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INTEGRATING CONSERVATION AND DEVELOPMENT AT THE LOCAL LEVEL: CO-MANAGEMENT OF THE GALIBI NATURE RESERVE, SURINAME

by

Sean Connelly

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Examining Committee:

Chair: Dr. Deborah Poff
Vice-President (Academic) & Provost
Acting Dean of Graduate Studies

Supervisor: Dr. Heather Myers
Assistant Professor, International Studies Program
UNBC

Committee Member: Dr. Chris Opio
Assistant Professor, Forestry Program
UNBC

Committee Member: Dr. Christopher Hannibal-Paci
Instructor, First Nations Studies Program
UNBC

External Examiner: Dr. Leslie King
Professor, Environmental Studies Program
Regional Chair & Program Coordinator - Northwest Region
UNBC

Date Approved: August 30, 2001

Abstract

The objective of this thesis is to examine co-management as a tool for the integration of conservation and development at the local level. Integrated conservation and development projects, decentralization, devolution and community-based management approaches are examined to identify how conservation conflicts are resolved.

The co-management arrangement for the Galibi Nature Reserve, Suriname, is examined as an alternative approach. The co-management arrangement is examined based on how it resolves the problems with conservation and protected area management: integrating conservation and development at the local level, involving local populations in conservation and development and integrating state views of environmental management with local common property resource (CPR) management systems.

It is found that the Galibi co-management arrangement is effective at integrating conservation and development through the use of nature tourism. Local tourism developments are dependent on the successful conservation of the sea turtle. The co-management arrangement is also effective at involving local populations in development and sea turtle conservation. Local participation is included beyond merely consultation, as in other approaches. Local objectives and concerns are incorporated into management decisions. The Galibi co-management arrangement has not been as effective at integrating state views of environmental management with CPR management. While the integration of local CPR management systems was not as important for sea turtle conservation, the integration of local customs and values is important. The co-management arrangement has been unable to integrate state views on property with local views on traditional land rights. Local views of traditional land include the Galibi Nature Reserve and traditional land rights are not legally recognized which is a source of conflict in conservation and development.

It is proposed that the co-management arrangement be strengthened by granting greater local control over conservation and development to local organizations, under the supervision of the government agency responsible for protected area management. By granting greater local control over what is considered to be traditional land, the conflicts associated with differing views on property rights may be reduced.

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Introduction

There have been many large-scale development projects, such as large scale dams funded by the World Bank (China's Three Gorges dam, Brazil's POLONOROESTE projects, India's Narmada Valley dams) which have been criticized for the low priority placed on environmental concerns and which have questionable development benefits (Fearnside, 1988). Based on these experiences, there has been a shift in development towards placing greater emphasis on the small scale, sustainable, grass roots, rural development projects.

The shift to small-scale rural development projects has mirrored the efforts of large environmental organizations such as the World Wildlife Fund and Conservation International. In the past, while focusing on mitigating the environmental effects in rural and "pristine" habitats, they paid little attention to local development implications. While striving to protect rainforests or to conserve biodiversity, environmental organizations have promoted the creation of parks and nature reserves to eliminate human impacts on the remaining natural areas of the world (Wells and Brandon, 1992). These parks and protected areas formerly placed restrictions on local populations in the form of fences and regulations that limit access to resources. However, such an approach has also changed to include the incorporation of local development activities in and around protected areas.

Many governments of developing countries face tough decisions of either exploiting natural resources to increase foreign reserves or to satisfy stringent International Monetary Fund (IMF) reforms, or of conserving natural resources and watching passively as others pass them on the economic ladder. Often, governments seeking to eliminate poverty feel they must do so at the expense of the environment. The inverse is also true. Governments feel the pressure internationally to be environmentally

conscious, and do so, often at the expense of rural communities. These opposing options are an indication of the tensions created between the right of governments to exploit resources for their development and that of outsiders to deny the use of certain natural resources (Western and Wright, 1994).

The conservation of biodiversity in the form of protected areas and nature reserves has the effect of limiting or controlling access to resources. Since most rural communities in the developing world (and to a lesser extent in the developed world) base their economies on subsistence agriculture or the use of natural resources (to varying degrees), it is those communities that suffer the effects of conservation measures. Therefore, their economic/development options are limited, and they are often forced into "illegal" behaviour in the form of poaching and trespassing.

In Suriname, the Amerindian and Maroon communities have practiced, and continue to practice subsistence economies; they use the forests as resources for gathering materials, for hunting and for agriculture, and the numerous rivers and swamps for fishing. With the establishment of national parks and protected areas in Suriname beginning in the mid 1950s, Amerindian and Maroon communities were suddenly seen as intruders who were directly opposed to conservation values (Kloos, 1971). Their traditional activities were limited by rules imposed in Paramaribo, and the resulting restrictions caused a reduction in incomes and freedoms, that were only aggravated further by the failure of the government to recognize their traditional land rights.

Local people were not involved with the siting of national parks or protected areas and were not consulted in the park management process. Therefore, local people received very few benefits through the conservation of resources and had little incentive for conservation. Their traditional activities were suddenly considered illegal and resulted in

fines for trespassing and poaching. The Nature Conservation division of the Suriname Forest Service also had to invest in park guards and rangers to patrol and monitor such illegal activities, at a great expense. Attempts were made to provide jobs to rural residents in the forestry and mining sectors in an effort to integrate them into the national wage economy, but this had mixed results.

The resulting state of conflict between park management and local residents in Suriname is, therefore, not surprising. Nor is it unique. The same conflicts have been occurring throughout the world. The number of examples of people-park conflicts is endless, regardless of the type of park (for examples, see Wells and Brandon 1992 among others). International conservationists and park managers acknowledged the conflict in the 1980 *World Conservation Strategy* that emphasized the importance of creating economic opportunities for local communities (IUCN, 1980).

Since 1980, much effort has been placed on research into the integration of conservation and development initiatives in order to improve conservation outcomes. The balanced and integrated approach has also become the model for all international development activities. Efforts have been made to integrate local people directly into conservation and development activities through sustainable development.

Numerous methods have been used to attempt to involve local people in conservation projects and in development projects. In the late 1980s and early 1990s, integrated conservation and development projects (ICDPs) were seen as the most promising model to reduce conflicts between local people and park managers and to improve the protection of ecosystems. Governments, non-government organizations (NGOs), conservation organizations, international development organizations, and private foundations have all attempted, with mixed results, decentralization and devolution of

various aspects to the local level (Enters and Anderson, 1999). There have even been suggestions that what is needed is complete devolution to community management of resources, although very few actual working examples exist (Western and Wright, 1994).

Co-management is another potential method to integrate development and conservation goals and to overcome conflicts. Co-management agreements have been used successfully to integrate government and local resource use objectives in the management of national parks (Hawkes, 1996; DeLacy, 1993; Davis and Weiller, 1992; Richardson, 1992), forest reserves (Matose, 1997; Bruce et al., 1993) and fisheries (Pinkerton, 1996). In each example, co-management allowed for the integration of the objectives of various stakeholders (to varying degrees) to allow for more equitable management decisions and reduced conflict over resources. With co-management, local people can be directly involved in the management process and they are more involved in determining the costs and benefits, goals and methods of conservation and development.

The objective of this thesis is to examine co-management as a tool for the integration of conservation and development goals through the involvement of local people. There exists a wide range of co-management agreements that vary greatly in terms of the resources that are managed, the degree to which participation is shared and the degree to which the co-management agreement is institutionalized. There is significant interest, for the future design of co-management arrangements, in what elements are important, in how the agreements have evolved, their outcomes and the potential lessons that can be learned from them. Through an examination of the literature, theoretical propositions will be examined that will then be used to assess the co-management agreement that is in use for the management of the Galibi Nature Reserve in Suriname. The relevance of these theoretical propositions will be investigated through the

Galibi Nature Reserve example. It is my expectation that the co-management agreement for Galibi will provide incentives for both development and conservation goals to be achieved, thereby reducing the conflict between local residents and park management.

There are three main questions that guide this thesis. The first relates to the effectiveness of co-management for the integration of conservation and development objectives. The second question refers to the ability of co-management to lead to greater local participation. The final question relates to whether co-management allows for the integration of classical environmental management with local common property resource management systems.

Chapter One will examine modernization, dependency, Marxist and feminist theories of development with regard to participatory development. These theories of development provide the lens through which development activities take place and determine the goals and objectives of development. Therefore, the framework through which development is viewed leads to different development approaches, such as macro- and micro-economics, commodity production and community participation. In this chapter, a framework for analysis of participatory development will be suggested.

Chapter Two will examine conservation and protected area management. The problems encountered with conservation will be discussed, as will attempts to overcome such problems, including integrated conservation and development projects (ICDPs), decentralization, devolution and community-based conservation.

Chapter Three is a discussion of co-management. Co-management will be defined and important aspects of co-management (linking conservation with development, local participation, common property resources and the problems co-management addresses) will be put forth as theoretical propositions.

The methods in Chapter Four will outline the rationale for the case study approach and provide a brief description of the case study location, the case study protocol, the scope and the limitations.

Chapter Five will be a description of the Galibi Nature Reserve as a case study. A history of the creation of the nature reserve will be followed by the park management framework in Suriname and a description of the co-management arrangement that exists for the nature reserve.

The analysis of the case study in Chapter Six will be based on the theoretical propositions on development from Moser (1991) (Chapter One) and those based on co-management (Chapter Three).

The conclusions and recommendations in Chapter Seven will report the major findings of the thesis and suggest some recommendations. They will include both recommendations for government policy and local policy. Avenues for further research will also be recommended.

Chapter 1

Development Theories

The term "development" has been defined in numerous ways based upon different theories about development. The term has been used variously to describe improvement of basic human needs, of improvement in the social, economic, environmental or political situation. The definitions used by different development theorists are based on very different assumptions about the methods and goals of development. The purpose of this section is to define development objectives and approaches based on the theory that is most suitable for participatory community development. Modernization, dependency, Marxist and Feminist theories of development will be examined briefly to demonstrate which theory is best suited for an examination of development at the local level. These four theories have been chosen because they are the dominant theories of development that represent both the assumptions of harmonic and discordant interests, animate and inanimate values and material and human resources (Black, 1991).

These four theories are the major development theories that share common assumptions about the possibility and desirability of development but which differ drastically in terms of how development should occur. Modernization, for example, views national economic interests as being similar to those of class interests while dependency and Marxist theories view them as competing (Black, 1991). The four development theories discussed place differing emphasis on the role of the nation state, international pressures and the individual. They also place different emphasis on how results are measured and thereby provide a glimpse of the broad spectrum of development theories.

1.1 Modernization Theory of Development

Modernization theory arose from the hegemonic power of the United States in the post- Second World War years. Due to the success of the Marshall Plan in the reconstruction of Europe, modernization was seen as a means for the Third World to develop. It was believed that the Third World could develop as quickly as Western and Eastern Europe had, immediately following the war. Its theoretical basis is structural-functionalist, with the belief that development will occur provided that the proper structures (capital, expanded trade and technical assistance) are in place for economic growth to occur (Preston, 1996). Modernization theory is best expressed in Rostow's "stages of growth" model, which predicts that, once the proper structures are in place, development will progress through a linear path, from traditional society, to the pre-conditions for take-off, to the take-off, to the drive to maturity and finally to the age of mass-consumption or development (Otubusin, 1992).

Modernization theory views the Third World as traditional. These societies are based on spiritual values, not values of self-betterment that are needed for improvement or development (Isbister, 1993). The traditional societies lack capital, which is seen as a major inhibitor to economic growth. Much of the early (1950-1970) development assistance that occurred in the third world was geared towards the generation of capital for domestic investment (Billet, 1993). As states become modernized, by accepting economic liberalism, Western-style education and Western values, all sectors of society were expected to be improved.

Criticisms of modernization have been made on moral, political, economic and historical grounds (Otubusin, 1992). One of the major criticisms of modernization theory

is that it creates dichotomies: nations are developed or underdeveloped, modern or traditional. Modernization theory works from a technocratic point of view where development experts determine areas in need of modernization. The degree of modernity is equated with development. With the focus on modernity, information and ideas are highly technical and they flow from the technocratic elite at the top of society to those at the bottom. The effects are evident where states have put modernization policies in place. These policies can be characterized as generating economic growth in the major cities which results in greater urbanization. This focus of economic growth and modernization in the major cities, has often ignored rural areas, which are often in the most need of development assistance. According to modernization theory, rural agricultural areas will never achieve development because they are traditional, which characterizes them as undeveloped from a modernization point of view.

Modernization has been based on the assumption that recipients of development assistance are passive rather than active participants in the development process. Modernization theory does not acknowledge the different needs of rural areas in development. Its approach is strictly on a national level and it views each segment of a nation as needing to modernize their values in order to achieve development (Valenzuela and Valenzuela, 1998).

Therefore, the modernization theory of development is in direct conflict with the participatory approach to rural development. It limits participation to development experts, it focuses on modernization and urbanization to the exclusion of rural areas, and it assumes that development assistance should be focused on aiding modernity.

1.2 Dependency Theory of Development

Dependency theory has its roots in the United Nations Economic Commission for

Latin America in the 1960s and it is based on the work of economists there who sought to place attention on the deterioration in terms of trade for primary producers in Latin America (Black, 1991). While Marxist theories of development seek to explain why and how the dominant classes expand their spheres of influence, dependency theorists examine what the relationship of unequal bargaining and exploitation means to the dominated classes in the dominated countries (Black, 1991).

Dependency theories of development are based on several major assumptions. Firstly, economic interests are the primary determinant of the distribution of power and status in the international arena. Culture and attitudes, what modernization theorists view as impediments to development, are irrelevant to dependency theorists (Nef, 1994). Secondly, the causes of underdevelopment cannot be determined by strictly examining processes at the national level. For dependency theorists, the root cause of underdevelopment is participation in the international economic system. The pattern of economic relations between dominant powers and their client states forces the latter to remain underdeveloped (Frank, 1992). Finally, contrary to the views of modernization theorists, the free market creates greater inequality rather than eliminating it. Trickle-down or diffusion of wealth does not occur with the absorption of individuals into the modern sector, but will, rather, cause increased inequalities (Isbister, 1993).

Dependency theories offer many examples of problems with modernization theory, yet there are no concrete approaches that are offered for development. Dependency theorists suggest a revolutionary break from the global economic system that is promulgating dependency as a solution. Dependency theorists, as do modernization theorists, offer a structuralist theory of the causes of development and underdevelopment (Preston, 1996). They believe that the structural conditions of dependency will persist as

long as the underdeveloped countries remain within the global system. Dependency theorists propose macro-economic changes that would weaken the effects of multi-national corporations and foreign governments. They also propose the creation of trade barriers and regional trading areas that would allow nationalist governments to pursue goals of national development.

Presumably, with the dislocation from the global economic system, Third World governments could be free to pursue independent development projects that would involve rural populations and environmental conservation. However, the method that national governments use to pursue development is of little concern of dependency theorists. The major concern is a critique of modernization and an attempt to persuade Third World governments to remove themselves from the conditions that perpetuate underdevelopment and dependency on other states for trade and development inputs.

Critics of the dependency approach to development point out that dependency theorists fail to demonstrate why the development of capitalism in the periphery will always result in an outflow of capital rather than internal capital accumulation (Browett, 1985). Dependency theory has been seen as merely a description of the uneven distribution of capital and not an explanation as to the cause of this inequality. It has never challenged the dynamic and progressive characteristics of capitalism as it behaves in the global arena (Scott, 1995). Therefore, for dependency theorists, politics at the periphery include only those attributes which link the periphery to the international system. The focus of dependency theory on the macro-level linkages between nation states and the focus on independent national development make it irrelevant for participatory local development. The needs, desires and goals at the local level can vary greatly within a nation and dependency theory does not take such differences into

consideration.

