Project Ownership
In many parts of the country the issue of who should benefit only becomes an issue whenever the development activity becomes successful. The National leadership of VDT, in anticipation of such conflicts, has taken a formal legal approach to enter into the partnership arrangement with the community before setting up costly infrastructure. It has also taken a genuine approach towards the establishment of a long-term funding facility for the community from the income generated from the centre. Funds are put into the community trust fund, which is administered by the project committee. Some of these funds are given out to projects, evaluated on merit, as a loan to assist various groups or individual to start small business activities.

Despite their best efforts, the project has so far not initiated long-term formal educational training programs nor has it begun to train the local management team for its major eventual mutual partnership between the ICAD project and the Lababia village through the Kamilai Project Committee. There is no plan in sight to sponsor any local kids from Kamiali primary school to enter Salamaaua high school, which was only opened in 1995.

The Kamiali project is fortunate to become part of VDT’s national program by using such a facility to promote or house it’s eco-tourism business. If the Lababia community, particularly the youth, were aware of this fact then their speculations, that the VDT is using Kamiali conservation project as a front to secure more funding for it’s programs in other parts of the province or country, would have no basis.

5. 3. 6. 8. The Community Role in Social and Economic Programs
Community involvement in various social and economic activities have been discussed earlier under section 5.3.3.4 (p. 324). This project has approached the social and economic incentive package differently in that it has taken a major step to set up the most expensive infrastructure facilities very close to the community. Besides, the project proponent’s have shown a genuine desire to build the income generating activity based on the community’s traditional skills and ability in fishing, an approach that is a clear proof of commitment on their part. To ensure that
trust in the community, the VDT provided a financial guarantee for a commercial bank loan for the community to set up the fishing business that unfortunately soon fell apart.

Similarly, the portable sawmill obtained from the Australian High Commission was given directly in good faith to the community to start the eco-timber project. Since VDT as an organisation could not meet the operational cost, it asked the Manda brothers to meet the operational cost through their own means. Later, when they could not pull through, a direct cash injection was made as soon as funds for the construction of the training centre were secured. This enabled them to engage the Lababia youths to produce the timber and the shakes required for the construction of the training centre. Besides the project also provides the community with the only means of communicating with the outside world with a two-way radio and the village water supply project to benefit the Kamiali people. The project has transportation facilities on site to assist the community to take their sick and injured to Lae hospital when required.

Figure (17) shows diagrammatically status of the perceived Business Plan.

5. 3. 6. 9. Measures Towards Project Sustainability and Funding Arrangement

This project is well supported by the older generation who are recognised leaders of the village and who have lived in the village most of their lives. These people had not seen anyone in their lifetime, even from the government, who had come to talk to their community and take interest in the development of their welfare and even have the interest to assist them to protect their rich natural resources. The perception is that with the establishment of the training centre and visitors facility in their area the Kamiali people through their project committee can access the funding organisations directly thus bypassing the role of VDT as agents for change. This is why they
believe that the village project committee is the only avenue for the Lababia village community to effectively bargain with VDT for management control, both financially and having a greater say in what goes on in the project.

This issue has only developed because the villages have not been able to establish how much in actual funds have been allocated to assist the villages towards the economic and social incentive packages. They believe the NGO VDT has not openly discussed the budgetary allocation for Kamiali project and programme priorities with them and therefore are suspicious of VDT using Kamiali project as a front to secure a lot of grant money for activities that does not directly benefit them.

A very committed member of the project committee, Andrew Gwai, thinks that there is no substance in what these young people are saying. According to Andrew Gwai:

‘Many of these people are only good at talking. If they get involved in managing the funds, they will go off to Lae and spend all that money on beer and female friends. I have been in the village most of my life and have not seen these educated people bring anything good for the community to date.’

This view is also supported by Peter Ninga, one of the well-respected leaders in the village, who has now taken on the failed community-fishing project to be managed by his family. When asked what he thinks about the views of the young people in the community his response was:

‘Young people think it is easy to get financial help from outside world. To start with, they are very lazy and only good for talking. The fishing project was working well but these very people started dividing the communities so the project failed. Do they think the outside people know them and can trust them with the lot of money? We are Christians so we must pray to God to convince VDT management to be honest with us. It is not good talking at their back.’

The elders' views on the project and their support for VDT’s efforts are firm. However, there had already been several confrontations where the senior project staff had been told that they will burn down the training facilities and have threatened their safety. Besides, some members of the project committee who seem to have been convinced by this sinister group are campaigning to convince the people that VDT is cheating on them. As a result, some of the elders have started to be cautious of their genuine trust placed on the local NGO. In terms of the overall conservation objective, the Kamiali Integrated Conservation And Development Project has already received official recognition by the Department of Environment and Conservation by declaring the area as a Wildlife Management Area (WMA) in 1996 in Govt Gazette no 678.

By having the area Gazetted in the government gazette the area is now legally registered as a conservation area. The committee members who are selected to represent their interest group
and whose name appears in the gazette are the legal custodians of the land for their communities. The implementing organisation does not own this land. The traditional landowners own it.

5. 3. 6. 10. Interaction with Provincial and National Government.
There is very little association with the provincial Government in this project. The people have made their stand clear to VDT that the Morobe Provincial Government had forgotten their existence. However, the Village Development Trust as an organisation has established a partnership with the Timber Industry Training College (TITC) in Lae that has set up saw milling and timber processing facilities. The NGO as a participating partner assists village operators deliver and sell their timber according to a published price that reflects the market demand for a wide variety of marketable species of roughly sawn timber. Village sawmills are now progressing plans to expand the marketing and valued added opportunities for locally produced timber. Under this partnership VDT is making a second attempt to establish overseas market link for certified green timber. In terms of over all conservation objectives, the Kamiali Integrated Conservation And Development Project has already received official recognition by the Department of Environment and Conservation by declaring the area as a Wildlife Management Area (WMA) in 1996 in Govt Gazettal no 678. By having the area Gazetted in the government gazette the area is now legally registered as a conservation area. The committee members who are selected to represent their group and whose name appears in the gazette are the legal custodians of the land for their communities and not the implementing organization.

5. 3. 7. CONCLUSIONS
The Kamiali project is socio-economic development focus. It differs from both Lakekamu and Crater Mountain ICAD Projects, which are basically Scientific Research and Conservation focus, with the view that Scientific Tourism will provide economic opportunities for the local communities to decline accepting extractive forms of development. This is further discussed on p.247. VDT has kept its promise but the success depends on the people’s ability to make it happen and not give up too easily. This is a project developed by the national NGO organization that understands people’s perspective of partnership. That is to pursue what you agree on and if the community does not do its part at least you are not to be blamed. The issue of ownership and sustainability in this project centres on the Kamiali training and visitors centre set up along the coast six kilometres east of Lababia village. The Community run business activities have not been successful enough for them to prove to VDT that the people are capable of taking over the
management of the Kamiali Training and Visitors Centre. Any forceful takeover by the inexperienced group of young people will only endanger the viability of the major incentive component of the project. In as far as the conservation of the natural resources is concerned, there is no problem.
Chapter 6

6. Discussion of Key Themes: Findings and Outcomes

6.1. Introduction
This research aimed to establish whether conservationists have learnt from past lessons of non-effective community participation and the habit of offering non-viable or sustainable social and economic incentive packages to rural communities in Papua New Guinea. The research also aimed to establish if the various forms or types of social and economic opportunities promoted by the conservationists under the ICDP or ICAD model for sustainable development in PNG is viable and profitable enough to convince the resource owners to resist possible offers of environmentally destructive forms of development on their land, and instead continue to pursue those development initiatives promoted by the conservationist movement.

This chapter looks at specific issues raised from the three case studies but discusses in generic terms various issues and aspects of ICAD projects in Papua New Guinea. Discussion is made in the light of global perceptions of the issues raised in the analysis of the case studies. The main issues included in the discussions relate to the nature and type of the community approach and participatory mechanism put in place by the project proponents, from the planning and documentation phase through to various stages of project implementation, particularly how the resource-owning communities are engaged in both the project decision-making process and the development of the social and economic incentive packages. The discussion also looks at whether or not the social and economic packages are feasible in terms of market opportunities or availabilities and the infrastructural facilities like transportation and communications needed to support such enterprises at the project locations.

In addition this Chapter looks at the degree of emphasis the project proponents in each of the three case studies have placed on biodiversity research, biodiversity conservation, special skills training and the social and economic development programmes and how each project has affected the community’s readiness to accept the ICAD initiatives in Papua New Guinea. Discussion is centred on the programme logic aimed at addressing issues such as poverty alleviation, community support services and the improvement to existing poor health and educational services in the project areas. Examples of existing biodiversity-based enterprises in PNG are meant to establish whether or not there is logic and the genuineness of the conservation movement to build on existing enterprise experiences in the country. Comparisons of perceived
ICAD benefits and actual achievements with the proposed likely benefits from the pending large-scale development projects may support the rhetoric of the conservation community about delivering goods and benefits better than major development projects in the country.