1.3 Marxist Theory of Development

While dependency theorists draw much of their conclusions from theories developed by Marx, and many would consider themselves Marxist, contemporary Marxist theorists of development are in disagreement with both modernization and dependency theories. The basis of Marxism is the analysis of the class structures of Third World societies rather than economic growth and modernity (as in modernization theory) or foreign domination (as in dependency theory) (Isbister, 1993). Marxist theories of development revolve around the forces and relations of production. Marxist analysis focuses on production relations that are the key structures, which determines how society functions (Peet and Watts, 1993).

There are a number of fundamental differences between Marxist theories of development and those of dependency. First, Marxists see the fundamental forces for social change as being internal rather than external to Third World societies (Isbister, 1993). Secondly, Marxists argue that economic growth is possible for Third World countries within the global system. The neo-colonial forces, which dependency theorists see as perpetuating underdevelopment, can act in a manner that would actually propel Third World societies along the path towards capital growth (Isbister, 1993).

Marxist analysis focuses on the primacy of the state in bringing about change. The analysis remains in an economic framework that places the instruments of change in the hands of the state and in elites of the South to counter the capital accumulation of the North (Braidotti et al., 1994). Essentially, for Marxist development theorists, the conflict between the capitalist and working class has been transformed into a conflict between North and South.

Marxism does not prescribe how development is likely to occur, but rather why social change will occur. It is believed that social change will create new structures that will incorporate a redistribution of wealth and therefore, development. Social change is the result of conflict that arises between classes that have different relationships to the productive structure of society.

Criticisms of Marxist theories of development occur along the same lines as those of modernization and dependency. Marxism promotes a re-ordering of the global economic system in favour of Third World countries as a result of changes in the capitalist production centre at a national level. Marxism, along with modernization and dependency, is a structural approach on a global level that does not account for changes in non-state organizations or changes in individuals. Therefore, the perpetuation of inequality and injustice is not addressed at these levels and there exists blindness towards the needs of grassroots and intermediary levels of change (Braidotti et al., 1994).

With emphasis placed on the role of global capitalism, other factors that shape and determine local cultures and societies are ignored. Such factors include conflicts surrounding the low-level politics of rural inhabitants' struggles over access to environmental resources in their everyday lives. Macro-structural approaches dismiss local differentiation among resource users, differentiation that occurs along lines of class, ethnicity, age and gender (Moore, 1996).

1.4 Feminist Theory of Development

Feminist theories cover a wide range of views and place importance on various elements and structures that determine how and where development occurs. Multi-lateral rather than unilateral models are used which define the interdependent linkages that exist both within and across national borders. Feminism represents a critique of prevailing

gender-based power structures and the accepted norms and values which are used to define women and men (Whitworth, 1994). At its fundamental root, feminism is directed at transforming the unequal power relationship that exists between women and men. Feminist development theorists define the economic, materialistic and positivistic approaches to development put forth by the dominant development theories as limiting development. Rather, feminist theorists believe that development analysis should begin with the micro-level experiences of poor women living in the Third World and that these experiences are linked to the macro-economic level. The assumption is that experiences at the micro-level should inform macro-level analysis (Braidotti et al., 1994).

Feminist development theory is critical of other development approaches because of the lack of emphasis that is placed on those people on the margins, who are in the most need of development assistance. By examining how gender relations have resulted in current marginality, the linkages between local level and larger political and economic forces are revealed (Stivens, 1994). Examination of these linkages results in a more encompassing theory of development that considers how development or underdevelopment affects those located on the margins of society. The post-modern feminist approach to development offers new potential and direction to development because of its pluralist approach. The limits to modernization, dependency and Marxism have created a new interest in the informal sector, popular participation, female production and ecology - elements that have been ignored by previous development theories (Scott, 1995). This new interest has refocused attention on the dominant theories of development not as to how they "provide the answer or solution to the women question [but how the] dominant theories, and their implicit biases, are themselves part of the problem" (Gatens in Pearson and Jackson, 1998: 12).

Feminist theories of development also place an increased importance on civil institutions. Their importance in development has been noted because of their ability to overcome the failings of authoritarian and bureaucratic development. The failings of the state are noted: "when the state fails to deliver public goods [or] minimum basic needs and democratic rights, civil organizations may fill the vacuum" (Peet and Watts 1993: 236). It is not surprising therefore, that by replacing the state-centric focus of development with other internal institutions, a degree of populism results. The appeal of populism results from its ability to work within any given structural framework to achieve a pragmatic, rather than solely a political agenda. It is in this area that feminist development theory possesses the greatest strengths. It is able to circumvent political structures in its focus of household-level development and its goal of development for the ordinary person.

Feminist theories focus on individual level decisions, grass-roots civil institutions and public participation as the methods through which development should occur. Therefore, feminist theories of development provide the best framework through which to examine participatory development and conservation at the local level, which will be discussed in the following section.

1.5 Feminist Framework for Participatory Conservation and Development

Moser (1991) provides a feminist framework for planning in the Third World that can be applied to participatory local development and conservation. Within this framework, four elements are identified as important for effective development planning and they include: decision-making power, highlighting of complexities, differentiation between strategic and practical needs, and shift from welfare to empowerment in development.

Decision-making power is important for any participatory project. If decision-making powers remain centralized in one state authority, it is inevitable that decisions will not reflect the needs of those who are affected by decisions. The importance of decision-making power is based on the assumption that development planning needs to be locally specific. The basis of this assumption rests on whether or not planning for development can be done generally, or if it is necessary to focus on locally specific rural development. The same assumption applies in conservation. Conservation programs can not be limited to parks and protected areas, but must also involve communities (Little, 1994). Decision-making power is important at all levels of development planning. It is important to note who is determining what the specific requirements of development are and how those requirements will be implemented. The feminist framework argues that men and women have different roles in society and therefore they have different needs (Moser, 1991). The same is true for development and conservation on a local basis. Needs vary on a local level and therefore development can only occur when the people it affects participate in the design of proposed policies and where the model which is implemented corresponds to local people's aspirations (Peet and Watts, 1993).

Another important aspect in the feminist framework for development that can be applied to participatory development and conservation is the aspect of simplifying relations so that methodological tools can be developed and implemented (Moser, 1991). Rather than highlighting complex relationships, focus should be placed on simplified connections between individuals and groups. By simplifying relationships, it can be determined who has power over decisions, who needs to have power and the connections and decision-making relationships become clearer. By knowing these connections, relationships can be understood and the development and implementation of ideas can

proceed in any situation.

A third aspect that is important in development planning is the differentiation between strategic and practical needs. While both needs must be satisfied for effective development planning, strategic and practical needs must be approached differently. Practical needs are those needs such as housing, services, food, shelter, access to resources, but which do not focus on challenges to the existing system. Strategic needs for development seek to overcome obstacles to development. It is only through the fulfilment of strategic needs that practical needs can be fulfilled over the long term. The Grameen Bank in Bangladesh provides an example of how a practical need (employment for women) is met only through meeting the strategic needs (enabling women to control the loans they receive and to contribute to family support) (Hashemi et al., 1996). Focus on strategic needs aims at an alternative, more equal and satisfactory organization of society that overcomes the burdens that have prevented the realization of practical development needs in the past. The example that Moser (1991) uses is in the area of employment planning for women. It is insufficient to provide employment for women (a practical need) without providing for strategic needs such as a household and community support system that would allow women to enter the workforce.

Finally, focus in development planning must shift from a welfare perspective to one of empowerment. With the welfare approach to development planning, local people are seen as passive recipients of development assistance. Practical development needs are met through handouts of technology (such as wells, fertilizer, pesticides, housing, etc.), that occur in a hierarchical, top-down nature. The welfare approach does not include any participation and does not challenge the existing structures that inhibit development.

For successful participatory development, it is assumed that a shift from the

welfare approach to an empowerment approach must occur. The purpose of the empowerment approach is for the residents of the Third World to define their development needs. Such a goal is to be achieved through greater self-reliance. The empowerment approach seeks to meet strategic development needs through bottom-up mobilization around practical development needs (Moser, 1993).

While elements of a feminist development framework were used, it is not within the scope of this thesis to undertake a gender analysis of the Galibi case study. There are a number of elements that can be extracted from feminist development theory which are applicable to participatory conservation. The emphasis on the individual, on grass-roots civil institutions, empowerment and on public participation are all elements that are important in participatory conservation. These elements provide the framework through which participatory conservation and development are examined. The following chapter examines the conflicts in conservation and protected area management with these elements in mind.

Chapter 2

Conservation and Protected Area Management

When national parks and other protected areas (nature reserves, game reserves, conservation areas) were first created in Suriname, as elsewhere, the primary concern was with preservation of the natural environment. In an attempt to save natural wonders, wildlife, biodiversity and ecosystems, protected areas were created which attempted to eliminate human impacts on the area. The preservationist paradigm which guided protected area management placed the activities of humans in direct conflict with conservation objectives (Fearnside, 1999).

Over time, it was acknowledged that successful conservation efforts required the support and participation of local people. With the change in perception of local people, a number of new models/paradigms for protected area management have been proposed (e.g. Integrated Conservation and Development Projects, decentralization, devolution, community-based management).

In this chapter, the problems with traditional protected area management will be discussed as will the need for a more integrated approach to conservation. Integrated Conservation and Development Projects (ICDPs) are one approach that have generated much enthusiasm. The concept of ICDPs will be examined, as well as attempts at decentralization, devolution and community-based management of protected areas to overcome park management conflicts.

2.1 Problems with Protected Area Management:

The basis of traditional protected area management was the preservation of the natural environment through the exclusion of negative human impacts. Such a view is

evident through an examination of park management plans and the old definition of protected areas by the International Union for the Conservation of Nature (IUCN). The IUCN (1975) defined protected areas as large areas where ecosystems are not altered by human exploitation and occupation and where authority has been taken to *eliminate* exploitation and occupation and *enforce* effectively the respect of ecological, geomorphological or aesthetic features [emphasis added]. While there has been much effort on the part of organizations such as the IUCN to change the view of protected areas over the years, the idea of preservation has remained at the forefront until recently. As recently as 1990, the *Conservation Action Plan for Suriname* (1990) for example, stated the purpose of conservation as to maintain biodiversity and to maximize tourism and scientific research. The emphasis is placed on guards, patrols, preservation and the exclusion of all activities unrelated to tourism or research.

Traditionally, government-controlled protected area management excluded other stakeholders, objectives other than conservation, and social, political and economic forces (Wells and Brandon, 1992). In excluding all of the above, conflicts were created between park managers and local people who were only involved in park management activities to the degree that it was useful for park managers.

Enters and Anderson (1999) describe why a more integrated approach to biodiversity conservation is needed. They are critical of the vision held by developed nations of an untouched wilderness void of any human impact as the basis for global conservation policies. Under this conventional approach to conservation, local communities are considered threats to conservation and are treated as such. The implementation of management plans proceeds through a combination of encouragement and more coercive activities aimed at limiting the actions of local populations (Enters and

Anderson, 1999). Under such situations, the national government is seen as the guardian of biodiversity and it has complete sovereignty and control over all conservation activities.

Bryant and Wilson (1998) criticize state-led environmental management because it allows for local participation and integration of local knowledge only if it can be controlled. A complete rethinking of the field is necessary that would include a broader understanding from a wider range of fields of knowledge so that humans are reincorporated into the environment.

Bryant and Wilson (1998) describe how the technocratic field of environmental management focuses on providing technical information for practical environmental management with very little effort or attention paid to the understanding of cultural, political or economic considerations at the local level. As such, four main criticisms of state-led environmental management are that it often ignores the interdependency of the environment, it imposes top-down, bureaucratic solutions on people, it follows a positivist approach that only allows experts to define environmental problems, and it is based on the assumption that environmental problems can be solved through technology without any modification to broader social, political or economic forces. It is interesting to note that criticisms of environmental management parallel those of development as discussed above. In resource management, attention is focused on increasing the involvement of the principal resource users, and therefore the major beneficiaries in critical resource management decisions (Doulman, 1993) while development has been focused on meeting locals needs through local participation (Little, 1994).

There are two separate, but related issues that need to be addressed in rethinking environmental management. The first involves how the environment is viewed. While

the environment is no longer viewed as its own entity, but as a set of interconnected issues, state led environmental management has still maintained a functional approach aimed at resolving environmental problems (Bryant and Wilson, 1998). The technocentric approach to environmental management is based on the assumption that environmental problems can be solved without the modification of broader political, social or economic forces. It has become increasingly obvious that successful conservation measures must be linked to local development (Wells and Brandon, 1992), local people (Hackel, 1993) and local economies (Viet et al., 1995).

The second issue that must be addressed in state-led environmental management relates to who controls and participates in environmental management. Environmental management is seen as a process in which experts apply their environmental expertise in the resolution of selected environmental problems. The view is that environmental management is a hierarchical process which needs to be imposed upon people living in a defined area (Bryant and Wilson, 1998). State-led environmental management is not interested in complete understanding of specifically located situations, but in partial understandings of widely dispersed but similar situations that can be covered by broad policies (Kloppenburg, 1991). Therefore, it is viewed as a practice that can not be associated with stakeholders other than those in the bureaucracy and it ignores traditional or local environmental knowledge.

Beckley (1998), while describing forestry management, describes the crisis that is occurring in management circles as one where greater accountability is being desired on behalf of the public, as well as a growing preference for broader management goals that allow for multiple benefits to multiple stakeholders. The problems that arise are based upon decisions being made at arms-length of actual resource use, the decision making

structure is hierarchical and often does not allow for input from the local level and the scope of management objectives is narrow, often focused on a single issue.

However, participation of other stakeholders has been deemed an essential component for successful environmental management. Gadgil et al. (1993) demonstrate the relationship that exists between local people and their environments. Local people depend on the ecological services provided by the environment, and therefore, have the knowledge and motivation to sustain them. Such a relationship between humans and their environment, however, has been excluded from state management systems. The exclusion of local actors in environmental management often results in the implementation of policies and decisions by state decision-makers who themselves rarely experience the effects of those decisions (Bryant and Wilson, 1998). As a result, decisions may be based on incomplete information about the locally specific environment, incompatible objectives and divergent ways of understanding the environment.

Much of the criticism surrounding past environmental management rests on its failure to incorporate the environment into social, political or economic sectors and the failure to address the needs of local people. The obvious solution to such criticism is to create a management framework that incorporates more inclusive management, that integrates different management objectives and that allows for greater participation from all interested stakeholders in the management process. In many circles, the top-down exclusionary approach to management has been abandoned in favour of management procedures that place greater emphasis on local participation through integrated conservation and development projects (ICDPs), decentralization, devolution, community management and co-management. However, the implementation of such ideas/methods creates many new problems relating to who is involved, what people are involved with

and what the objectives are. While ICDPs, decentralization, devolution and community-based approaches all deal with the same issues, they all place different emphasis on different elements, objectives and involvement, in order to remedy the current problems with environmental management.

2.2 Integrated Conservation and Development Projects:

The strategy of linking protected area management with economic activities for local communities gained international acceptance with UNESCO's Man and Biosphere (MAB) project of the mid 1970's and through the World Conservation Strategy in 1980 (IUCN, 1980). The MAB emerged as a follow-up to the International Biological programme sponsored by the International Council of Scientific Unions to promote further ecological research in order to better manage ecological resources (Francis, 1985). The MAB was an international programme of scientific cooperation dealing with people-environment interactions through the whole range of global biospheres (Batisse, 1985). Through the MAB projects, there emerged a new concept in protected area management, the biosphere reserve. Batisse (1982) states the primary objectives of biosphere reserves as:

1) To conserve for present and future use the diversity and integrity of biotic communities;

2) To provide areas for ecological and environmental research; and

3) To provide facilities for education and training.

From such objectives, it is obvious that the movement in protected area management has shifted from a strictly preservationist approach to one of conservation, education and research.

The biosphere reserve consists of a core, undisturbed area surrounded by a buffer

zone which is managed with minimal human activities. It is in these buffer zones where "area managers and local residents in or near the biosphere reserve should be involved in consultations... Managers and residents may also have to help with the implementation of research projects...(Francis, 1985: 26)." The type of benefits that were provided for local residents are focussed on scientific research. For example, socio-economic projects that have been carried out with close cooperation from local residents include soil, water and primary productivity analyses in the review by Francis (1985). The primary objectives of biosphere reserves, as stated by Batisse (1982), mention nothing about the integration of local communities except in ways that can aid scientific research.

The overall approach of the MAB Programme was to associate local populations with the formulation and implementation of research projects. The biosphere reserve concept shows that:

> when the populations are fully informed of the objectives of the biosphere reserve, and understand that it is in their own and their children's interest to care for its functioning, the problem of protection is largely solved. In this manner, the biosphere reserve becomes fully integrated - not only into the surrounding land-use system, but also into its social, economic and cultural reality (Batisse, 1982: 107).

However, the MAB Programme did not adequately deal with the problems of local participation, top-down scientific approaches, the integration of conservation into local social, political and economical sectors, or addressing the needs of local people. The MAB Programmes and biosphere reserves were considered a success when they produced biodiversity conservation results (Lasserre and Hadley, 1997). Local people were *consulted* or *informed* of the objectives of biosphere reserves and were able to *participate* in research projects deemed important by the international scientific community. Local preferences are only considered if they match the pre-determined goals of biodiversity

conservation.

The MAB programme and the biosphere reserve concept reflect a more integrated approach to conservation that allows for the wise use of the environment, from the merely preservationist attitude. The more integrated approach is evident through the multiple objectives of biosphere reserves (conservation, education and research). However, the presence of continual conflict between local residents and protected area managers created a need for greater focus on local development. With the development of integrated conservation and development projects (ICDPs) in the mid 1980's, an attempt was made to actually incorporate development objectives within park management plans in order to reconcile conservation, social and economic objectives (Wells and Brandon, 1992).

Integrated conservation and development projects can be defined as projects that link biodiversity conservation in protected areas with local socio-economic development (Wells and Brandon, 1992). The link between conservation and development is a result of providing alternative sources of income to discourage resource use. With ICDPs the primary objective is biodiversity conservation. Conservation objectives override local development objectives if there is conflict and ICDPs should be projects where almost all investments and activities should be directed at biodiversity conservation (Sanjayan et al., 1997). Ideally, ICDPs establish a pattern of sustainable use of resources so that pressures on protected areas from local residents are voluntarily reduced.

Integrated conservation and development projects involve three different activities which portray their link to the MAB and biosphere reserve concept. The first activity is protected area management which includes biological monitoring and research, enforcement and conservation education. The second activity is buffer zone management around the protected area. Buffer zones are areas peripheral to a national park or reserve

where less stringent restrictions are placed on land use, which give an added layer of protection to the park or reserve while allowing for both conservation and development needs to be carried out (Slocombe, 1992). The third activity that ICDPs perform are local social and economic development activities. Such activities are similar to rural development projects and they rely on compensation to local populations for park management restrictions or substitution for traditional economic activities (Wells and Brandon, 1992).

The main aspect that differentiates ICDPs from classical environmental management is ICDP's focus on poverty. The central assumption of ICDPs is that poverty leads to resource degradation by residents near conservation areas (Gezon, 1997). Therefore, the goals of economic development by ICDPs is twofold. The first goal is to create conditions where development can occur in peripheral zones which a positive influence on conservation and the second goal is to involve local populations so as to create partners in conservation.

Peters (1998) describes an ICDP situated around Ranomafana National Park in Madagascar. The ICDP initiated a policy to share half of the national park entrance fees with local residents to demonstrate the benefits of conservation. The goal of the policy was to create new management partnerships between park management and local people and to make the conservation of nature economically beneficial to local people. In the beginning, however, local people were simply passive recipients of entrance fee revenues. The resulting situation could be described as the welfare approach to development where people are passive rather than active participants in development, and where the main method of implementation is the top-down hand-out of goods and services (Moser, 1991). Local residents were merely compensated for the restrictions placed upon them by the

national park (although they are involved in decisions of what to do with their portion of revenues) and do not participate in the actual management decisions of the park.

Many ICDPs treat local residents in the same way. In their review of fourteen ICDPs throughout the world, Wells and Brandon (1992) describe few projects that specifically outlined what was meant by public participation and most treated local people as passive beneficiaries rather than active participants. It is often the case that ICDPs use the lure of short-term benefits to obtain credibility which then substitutes for the more difficult process of involving communities in project design and implementation over the longer term (West, 1991).

West (1991) notes that while there has been a move away from the preservationist and isolationist view of protected areas, the adoption of cultural preservation and eco-development has often been co-opted. In an overview of tourism as a form of eco-development, West warns against "the blind promises of economic development to local residents from tourism revenues without an understanding of the social conditions under which tourism can provide benefits to local people (1991: 390)." The promise of economic development through tourism is often used to sell the idea of conservation to local residents.

While the ICDP approach is an improvement over traditional park management techniques, it still isolates local people outside of the core conservation zone by placing the greatest emphasis on biodiversity conservation (Wells and Brandon, 1992). Many of the problems with traditional protected area management have not been addressed. While the link has been made between conservation and development, many of the problems associated with traditional protected area management remain. Integrated conservation and development projects still rely on the trickle down theory of development and still

rely on the top-down approach where local people are given responsibility to follow conservation objectives but they are not involved in the determination of such objectives. The problems with traditional park management still exist, (exclusionary, top down, hierarchical) and they are incorporated into development models based on the same approach (i.e., modernization theory). It is still a technocratic process where participation is limited to involvement with conservation objectives driven by the conservation agenda of the organization/state. Goals, objectives and methods of implementation are still set by protected area authorities and local residents are given the opportunity to participate with the predetermined goals.

The problem with ICDPs is that they do not try to involve local people in conservation, but rather attempt to involve them in other activities away from the core park area. The priority is still on protecting the park or reserve firstly, and benefiting local people secondly. Such a view highlights the key difference between a focus on development (improve living standards and eliminating poverty) and ICDPs (conserve biodiversity).

The focus of the ICDP is of the management for the conservation of biodiversity while providing and defining limited opportunities for local development. The emphasis is placed on conservation that may have the spin-off effect of creating opportunities for sustainable development for local populations. Such an approach ignores both the desires of local people and the need and potential for local development that could have the spin-off effect of conservation. When local people are left out of the decision-making process, greater conflicts occur and neither conservation nor development objectives can be achieved. Such a problem is not isolated to ICDPs, but to the larger framework under which they operate.

2.3 Decentralization, Devolution and Community-Based Approaches

There have been many attempts to achieve greater involvement of local populations in conservation and environmental management. The terms decentralization, devolution and community-based management appear frequently in discussions about policies and practices aimed at sustainable development (Fisher, 1999). Each approach exists on a continuum of local participation, from strict government control to complete community control, that is best represented by Arnstein's (1969) "ladder of citizen participation" and modified by Berkes et al., (1991) and Matose, (1997) (Table 1). In Arnstein's model, the levels of local participation are represented as rungs on a ladder ranging from non-participation, to tokenism and to degrees of citizen control. While decentralization, devolution and community-based management are used to generate greater local participation, what they actually achieve vary with regard to the involvement of local people, the objectives, the outcomes and the associated problems in each approach.

Decentralization is one method used by government park policy makers to overcome the problems created by management decisions made at a great distance from parks. Decentralization implies the de-concentration of authority to lower levels within the government structure in order to bring government managers closer to resource users (Otto and Elbow, 1994). It engages local government authorities to legitimate management regimes, adjudicate disputes and enforce decisions with greater knowledge about the local situation.

Any effort to increase local participation in policy decisions usually requires some form of decentralization (Little, 1994). With decentralization, management functions are shifted from a central bureaucracy to regional or local offices of the same bureaucracy.

While decentralization does increase local participation by informing and consulting local people, it often results in tokenism. The decentralization of authority occurs, but the decision-making power remains at the centre which results in continued control by the centre as central authorities carry out policies and programs through representatives in local areas (Little, 1994).

In an example of protected area management in India (Badola, 1999), decentralization has led to local people being responsible for the protection of resources but they are not given access to them or the ability to change the rules of protection. Such is a common criticism of decentralization. The tendency has been for governments to pass responsibility for conservation to local governments, communities or bureaucracies without the authority to make independent decisions or to take action outside of the parameters and objectives set by the central government (Fisher, 1999). Local resource users lose confidence and trust in state and local institutions abilities and interest to regulate resource use. With the adherence to state and local resource use institutions, the influence of traditional common property resource (CPR) systems is reduced. With the loss of confidence in state and local resource use institutions, there is no other resource management system to rely on which can lead to open access to resources. This results in the degradation of common property resource systems to open access systems, which leads to further environmental degradation (Little, 1994).

In order to overcome such problems, it is necessary to determine to what degree decentralization occurs. Indicators of genuine decentralization include: the extent to which decisions are given to local authorities, the extent to which the community has authority to negotiate with external bodies and the extent to which the community has power to exert sanctions and to reward resource users (Little, 1994). These indicators

denote the level to which decision-making power has been decentralized to local users.

Decentralization of authority to more local levels of government is not the same as the devolution of rights to communities (Feldmann, 1994). The distinction between decentralization and devolution centres on the element of empowerment. In many cases where decentralization has failed, it has been as a result of the reluctance of central government authorities to relinquish real power (Fisher, 1999).

Devolution is the actual transfer of power away from central authorities to local authorities. The goal of devolution is to overcome the problems of decentralization by transferring not simply responsibility for resource management but also the ability to make real input into the setting of objectives and the defining of priorities. It is a step up on Arnstein's ladder of citizen participation (Table 1). With actual devolution, local communities and government authorities enter a partnership that enables them to negotiate and engage in trade-offs to achieve desired objectives (Berkes, 1991).

The same process is involved with devolution as with decentralization, however, authorities at the local level have greater power in decision making, in setting objectives and in defining priorities. The Nunavut Wildlife Management Board (NWMB) is one example where devolution from national/territorial government resource management to community hunting and trapping organizations has occurred through the NWMB for the management Beluga whale quotas.

The NWMB has the responsibility and authority to make decisions on Beluga whale quotas and the local hunting and trapping organizations allocate the quota to community hunters (Rodon, 1998). While the ultimate authority for wildlife management rests with the governments of Nunavut and Canada, the NWMB is the decision-making

Table 1: Ladder of Citizen Participation (adapted from Arnstein, 1969; Berkes et al., 1991; Matose, 1997)

Degrees of Citizen Power		Characteristics	Type of Management
Citizen empowerment	Community Control	Local community governs the program and is in charge of policy and managerial aspects; mechanisms exist for consultation with central authorities but ultimate authority rests with local institutions. Complete community control of resource management	Community-based management based on community traditions, values and objectives.
	Empowered Control	Local community has opportunity to set its own objective and implement its own plans. Institutionalized mechanisms exist for consensus decision-making with government authorities.	Devolution
Decentralization/ Tokenism	Partnership	Power is redistributed through negotiation between government and local community who share jointly in planning and decision-making.	
	Advisory Panel	Local community concerns are sought and considered in management, local participants are included in planning yet government retains the right to judge planning decisions.	Decentralization
	Voice	Local participants have an opportunity to voice opinions about management decisions but there is no guarantee that those opinions will be considered.	
Non-participation	Inform/Educate	Goal is to educate local residents of the rules and regulations and to inform them of their options. Local participation is excluded from management decisions.	Strictly government management based on government values and objectives.

Co-management can encompass any of these types of management depending on the particular agreement.

body and the government's role is to carry out NWMB decisions (NWMB, 2001). The management of the Beluga whale harvest has been completely devolved to the local level. The NWMB is responsible for the use of scientific and traditional research to set quotas, to allocate the quotas and to enforce the quota levels.

Since devolution involves the potential for changes in objectives at the local level, the central government authority must be willing to accept such changes and even modify their own objectives. In order for the acceptance of changes by the central authority, a significant degree of trust in local management must exist. It is not only decision making power that must be devolved but also accountability. If local communities are to participate in decision-making roles in resource management, they must be prepared to accept long-term accountability for the state of those resources (Feldmann, 1994).

Devolution involves people in all elements of management, from the definition of priorities to the implementation of programs. With the devolution of power to local authorities, central authorities must not be left to simply set the rules of management or to judge the abilities of the local authority. While local authorities remain accountable to the central authority, the inverse must also be true. Central authorities must also be held accountable to local communities and organizations in order for trust to be built on both sides.

The objectives may differ greatly with devolution. With the empowerment of local communities, predefined priorities of the central authority may be rearranged. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe is one example where devolution to the local level led to a re-arranging of priorities. CAMPFIRE's concern with resource tenure was linked to broader issues of representation, economic participation, communal area governance and collective

decision-making rather than solely issues of sustainable use of wildlife (Metcalfe, 1994). With CAMPFIRE, the empowerment of local communities was considered a precondition to wildlife conservation. The rearranging of the centrally held assumption that conservation may lead to local development was changed to local development that may help wildlife conservation.

Many criticisms of devolution result out of challenges to the assumptions that: 1) local residents are skilled in sustainable resource use and conservation,
2) contemporary rural communities are homogenous and stable, and,
3) local, community-based tenurial, knowledge and management systems are uniquely suitable for conservation (Enters and Anderson, 1999). While these assumptions may or may not hold true (or even be important), they cannot be used as excuses to prevent devolution to the local level, especially when current resource management approaches are not working. The real problem behind these assumptions is based on the lack of control by central authorities. Once again, trust is an important issue, and in many instances, devolution does not occur because of the perceived (or real) lack of the capacity for local institutions to undertake effective management. Meaningful devolution requires both that local-level managers (either local government or local communities) have the capacity for resource management and that those with the current authority to make management decisions be prepared to transfer that authority (Fisher, 1999). Levels of trust in local management must be built through building local capacities and providing examples of effective local management to demonstrate improved local capacities (Fisher, 1999).

Community management of resources is even further along the continuum of participation than devolution and it also involves many aspects of decentralization. It has

been discussed widely as an ultimate ideal, although actual working examples of complete community management are few (Fisher, 1999). While local residents have been making decisions for centuries regarding who may take resources, how, when and where those resources may be used, it has only been recently that such local management arrangements have been recognized by national or Western management authorities (Johannes, 1998).

Community-based conservation directly involves the integration of rural development and conservation. It can be defined as "local, voluntary initiatives involving a minimum of several households in which at least one of the outcomes of local management practices is either the maintenance of habitats, the preservation of species, or the conservation of certain critical resources and another outcome is the improvement of social and economic welfare (Little, 1994, p. 348)." There exist many different methods by which local initiatives are integrated into conservation and development schemes.

Community resource management has been described as a management framework that is based on community development through multiple uses of resources, where community forces drive land- and resource-use decisions, and where the community is satisfied with its involvement and benefits from the use of surrounding land and resources (Little, 1994).

One area of community-based resource management for which there exist numerous examples in the literature is common property resource (CPR) management systems. Berkes (1989), Ostrom (1990) and Bromley (1992) provide various examples of differing resources that are managed based on community knowledge about the resource and community customs and traditions that govern resource use.

Many of the problems associated with devolution are also present with

community-based conservation, such as lack of faith in community management capacities. Due to the global nature of the environment and the increasing number of international environmental agreements, it is difficult for community-based conservation to exist in isolation. There are increasing pressures from governments and international organizations to meet global conservation standards. However, there is much support for the belief that community-based management systems provide a modern management alternative by ensuring equitable access and by managing and enforcing conservation measures to ensure sustainability (Ruddle, 1998).

In the area of fisheries management in particular, effective management of small-scale, near-shore fisheries using conventional Western methods has failed (Johannes, 1998). With the recognition of this fact, governments have begun to look towards community-based fisheries management's ability to meet government conservation standards (Johannes, 1998).

The main problem with community-based resource management is the difficulty encountered with the integration of government control. When government resource management initiatives are introduced, community customs are eroded, which decreases and illegitimizes the community resource management system. In an example from Indonesian fisheries, centralized conservation policies, combined with collusion and self-interest have combined to threaten both resources and the community resource institutions that have sustained resources over centuries (Thorburn, 2000).