The fact that there are over 750-800 different languages and a similar number of cultural groupings in Papua New Guinea, means there is no uniformity in the social and cultural institutions that determine how decisions are made with regards to the use and distribution of natural resources in communally own land system. That is why it is important to understand, in a given geographical location, the local community protocols and approaches as well as the importance of the participatory process in decision making. The community approach and participatory process adopted by each of the case study has been examined.

For example, the case study of the Crater Mountain ICAD project shows that it was initiated by an expatriate anthropologist who was living and studying the avian-based culture found in the local songs and dancing of the Gimi people of Ubaigubi. His study convinced him that the people had the cultural basis to conserve the birds of paradise, because the bird’s courtship behaviour is seen depicted in their traditional dances. The detailed information on the community approach for entry into Crater Mountain project is presented under project history (pp. 116-120) and the mechanism for community and stakeholder participation is shown in Table 3 (pp. 123-) and Table 4 (pp. 123-124) respectively. This project has had a significant external (expatriate) influence in both the awareness for conservation and mobilization of the youth to represent each of the clans whose land is included in the project.

The external- or expatriate-led type of approach had difficulty in winning commitment and support from some of the village elders to agree to have their land given away for conservation. Because of the doubts and suspicion about giving their land away to foreigners, they gave their verbal consent for youths to get involved, thinking that the youths will not be recognised formally by outsiders including the government. After giving their consent to the youths, the elders soon realized that young people were getting recognition from the national government and taking over the leadership role on land matters, especially when they heard that the youth’s names were registered in the national gazette as the clan leaders and subsequently nominated to be on the WMA committee. This particular issue led to a stand-off between the project proponent and community elders especially among the Gimi people of Maimafu and Herowana.
Because the Crater Mountain project area is big, and has four separate communities living in the area, each of the designated conservation area has its own WMA Committee. Besides, under this project, gender equality and participation was not apparent at the beginning but was a requirement under the grant fund arrangement for the implementing NGOs, to ensure women were represented on the Wildlife Management Committee for Ubaigubi, Maimafu, Herowana and Haiya. There is a coordinator for each of the four designated conservation areas. Unlike the other two projects the Crater Mountain ICAD project pays an allowance to its Wildlife Management Area Committee members for patrolling their forest on behalf of their clan. When payment is not made by RCF management they refuse to execute what is supposed to be their traditional duties. Under the Fauna (Protection and Control) Act 1966 these people are not supposed to be paid but have the customary obligation to guard their forest with formal recognition from the State.

The analysis for the Lakekamu ICAD project of the Gulf, Central and Morobe province shows that the project was initiated by a foreigner who is also a long time researcher in the area. The study analysis shows that proper entry protocol was not followed and as a result his team did not get formal clearance from the Gulf provincial government before they entered the valley, as discussed in the project history (item 5.2.2.1, pp. 156-161); this particular type of community approach consequently created internal confusion and conflict among the four ethnic groups now occupying the Lakekamu basin. Political and ethnic confrontation and the demand for development equity by Kovio ethnic group negatively impacted the conservation, vision and people’s potential for equitable participation, from the start. Since then this project had never managed to pull through to put in place a community participatory mechanism to include, a larger area of the Lakekamu basin. At the conclusion of this study and on the last field trip to the project site, the project had not put in place, a Wildlife Management Area Committee which is mandatory for formal gazetittal and recognition of a conservation-designated area under the WMA model, as stated above. A long-term decision making mechanism is absent and an ad hoc project committee and stakeholder participatory role is minimal as shown on Tables 8 & 9 respectively, pp. 164-168.

Interestingly, community entry into the Kamiali project and the participatory mechanism employed by the project proponent is clearly different from the other two projects. The data analysis shows that the resource owners of the Kamiali Project themselves approached and invited the Village Development Trust to assist them to develop their timber resources in a sustainable manner. In accepting the invitation, the local NGO (VDT) had taken the time to ensure that different gender
and stakeholders roles were clearly identified for the community to participate in various gender-based activities. This project involves, a single community of single ethnicity, unlike the two other projects which have to deal with a much larger bio-geographical areas with four different communities from the two ethnic groups who are still hostile to each other in many ways. Different roles played by different sectors of the community in the Kamiali project is shown in Table 13 (pp. 201-202) and the role played by different stakeholder is shown in Table 14 (pp. 202-204).

From the analyses of the participatory process, the decision making mechanism and the protocol for community entry of the three case studies, it is obvious that proper protocol for community entry is one that is carefully observed and done over a longer period of time as shown by the evidence from Lakekamu case. Similarly, careful identification and recognition of traditional institutions and the leadership roles played by the elders in the decision making process will contribute towards genuine long-term understanding and partnership between the resource owners and the project proponent as demonstrated from the Kamiali project (item 5.3.2.1, pp. 192-197). When the traditional leadership roles and the right to effective participation are taken away, there is bound to be leadership conflicts as shown by the Crater Mountain project when youths were given prominence over the elders.

The third important aspect which has been shown from the case studies is that it is hard to implement a project that involves large forest areas covering several provinces and different ethnic groups, within a short period of time, especially when attempting to bring together under one management unit communities of people from conflicting and opposing tribes, as is the case of the Lakekamu and Crater Mountain ICAD projects. To address this issue and to ensure each area had its own participatory and decision making mechanism, the Crater Mountain project proponents established four separate WMA committees. This meant one WMA committee for each of the four designated conservation areas. The Crater Mountain project proponents approached each area separately over a ten year period. As a result they are also able to achieve the conservation objective on the basis of a rolling effect approach, a concept where people in the neighbouring area see socio-economic opportunities and invite the project proponent to include their forest and assist them as well. The rolling effect approach is an ideal approach to working in a large area with differing tribes.

The Lakekamu project on the other hand has not been able to reach this far, primarily because the team leader relied on his past time minimal contact with only one ethnic group and rushed
into the area and wanted to get everybody together under one project management team, within a short period of time without conducting proper awareness activities in the community. As a result respective ethnic groups were not given adequate time to first meet among themselves to identify the spokesperson or to talk about the land boundaries before meeting with the other ethnic groups who share the common boundaries with them. The wholesale instant approach with limited awareness disrupted a potential partnership by the four ethnic communities within the Lakekamu basin. Only two clans from Biaru whose land boundary with only one Kamea ethnicity are involved in the project.

The Kamiali project shows that it is easier to work with a single ethnic group. Research findings show that if the community or resource owners themselves make a decision to conserve their resources they will be united in their decision to stand together, to ensure the participatory process in decision making and project implementation is observed and proceeds with less disruption, as demonstrated by the Lababia community of Kamilai project. The reason for such a participatory approach within the community is that they see this as the avenue to negotiate with outsiders including the project proponent on what they expect to benefit from the partnership deal in the project.

6. 3. Local Participation in Conservation and Development
The arguments used for local or stakeholder’s participation is discussed in Chapter 2, items 2.3.7-2.3.10 (pp. 39-42). Similarly, local people’s participation in each of the ICAD projects described under Stake Holders and Stakeholders Relationship and Proposed Business Plans presented in Chapter 5 for each of the case studies can also be viewed as local participation in conservation and development.

In Papua New Guinea, equal participation in conservation and development is important. The country’s National Constitution recognises the traditional communal ownership system of the country’s resources, and sees resource owner’s involvement in the decision making process as equal partner in the development of such resources. Papua New Guinea’s National Constitution embraces the participatory process as an essential means to human liberation, fulfillment and well being of all Papua New Guineans (Peutalo and Howlett, 1992). For example, the first goal states that:

“We declare our first goal to be for every person to be dynamically involved in the process of freeing himself or herself from every form of domination or oppression so that each man or woman will have the opportunity to develop as a whole person in relationship with others.”
The Second National Goal provides for equal opportunity through participation in the development of natural resources in stating that:

“We declare our second goal to be for all citizens to have an equal opportunity to participate in, and benefit from the development of our country.”

More importantly, the Fourth National Goal of the Constitution specifically recognises sustainable use of the natural resources to enhance the livelihood of the communities throughout PNG by stating that:

“We call for wise use of our natural resources in a sustainable manner to ensure that they provide sound living for the whole community now and replenished for the benefit of our future generations.”