In order to overcome such problems, a resource management arrangement is needed that is able to balance the needs of government authorities with those of local resource users. What is needed is a genuine sharing of power over the management of the resource, in decision-making, planning and implementation. Co-management is one such

approach that attempts to incorporate elements of ICDPs, decentralization, devolution and community-based approaches into a partnership where governments and local communities share authority and responsibility for resource management (Pinkerton, 1989). In the next chapter, co-management will be examined further with regard to how it allows for the integration of development and conservation with the full participation of local communities.

Chapter 3

Co-Management

As previously discussed, ICDPs, decentralization, devolution and community-based management are all genuine attempts at integrating conservation and development at the local level. However, conflicts continue to arise over local development and resource management issues. Conflicts arise because local communities feel as though they are excluded from conservation and development activities (government control and decentralization) or because government resource managers feel as if national conservation and development objectives are threatened (community-based management). The above approaches have been unable to achieve the necessary balance between stakeholder involvement, national conservation and development objectives and local conservation and development objectives.

Co-management is a further approach that attempts to combine elements from the above approaches to generate a management regime that is more suitable to all parties. In this chapter, co-management will be defined and it will be discussed on the basis of how it addresses the key problems in integrating conservation and development at the local level. There are three key issues that will be dealt with: 1) how the differing values and objectives of conservation and development are addressed, 2) how local participation and empowerment are included, and 3) how common property resource (CPR) management systems are included. These three issues form the basis of the main questions of the thesis: 1) the effectiveness of co-management at integrating conservation and development, 2) the ability for co-management to allow greater local participation, and 3) the ability of co-management to allow for the integration of conventional, state-led

environmental management with local CPR management systems.

3.1 Co-management Definitions and Examples:

Decentralization, devolution and community-based resource management have all been shown to exist on a continuum of community participation. Co-management is an approach that uses various elements from the above approaches in an attempt to generate a more suitable management arrangement capable of recognizing differing management cultures. Co-management is a term that is widely used in resource management, yet it is not precisely defined in the literature. It has been defined as a "process of shared decision making between decision-makers and resident shareholders who seek to optimize mutual good and to plan for the long term" (Reed, 1995, p. 133). Such a definition places the emphasis on the participation of local resource users in state-led management. It is important to recognize that within this definition, a distinction is made between the decision makers (i.e. government) and resident stakeholders (i.e. local people). The degree to which decision making powers are actually shared between these two groups depends on the agreement made (formal or informal) and the particular situation.

Co-management can be more broadly defined as various levels of integration of local- and state-level management systems (Berkes et al., 1991; Pinkerton, 1992; Notzke, 1995). Integration is the key element that allows for the combination of various techniques, values and approaches in order to achieve management objectives. This more broad definition incorporates not only the elements of participation, but also the integration of different management systems. It is unnecessary to precisely define co-management because of the wide range of management schemes that fall under the co-management framework, and examples of co-management exist that cover broad ranges of participation and integration. For the purposes of this thesis, co-management can be

defined as an arrangement where decision-making powers are shared between government and local resource users which allows for the integration of different objectives, values and approaches to resource management.

Co-management allows for the sharing of decision making powers between groups that may have different styles of resource management, such as the state/bureaucratic style and common property resource management style (Beckley, 1998). That is why a precise definition of co-management is difficult. In fact, a continuum of co-management agreements exist, ranging from arrangements where local people are merely consulted to those where local populations have all of the management power and responsibility (Berkes et al., 1991).

There are numerous examples of co-management agreements, both in Canada and internationally that have achieved varying degrees of success. In Canada, co-management has been used to manage resources jointly between government and Aboriginal groups (Royal Commission on Aboriginal People, 1996). Probably the most well known international co-management agreements are found in Australia, where much has been written about the co-management agreements between Aboriginal people and the government to manage national parks (De Lacy, 1993; Davis and Weiller, 1992; Richardson 1992). Co-management agreements also exist for the management of forest reserves in Zaire (Matose, 1997; Bruce et al., 1993), India (Corbridge and Jewitt, 1997) and in Samoa (Cox and Elmqvist, 1997), among others.

Co-management has been developed as a potential method to integrate common property resource management practices with those that are state-controlled. By creating a partnership where authority and responsibility for resource management is shared between local and state management systems, it is more likely for common property

resource institutions to remain intact in the face of government control and integration into capitalist systems of production and trade (Thorburn, 2000).

Co-management agreements have evolved into a method to deal with the above mentioned conflicts in environmental management. Since the goals and values of state resource departments and those of local groups are often quite different, the framework of co-management can allow for the incorporation of both sets of values into the management of the resource. When diverse groups are included in co-management process, they are able to articulate their diverse values.

Government agencies based their policies on traditional western notions of conservation. These policies, based on the view of nature as "an untouched and untouchable wilderness", ignored the "historical relationship between people and their habitats and the role people play in maintaining biodiversity in forests and savannas" (McNeely in Cox and Elmqvist, 1997, p. 85). In many developing countries, rural inhabitants view the land and the resources as communal property that can neither be individually owned, nor traded, as in the case with private or government-owned land. A major feature in many rural resource systems is communal control of the resource. Co-management allows for sharing of control over common property resources between government and local users. Enforcement of norms, rules and regulations must be based on a community value system that is agreed upon by all of the group members and government (Berkes et al., 1991).

One of the most important reasons for co-management is to provide a means for different stakeholders with conflicting values to share a resource and participate in its management (Notzke, 1995). By agreeing to a management system that allows for joint-use of a resource, it is likely that conflicts will be reduced. If members of all the

stakeholder groups can agree upon and coordinate a management scheme, there is greater potential for sustainable use of the resource. Co-management allows for bilateral and multilateral agreements between local residents, government officials and non-government organizations so that conflicts can be resolved while maintaining sound environmental management. With co-management, local bodies can make locally appropriate decisions and reduce state/local conflicts that result from state decisions that are made thousands of kilometres away (Pinkerton, 1996). The assumption is that local bodies have greater flexibility to design appropriate local regulations and offer a greater chance of compliance than state regulations that originate at a distance (both physically and by way of understanding local conditions). However, in order for the assumption to hold, local bodies must have the authority, power and competence to do so.

Enforcement is also most likely to succeed if such activities are shared between the state and local users (Hawkes, 1996). In theory, the possibility of voluntary compliance increases because local resource users have a say in how the resource is managed. Local management bodies, run by local citizens, also have a vested interest in the sustainable use of resources and therefore, are more considerate of the long term benefits of resource management (Pinkerton, 1996). Local resource users have the benefit of participating in decisions that affect their access to resources while government managers have the benefit of greater acceptance and compliance with government regulations (Berkes, 1994).

Based on the above definition and experiences, co-management has the potential to be used as an effective tool in overcoming conflicts with local development and conservation. Co-management has the potential for linking conservation with local development, for increasing local participation, for integrating common property resource

management systems and for the integration of local social, economic and environmental objectives.

3.2 Problems That Co-Management Must Address

Co-management provides a potential approach to integrating conservation and development with the involvement of local people. It allows for conflicts that result out of conflicting views to be resolved by integrating local resource management techniques, values and customs with those of government-led conservation.

Based on the above discussion of co-management, there are a number of aspects that must be considered when examining a particular co-management agreement. It has been suggested that in order for conservation to be successful at the local level, it must be linked with a development component. Economic incentives must be generated for conservation that promote sustainable use of resources, social health and cultural sustainability.

Another important aspect is local participation. Local participation refers to the degree to which local people are empowered to make conservation and development decisions, the stages at which decisions are made (planning, design and implementation) and the manner in which participation is sustained through local institution building. When these three aspects are combined, can co-management be effective at integrating conservation and development?

A final aspect that must be considered with co-management is common property resource management systems. In order for co-management to be successful, existing traditional and local strategies for the environment, economy and society must be considered. These strategies need to be integrated into any new management arrangement that includes local values with government values.

Therefore, by examining the integration of conservation and development initiatives, local participation, and local common property resource management systems, the appropriateness of co-management arrangements can be analyzed.

3.3 Importance of Linking Conservation and Development

Conservation is of secondary importance to most rural inhabitants in the Third World. While there are numerous linkages between rural livelihoods and the environment, the primary concern for rural residents is to create conditions in which they can satisfy their basic needs for survival (Hackel, 1993). The satisfaction of such needs deals primarily with the alleviation of poverty and, therefore, is often the focus of development projects. Rural residents generally view conservation as a worthwhile goal yet they believe that it should not take precedence over people (Hackel, 1993). Wells and Brandon (1992) describe successful cases of rural resource management that meet two objectives: to increase the income of individuals through access to the resources, and to conserve the resource base. They include projects associated with tourism revenue development in Amboseli National Park in Kenya, collection of non-timber resources in Royal Chitwan National Park in Nepal, and local income- generating activities such as agroforestry, reforestation and ecotourism in the Osa Peninsula, Costa Rica (Wells and Brandon, 1992). Such an approach demonstrates the importance of dealing with issues of social security as well as dealing with resource management or conservation issues.

Many rural communities in the developing world either maintain subsistence-based agricultural systems or are dependent on the natural resource base as their primary source of income. For them, employment offers an increase in security or a cushion for the inevitable instances where agriculture fails due to natural phenomena such as drought or disease. Therefore, rural populations view employment opportunities as much more

important than conservation (Hackel, 1993). The difficult dilemma of economic development over conservation is common in most poor rural areas and poses difficult problems for conservationists. Unless local populations see themselves as deriving direct benefits from conservation, it is unlikely that they will take measures or be enthusiastic about actions in that direction (especially if conservation limits their access to resources).

Therefore, successful conservation projects must involve an integration of rural economic development and conservation. Unless projects generate higher revenues through economic opportunities, higher yields for sustainable practices than unsustainable ones, and resource-based activities that remain in the hands of local people, sustainable development will not be profitable and conservation efforts will be bound to fail (Viet et al., 1995). These issues deal primarily with measures that would alleviate poverty. By increasing revenues generated at the local level, economic incentives can be created that do not necessarily involve environmentally destructive behaviour. However, sustainable rural development is bound to fail if greater benefits can be obtained by unsustainable practices. Social conditions must be improved and the linkage between increasing economic welfare, local participation and conservation must be demonstrated for any conservation effort to be achieved.

The time frame over which profits from conservation and development are generated is also important. When the economic situation is precarious, people are more likely to support projects that generate revenues in the shortest time period, regardless of long term consequences. They do not have the flexibility to make investments in the future. For example, leaving valuable timber in a forest increases the value of the timber over time, however, that fact is not of concern to someone who needs to capitalize on that value in the present (Fearnside, 1999).

Ideally, the co-management framework (through local participation in all activities) provides opportunities to generate economic incentives for local people in a sustainable manner. The Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) in Zimbabwe is an example of a co-management arrangement where authority, management, production and benefit are all primarily situated with the local producer community (Metcalfe, 1994). The Gwaii Haanas Agreement in Canada allows for local community development and livelihood security in conjunction with national park management (Hawkes, 1996). Co-management can promote ecologically sustainable use of the environment, social health and cultural sustainability of the local population and direct economic benefits (Berkes et al., 1991). It can, therefore, effectively link conservation to local development by allowing for participation of both resource managers and local communities.

3.4 Importance of Local Participation

One of the key elements of integrating conservation and development is the involvement of local people. Local participation is now seen as one of the most important ingredients that allows for the successful implementation of integrated conservation and development projects (Wells and Brandon, 1992). Effort to increase local participation in conservation and development has arisen out of the problems encountered with highly centralized and non-participatory programs of the past (Little, 1994). Therefore, if the co-management approach is to be used, an examination of the importance of local participation and the potential for co-management to create opportunities for local participation must be included. This section discusses the importance of local participation and how co-management provides opportunities for greater local participation.

Any examination of participation must include an examination of the degree of local involvement, the stages at which participation occurs and how local participation is linked to the sustainability of programs. These factors are all significant in influencing the success of integrating conservation and development programs, and co-management provides the opportunity to address them. Without local participation, the potential exists for greater conflict between local people and conservation managers regarding desired goals, values and desired outcomes.

The various degrees to which local participation occurs are best illustrated the typology of citizen participation developed by Arnstein (1969) and adapted by Berkes et al. (1991) and Matose (1997) for co-management of resources (Table 1). In this diagram, the levels of participation range from non-participation to full participation. Participation refers to the means to which "have-nots" join in determining how information is shared, goals and policies are set, programs are operated and benefits distributed (Arnstein, 1969). Local participation is measured in this method by degrees of authority or power that local people have and it refers to the means by which they can influence change. Depending on the co-management arrangement, the level of local participation can fall anywhere on the ladder, which reflects the variability of different arrangements to generate genuine participation. Greater local participation in co-management may or may not result in more efficient management of the resource but it will certainly be more compatible with local needs (Berkes et al., 1991). It is insufficient to examine participation by itself, the examination must also include how people participate and what authority their participation includes.

By examining the authority vested in local people, the element of empowerment is introduced. Empowerment refers to the ability of one group to make institutions

responsive to their views, aspirations and needs (Arnstein, 1969). In the context of resource management, empowerment has been defined as the ability of local communities to have control over and shared benefits of local resource initiatives (Scheyrens, 1999). Regarding participation without including an examination of empowerment misses the point because there are many instances where people have participated a great deal in a project but they have no real power in what goes on. Co-management arrangements can involve the full delegation of real decision-making power to local people (Hawkes, 1996), thereby empowering local communities.

Another important aspect of local participation in need of consideration is the area in which local involvement occurs. Ideally, local participation would occur throughout, however, this is rarely the case. Kiss (1990) identifies three areas where local participation is particularly important: participation in benefits, participation in planning and design and participation in implementation and management. Local participation in benefits is important because it is necessary to obtain local support for conservation and to compensate for the potential costs of conservation such as the loss of access to resources or the limiting of activities. The benefits may be direct, such as increases in income, or indirect, such as improved sanitation or nutrition, but the benefits must be directly linked to the conservation objectives (Kiss, 1990). There are numerous examples where local participation in benefits from conservation is enhanced through co-management arrangements. Local communities have participated in benefits through tourism (Prystupa, 1998), wildlife management (Metcalfe, 1994) and park management (Notzke, 1995).

Local participation in planning and design is also important. Involving local populations at the beginning of a project allows for local views and perceptions, needs,

traditions, constraints and expectations of the resources in question to be included. If this occurs, it is more likely that desired benefits to local populations will be obtained and therefore, conservation will be successful. Finally, it is important to include local participation in the implementation and management of the project.

The implementation of conservation projects requires organizational, technical and managerial elements. In order for conservation projects to remain sustainable over the long term, local participation must be included in all of these aspects (Little, 1994). There are many instances where projects run smoothly through the implementation phase, yet it becomes unlikely that project activities will continue because of over-reliance on donor funding or field staff (Wells and Brandon, 1992). In order for this to be avoided, many conservation and development projects involve a training aspect in which local residents are able to acquire technical, managerial and organizational skills. One example of such a case is in Kakadu National Park in Australia, where a co-management agreement outlines the obligation to train local Aboriginals in skills necessary for them to participate in park management. Local members of the various Aborigines communities that comprise the Gagudju Association were involved in an Aboriginal ranger training program that involved local residents in conceiving, planning and implementation of management techniques (Hill, 1983).

Local participation can be seen as both a goal and as a means of achieving goals (Little, 1994). Participation allows communities to have greater control over resources and decisions that directly affect their lives. It also provides a means to achieve social and economic objectives. It is for these reasons that local involvement in resource conservation is a primary objective of current conservation movements. The most important area in which local involvement is sought is in the area of determining goals

(Uphoff et al., 1998). Unless resource management goals match those of the local resource users, constant conflict will result. The determination of goals hinges on the aspect of participation in decision making. Local people can only have their objectives heard and considered if they are a part of the decision making process.

Closely associated with decision making power is local empowerment. The ability to make locally specific decisions with regards to the environment, society and the economy is important. It includes the ability to resist the infringement of others onto economic or cultural interests that are valued by the individual or community and the ability to promote those interests in which others are willing to accept (Uphoff et al., 1998). This allows local interests to influence resource management regulations and the planning process.