The natural resources, both renewable and non-renewable, are found on land owned by the rural based communities and not by the state. This means Papua New Guineans, despite their educational background, know that they own the land with their respective communities and possess the resources on the land. The literature review undertaken in this research, which looked at the process of equal and efficient participation in conservation and resource development at the global level, found that many authors who have worked especially in many developing countries recognise the significance of resource owners participation. Authors like Filer, Dubashi and Kalit (2001), Dalal-Clayton, Swiderska and Bass (2002), Abaza and Baranzini (2002), Garnaut (2002), Laird (2002), Brown (2003) and Fisher R. J et al. (2008) agree that failure to adequately set up effective participation in the social economic activities of their own choice will result in the project failure.

**Perspective to Participation in the Melanesian Context.**

Having quoted the recent work above on the issue of participation it can now be said with academic confidence and not a Melanesian anemic voice, that for the ICAD projects to be successful in PNG where the land is communally owned conservation models should incorporate as much as possible the traditional resource knowledge and management practices and use local social and political institutions where the local elders are encouraged to play a major role in the decision making processes (Saulei, 1993).

In the current global context community participation and institutional support is a beautiful colouring word of a funding proposal for the noted and well- written academic and conservationist institutions to secure funding in the name of the country they wish to participate. As soon as the funding is approved, the implementing agencies decide to shift away from the original objective
and tend to operate in total isolation to national endeavours or initiatives already in place. Lack of information on such initiatives existing in the country of the proposed project is often the justification to re-invent the wheel.

Box (11) showing what is not participation in Melanesian perspective.

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**Box (11) What community participation is not: A Melanesian perspective?**

- Participation is not driving into and area and having a short series of meeting to inform the beneficiaries and getting their endorsement from the usually rushed meetings and taking off to project administrative offices. Participation in the traditional decision making process in Melanesia usually goes on well into the night with everyone effected by the decision represented expressing their fears, concerns, needs and wants. A simple decision may take weeks or even months, time is not an issue.

- Participation is not when few selected individuals can continue to make isolated decisions on major issues on behalf of the community. This is because when major decisions are at stake the elders need the time to think over. What ever decisions reached after long discussions well into the night have to go through several stages again and again to get the views of all other recognised key individuals or resource user rights who may be effected by the decision made by the primary use right holders.

- Participation is not when an outsider assumes the power of a decision making process with regards to who should be involved, get what and do what. Such decisions have always been the prerogative of the few by virtue of inherence or well earned recognition from the society they live in. When an outsider exert influence in these types of decision, traditional rights of who gets the first recognition in any involvement the traditional protocol is by passed and hence one can expect disagreements and backlash as current user rights have been sealed by the previous generation.

- Participation has to be demonstrated by actual contribution to the means to enable discourse of participation. Pigs are killed, or fish are caught, food and betel nuts must be supplied adequately for the occasion. Those with secondary user rights must bring along the produce to the central figure or leader who have the honour to distribute on their behalf. The leader is the spokesperson and those below him must live by his final decisions irrespective of how much western education they posses.

- Participation recognises status and respect of decisions from traditionally recognised persons with the first right to use and does not necessarily carry the decisions of the majority of the people with secondary users rights to resource even if they are better educated. It does not consider women as having the right to important decision. A brother or eldest son may represent her decision as maternal leader, now days.

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The results from the case study reinforces the argument that there are three main issues that must be addressed in a Papua New Guinean society to get community support and participation. These are the length of time needed to make friends with the locals to win their support, and understanding traditional rules and regulations that are put in place. Especially for the common
use and management practice of local resources and the traditional right of benefit with the fees, bonds and credits that go with the right of access and use of land, or sea and the resources in them.

Given the background of numerous unfruitful promises by the politicians at every election period and during special occasions the trust of the people is no longer there. Therefore; lot of time is needed even if it means years before they can trust some one new entering their community with perceived socio-economic benefits. It must be understood that it has taken one generation to come out of isolation, tribalism and suspicious cultural background to be able to live and work together with their one time enemy. Besides their traditional knowledge for survival in their given environment is too precious and secret to share with anyone even with the other clans in the same village. Time is needed for them to prove that one is genuine. They need to know if the individual will be patient to deal with them if they don’t turn up to program schedules because, they have other pressing community obligations to fulfil.

**Community Consultation and Participatory Development Model**

Community consultation process from project documentation to project implementation should follow a process that is capable of accommodating consultation process and addressing the socio-political and economic issues, as presented below in Figure (18).

The consultation and participatory process may take the following steps,

![Diagram of Community Consultation and Participatory Development Model](image-url)
Figure (18) showing diagrammatic presentation of a process involved in community consultation and participatory process for community based projects. The identification of the landowner groups in any proposed conservation area starts by first making a quite visit to the area and making initial contact. Then the process of follow up consultation by going there again with the aim to consult them on the interest of having their land come under the western concept of conservation.

After the first contact it is wise to make a second visit this time to inform the people and make wider contact at the community level and to inform the people of why you are there. If the response is positive then invite them to visit your set up. At this stage never discuss about grand plans, as people will hold it against you if it does not materialise. When they do turn up then show them the types of activities your organization can offer as in PNG, seeing is believe. Besides such personnel contact remove ethnic and cultural barriers and begin to build a bond of friendship at personal level. Let them tell you what they want to see brought to their community but be frank and honest by telling them what is realistic, funding wise from the start. Explore with them of possible opportunities for certain choices if they do decide on number of things for their community in exchange for partnership.

After securing friendship advise the person or persons to organise a meeting in the village so that a more senior person in the organisation can visit the community and discuss the extend of the particular project interest. More than one is needed as community contact point for maximum support if necessary to rally village support. Let people publicly declare their views relating to their interests and concerns so that the collective view of the community is felt from the start. It is only feasible to develop a project document that address the issues presented to you after they have made their choices.

Once the choices are made then it is important to inform the global partners about the project you have in mind and what your local partners want based on your detail discussions with them. This may take time but maintain the local contact. Be prepared to refuse funding which are socially and culturally incompatible based merely on western perceptions of what should be done. Meanwhile, while waiting for major funding, it is wise to get the community to do something small they can do within their means as a first practical step. For example they provide the labour while you provide store food, tools, nails, saws and hammer to construct a bush material house. Community work for food is still effective means of local support and participation.

When funding is secured it is important to let them know how much money you have secured for their part of the project and for what purpose. Let them have the figures so that they too can keep a track of the real expenditures. It is outrages to get the money on their behalf and diverted
to something else with out letting them, know. Put in place a public scrutiny system for funding requests and expenditure by community project leaders. The issue of transparency and accountability is so far lacking in many projects. Request funding agencies for the extension of time if community is taking time to get their activities completed on time for reporting purposes. Ensure that there is gradual pull out of the project site with assurance of keeping in contact in the future.

The notion of conservation is not something new to the tribal communities of Papua New Guinea. Maintenance through gradual enrichment plantings of economic and culturally significant tree species with self regulatory rules put in place has been a part of the overall management strategy of their resources. Today's concept of conservation now being introduced in the country be merely viewed as a new concept of shared interest in the partnership with outsiders to promote various criteria to qualify for legal recognition of the government against future land claims from the conflicting tribes and at the same time built friendship with outsiders. In the authors view it is naive for urban based westerner to tell tribal communities that they want to help them conserve their biodiversity while many of them come from a totally urban society have no hands on experience about nature preservation.

Biodiversity conservation effort in PNG should be built on recognition of the fact that the people who live closest to the resources have often developed specific ways and means of managing these resources. This is because the forests, plants, and animals provide them with food, medicine, hides, building materials, income and the source of inspiration. The rivers provide transportation; fish, water and fertile alluvial soil, and coral reefs together with coastal mangroves provide a permanent source of sustenance and building materials.

In Papua New Guinea society friendship and partnership starts at a personnel level. When that partnership takes on the bureaucratic approach the key decision makers of the resources concern will often view it with suspicions. One should always remember that they do not operate on the bureaucratic rules of seeing the third person in charge if they have the key issues to talk about.

6. 4. Research and Conservation Status
Scientifically, there is a great potential to discover new species for science, through an ecosystem conservation effort under the ICAD project model in PNG. This conservation will happen if proposed conservation areas, including the 31 formally-protected areas under the conservation laws of PNG, are given proper guidance and support. The country’s global commitment to the
biodiversity conservation drive is mandated by the UN charter signed in June (1993) on global climate and on Biodiversity in Rio de Janeiro Brazil. This topic is discussed in item 4.10.2 (p. 100).

In two of the three projects included in this research, both of which cover large areas of differing ecosystem and altitudinal range, the aim is to solicit and link long-term research with overseas researchers, especially US based researchers, academic institutions and funding agencies. Project proponents from Lakekamu and Crater Mountain ICAD project see their project sites as having the potential to attract scientific tourism internationally. Unfortunately, in reality, there is very little success so far to convince the people that a successful economic outcome will be achieved, in order to win the support of the resource owners. People from other clans whose forested land is not included in the Ware Sera field station in the Crater project are now losing confidence, as reported on p. 144. This loss of confidence is because resource owners or land owners of the field station are getting the priority for casual field assistant jobs and the income from the rent is not enough to be equitably shared with other communities.

In terms of achieving conservation objectives only Crater Mountain ICAD and Kamiali projects are able to bring the proposed conservation areas under the PNG WMA conservation model, while Lakekamu project has not formerly declared the conservation area nor has it put in place a WMA committee consisting of clan leaders from Biaru and Kamea.

The Kamiali ICAD project aims to include both marine and forest ecosystems as a WMA conservation area. The project approach is different in that it is driven by a genuine desire to address poverty alleviation and the need to protect the forest and marine resources from a foreign logging firm operating in the area. Plans are under way to set up marine research centre under the leather back turtle project and a forest research field station at 1,200 m.

The promotion of scientific tourism as an economic incentive for biodiversity conservation by Crater Mountain and Lakekamu ICAD projects is very much disadvantaged by the remoteness of the field stations along very difficult steep tracks and is disadvantaged by the high cost of living and travelling cost in the country for researchers to come to PNG. Under such conditions it is difficult to constantly bring in a stream of researchers from countries overseas on a long-term basis. This is now clearly proven from the Lakekamu project as the project proponents are not able to continue to bring in further researchers, after initial grants from the BCN and MacArthur funding that brought them in ended in 1999. However, the Crater Mountain project partner, Wildlife Conservation Society of New York, is placed in a better financial position to bring in more
wealthy tourists for nature-based tourism, but the poorly structured hiking nature tracks to the field station are not conducive for elderly researchers or nature keen tourists. Despite poor accessibility to the site, Crater Mountain project has some potential to sustain the research objective than the other two projects.


In each of the case studies, the type of social and economic development incentives proposed for the resource owners is discussed and is presented in table format with the heading Proposed Activities Versus Actual Achievement, and a numerical rating out of five is given for each activity (item 5.1.5.1. table 7, item 5.2.5.1. table 10 and item 5.3.5.1 table 16). For example, the Kamilai project proponent had perceived to promote an eco-timber project, Informal education, Advocacy programme, Gender and social issue programme, Scientific research and conservation, Fishing project, Village bakery and Ecotourism project. Both the social and economic programme activities show a ranking of 3/5, as shown in Tables 15 & 16 respectively (pp. 216-219). The field data from the three case studies show that only the Kamilai ICAD project proponent took time to consult with the communities first on the type of social and economic incentive package they wish to see promoted before seeking funding. This type of evaluation goes to show that Village Development Trust ICAD initiative at Kamilai has clearly demonstrated a willingness to listen to the community’s development and management aspirations. The support by several funding agencies, especially the World Bank to Kamilai project, to invest K250,000 in modern ecotourism and training facilities reflects recognition and appreciation by the conservation fraternity and donor agencies on VDT’s ability to put in place project implementation and participatory decision-making mechanisms, as well as getting the conservation area declared formerly as a WMA. This shows that funding agencies will fund projects that reflect transparency in the participatory process, the inclusion of poverty alleviation and clear evidence of financial accountability. The projects location for accessibility from Lae, makes future sustainability more feasible than the other two projects.

This high level of achievement in the incentive package development is not the same for Lakekamu and even the Crater project, as the benchmark ranking in most of their proposed programme activities is given a ranking of 3/5 downwards, as shown in Tables 10 &11, (pp. 175-1757. The only major achievement in this project is the completion of the field station house, which is the only activity receiving 5/5 for Lakekamu. The level of success in achieving the overall conservation and development objectives in this project is due to isolation and slow release of funds from the project partner, Conservation International (C I ), of USA.
The Crater Mountain project on the other hand had number of successes with a ranking of 5/5 on the conservation and research front, especially in terms of formal training of national biologists, and maintaining the drive to bring in research scientists to conduct basic biological or ecological research, thereby positively contributing towards making scientific tourism a possibility, as shown in Tables 5 & 6 (pp. 130-134). The desire for the Wildlife Conservation Society of New York to maintain a biological research base in New Guinea is also seen as a major factor towards the sustainability of the project after the major granting period ends. The current business activities as proposed in the business plan for the communities is minimal, as compared to what they could get from major resources development, such as royalties from proposed logging and mining ventures as discussed (pp. 132 & p137).

6. 6. Project Approach to Development Threats
The development threats facing the three case studies is discussed in chapter 5, under the heading ‘Project Threats’. For example, the project threats for Crater Mountain project are discussed on pp. 130-132, Lakekamu on pp. 173-176 and Kamiali project pp. 211-214.

The findings from field data for Crater Mountain and Lakekamu ICAD projects shows that both projects are biodiversity research and conservation focussed and their income generating proposition is aimed to test the hypothesis ‘that the establishment of economic enterprises which rely on the viability of site biodiversity will provide direct socio-economic and environmental benefits to resource owners at the local communities and will result in conservation of site biodiversity’, item 5.1.5 (p. 133). This particular argument or hypothesis is not likely to work for Lakekamu project due to relatively poor outcome of perceived social and economic benefit packages, as discussed above and shown in the benchmark ranking Tables 10 & 11 (pp.1742-179). The data presented in the Swot Analyses also show that there is no obvious tangible socio-economic benefit packages to benefit the resource owners to win their confidence to accept ICAD project initiatives. Besides, potential threats exist from three other communities that have been excluded from the project. Opportunities for different ethnic groups to bring in resource development partners for large scale extractive forms of development as a pay back to disrupt conservation initiative is possible (pp. 179-180). The Project partners, both CI and FPCD, are now not in the position to prevent the existing threats as there is no convincing benchmark achievement to showcase economic development achievement under the ICAD project model.
The Crater Mountain ICAD project has some tangible achievements where communities like the resource owners of the Wara Sera field station have been receiving most of the benefit from researchers working in their forest and staying at the field station. The business plan as shown in Figure 6 (p. 120) shows other income-generating activities. Equitable distribution of income from scientific tourism is currently the contentious issue facing all other clans whose land is adjacent to or included in the second third and four phase of the proposed conservation area. Data from the field study show that most of the portering and field assistant jobs go to landowners of the Wara Sera field station. Other resources owners whose forest is used by researchers are not happy and they can easily pull out of the conservation deal. Besides, it is also doubtful if the minimal income expected from the perceived income-generating activities is going to financially sustain all the resources owners and prevent them from accepting offers for much bigger gains from the proposed extractive forms of development such as the proposed mining project in the Maimafu area and the Timber project for the Hiaya communities at the lowland. This issue is highlighted on (pp.136-147).

Possible solutions to avert threats to both Lakekamu and Crater Mountain conservation projects from major development interests is for the project partners to support the vulnerable and often most neglected communities with social and infrastructural development such as roads, schools, health centres, water supply and communication services which have been neglected by both the national ad the provincial government and to remind the National Government of it's international obligation to conventions and treaties in relation to the conservation and protection of unique and diverse biological diversity. Research findings and other studies show that resource owners in remote areas are often forced to invite in big foreign companies that practice destructive forms of development in exchange for the basic services listed above.

The Kamiali ICAD project, with the establishment of Kina 250,000 infrastructural facilities to tap into the local tourism market in Lae, is best positioned to deter any short term extractive forms of development. By comparison, the Crater Mountain and the Lakekamu ICAD projects have a conservation focus and simultaneously view scientific tourism as potential alternative economic incentive to deter pending threat by extractive forms of development on the country’s little known but significant and diverse biodiversity. Both of these areas are inaccessible except by air and people are sparsely populated and distributed. From the field data analysed it is clear that the socio-economic project is not likely to generate significant income to benefit the community on a continuous basis and not likely to convince the people to forgo alternative offers of short term development with greater immediate monetary benefits.
6. 7. Role of International NGOs

According to Salmen and Eaves (1989), many NGOs have limitations and promoting development has proved difficult even for NGOs experienced in managing rural development projects. Doing so for ICDP would likely prove extremely challenging for international conservation NGOs with limited experience in projects targeting poor rural people or for national conservation or environmental NGOs that were originally established to lobby Government to raise money mainly for awareness and specific protected area management functions. The role of international NGOs in three of the projects varies in terms of project ownership, the long-term commitment to the project area, the fund-raising drive and direct administration/implementation in partnership with the local NGO. The analyses of the three case studies show that international NGOs are more interested in the following areas:

- Achieve research and conservation results in the shortest possible time frame
- Ensure Technical Planning and Coordination remains their responsibility
- Pursue Conservation and Research Objectives more so than Social and Economic Outcomes
- Assist national NGOs towards specific skills training in dealing with national and overseas funding agencies.