In order for conservation and development projects to remain sustainable over the long term, all of the elements of local participation must be maintained (Little, 1994). Local level participation must be promoted from the beginning in the design, implementation and management of projects at the local level. There are two ways in which organization for continued participation can be achieved. The first involves the use of agents of change, who are described as field workers or extension workers that are employed for implementation of the project and for mobilizing the community around the project (Wells and Brandon, 1992). This approach achieves results quickly, however, there is no organizational structure to support the project activities once the agents of change are removed unless some sort of local structure that existed previously is able to take over.

The second approach for organizing for local participation involves the recognition or creation of local institutions. The Nyaminyami Wildlife Management

Trust in Zimbabwe, is one example where a local institution was created with aid from local residents, local government and the national government parks department, with the specific goal of participating in conservation and development projects (Metcalfe, 1994). In another example from Suriname, the Foundation for Nature Conservation Alusiaka (STIDUNAL) arose in a time of civil conflict and it was subsequently used for participation in conservation and development at the village level. Either way, institution building has been argued as more effective in sustaining local participation than relying on individual agents of change (Wells and Brandon, 1992).

Institution building has been defined as "the creation of procedures for democratic decision making at the local level and the involvement of local people in these procedures to the extent that they regard them as the normal way of conducting community affairs (Midgely in Wells and Brandon, 1992: 82)." With the use of local institutions, project activities are incorporated into the manner in which the community functions. Project decisions are not seen by the community to be authoritatively imposed by outsiders and enforcement is more likely. Once project activities become part of the community, they are likely to be self-sustaining when funding for the project inevitably runs out. While the local institution building approach is much more time consuming than the use of agents of change, the potential for greater benefits over the long term exists.

From the literature on local participation it is evident that numerous aspects are important. Successful community based conservation and development projects must have high degrees of local participation. This participation refers not only to the depth of participation but also to the breadth of the community that participates. The stages at which participation occurs is another critical element. Successful local participation programs involve local residents at all levels of the planning, implementation and

managing stages. Participation is also important as both a goal and as a means of achieving goals. It allows for specific goals to be achieved, goals that are often simply for empowerment, or being able to control the conditions which affect day to day life. Finally, it is important to obtain sustained participation. Sustained participation can only be achieved if local institution building is incorporated into project activities so that they become a part of community activity.

3.5 Importance of Common Property Resource Management

Most rural communities in the developing world base their economies on subsistence agriculture or the use of natural resources, to varying degrees. Such activities involve the joint use of communal property in which many families share resources. There exists a wide range of common property resource systems that vary greatly in the resources that are used, the manner in which resource decisions are made and how the management of the resource is maintained. Therefore, in many situations, co-management arrangements will need to consider the reasons for common property resource systems, the types of resources that are managed communally, the way that these elements affect the manner in which local resource decisions are made and the way that resources are traditionally managed.

Hardin (1968) described, in a simplified manner, the "tragedy of the commons" using an example of grazing land. Without privatization or government control, the resource is expected to become depleted because users receive individual benefits with over-exploitation, while the costs are shared with all other users. The limitations to this theory have been often cited (Burger and Gochfeld, 1998; Feeny et al., 1990). The major criticism of the "tragedy of the commons" is that its impeccable logic applies to few actual cases, of which Western European communal property systems are one such case.

Stevenson (1991) defines common property resources as "a form of resource management in which a well-delineated group of competing users participate in the extraction or use of a jointly held, fugitive resource according to explicitly or implicitly understood rules about who may take how much of the resource (p. 46)." Essentially, the number of users is limited to those who are members of the defined group, each user has knowledge about their rights and limits, and decisions are made as a group process. Common property resources are an example of resources that are managed directly by local groups.

There are two main concepts that can be derived out of Stevenson's (1991) definition. The first concept refers to the physical and environmental aspects of the resource and the human pressures placed upon it. The second concept refers to the rules governing the use of the resource. The rules that govern use are an indication of management decisions that are made to control access to, or use of, the resource. A relationship exists between physical aspects of common property resources (such as resource scarcity) and the level to which communal resource management decisions are institutionalized.

The physical and environmental aspects of the resource are of little consequence in this discussion about resource management. It is the way that resource decisions are made, who makes them and how those decisions are made that is of interest. The main point that must be made is that the resource in question is indeed a common property resource (or was prior to conservation intervention) and that a management system is necessary.

Common property resource management systems have been identified as a potential area for development assistance for the rural poor. CPR management systems

are seen as providing a more equitable distribution of the benefits of resource exploitation through the controlled extraction of local resources for local benefit (Thorburn, 2000). Common property resource management systems are also an area of great interest for conservation. The emphasis that has been placed on participatory development and the potential benefits of common property resource strategies suggest that there is a need for examination of the relationships between the environment, the economy, social systems and resource management systems because of participatory developments broad scope (Jodha, 1992). There is a need to integrate such systems within Western notions of resource management in order to avoid conflicting views on the way resources are used.

Before development initiatives are implemented where CPR management systems exist, the impacts of external involvement (through regulation) on resource management systems should be considered. The implementation of overly strong, centralized institutions has the effect of eroding existing local institutions (formal and informal) and further degrading the resource (Jodha, 1992). However, if the management system does not have a strong institutional base, resource degradation may also occur. A fine balance exists between the organization of society around a resource system and the successful management of the resource (Jodha, 1992). Therefore, there is a need for some type of management regime, where genuine power sharing allows for the integration of communal property systems with those of the state, such as co-management (Sekhar, 2000).

Runge (1992) describes three main factors that lead to common property resource management systems: poverty, dependence on natural resources and uncertainty. Poverty limits the opportunities for individuals to take advantage of privatized resources. The act of creating the institutions for private property is very expensive. It is expensive to survey

land, to have courts that respect land titles and monitor for compliance of obedience to private property rules. Moreover, local beliefs or customs may not recognize property rights in the Western sense, but recognize the right for all to use the land and its resources (Berkes, 1994). For those individuals who live on a subsistence level, communal use is a necessity and a way of life.

The dependence on natural resources is another factor that leads to the development of common property resource management. The distribution of natural resources and the natural phenomena upon which they are dependent occurs in a random pattern over the landscape. Such conditions make it extremely difficult to assign exclusive use rights to a certain area equitably. Common property institutions tend to reduce the environmental uncertainty faced by resource users (Runge, 1992).

Uncertainty is the final factor that leads to communal management of resources and it is a direct result of the previous two factors. Where poverty exists, the options available for subsistence are limited to the use of the natural resources in the surrounding area. When entire livelihoods are based on resources that are affected by the randomness of the environment or require collective effort (i.e., rice fields and irrigation agriculture), people tend to coalesce into groups. Communal management allows users to share in the benefits of resources and to distribute the losses equitably. Such behaviour is a hedge against uncertainty, where, instead of acting like rational individuals, people will accept less than a best case scenario in order to avoid a worst case scenario (Runge, 1992). The solution for the management of common property resources is to place the property rights of the resource in the hands of certain users. Common property resource (CPR) management does this within the framework of group control.

Other important considerations with common property resources are the types of

resources and conditions under which they can be managed through group control. There are many examples of common property resource management systems that cover many different resources, such as water, forests, wildlife, fisheries and grazing lands (Cousins, 1996). Common property resource institutions rely on local beliefs and customs to provide the various rules and conventions regulating the use of these resources (Sekhar, 2000).

Common property resource (CPR) management systems have been successful in managing natural resources and protecting biodiversity in numerous situations (Berkes, 1989; Ostrom, 1990; Bromley, 1992). However, increasing pressures on resources through the extraction of raw materials, expanding modification of the environment and the erosion of traditional values and norms has led to the intervention of the state in the management of CPRs.

In many cases, CPR systems have become impractical as a result of new challenges from a more integrated society where communal values are not as strong. This has resulted in attempts at state control where further degradation to the resource has often occurred due to the failure of the state to consider local management approaches and policies (Sekhar, 2000). Both of these issues suggest the need for a type of management regime that allows for the sharing of decision-making powers between communal property resource management systems and state control (Pinkerton, 1994). In Indonesia, the local management of marine resources provides an excellent example of a CPR management institution where both the resource and the institution have been threatened by centrally-imposed state management techniques (Thorburn, 2000). Attempts are now being made to use a mutually beneficial co-management regime that could serve the interests and employ the inherent knowledge of local communities, resource users and

government agents in Indonesia (Thorburn, 2000). Another example is of the Nunavut Wildlife Management Board (NWMB) that uses both scientific knowledge and traditional Inuit knowledge in its co-management arrangement and addresses the diminishing communal values with state control of resources (Rodon, 1998).

While the management of resources communally has been successful in the past, the integration of state-led management should continue to include such approaches where they still exist through the use of co-management. Co-management has become increasingly significant in the contemporary world where local-level traditional controls to resource management alone are no longer sufficient as a result of increasing national and international pressures on resources (Berkes, 1989). In many instances, the integration of scientific knowledge with traditional knowledge has improved resource management systems. Therefore, co-management should include not only the sharing of decision-making responsibility and authority, but also the integration of different resource knowledge systems (Rodon, 1998).

Chapter 4

Methods

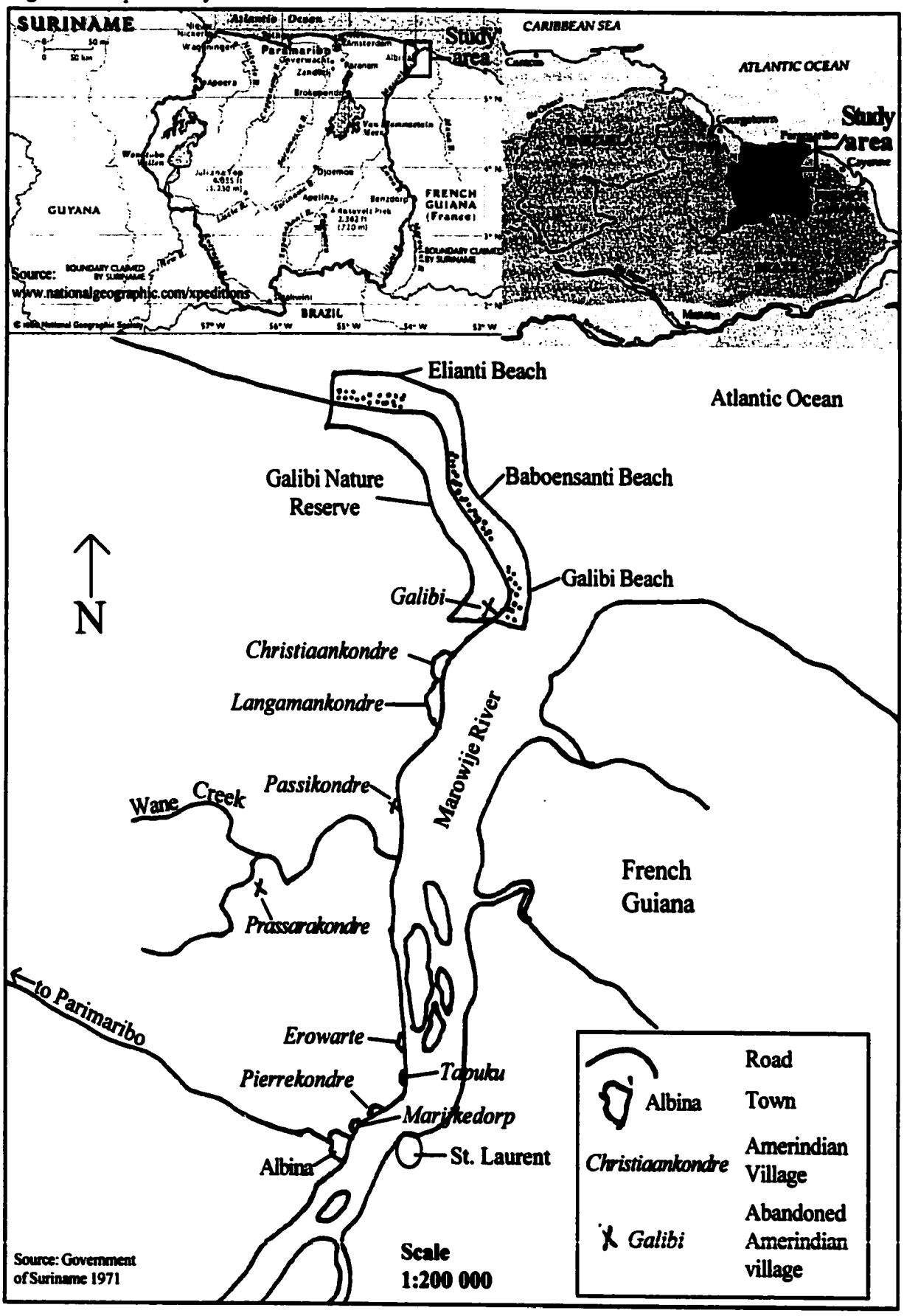
The co-management arrangement for the Galibi Nature Reserve was used as a case study to determine the ability of co-management: to address conflicting conservation and development issues, to increase local participation in resource management and to integrate state resource management systems with common property resource management systems. This chapter will outline the methods by which the information for the Galibi case study was collected. It will begin with a description of the study area, followed by the rationale for the case study approach, the theoretical propositions that guide the research and finally will conclude with the data sources, scope and limitations.

4.1 Study Area

Suriname is located in tropical South America, on the North-East coast between French Guiana and Guyana (see Figure 1). Formerly a Dutch colony, this relatively small, sparsely inhabited country gained its independence in 1975. Of the approximately 425,000 inhabitants, 70% are concentrated in and around the capital city of Paramaribo, 25% in small towns along the coastal plain and 5% in the Savanna belt and the interior along the Marowijne, the Suriname and Saramacca rivers. With such population concentration in the city, the remaining 90% of the country has a very low population density.

The majority of the country is covered by a vast expanse of tropical rainforest and is largely untouched by humans. While lowland tropical rainforest makes up nearly 90% of the landmass, there exists great diversity ranging from swamps and mangrove forests in the coastal region, to forested highlands along the Guyana Shield with forested and

Figure 1: Map of Study Area



swamp savannas interspersed throughout (Baal, 1999). These various ecological areas are intersected by numerous rivers.

As can be expected with the diversity in landforms, both flora and fauna species diversity is great. It has been estimated that there exist 138 unique tree species in the lowland forest portion of the Guyana Shield alone and the overall level of plant endemism is estimated at 40% (Conservation International and Government of Suriname, 2000).

The peoples of Suriname are very diverse as well. There are numerous ethnic groups that inhabit the capital and coastal towns, however, in the more isolated regions of the interior, the population consists mostly of Amerindian or Maroon communities (approximately 12% of the total population). Such communities range from those that are completely isolated and rely solely on hunting, fishing, shifting agriculture and non-timber forest products to those that are well integrated into the national wage economy.

The specific study area includes the Carib villages of Christiaankondre and Langamankondre, and the Galibi Nature Reserve (see Figure 1). These two traditional Amerindian villages comprise approximately 1000 inhabitants who use the surrounding area for subsistence activities such as hunting, fishing, agriculture and gathering of timber and non-timber resources.

Traditional tribal societies have faced radical change since the 1980s, much of it brought about by the expansion of logging, mining and other natural resource exploitation in the interior, bringing the government into conflict with the indigenous tribal communities. Between 1986 and 1992, the Government of Suriname and the tribal communities of the interior were in a state of civil war. Rapid expansion into the interior without recognition of traditional land rights was one of the main causes of the conflict. The conflict illustrated the degree to which various groups felt threatened by the

expansion of forestry and mining concessions in the interior. The peace accord that was signed in 1992 recognized the right of citizens of tribal communities to secure communal land title and the right to pursue economic activities in an economic zone surrounding those communities. However, the agreement has yet to be implemented, economic development in the interior proceeds in an *ad hoc* manner, and traditional land rights have yet to be formally implemented. Therefore, trust between local communities and government is an important issue.

4.2 Rationale for Use of Case Study:

The method that is used in any study is dependent on the questions that are asked and the conditions under which such questions are asked. The case study approach was considered in this study because it represents the best method for guiding contemporary questions in which there is very little control over behaviourial events (Yin, 1989). The case study allows for the detailed examination of a particular situation that can then be used to examine general theoretical problems. The case study approach is also flexible in nature so that the research can respond to evolving events.

Critiques of the case study approach are commonly based on the lack of rigour or bias of the researcher, the difficulty in maintaining external validity and that such an approach is too time consuming. These problems can be addressed with a rigorous research design and a well organized approach to research.

The research began with an extensive review of co-management, conservation, development and common property resources in the literature to identify research questions which served to anchor the case study research. Canadian Crossroads International provided the opportunity for obtaining volunteer work experience in Suriname. Through contacts with work placement at the Association of Indigenous

Leaders of Suriname, the efforts for conservation and development at the Galibi Nature Reserve became evident and were the impetus for the case study location.

Since the focus of the case study research was on the ability of the co-management arrangement for the Galibi Nature Reserve to integrate conservation and development through the involvement of local people, reliance on qualitative data was necessary. While it would have been possible to quantify reaction of individual village residents to the co-management arrangement through a close-ended questionnaire, it was felt that this would not provide an accurate picture of the situation. By allowing interviewees to frame the problems, solutions and responses through open-ended questions, the research was able to proceed beyond the rigid structures of quantitative data based on questionnaires.

External validity is a common concern with case study research. External validity was addressed in this study through a thorough literature review prior to beginning the study that provided the background that enabled similarities and differences to be identified which could then be generalized to the wider field of conservation and development. Attempts were made to corroborate all information through the use of various sources of information.

4.3 Key Theoretical Propositions

Based on the literature review, three key theoretical propositions were examined that were deemed to be essential for co-management of the Galibi Nature Reserve and they have already been described in previous sections (Chapter 1 and Chapter 3). A feminist framework for participatory development provides the rationale for the inclusion of local people in development and conservation. It focuses on micro-level decisions, highlighting of complexities, differentiation between strategic and practical needs and a shift from welfare to empowerment. The discussion on co-management focused on the

issues of linking conservation and development, local participation and local common property resource systems which follow the suggestions from feminist development literature. These two sections can be combined to create three key theoretical propositions and they are as follows: 1) in order for conservation to be achieved it must be linked to local, micro-level development activities, 2) local people must be able to participate and have the authority and power to participate in the decision-making, implementation and management processes (which is a shift from a welfare to empowerment), and 3) common property resource management systems must be integrated with state management systems (which highlight the complexities of local resource management). The co-management agreement that exists for Galibi Nature Reserve for the conservation of marine turtles is examined below with regard to these propositions.

4.4 Data Sources, Scope and Limitations

Data sources for the case study included both written material (such as government and NGO documents), interviews with key informants and observations. The written documents provided crucial background information and detailed the manner in which environmental management proceeds in Suriname from the government/NGO perspective. The documents provided the legislation, mandates and regulations that demonstrated the way things were intended and provided contrast to what was actually occurring. Information at the local level relied more on interviews and observations and provided the material needed to determine what was occuring at the local level.

Interviews were conducted during the months of May through August 2000, and involved members of government, environmental NGOs, village leaders from Langamankondre and Christiaankondre, and tour operators involved in the conservation

of marine turtles in and around Galibi Nature Reserve as well as related tourism ventures. Many of the interviews at the local level relied on the use of translators. Two reliable translators were used who were both well recognized and respected in the villages of Christiaankondre and Langamankondre. The interviews always included some basic questions and followed a general framework (see Appendix 1) but were informal in style. Rather than adhering to a standardized survey-style format, the unstructured approached allowed the interview to pursue unanticipated issues and questions. The specific questions varied with regard to how the interviewee was involved in Galibi Nature Reserve, but generally dealt with how the stakeholder or interest group they represented was involved (goals, activities and degree of involvement) in conservation and development in Galibi. Detailed notes were kept of all questions asked and of all responses and respondents understood the purpose of the research and were assured of anonymity.

Written sources, interviews and observations were combined to provide a clearer picture of the potential barriers and incentives to the development of a co-management approach for conservation and development in Galibi. The data was summarized based on the source of the information and how it fit with the case study protocol framework that provided the guiding questions for interviews.

The scope of the research was an examination of the management arrangements for the Galibi Nature Reserve. The focus included the various interactions at the local, national and international level that influenced how management of the nature reserve proceeded. While it was important to understand the context under which conservation and development proceeded, the main conservation goal of the Galibi nature reserve was the conservation of marine turtles while the main source of development was through

ecotourism development.

Two resource limitations that were encountered were language barriers and available time. The official language of the country is Dutch, the majority of the population speaks Surinamese, and in the villages of Christiaankondre and Langamankondre, the predominant language is Carib. There was, thus, significant reliance on translation in interviews, documents and of secondary sources. There was an attempt to use reliable translators, who were well informed of the research objectives and of the study community, to overcome the obstacles of translation. As with any interview, bias on the part of the interviewee and the interviewer were introduced, but this was held to a minimum by corroborating evidence with multiple sources.

At the local level, there was reluctance to discuss anything about the specifics of the village way of life. This included any talk of specific tourism revenues from the arrangement with STINASU (the semi-government organization responsible for nature tourism). The reluctance was a result of previous experiences with ethnographic research in the village and it was necessary to stress that the focus of this research was on the management of the Galibi Nature Reserve and not intrusive research regarding the village way of life. It was also impossible to obtain specific revenues from STINASU, or the amount that was returned to the village for local development projects. Therefore, there was a gap in information regarding the full impacts of tourism.

The length of study was limited to the 4 month period of May to August, 2000, as a result of the overseas placement with Canadian Crossroads International. In such a short period of time, it was important to balance the need to gather as much information as possible with the concerns people might have over providing the information and building their trust.

Chapter 5

Case Study of Galibi Nature Reserve

In this chapter, the Galibi Nature Reserve is examined. A brief discussion of marine turtle biology is included to provide an idea of the difficulties encountered in conservation. The process by which the Galibi Nature Reserve was created is discussed, the organizations involved at the national, international and local level are examined and the co-management arrangement for the Galibi Nature Reserve is described.

5.1 The Galibi Nature Reserve

The Galibi Nature Reserve is located in the North-East corner of Suriname where the Marowijne River meets the Atlantic ocean (see Figure 1). The mixing of the fresh water with the ocean and the large sand bars and sandy beaches makes it one of the most significant marine turtle nesting sites in the Western Atlantic (Reichart, 1992). The 4,000 hectare reserve (4 km long by 1 km wide), contains the greatest biological diversity that can be found along the Suriname coast. While the entire Nature Reserve is protected under the 1954 *Nature Preservation Law*, its primary concern is to protect marine turtles and their nesting beaches. By creating the Galibi Nature Reserve in 1969, the government of Suriname made an important contribution to international marine turtle conservation efforts.

5.2 Marine Turtle Life History

There are four marine turtle species that use the Galibi beaches as nesting habitat, the olive ridley (*Lepidochelys olivacea*), green turtle (*Chelonia mydas*), the leatherback (*Dermochelys coriacea*) and the hawksbill (*Eretmochelys imbricata*). They range in average size from 45 kg for an adult olive ridley to 900 kg for the leatherback (Meylan

and Ehrenfeld, 2000). The various species exhibit similar life histories. The females of the species bury clutches of 100 eggs on coastal and estuarine beaches. The mature males and females gather off of the beaches to mate in the early part of the year and the females return to the beaches to lay between 1 and 10 clutches of eggs per year during the months of May through September (National Research Council, 1990). After nesting, the females return to the open ocean for a period of 1-4 years before mating again at the same site.

The turtle eggs are laid in a hole dug in the sand and they incubate for approximately 2 months. After the incubation period is over, the hatchlings dig their way to the surface and make their way to the water. The hatchlings spend their early years in the off-shore waters, feeding off the surface. The majority of the hatchlings activities during these years remain a mystery and are thus called their "lost years" (Meylan and Ehrenfeld, 2000). After an unknown period of time, they reappear in the coastal zone, bays, river mouths and estuaries where they spend their juvenile life eating and growing until they reach maturity, which can take between 10 and 50 years, depending on the species (National Research Council, 1990).

The life span of marine turtles ranges from 50 to 75 years or more. Such a long life span and a long period to reach maturity poses many difficulties in assessing the status of populations and conservation efforts (Meylan and Ehrenfeld, 2000). Adult marine turtles that are observed nesting today, hatched decades ago when conditions were quite different. Therefore, it is very difficult to determine the effects of egg harvesting on populations when adult females continue to return to nest for 50 years, which gives the impression that populations are stable. Meanwhile, populations may be progressively depleted of hatchling, juvenile and young adults (Meylan and Ehrenfeld, 2000).

Marine turtle populations are difficult to estimate as a result of their cyclical

nesting patterns in which they may spend 1-4 years in the open ocean (National Research Council, 1990). Estimates are often based on the nests laid on a particular beach over time. However, there is no explanation for the considerable fluctuations recorded in the yearly number of nests (Schulz, 1982). In Suriname, there is very little data on the number of nests a female lays per nesting season and the length of the non-breeding cycle, therefore, it is very difficult to estimate population size (Schulz, 1982). The wide fluctuations are evident in Table 2, which shows the numbers of nests over the years. Data collection is incomplete and sporadic since 1990 as a result of the civil conflict. However, the population of olive ridley's appears to have declined significantly while the green and leatherback turtles have increased, with the exception of 1990, the beginning of the civil conflict (see table 2).

5.3 Creation of the Galibi Nature Reserve

The process by which the Galibi Nature Reserve was established is an important starting point. In the early 1960s employees of the Forest Service noticed large groups of olive ridley marine turtles nesting on the Elianti and Galibi beaches. This was the first report of large groups of olive ridleys nesting in the Western Atlantic and it prompted further scientific observation. It was determined that the area around the mouth of the Marowijne river was an important nesting site not only for these turtles (*Lepidochelys olivacea*), but also for the green turtle (*Chelonia mydas*) and the leatherback (*Dermochelys coriacea*) (Reichart, 1992). Since virtually all marine turtle species are threatened with extinction, the Suriname Forest Service proposed that all of the Galibi beaches (Elianti, Baboensanti and Galibi) be accorded protected area status.

Table 2: Number of nests per species, per year, in Suriname (Reichart, 1992; Reichart et al., 2000).

year	olive ridley	leatherback	green
1968	2875	200	5000
1970	1750	255	3115
1972	1270	380	6885
1974	1080	785	7465
1976	1160	670	8080
1978	870	2160	8465
1980	1020	1300	4510
1982	1045	3680	4180
1984	944	7291	7546
1986	537	3599	5879
1988	563	11436	6776
1990	175	1182	1524
1999	136	7524	7524

Under Suriname's *Nature Protection Law of 1954*, an area can be designated as a protected area if it is "deemed to possess varied nature and landscape beauty or because of the presence from a scientific or cultural point of view, important flora, fauna or geological objects" (Government of Suriname, 1954). The *Nature Protection Law* and the *Game Law* (both from 1954) provide the legal basis for nature reserves, and in 1969, the Galibi Nature Reserve was formally created.

Since the creation of the nature reserve, there have been numerous conflicts between park managers of the Forest Service and the local Amerindian population that live near the Galibi Nature Reserve area. The conflicts usually revolved around issues relating to access to the reserve for subsistence activities and the collection of turtle eggs (Kloos, 1971; F. Baal, personal communication, June 23, 2000; R. Slyngaard, personal communication, June 21, 2000; anonymous interviewees).

The Amerindian population currently inhabiting the area are of Carib descent (see Kloos, 1971 for an ethnography of Carib society in Suriname). While there are no longer any permanent settlements in the Galibi Nature Reserve, there are numerous fishing camps, agricultural plots and the abandoned village of Galibi from which the reserve gets its name. Approximately 1,000 people live in the villages of Christiaankondre and Langamankondre, a few kilometres to the south of the nature reserve. Prior to the establishment of the reserve, the inhabitants of both villages used the reserve for traditional subsistence agriculture, hunting, fishing and the collection of turtle eggs for consumption and for sale. Much of the area around the villages, including the nature reserve, are considered by the village inhabitants as traditional lands and, therefore, nature reserve regulations were seen as an infringement on their rights (anonymous interviewees). The fact that tribal (or village) land claims have not been legally

recognized by government further adds to the tension relating to the management of the nature reserve.

Under the Surinamese constitution, Amerindian and Maroon rights are not property rights but customary law rights which can be superseded by statute constitutional law, Presidential and ministerial decrees, resolutions and regulations. Customary law only applies to villages and adjacent agricultural land, not to hunting, fishing or other resource use lands. According to this law, Amerindian and Maroon village and agricultural land rights will be respected unless there is a conflict with the general national interest (Government of Suriname, 1982). General national interest includes any project within the framework of an approved development plan such as mining, logging, tourism and conservation. Therefore, Amerindian and Maroon land rights are weak and subject to compromise from a number of different "national" objectives.

5.3.1 History of the Creation of the Galibi Nature Reserve

By 1967, numerous scientific surveys of nesting marine turtles had begun on all of the Galibi area beaches and it was determined that the local amerindian population harvested a significant number of eggs that would soon result in the local extinction of the Olive Ridley species. Since the local population were identified as a threat to the survival of the marine turtles as a result of over-harvesting of eggs for sale, their cooperation was sought in protecting the nesting sites. Village meetings were held to determine if the villages would cooperate in the 1967 project, funded in part by the World Wildlife Fund (WWF) and the Foundation for Nature Preservation in Suriname (STINASU). The project would require village inhabitants to mark and claim nests and they would be compensated at a rate of $0.01 (U.S.) per egg (approximately $1 per nest). Dissent was raised over such issues as the validity of the threat of marine turtle extinction, the amount

of money paid as compensation and the interference in their territory. Conflict between the perceptions of local resource users and government resource managers over resource abundance reflect the difference in perceptions and values between western scientific knowledge and traditional local knowledge.

In the end, the village agreed to cooperate. Through the project, 2500 guilders ($700 U.S.) was paid to 32 collectors, a number of villagers were hired as labour to build camps for biologists, and to rebury turtle eggs either in their original nests, or elsewhere for safe hatching. Similar projects were initiated in 1968 and 1969 where villagers participated in marking nests and were paid $1.50 U.S. per nest in both years.

While plans were under way for the development of the area as a nature reserve throughout the late 1960s, representatives from the villages were not involved in the process. They were first notified of the reserve by a sign on the beach and immediately jumped to conclusions, some erroneous, some not, about how the reserve would restrict their economic activities. It was felt that they would lose the right to hunt, fish, practice agriculture and collect turtle eggs in the vicinity (Kloos, 1971). While turtle eggs are used as a source of food, their most important use is as a source of income through sale to the urbanized public where they are considered a delicacy.

Village inhabitants were also informed of the construction of a guest house on the reserve, which was an attempt by park management to boost nature tourism in the area. Village concerns regarding hunting and fishing rights, infringement on what they considered their territory and the concern over the effect of increased tourism were not heard and were not included in the process of the creation of the nature reserve. As a result, there was strong resistance to the nature reserve from the beginning. Through village meetings, a resistance approach was decided upon where local people would

ignore nature reserve regulations and over-charge for tourist transport to discourage tourism to the reserve.

Eventually, through a series of meetings between forest service representatives and village leaders held in the early 1970s, it was agreed that residents of the local communities could continue to use the reserve for subsistence purposes (plant collecting, hunting, fishing, agriculture). STINASU obtained permission from the Forest Service to control the turtle egg harvesting with the cooperation of the local Amerindian community.