The findings from the field data shows that Crater Mountain ICAD project is implemented by the Wildlife Conservation Society (WCS). The Research and Conservation Foundation, a local NGO formed and registered in PNG under the leadership of WCS, is seen as the field linkage and avenues for community dialogue and project implementation on site at the local level. Technical support and external fund-raising drive by WCS is done in the name of RCF. The primary objective here is to promote biodiversity research in order to generate scientific information to justify conservation within the required time. The social and economic benefit is designed to link up with the concept of scientific tourism. This is discussed in item 5.1.3.3, item 5.1.3.4, item 5.1.4.5 and Table 4.

The Lakekamu project on the other hand was initially meant to be implemented by Conservation International of Washington. However, due to political concern and interference from the Gulf Provincial Government, the project initiators resorted to seek a local partnership arrangement with two local NGOs as described in item 5.2.2.1 (pp156-160). The perceived project administrative structure early on in the project in 1993 is shown in Figure (10. p. 160). Under the current partnership arrangement with the Foundation for People and Community Development (FPCD), Conservation International has a major say on what should be the priority areas of the
project, particularly on the type of socio-economic incentive package, and the decisions with regards to basic research on biodiversity and conservation outcome. The international NGO (CI) also plays a major role in fund raising and soliciting of researches across US universities to come to the project site as part of its objectives to promote scientific tourism. As a result of this type of approach, there are differences developing between the two project partners. These differences are already creating doubt on the future role of Conservation International in the project, as the local NGO FPCD is looking at getting out of this partnership and is trying to secure a long-term partnership directly with other international donor NGOs in Europe, who are more keen to fund social economic packages meant for the local communities in the conservation area. These issues are discussed in item 5.2.3.3., item 5.2.3. Table 4 and item 5.2.3.5 (pp. 167-171).

From the three case studies, only the Kamiali project has minimal collaboration with an international NGO, namely World Wildlife Fund, which is already described under the history of the project, item 5.3.2.1 (pp. 192-195). Their role was critical to mobilise the financial means to move into the project site, as a show of support to those who sought support for alternative forms of development, especially during the presence of the Malaysian logging company in the area. The other major involvement by international NGOs is in terms of funding support which came from ICCO of Netherlands, and MacArthur Foundation of USA. The local NGO Village Development Trust sees the social and economic development package as a priority over basic research and building of research field station and sort funding directly from the international NGOs by itself. This is mentioned in item 5.3.3.5 (pp. 209-210).

Despite the differences that exist between the local NGOs and their International NGO partners in the overall ICAD movement in PNG they have brought local communities forward from their backwardness, especially communities from the first and the second case study. In particular, it has helped the local people towards the development of capacity, which will now allow these communities to better assess development threats in future. It is obvious that mining can bring a lot of income for a short period of time. What is important is that local communities are now in a position to better negotiate for their social ecological and economic outcomes through the knowledge and capacity gained as a result of these conservation projects in their respective localities.
6. 8. **Introduction of ICAD Model and its Appropriateness in PNG.**

The data from the case studies shows that the ICDP model could be successful in PNG given the fact that a similar model of conservation exists in PNG under the WMA model as discussed in Chapter 4, item 4.10.6 under the legislative framework for biodiversity conservation and environment protection. The particular Act which the wildlife management area (WMA) comes under is the Fauna (Control and Protection) Act 1966. The reason and the difference between WMA model and the introduction of ICDP or ICAD project in Papua New Guinea is that the new model has the following criteria or elements:

- A relatively large area of land or marine/coastal environment (at least 50,000 hectares) zoned by agreement for biodiversity conservation and development objectives.
- A negotiated package of social and economic benefits linked to the long term maintenance of the conservation area.
- Social organisation to enable collective decision-making and long term management partnerships.
- Institutional support to maintain the above three elements on an adaptive, on-going basis.

Success can happen if the project proponents are consistent in pursuing the perceived criteria for the introduction of the ICAD model in addition to empowering the communities to enter into economic development projects that are profitable with a sound local market base. The existing legislation under the WMA model provides three elements for community based conservation areas to be successfully achieved and these elements are:

- to create the means or mechanisms for discussing, reviewing and assessing the values of biodiversity conservation;
- to permit those values to be expressed in policies that incorporate incentives for conservation;
- to implement enforcement procedures to provide assurance that conservation actually produces results.

The data from the field studies shows that only Kamiali ICAD project implementers clearly worked towards achieving the perceived criteria set for ICAD project initiatives.

6. 9. **Long Term Sustainability of Three ICAD Projects in PNG.**

The ability to achieve perceived social and economic benefits within the time frame as stated in the project documentation is indicative for likely success in the future. From the research findings it is also obvious that the future success of the three ICAD projects included in the case studies as well as other ICAD projects in PNG depends largely on the benchmark achievements as set
out in the project document, particularly in relation to the nature and types of social and economic benefits that can be properly negotiated and made available to the resource owners on a sustainable and continuous basis. Secondly the government policy and legislative framework has to be effective and functional to enable enforcement procedures to provide assurance for successful conservation outcome. The future sustainability of Crater Mountain project hinges on the ability of the local NGO RCF to initiate income generation activity that can benefit the resource owners and the operational funding to keep the project going and its ability to work closely with the long-term interest of the WCS. This is because the overseas fund-raising initiatives to bring in researchers from outside of PNG and within PNG is done by WCS. Secondly, long-term reliability of the Wildlife wardens or committee members to patrol their forest to enforce conservation rules and regulations is in question, as the precedent is already set, where WMA committee members will only do their job if they are paid an allowance. This then raises the question on whether they will refuse to do their traditional obligation to conduct surveillance of their forest if they are told by their elders. As for Lakekamu project, the issue of project sustainability is far more remote than for the other two projects. Besides, the long-term commitment to PNG by Conservation International (CI) is not clear, unlike that of WCS in the Crater area. Furthermore, much of the perceived social and economic activities are yet to be implemented. Besides, the possibility of major funding withdrawal from the project is likely. In addition to reasons for non-sustainability in Lakekamu, the project also falls under the common reason for failure globally as presented in Box 1 of p. 31.

The Lakekamu ICAD project is adopting a similar type of approach adopted by Wildlife Conservation Society of New York (WCS) where funds are solicited to support their PNG based organization known as the Research and Conservation Foundation (RCF) to implement research, conservation and development in the Crater Mountain area. One of the major difficulties that Conservation International has to overcome in the Lakekamu project is that, before it can attract researchers from US universities, it must resolve a problem of the past, where students from some of the universities were refused entry into the Lakekamu basin because the project team leader had a stand-off with the Gulf Provincial Government. Besides, the funding agencies may be concerned over the much reduced area being proposed for conservation than what was previously proposed. Both Crater Mountain and Lakekamu ICAD projects carry elements or reasons for failure in ICDP projects globally. These reasons are shown in Box 1 (p. 31) (Wells and Brandon 1992).
By contrast the Kamiali project, within two hours by boat from Lae, is on a sound commercial footing, with modern ecotourism and training facilities at the beach front, accessing the rich and diverse marine ecosystem and the fragile forest ecosystem. The local NGO plans to develop a field research station at 1700 m above sea level at the final phase of the project. Besides, the implementing national NGO (VDT) has moved a step ahead to formally lease the land on which the ecotourism and community training centre is built from the Lababia community for 30 years. This gives them the legal right to manage the business activities in partnership with the local community on a professional basis. The nature of business activities is given in Figures 13 & 14, plus information opp. 190-195).

In terms of long term sustainability the Crater Mountain ICAD project has some degree of success in facilitating and bringing in a lot of overseas researchers to conduct biological research but it is way behind in demonstrating tangible benefits to the local communities. As for Lakekamu, despite many setbacks a research field station is already built at the ICAD project site, but the project is not likely to see a stream of researchers flowing into the project site like that of Crater Mountain project. This is because Conservation International (CI) does not have the advantage WCS has to solicit funding in the USA through its wealthy membership of the New York Zoological Garden.

In terms of economic benefits, realistically it is imperative to initiate large scale infrastructure facilities that tap into the local market that has the potential to make money to sustain the ongoing programme activities once donor funding comes to an end. Field findings show that the Kamiali ICAD project has had the foresight to work at consolidating long-term income generation facilities. It is now able to receive tourists from all persuasions and not only researchers coming into the area. This influx is expected to generate income for the community and VDT for it to sustain its' programme and to maintain the upkeep of the visitors and the community training centre.