Through the turtle egg conservation program, STINASU assumed ownership of all of the turtle nests and eggs. They then contracted out the collection of eggs from endangered nests to local Amerindian harvesters. The eggs were then sold, by STINASU, to the urban public in Paramaribo, where they are considered a delicacy. Amerindian harvesters were paid a fee for collection and a fee for transportation of the eggs to the market in the city. Such a program allowed for government control over the turtle egg market and ensured that only eggs from endangered nests (resulting from high tides or beach erosion) were collected. Village residents were also allowed to collect eggs from nests outside of the nature reserve, but for consumption purposes only, and not for sale.

However, in the mid 1980s, based on research on turtle populations, it was determined that greater effort was needed to ensure the survival of the marine turtles locally. Therefore, the number of eggs that could be collected had to be significantly reduced to protect the species. The eggs in endangered nest sites (due to tides, beach erosion or high water levels) were no longer collected for sale, but were reburied in a safe location. The reported causes of continued population decline were continued poaching of eggs and turtle mortality as a result of off-shore fishing nets. With the pending elimination of turtle eggs as a source of income, greater emphasis was placed on nature

tourism to create other economic opportunities at both the national and local level.

In the midst of the civil conflict in the eastern portion of Suriname and in the interior (1989-1992), the nature reserve was occupied by local Caribs and both the Forest Service and STINASU were denied access to the area. Under such conditions, all turtle conservation programs ended, as did nature tourism to the area. It was also during this time that the Galibi Management Plan was created without input from the local level, as a result of the occupation of the nature reserve. However, one of the goals of the management plan is to increase local involvement in the management of the nature reserve (Reichart, 1992). The resolution to the conflict in 1992 began a new series of discussions and agreements on land rights nationally and on the sharing of benefits and costs of the nature reserve locally. The new partnerships in conservation and development have evolved from such negotiation and will be discussed below.

In order to examine the conservation and development situation in the Galibi Nature Reserve area, it is important to examine the post-civil conflict framework for environmental management in Suriname and all of the actors and organizations at the local, national and international level with interests in the Galibi Nature Reserve.

5.4 Environmental/Park Management Framework In Suriname

With approximately 90% of its original forest intact (Baal, 1999) as a result of the concentration of population and economic activities along the coast and in the capital city of Paramaribo, the potential for nature conservation in Suriname is considered to be among the best in South America. As such, there is recognition on the part of the Government of Suriname and of international environmental organizations that the future of economic development rests with appropriate balance between use and conservation of natural resources. Policies and legislation regarding protected areas play an important

role in achieving such a balance.

5.4.1 Role of Government Organizations in Galibi Nature Reserve

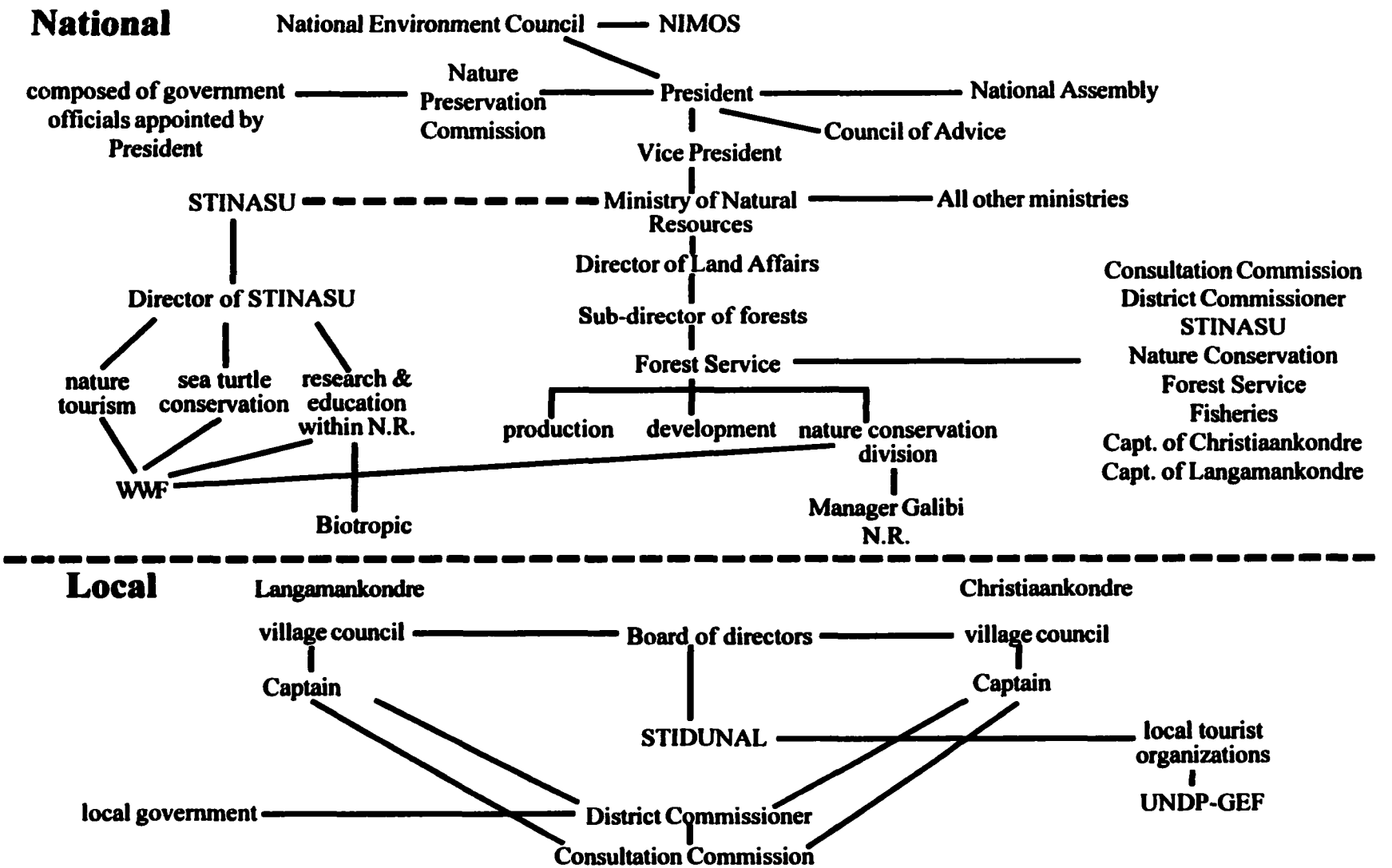
The *Nature Preservation Law* and *the Game Law*, both from 1954, form the basis of protected area legislation and management in Suriname. Based on those laws, the protection of the natural environment is needed for science, recreation and educational purposes, subject to ethical, aesthetic and economical considerations. To be designated a nature reserve:

> the area has to satisfy the following requirements: that it deserves protection by the Government because of its varied nature and scenic beauty; and/or because of the presence of - from a scientifically or culturally significant point of view - important flora, fauna, or geological objects (Government of Suriname, 1954).

Once an area has been declared a nature reserve and receives protected area status, the management for the area falls under the direction of the Nature Conservation Division of the Forest Service, a subdivision of the Ministry of Natural Resources (see figure 2). The Forest Service is the ultimate authority with complete control over all activities that occur in the nature reserves. The Nature Conservation division of the Forest Service is responsible for the development of management plans, patrolling and enforcement of rules and regulations in the nature reserve and nature reserve maintenance. Each protected area or reserve has its own manager who reports directly to the head of the Nature Conservation. The manager of the nature reserve is responsible for the day to day management activities and for ensuring that the mandate of conservation set out by the Forest Service is followed.

The government approach to nature reserve management appears to be very centralized. However, in the mid-1990's the Nature Conservation division instituted a two-track approach to nature reserve management. The change in approach resulted out

Figure 2: Relationships between Government, NGO's and Local Organizations at the Local and National Level



NGO = *non-governmental organization*
NIMOS = National Institute for Environmental Management
STINASU = Foundation for Nature Preservation Suriname
STIDUNAL = Foundation for Sustainable Nature Conservation Alusiaka
N.R. = Nature reserve
Capt. = Captain
UNDP-GEF = United Nations Development Programme - Global Environment Facility

of the recognition of the desire of local communities to have greater involvement in the management of nature reserves and over the conflicts between long-term objectives and short-term benefits.

The two-track approach has both a long term and a short-term focus. The long-term focus is on management plans and relies on input from local communities, rules of agreement and on consultation committees composed of government and local community officials. It fits into the model of decentralization discussed in Chapter Two, where greater local involvement is achieved in decision-making but the ultimate authority rests with the Forest Service. The short-term focus is on specific projects where greater authority is devolved to the local level for individual projects. It relies on lower level consultation between individual park managers and all of the local stakeholders that strive to meet the objectives of the management plan while providing benefits to local stakeholders.

The Foundation for Nature Preservation in Suriname (STINASU), a semi-government organization founded in 1969, also plays a significant role in the Galibi Nature Reserve. When the numerous nature reserves were being created, the government wanted to ensure that the reserves be used in order to justify their protection. STINASU was founded with the mandate to ensure that the goals of nature reserves (to promote scientific research, nature education and nature tourism) are achieved.

While the management and protection of nature reserves rests with the Nature Conservation Division of the Forest Service, STINASU was created to oversee research and nature tourism in the reserves. STINASU, a non-profit organization, enjoys the benefits of government support through wages to employees, the use of government infrastructure such as office space, trucks and boats and the exclusive right to nature

tourism within nature reserves in Suriname. Being a semi-governmental organization, STINASU is also in a much better position to receive funding from international conservation organizations. It is also able to avoid the bureaucratic tangles that allow it to provide more efficient services to tourists, to access supplies and to finance its own projects.

STINASU is run by a board of directors, of which the Minister of Natural Resources is the chair (the other board positions are filled by various ministers and directors of government departments). The board appoints a director who is responsible for the supervision of the three aspects of STINASU's work: nature tourism, marine turtle conservation and research and education within the nature reserves.

STINASU operates a guest house in the Galibi Nature Reserve and controls all tourism to the reserve. Interested tourists contact STINASU at their Paramaribo office and STINASU makes arrangements for travel, accommodation and meals. Apart from nature tourism in the Galibi Nature Reserve, STINASU is most active in marine turtle conservation and research.

Therefore, the Nature Conservation division of the Forest Service is responsible for all nature reserve activities such as patrol, enforcement and maintenance while STINASU is responsible for all activities that occur within the nature reserves, mainly tourism, research and education.

5.4.2 Role of International Organizations

There are numerous international organizations which sponsor and/or take part in conservation activities in the Galibi nature reserve. The WWF is the most prominent organization because of its interest in the protection of the endangered marine turtle species. They act as a broker that influence national and local organizations to promote

nature conservation and sustainable resource use. They provide the funding and the expertise for the development of management plans that meet the conservation objectives of the WWF.

As such, the goal of WWF is to simply provide funds and technical expertise for marine turtle research and encourage national and local organizations to carry out the projects. Under those circumstances, WWF commands significant power over national and local organizations that must meet WWF objectives to adhere to funding requirements (Drijver et al., 1997).

It is also the WWF that coordinates international efforts for sea turtle conservation. They are in the process of developing a regional sea turtle conservation program for Guyana, Suriname and French Guiana that focuses on protecting nesting habitat, reducing the threat of fisheries and improving regional cooperation in conservation.

Biotopic (a Dutch conservation organization) is also involved directly in the Galibi Nature Reserve, although to a lesser extent. Since 1995, Biotopic has carried out numerous studies on marine turtle populations as well as promoting conservation programs. They are currently executing a conservation program in cooperation with STINASU and STIDUNAL which includes field research, an awareness program and stimulation of international cooperation.

Finally, the United Nations Development Program (UNDP) Global Environment Facility (GEF) is active in the Galibi Nature Reserve as part of its biological diversity conservation program. The GEF Small Grants Program provides grant support to local NGOs and community-based organizations, aimed at the implementation of community-level activities that provide economic alternatives to unsustainable resource use (UNDP,

2000). In the Galibi area, GEF grants have been provided to village groups to outfit boats for tourism; allowing for greater participation in nature tourism, and increasing the economic benefits of marine turtle conservation. Therefore, they indirectly influence the use of tourism as a source of sustainable economic development at the local level.

5.4.3 Role of Local Organizations

After the resolution of the civil conflict in 1992, the villages of Christiaankondre and Langamankondre created the Stichting Duurazaam Natuurbeheer Alusiaka (STIDUNAL) (Foundation for Sustainable Nature Conservation Alusiaka) in order to cooperate directly with STINASU. STIDUNAL is an organization that is made up of a chair and board members who are elected by village councils. The stated objective of STIDUNAL is to represent the local indigenous community in the participation in the preservation of biodiversity and to stimulate local social, educational and economic development. In such a position, STIDUNAL promotes biodiversity research, nature tourism and organizes the lodging and recreational facilities in the village.

STIDUNAL acts as the only broker between STINASU and the village. It is through STIDUNAL that the village negotiates and receives the benefits of tourism to the nature reserve. When STINASU has tourists that need to get to the Galibi Nature Reserve, STIDUNAL is contacted and they arrange for one of the various community tour groups operating in the village to transport the tourists from Albina to Galibi. STIDUNAL is responsible for ensuring that the village tour boats provide formal and professional service for tourists and that they meet the standards set by STINASU. The money that STIDUNAL receives from STINASU for tourist transport is distributed to the various organizations in the village (who are represented by the various tour operators). There are no private, independent tour operators. Tourism transport is a communal

village activity. The revenue from transport does not go towards individual tour operators, rather tour operators are paid a portion for their time and the remaining revenue goes towards village projects.

STIDUNAL is also responsible for marine turtle conservation training and education programs in the village. They ensure that all of the tour operators are knowledgeable about turtles and that they know how to approach them safely without endangering the nesting process. STIDUNAL also promotes turtle conservation programs in the village through education programs aimed at school children. Finally, when STINASU requires labour for maintenance or construction projects in the nature reserve, it is STIDUNAL that recruits labourers from the village. STUDINAL has the authority to control the local economic benefits and it participates with other government and international organizations in the nature reserve management process.

Table 3 and figure 2 provide a summary of the organizations involved in the Galibi Nature Reserve and their interactions at the national, international and local levels.

5.5 Co-Management of the Galibi Nature Reserve

As mentioned above, the Nature Conservation Division of the Forest Service is responsible for the management of all activities that occur in the nature reserves in Suriname. STINASU has obtained exclusive permission for nature tourism in the nature reserves. However, due to concerns of local community members in the villages of Christiaankondre and Langamankondre, the process of management of the Galibi Nature Reserve has evolved into a type of co-management.

Co-management, as defined in chapter three, involves an arrangement where decision-making powers are shared between government and local resource users which allows for the integration of different objectives, values and approaches to resource

Table 3: Organizations involved in the Galibi Nature Reserve

	Organization	Role in the Galibi Nature Reserve
Government	Nature Conservation Division of the Suriname Forest Service	As a government agency, it is responsible for all nature reserve activities, management and enforcement of rules and regulations.
	Foundation for Nature Preservation Suriname (STINASU)	As a non-governmental organization (NGO) linked with the Forest Service, it is responsible for sea turtle conservation, research and nature tourism in all nature reserves.
International	World Wide Fund for Nature (WWF)	International NGO funds sea turtle research and conservation projects, provides logistical and technical support and provides funds for wage supplements for STINASU and Forest Service employees.
	Biotopic	Dutch NGO that undertakes sea turtle research and promotes conservation in cooperation with STINASU and STIDUNAL.
	United Nations Development Programme – Global Environment Facility (UNDP-GEF)	UNDP-GEF provides loans to local residents to take part in environmentally sustainable activities such as nature tourism. Local loans have been used to buy and outfit boats for tourist transport.
Local	Foundation for Sustainable Nature Conservation Alusiaka (STIDUNAL)	Local Amerindian organization responsible for biodiversity conservation and nature tourism activities in the villages of Christiaankondre and Langamankondre in cooperation with STINASU and the Forest Service.

management. With the Galibi Nature Reserve, there are two separate but related arrangements that together comprise co-management; a consultation committee which is responsible for determining management objectives and goals, and agreements between STINASU and STIDUNAL which determine the method in which the benefits and costs of conservation are shared.