The Kamiali community themselves had the desire to promote alternative forms of development which are environmentally friendly and sustainable like harvesting their timber resources through tmobile sawmilling option. This is discussed under the history of the project on (pp. 192-194). The Kamiali project proponent took time to seek peoples views on the economic activities and included their expectations in the project submissions for fundings. Though funds received from the New Zealand Government and the Green Grant fund of US were relatively small, at least it enabled the communities to venture into the income-generating activities, as a priority before scientific research and conservation. Scientific research is also promoted in this project but it is
seen as secondary objective to the aspirations for eco-tourism and eco-timber development. The focus is on attracting economic benefits before promoting basic ecological research within the designated conservation areas. The designated conservation area covering the marine ecosystem and the upland forested area, was formerly gazetted as a WMA in 1996 (p. 214).

6. 10. Funding Criteria and Funding Time Frame
The ability to achieve perceived social and economic benefits within the time frame as stated in the project documentation is indicative for likely success in the future. There is a good indication for the Kamiali project to become sustainable after the grant period ends, especially in the ecotourism project.

The field data shows that the project proponents of the three case studies have fixed sets of goals and objectives which they intend to achieve within a funding time frame. The goals and objectives as set out in their project documentation are shown in Boxes 7, 8 & 9. When several funding organizations are approached, project proponents have been noted to have changed in priorities from one funding agency to the other. In some cases one funding source is used as collateral or own means to seek funding for a different priority area of the set of programmes within the project. For example, the Crater Mountain project received total grants of US$ 878,107 from Biodiversity Conservation Network (BCN) grant funds made available from the US Government through BCN and the MacArthur Foundation grant to implement the same goals and objectives as shown in Box 7 (p. 120) and the business plan shown on Figure 6) (p. 120). Besides, the funding from the two agencies is for the same three year period 1995-1998. This is shown in Table 5 (p. 130). Similarly the goals and objectives for the Lakekamu project are shown in Box 8 (p. 161) and the business plan that shows economic focus is shown in Figure 9 (p. 152). This information shows that both the BCN and MacArthur funding also funded this project and contributed a total amount of US$773,062 for the same period which from 1995-1998. Same funding period as the other two projects.

Field data shows that much of the funding for the Crater Mountain and Lakekamu projects is spent on administration and scientific research by bringing in researchers from overseas to quickly conduct field work to publish papers. This approach is taken to enable the project proponents to publish the results of the research findings to promote research, which is aimed at discovering new species to science, hence justifying or stressing the importance of conservation among the relevant institutions around the world to come to New Guinea.
Unlike these two projects a different scenario is projected for the Kamiali project, where the goal and objective as shown in Box 9 (p. 196) clearly shows that besides biodiversity conservation, there is also a focus on education and awareness for sustainable development. This includes timber production for export to overseas eco-timber market, and eco-tourism guest house and the training centre. More importantly, this project had developed gender-balanced socio-economic programmes towards poverty alleviation in the community. The implementation of the goals and objectives of this project received a wider support from various funding organizations, as shown in Table 14, (p. 216). The funding received for the project includes the World Bank (funding of US$ 250,000), MacArthur Foundation (an amount of US$ 490,000 for the period 1995-1998) and Inter-Church Organisation for Developing Corporation of the Netherlands (an amount of Kina 3 million for the period 1998-2000). In comparison the criteria of funding for Crater and Lakekamu projects are primarily to promote biodiversity conservation and research hence there is an obvious tokenistic effort in the provision for social and economic benefits. This is particularly true for the BCN grant. The Kamiali project basically took a middle of the road approach to qualify for both conservation funding, like that from the MacArthur Funding, and funds for socio-economic improvement towards poverty alleviation from ICCO and the World Bank.
Chapter 7.

7. CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS.

Biodiversity conservation cannot be achieved easily in a developing Pacific Island Country like Papua New Guinea without first having sufficient knowledge and understanding of the complex land tenure systems and issues relating to access and use of land. It is particularly important to understand the differing social, cultural and political issues and the institutions that dictate the decision-making process in regards to the distribution, ownership and use of land in the country. For example different ethnic groups and clans have been identified to own the forested land of the three conservation project areas included in the case studies. However within those clans only a few people have been entrusted the right to make final decisions as to what happens on the land. This means that setting up of a conservation enforcement and regulatory body within the community, to compete with the traditional institutions and leadership, will not be acceptable, as is the case of the Crater Mountain ICAD project. There, traditional leaders themselves or their likely successors were not adequately involved in the participatory and decision making process from the start.

In terms of outside intervention, especially in trying to work with the local resource owners on their communally owned land, the issues of the protocol required for community entry, the recognition of traditions and existing institutions, and the operational mechanism preferred by communities in the participatory and decision making process are important. The commitment and the decision making mechanisms within these institutions are often guided by the perceived package of benefits that has to derive from the deal to sustain or service the key stakeholders of the resource being negotiated. Failure to address poor social and economic conditions surrounding these communities will evidently result in a threat to pull out of the existing deal and wait for potential outside interests or offers that can meet community expectations. Research findings clearly reflect this concern from the Crater Mountain and Lakekamu ICAD projects. It is not surprising that the manner in which the project proponents implemented the Crater Mountain ICAD project is now considered a failure by an external evaluating team.

This research has also shown that, because of numerous anomalies in how funding is secured and spent for the specific programme activities within the project by NGO partnership, there is a need for the conservation fraternity and the resource owners to enter into a contract or legally binding contractual agreement signed into the project document. The agreement should define
how the natural resources should be conserved or extracted and how some of the financial benefits should be set aside for the maintenance of the biological biodiversity. Provisions for social services such as water supply, classrooms, desks and health facilities for schools should be initiated at the community level at the commencement of the project to show genuineness for the conservation-community partnership in the conservation and development endeavour.

The lessons learned from the case studies, in particular from the first and second case studies, show that the ICAD projects are focussed more on the research and conservation outcome and the economic incentive package is based on a non-feasible, unsustainable scientific tourism concept. The case studies show that international conservation NGOs involved in the Crater Mountain and Lakekamu ICAD projects are more interested in promoting the research and conservation agenda without any genuine effort to bring about the social and economic change, needs or wants of the local communities. For example, the poor outcome in terms of insufficient income derived from scientific tourism out of Wara Sera field research station is already a concern to resource owners.

As a result there is potential for the communities not to accept biodiversity conservation easily and they may be tempted to invite pending large-scale developers to go into their area. This is basically true, because the resource owners have the potential to negotiate their resources with major resource developers like the logging and mining companies that can offer more and better monetary incentives than the conservation proponents, particularly through payment of various forms of royalties and fees for the same resources that are being proposed for conservation of biodiversity. The communities want to see major economic and social change now. This is one of their strongly held views and obviously it became the major reason why the Kovio people of Lakekamu project and the Gulf Provincial Government objected to the conservation and research focussed project in the Lakekamu basin (item 5.2.2.1.).

Similarly, field studies also show that when attempting to conserve large areas that involve different tribal groups, it is important that there is a clear demarcation of responsibilities in terms of decision making mechanism, and that a mechanism for the equitable distribution of social and economic benefits be identified and included in the project procurement document at the planning stages so that these matters are addressed properly. In this aspect, the Crater Mountain ICAD project has made some progress but not Lakekamu as discussed in Chapter 6.

The findings also show that the ability to convince and win people’s confidence is enhanced by being in the area longer, as well as by promoting culturally based activities and viable economic activities in which the people are directly involved. This approach is necessary because, culturally...
speaking in PNG, the success of what happens in one area is likely to have a roll-on effect to the next community, who see the need to organise their own community to better compete with their neighbouring tribesmen. This type of approach was seen to be taken in Crater Mountain ICAD project. However, it needs to be promoted properly by ensuring a functional mechanism for the equitable distribution of income or income earning activities, by working closely with traditional clan leaders who actually make the decisions on land matters, and by avoiding the rush that has caused some setbacks, especially in the Maimafu area of the Gimi people.

Conservation NGOs, both national and international, and the development management agencies who do not have the same social or cultural obligations to the land and other resources as do the traditional custodians, should not assume control of these resources and remove the traditional regulatory mechanism that has been governing these resources for a millennium. It is very important to understand the local issues and concerns and to ensure that project plans address such issues at the project documentation phase, giving enough time for the possible donor funding organization(s) to consider the local priorities. It is also important to ensure that the local people’s expectation is not raised with various promises that may not be met realistically by the project implementers (McCallum and Sehkran, 1997).

It should be obvious to the global conservation fraternity, especially after almost 20 years of practicing the ICDP model in conservation, that even if the local communities and their government agree to allow conservation of their forest, they are often under budgetary constraints, poverty and pressing social and economic needs, needs that all work against an effective conservation drive for the protection of biological diversity (Dixson and Sherman, 1990, p4). In reality, the issue of national priority for economic survival often takes the priority over bilateral issues, such as international conservation treaties and conventions. This is a basic reason why even the ICDP with its good intention has failed in many developing countries - IUCN (1980); WCS (1980); McNeely and Miller (1984); McNeely (1992) Barraclough et al. (1995); Furze et al. (1996) Colchester (1997); Bridgewater (1992).

The external evaluation conducted by a team of experts in evaluating the Crater Mountain ICAD Project in 2003 found that the main goal of CMICAD was to achieve biological conservation but it was implemented as an ICDP by a consortium of NGOs which included the RCF, the Wildlife Conservation Society of New York, Conservation Melanesia and others. The concept was to trade eco-development for ecological conservation which has been tried vigorously for the last 9 years from 1993-2002, but the complexities and dynamism that are inherent in culture and nature provided a tough challenge for the project proponents. The report concluded the following,
"We contend that whilst the social and community benefits themselves are much needed, and much appreciated, the nature of the “deal” – the swap of conservation benefits for community / social benefits does not appear to be working well in the Crater Wildlife Management Area (WMA). The reasons for this are, we suggest, complex, and may not be homogeneous throughout the Crater Mountain region. The WMA has always been treated as one area, though it comprises two distinct language groups with different ways of life and there are reasons to think that the strategies adopted for specific areas and groups of people should be distinct. We suggest that these very complex issues which lie at the heart of conservation processes in protected areas (not only in Crater but throughout PNG), should be the subject of a symposium.”

This conclusion alludes to the fact that the ICDP (ICAD as known in PNG) experiment conducted in the Crater Mountain WMA needs reorganization or redefinition. The RCF has to a certain degree changed some of its focus by addressing livelihood and health issues and holding conservation issues at bay. There are many other macro-economic concerns that worry the WMA with gold and petroleum concerns developing in and around the WMA. The CMWMA is at a cross-roads as to what it should do now.

Recommendations:

Papua New Guinea has a well thought out, culturally sensitive and appropriate model for the conservation of biological diversities under the WMA model. Using this model as a core, I recommend:

1. National or international conservation organisations should instead work with communities that already have Wildlife management areas on their land and expand from there by winning a community’s confidence through demonstration of viable social and economic development package. This means tangible economic opportunities should be built around these areas to convince the resource owners to increase the size of the conservation area by attracting the adjoining landowners to include their land to increase its present size.

2. Long term legal agreements should be negotiated and signed to ensure that project proponents deliver perceived social and economic benefits and the resource owners on their part do not default on the continuation of the conservation objective after the funding ceases.
3. Funding agencies that tend to be selfishly manipulative and uncommitted towards promoting culturally sensitive programs should not be approached for partnership, just for the sake of funding, by national NGOs.

4. Adequate but manageable funding should be provided on a continuous basis towards the running of an operational enterprise until such time that it is able to be self-sustained. A guarantee of viable alternative funding to assist in the transition from subsistence living to a cash-based society is likely to attract the landowners or resources owners to release control over their resource base and become active participants in the cash economic sector. The level of financial and technical expertise placed at their disposal during the funding period should from the start play a back-up role in terms of market arrangements, skills training and at the same time realize that it will take some time to do it right (profitability margin).

5. National NGOs should begin to concentrate in working in programs they are best capable of performing and begin to set the guidelines for long-term partnership arrangements with the respective community groups with whom they are working. This will provide a basis for strong, useful partnerships to facilitate conservation or development.

6. There is a to encourage the integration of the subsistence agriculture sector with agricultural activities (e.g. cash cropping, insect farming, honey production) or fishing/aquaculture activities (e.g. breeding of giant clams, sea cucumber production, eel farming).

7. Project proponents should be encouraged to seek funding from funding organizations only after the relevant community’s needs and aspirations are incorporated in the project document. Production of the project document should be developed through a culturally sensitive protocol approach with a clear understanding on what the project can do and cannot do.

8. International NGOs who have a long-term interest to promote research and biodiversity conservation in PNG are likely to build and equip their permanent field stations as well as building more personal relationship with local leaders, the communities and the researchers in the country. The graduate cadetship programme being promoted by WCS in the Crater project is expected to be used as a benchmark to promote ecologists or biologists from around the world to come and conduct research in PNG.
9. In addition, the project implementing NGOs need to support/represent the remote and often neglected communities by speaking to the relevant government authorities about the much needed infrastructural facilities, such as roads, communications, schools and health services, so that the local communities are not tempted to seek such services from foreign companies that are environmentally destructive. The State should be told of the need to become more responsible in honoring it's international obligations in Biodiversity conservation as mandated by agenda 12 in the UN charter signed by 150 nations including PNG.
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Sarantakos, S. (1993) Social Research, second edition, Charles Sturt University, Australia, Published by Macmillan Education Australia PTY LTD 627 Chapel Street, South Yarra 3141.


APPENDIX 1. A List of Key Questions for Field Interviews.

1. Are the clan leaders who make key decisions on what goes on in their land clearly identified by the project proponent?
2. Are the inconsistencies between relevant aspects of the theory of community participation and the implementer’s approach towards participation identified?
3. Are the measures taken to reflect these inconsistencies addressed and if so is there evidence of effective community participation?
4. Are there inconsistencies between the delivery of perceived social and economic incentive packages, and what is actually delivered to the resource owners at the end of the funding period?
5. To what extent have inconsistencies between the delivery of perceived social and economic incentive packages influenced the views of resource owners on ICAD project initiatives?
6. What measures are being put in place to ensure that a project is sustainable when the funding ends?
7. What is the nature of the partnership between the project and the various levels of the government, the churches and the business communities?
8. Is there a strong political will to support the ICAD initiative and if so what sort of have administrative support mechanisms is put in place at both the provincial and national level to support ICAD initiatives in the country?
9. Is there an appropriate policy and legislative framework in place in the country to administer the ICAD process across sectorial boundaries, both at the provincial and the national level, to ensure conservation of biological diversity and to promote sustainable development?
10. What alternative funding mechanism is being put in place for the local people to continue the ICAD mission after funding period ends?
11. What does ICAD reveal about the type of social and economic incentives presently offered to the local communities in the project areas?
12. What sort of infrastructure support is provided for the local communities in the ICAD project areas?
13. Does conservation law under the ICAD model legally remove land ownership, right of access and management control from the traditional landowners?
14. What sort of conservation and development mechanisms are put in place to ensure the long-term sustainability of the conservation and development initiative?
Appendix 2. Research Structure, Context and Objectives

The first objective is to look at the external structures of the project. This involves:
1. Analysis of community participatory processes adopted by different stakeholder in three ICAD projects in PNG.
2. Examination of the efficiency of legislative and administrative mechanisms in PNG to support the ICAD process in PNG.
3. Identification of the political support and commitment to implement the ICAD initiatives both at provincial and national level.
4. Identify and examine the funding mechanism to support the community project activities.

The second objective is to collect data on internal structures of the project to establish:
1. How beneficial the community support infrastructure and the type of social services offered by the projects are.
2. The type of relationship that exists between project personnel and community members or landowners.
3. How well are the community and gender structures (eg, elders, youth, men and women) incorporated in the project design document?
4. What alternative funding mechanisms and benefits are being put in place to assure the project’s continuity?
5. How do incentives and access restrictions operate within the community (e.g. contractual agreements)?

The third objective is to analyse the project context to establish:
1. How well does the project design and implementation reflect the potential of the locally based natural resources management practice that is truly participatory?
2. How does the local ICAD community participatory process compare with approaches by exploitative foreign companies?
3. Are other line Government Departments like Mining, Agriculture and Forestry aware of the landowners’ decision to declare their land as a conservation area and is this decision respected by all the key Departments dealing with the extraction or conservation of the country’s natural resources?
4. What sort of land lease arrangement exists between the implementing organisation, the conservation department and the landowners?

The data for the analysis of the ICAD projects is collected from three different sources and these are:
1. Government Departments and implementing NGOs in the respective provinces were contacted for information on (legislation, official reports, project design documents and progress reports).
2. Project officers of implementing organisations in the respective provinces and the field officers were contact for information on (project sites, project design documents, progress reports and memo’s between various parties).
3. The village communities, the elders, women groups, youth groups, village councils, church leaders, business houses, nearby villages and the members of the project committee that represent all the interested party to the land.
Appendix 3. Lists of Names of People Interviewed in each of the case study sites

Crater Mountain ICAD Project.
Irelne Johnson Program Administrator for Wildlife Conservation Society
Ericho John Director Research Conservation Foundation
Paul Igag- Research and Scientific Office at Haiya Field Base
Paul Hukkahu Economic Incentive Development officer Haiya Field Base
Robert Bino Research and Scientific Officer at Maimafu Field Base
Local Community Representatives
Soya Maidau of Saidyu clan of Wapo, Purari country
Timothy Mai Tojo clan of Jare country
John Owal Taiyube clan Pou country
David Periai Irowa clan of Haiya country
John Kuseli clan man from Maimafu country
Aitima Seau of Witoua clan of Wii country and (15) clan members

Lake Kamu ICAD Projects
Yati Bun Director Foundation for People and Community Development
Celine Beuline Biodiversity Programme coordinator
Thomas Paka Lakekamu project coordinator
John Sengo Project Field Manager
Kosmas Markamet Community Liason Officer
Genuwa Toua Literacy Programme coordinator

Government Employees
Sister in charge of Kakaro Health Centre
Daniel Itu OIC Kakaro Station
Headmaster Takadu Community School
Mr. Sike Senior Teacher Takadu Community School
Waiyong Nang Consultant to Eco-forestry and oil palm Project
Mrs. Soni Community Development officer Wau, Morobe
Francis Lowe Local level Government Administrative officer Wau, Morobe

Others
Ben Gawi North Coast Aviation Wau
Pastro Jim Blume Baptist Missionary Wau
Awei Tokamensi Kuskom
Kuskom Papakau
Anton Perry

Kovio ethnicity
Joseph Mangabi Lawyer and Kovio leader
Headmaster Kakaro community school from Kovio
Ricky Kovio Youth leader
Councillor for Kovio Okavai village and (12) others

Gunumaipa ethnicity
Councillor Joe Dumoi also Kurija clan leader and five (5) elders of Mimija village Kakaro
Matai Kai caretaker Nagore Field Camp
John Sio former employee WEI
Biaru ethnicity
Councillor Tony Kaia and (7) females (16) males
Kai Pewe Kuinauk clan leader
Namun Kurumu clan leader
Kuskom Elka clan leader
Yinip Assi Kinggari clan leader
Rick Papakau

Kamea ethnicity
Peter Uyapango Amphia clan leader and his (3) sons
Councillor Timothy Tiamipo and (20) individuals at Takadu village
Emo Tam Nauti clan leader and (10) females and (17) males from Nukeva village
Matthew Yambyako
Norm Matei son in law of Emo Tam

Kamiali ICAD Projects
Sasa Zibe Founding Director Village Development Trust
Max Kuduck Kamiali ICAD Project Coordinator
Karol Kisokau Director Biodiversity and Researach Programme
Bing Tope Kamiali Filed officer

Lababia village
Levi Ambio Gara clan spokesman and incharge of Kamaiali Research and field work
Peter Ninga Active Church Elder and taken over Fishing Venture from Community
Sione Gwai Former Administractive Executive with the Lutheran Church

Youth and Women Groups
Ben Naru former employee Paguna Mine
Sammy Wanis former Policer officer
The female group interviewed consisted of wives of Andrew Gwai, Peter Ninga, Sammy Wanis and plus church Giyamsau leaders and young females working at the Training and Visitors centre. In total 12 female members of the Lababia village.

Project Committee
Steven Nasa of Areme clan Chairman Kamiali ICAD Project committee also coordinate village water supply
Yaeng Tena Deputy Chairman Areme clan incharge of Eco-forestry project
Gewa Steven Women Areme clan Representative coordinate Bakery Project
Andrew Gwai Areme caln Coordinate Activities at Training Centre and Guest House
Benjamin Gilingsu Gala clan Incharge Eco-Forestry Project
Goma Muia Coordinate Turtle Project.

Neighbouring Villages
Gebob Kekeng Kui village one of the first Participant in approaching VDT for help
Dusty Gewai Buso village same as Gebob
Peter Saiama Siboma and group of elders (10) of Siboma village

Government Employees
Gum Gull Huon District Administrator Department of Morobe
Headmaster of Lababia Community School and two of his teachers
Aid post orderly of the vilaage based clinic
Joe Kewa Business Development office
Murewe Zurunuc Provincial Planner

National Government
Environment and Conservation Department
Navu Kwapena First Assistant Secretary Conservation Division
John Geno Assistant Secretary Biodiversity Conservation Areas
Banabas Wilmot Assistant Secretary Species Protection Division
Abraham Kembi First Assistant Secretary Environment Protection
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2. Bismark-Ramu ICAD Project in area covering Madang, Eastern Highland Chimbu and Western Highlands Provinces and is the second pilot project initiated by UNDP and the Department of Environment and Conservation.
3. Oro Butterfly ICAD Project in Oro Province, initiated by CSIRO/WEI, DEC/AIDAB, CRI, AFSP/AACM Australia.
4. Kikori Basin ICAD Project in Gulf Province, initiated by WWF-US.
5. Hunstein Range ICAD Project in the East Sepik Province, initiated by WWF-Australia.
6. Maisin ICAD Project in Oro and Milne Bay Provinces, initiated by Conservation Melanesia.
7. Crater Mountain ICAD Project in Gulf, Chimbu and Eastern Highland Provinces, initiated by WSC/RCF.
8. Lakekamu ICAD Project in Gulf, Central and Morobe Provinces, initiated by FSP-PNG/CI and WEI.
9. Kamiali ICAD Project in Morobe Province, initiated by VDT/WWF.
10. Kuper Range ICAD Project in Morobe Province, initiated by WEI.
### Appendix 6. Lists of Abbreviations.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACT</td>
<td>Awareness and Community Theatre</td>
</tr>
<tr>
<td>ASEAN</td>
<td>Association of South East Asian Nation</td>
</tr>
<tr>
<td>AUS AID</td>
<td>Australian Aid for International Development</td>
</tr>
<tr>
<td>AIDAB</td>
<td>Australian International Development Assistance Beareau</td>
</tr>
<tr>
<td>BioRAP</td>
<td>Biodiversity Rapid Assessment Programme</td>
</tr>
<tr>
<td>BCN</td>
<td>Biodiversity Conservation Network</td>
</tr>
<tr>
<td>CAMPFIRE</td>
<td>Communal Area Management Programme For Indigenous Resources</td>
</tr>
<tr>
<td>CMICAD</td>
<td>Crater Mountain Integrated Conservation And Development</td>
</tr>
<tr>
<td>CNA</td>
<td>Conservation Needs Assessment</td>
</tr>
<tr>
<td>CRES</td>
<td>Centre for Resource and Environmental Studies</td>
</tr>
<tr>
<td>CSIRO</td>
<td>Commonwealth Scientific Industrial Research Organisation</td>
</tr>
<tr>
<td>CITIES</td>
<td>Committee on International Trade of Endagered Species</td>
</tr>
<tr>
<td>CI</td>
<td>Conservation International</td>
</tr>
<tr>
<td>DEC</td>
<td>Department of Environment and Conservation</td>
</tr>
<tr>
<td>ERIN</td>
<td>Environmental Research Information Network</td>
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<tr>
<td>FMA</td>
<td>Forest Management Area</td>
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<tr>
<td>FSP</td>
<td>Foundation for People of the South Pacific</td>
</tr>
<tr>
<td>FPCD</td>
<td>Foundation for People and Community Development</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GBRMPA</td>
<td>Great Barrier Reef Marine Park Authority</td>
</tr>
<tr>
<td>GEF</td>
<td>Global Environmental Facility</td>
</tr>
<tr>
<td>GTZ</td>
<td>German Internation Development Assistance</td>
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<tr>
<td>GROW</td>
<td>Grass Roots Opportunity for Work</td>
</tr>
<tr>
<td>ICDP</td>
<td>Integrated Conservation And Development Project</td>
</tr>
<tr>
<td>ICAD</td>
<td>Integrated Conservation And Development Project</td>
</tr>
<tr>
<td>ICCO</td>
<td>Inter-Church Organisation for Development Cooperation</td>
</tr>
<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
</tr>
<tr>
<td>KICAD</td>
<td>Kamiali Integrated Conservation And Development</td>
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<tr>
<td>LKICAD</td>
<td>Lakekamu Integrated Conservation And Development</td>
</tr>
<tr>
<td>MAB</td>
<td>Man and Biosphere Programme</td>
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<tr>
<td>NGO</td>
<td>Non Government Organisation</td>
</tr>
<tr>
<td>NPO</td>
<td>National Planning Office</td>
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<tr>
<td>NFCAP</td>
<td>National Forestry Conservation Action Plan</td>
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