The formal element of the Galibi Nature Reserve co-management arrangement is the consultation committee (the committee is responsible for determining management objectives and actions for the nature reserve). The committee is composed of the District Commissioner (the head of the local government), the director of STINASU, the head of the Nature Conservation division of the Forest Service, the head of the Fisheries Department, the Captain (village leader/chief) of Christiaankondre and the Captain of Langamankondre. The meetings are held four times a year at the location of all of the members on a rotating basis. It is at these meetings where grievances are voiced, solutions proposed and courses of action determined. Topics of conversation range from the development of management plans, expansion of tourism activities, turtle conservation initiatives and nature reserve rules and regulations. The functioning of the consultation committee rests on consensus decision-making where all concerns, objectives and approaches are considered equally. While various approaches are considered, the objective of marine turtle conservation is fixed and any activity that would have a negative impact on marine turtle populations rejected.

One excellent example of how the consultation commission functions relates to the closing of the fishing season. It was noticed by the residents in the Amerindian villages that a large number of dead, mature marine turtles were washing up on the beach as a result of being caught in off-shore fishing nets. The majority of off-shore fishing in

the area is not done by local people but by fishers that originate from Paramaribo. These concerns were raised at the consultation commission meeting by the village representatives.

Through discussions at the meetings, it was decided that the most suitable course of action would be to close the fishing season in the area of the Galibi beaches during the prime marine turtle nesting season between May and July. The Department of Fisheries was able to close the fishery because it had the backing of the local people, the Nature Conservation Division and the Forest Service (Baal, personal communication, May 30th 2000). As a result of conservation concerns raised by local residents, a fishery with significant outside interests was closed for the benefit of local conservation.

The consultation commission is the forum in which local people are represented in the decision-making process with regard to the management of the Galibi Nature Reserve. While the meetings are closed to the public, the elected Captains of the villages are present. Village representatives feel as if they have an equal voice on the committee and while disagreements are frequent, compromises are sought that are suitable to all parties.

The less formal arrangement between STINASU and STIDUNAL to share the costs and benefits of conservation is much more active. It focuses on short term goals and short term projects for both the conservation and development of nature tourism. Meetings are open to the public, are held more often, a wider range of topics are discussed and all stakeholders can be involved. While the consultation committee is where discussion occurs and plans are made, it is through the arrangements of these two organizations that integration of conservation and development occurs.

The arrangements between STINASU and STIDUNAL cover such issues as tourism revenues, activities and standards, marine turtle conservation and conservation

education. It works like this. In exchange for cooperation in marine turtle conservation, the village, through STIDUNAL receives economic benefits. Some of the benefits depend directly on the survival of the marine turtle population, effectively linking conservation to development while other benefits are indirect. Examples of direct economic benefits include employment, tour boat operations and traditional performances. Indirect economic benefits include payments by STINASU into village funds, sale of crafts and sale of food and refreshments.

In the agreement, all tourist groups larger than five people must be transported by Stidunal, using village tour operators. Tourists are charged approximately $15 U.S. per person for one way travel. STINASU provides training to tour guides to ensure that the guides meet the requirements of the Forest Service in the way that they approach nesting turtles. While transporting tourists, the tour operators often stop in the villages of Christiaankondre and Langamankondre where tourists can purchase handcrafts and refreshments from the village gift shop. Individuals construct handcrafts that are sold collectively in the gift shop, with the proceeds for each sale going to the individual artisan. A village traditional dance group is available to perform for tourists in the Galibi Nature reserve, for which the dancers are paid. At the end of every year, STINASU returns a portion of its profits from nature tourism in Galibi to STIDUNAL which is then used for various community development projects. A small guest house has been constructed by one of the tour groups in the village to obtain more revenue from tourism. STIDUNAL has also entered into negotiations to begin taking tourists to see the large number of birds that over-winter on the sand spits off the coast. The prime bird watching season does not coincide with the turtle nesting season so that the overall tourist season would be extended.

All labour for the nature reserve is provided by the village through STIDUNAL. When the nature reserve requires labour for maintenance or construction, STIDUNAL is contacted and they select people from the village to provide the labour. The village workers are then paid a wage from the Forest Service. While there is not a formal arrangement to hire and train village members for the Forest Service, there have been a few village residents that have worked as guards to patrol the reserve (R. Slyngaard, personal communication, June 21, 2000). Village members are also hired to provide services for the guest lodge in the reserve.

STIDUNAL is active in promoting marine turtle egg conservation in the village, however, they feel that there is very little external support for such activities. It is also believed that conservation efforts are focused too much on the village and not enough is being done to eliminate poaching of eggs in French Guiana or from other Amerindian villages. Much of the conservation education relates to how the economic benefits of tourism are dependent on the survival of the marine turtles. It then focuses on what can be done to improve the chances of marine turtle survival.

Through such education programs, the village decided to ban the commercial turtle egg harvest completely. According to village residents, such initiative came from the village and not the government. By deciding to ban egg harvesting, it suggests that the economic benefits that are received from nature tourism outweigh the economic benefits of turtle egg collection. However, it is unclear whether the benefits are immediate or over the long term as it was also a strategic move on the part of STIDUNAL designed to gain further trust from STINASU and the Forest Service and to demonstrate the village's interest in conservation and management (anonymous interviewee).

In summary, the co-management arrangement that exists between the villages of

Christiaankondre, Langamankondre and the Forest Service with regards to the Galibi Nature Reserve are comprised of two elements. There exists the formal consultation committee which is the forum for discussion on park management objectives, plans and actions and there is the arrangement between STINASU and STIDUNAL which governs how tourism activities and revenues are shared. The two elements are connected by the fact that STINASU is present in both bodies and STIDUNAL works in close cooperation with the two village representatives on the consultation committee.

Chapter 6

Analysis of Case Study

The co-management arrangement for the Galibi Nature Reserve has been described in detail. It will now be examined through the theoretical propositions that have been identified as essential for the integration of conservation and development at the local level. Three main theoretical propositions have been identified previously as being integral for effective co-management arrangements where the goal is to link conservation to development:

1) conservation activities must be linked to local development activities;

2) local people must participate with authority and power in the decision-making process of all activities; and

3) common property resource management systems must be integrated into state management systems.

These three propositions form the framework through which the co-management arrangement for the Galibi Nature Reserve is examined. They will be used to demonstrate whether they exist and if they improve the effectiveness of the co-management arrangement.

6.1 Linking Conservation and Local Development

While the manner in which conservation and development are linked varies from case to case in the literature, the main requirement is that local populations should benefit directly from conservation. There should be an arrangement where proponents of development and conservation can work together, and development objectives should be placed ahead of conservation objectives to gain local support. The co-management

arrangement for the Galibi Nature Reserve is assessed on the basis of how these elements are addressed.

In terms of conservation initiatives being directly linked to local development, the Galibi co-management has been successful relative to other examples in the literature. Unlike other examples, where local residents are simply compensated for limiting their resource use, in Galibi, development opportunities rely on the successful conservation of the sea turtle. The major development activities are based on generating income and employment from nature tourism. It is clearly understood that without the conservation of the marine turtles, tourism suffers. Therefore, local residents are interested in the conservation of the marine turtle, if only to increase tourism revenues. Conservation efforts and local development have been linked. The degree to which local people are involved in conservation and tourism can be debated (and will be discussed below), but at least to this extent, the success of development activities is dependent on successful conservation.

However, successful conservation of a migrating species such as the sea turtle is dependent on more than just local actions. The local development initiatives are dependent on the long-term survival of sea turtles, which in turn are dependent on numerous factors outside of local, and even national control. The regional sea turtle conservation program, developed by the WWF attempts to address this issue through a number of activities (education, capacity building, legislation and community support throughout the Guianas), of which the linking of conservation to local development is one example.

The second element of importance is how the co-management arrangement allows for the proponents of development and of conservation to work together. In Galibi, there

is the consultation committee which deals mostly with conservation and nature reserve management issues. Within this committee, representatives from the village, the government and the organization of STINASU are present, and together they set conservation goals and objectives, along with the rules and regulations to achieve them. Informants felt that their input in the consultation committee was considered and that they made valuable contributions for linking conservation to development.

With respect to development, the arrangement between STINASU and STIDUNAL involves development activities, mainly nature tourism. It is in this forum that development (tourism) activities, rules and revenue sharing initiatives are discussed. When STINASU and STIDUNAL come to an agreement on how to manage and share tourism benefits, their concerns and proposals are discussed at the consultation committee.

It is too simplistic to view proponents of conservation and of development as two separate entities. Due to the reliance of development activities (nature tourism) on conservation, conflicts between conservation and development initiatives have already been diminished in the Galibi case. The reliance on nature tourism necessitates co-operation between development activities and conservationist activities. The conflicts that do arise are frequently about various stakeholder's shares in tourism, and the rules and regulations governing tourism (ie development benefits), and not about the imposed conservation rules and park management regulations.

West (1991) warns against the potential for local development and conservation to be coopted by government or other outside interests (such as large NGOs). While the majority of the discussion on the subject fits in more under the section on participation, it warrants a brief discussion here. Due to the large number of organizations involved in

development and conservation in the Galibi Nature Reserve, (government, local, national and international NGO's, UNEP, and local government), it is difficult to determine who sets the objectives. All of these groups wield significant power in terms of funding requirements and, therefore, are able to determine the rules of the game under which conservation and development proceeds. For example, the UNEP-GEF grants support local small-scale tourism activities. The WWF provides funds for marine turtle conservation activities, financial and institutional support to STINASU to carry out sustainable tourism and technical help and research funding to the Nature Conservation Division of the Forest Service.

Meanwhile, many local residents have raised concerns about the appropriateness of increased tourism and the effects that it would have on the village way of life. In this regard, the dichotomy between local interests and conservation interests is similar to the problems encountered with ICDPs and the MAB projects. By placing the emphasis primarily on conservation and allowing development initiatives that meet certain conservation requirements, the potential for more appropriate local development based on local needs and objectives is lost. Such developments may in fact benefit conservation and would be more widely embraced by the community. Therefore, while nature tourism has been adopted by international NGOs as the method through which the village can benefit from conservation, fishing remains as the main source of income for many of the village residents. Valid questions arise about how tourism became the adopted practice and by whom. The issue rests with who has final control over what goes on, which will be discussed in a later section.

Many authors stress the importance of placing development objectives ahead of conservation objectives to gain support of local communities (Wells and Brandon, 1992;

Hackel,1993; Viet et al. 1995). The basis of this belief is that without greater benefits, conservation efforts will not be embraced by local residents. Viet et al. (1995) mention the importance of creating situations where local people can obtain higher revenues from sustainable practices than from unsustainable ones. When the Galibi Nature Reserve was created, there was an attempt to compensate local residents for conservation efforts by paying residents a fee for egg collection. However, the compensation was not deemed to be adequate and it did not involve enough of the local residents. Therefore, local residents did not participate fully in the conservation of marine turtles and conservation efforts were threatened.

The Nature Conservation Division of the Forest Service has always placed a higher priority on conservation efforts, which can be expected from a government conservation agency. STINASU has attempted to achieve a balance between conservation and development because of the understanding of the reliance of nature tourism on conservation. STIDUNAL, the village organization places greater emphasis on tourism revenues than on conservation activities. Through the various agreements that make up the co-management arrangement, attempts have been made to accommodate the development objectives of local residents with the conservation goal of the nature reserve. Sea turtle conservation has been linked to local development activities, however, the development opportunities of nature tourism have been imposed on the community through a combination of implicit and explicit external forces (government and international NGOs) and has not been completely accepted by the community.

As a result, it is evident that the co-management arrangement for the Galibi Nature Reserve has been successful in integrating conservation efforts with local development activities. Without considering the aspect of participation (which will be discussed

below), it can be argued that village development activities have been linked to the conservation of the marine turtles. Based on the fact that the village voluntarily decided to ban the commercial egg harvest, it is evident that through nature tourism, the village receives direct economic benefits which are greater than the potential economic benefits from harvesting turtle eggs.

6.2 Local Participation in Conservation and Development

It has been suggested that in order for conservation and development to be achieved, local residents must participate with authority and power in the decision-making process at all stages. Local residents must participate in the setting of objectives, planning, implementation and management. The ability of local communities to have control over and share in the benefits of resource initiatives through the establishment of local institutions to ensure continued participation is also important (Wells and Brandon, 1992).

Based on how empowerment has been defined above, both the Forest Service and STINASU are responsive to the views, aspirations and needs of local residents in the Galibi area and, therefore, some degree of local authority and empowerment exists. Local residents, through both STUDINAL and village representatives in the consultation committee, have the ability to shape the actions of STINASU and the Forest Service. There are many instances where the Forest Service or STINASU have modified plans in response to concerns by local residents. The closing of the fishing season (as described above) is one such example, as well as concerns over number of tourists, location of guest houses and tourism revenue. However, the consultation committee still relies on a top-down approach where local people are given responsibility to follow conservation objectives but they are not involved in the determination of such objectives other than

through their committee reprresentatives. While efforts have been made to force the commercial fisheries to adopt the use of turtle-excluder devices in their nets, sea turtle conservation efforts by the Forest Service and the WWF focus on the elimination of "poaching" as the main reason for marine turtles being threatened. While poaching of turtle eggs has an impact on sea turtle populations, it is by no means the only cause of population decline. Other factors such as impacts of off-shore fishing, development and modification of beach habitat elsewhere in the Guianas or the erosion of beaches play an equally important role. However, the primary focus when the nature reserve was created was the elimination of poachers. Therefore, the goal has been to create other economic options for "poachers" through tourism. While tourism may be the best approach to link conservation and development in the nature reserve, it was not an approach that was decided upon by village residents.

The problems with traditional park management still exist, (exclusionary, top down, hierarchical etc) and they are incorporated into development models based on the same approach (i.e.; modernization theory). By providing other tourism opportunities, greater economic benefits are expected to trickle down to all village residents and eliminate the need to "poach" turtle eggs. It is still a technocratic process where participation is limited to involvement with conservation objectives. Goals, objectives and methods of implementation are still set by protected area authorities and local residents are consulted and given the opportunity to participate with the predetermined goals, mainly tourism.

In the consultation committee, local participation is limited to the two representatives of the villages, being the two village Captains, and it is their responsibility to act in the interests of the village. Village concerns are heard and they are consulted

regarding marine turtle conservation, tourism, village revenues and the political situation. While attempts are made to arrive at a consensus for all decisions, authority still rests with the Nature Conservation Division of the Forest Service.

In the arrangement between STINASU and STIDUNAL, both organizations are empowered to make decisions. The conflicts that arise involve participation in consultation, setting of goals and planning, and they all occur at the village level and are not conflicts between the village residents and STINASU. STIDUNAL has been criticized by village residents for not generating enough involvement at the village level and not acting in the village's best interests, but in the interests of village residents involved in tourism. It is felt that STIDUNAL is not taking an active role in negotiating revenue sharing arrangements, but is simply accepting what STINASU offers. These problems are related to the accountability of STIDUNAL at the village level and are separate from the arrangement between STINASU and STIDUNAL. As a result of these concerns, the members of the STIDUNAL board were replaced through village council elections and the feeling within the new STIDUNAL board is that the village must take a more active role and increase its responsibility for getting the most out of the arrangement with STINASU. It is not STINASU's responsibility to simply provide benefits.

It is important that participation occurs in all stages, in planning and implementation, and in benefits (Kiss, 1990). Through the co-management arrangement for the Galibi Nature Reserve, local participation does occur. Village residents participate and benefit from the nature reserve directly in the form of employment and tourism and indirectly through revenue sharing which is deposited in a village fund for village development projects. Effort is made to consult local views, traditions, constraints and expectations in the planning stage. For example the village has been consulted about the

size, design and location of a new guest house that is planned for the nature reserve and there are frequent discussions with regards to expected tourism revenues.

Local participation in the implementation of conservation and development initiatives are relatively weak. As Metcalfe (1994) describes with the CAMPFIRE example, there has been difficulty in obtaining active involvement at the household level. Aside from the individuals actively involved in village organizations for nature tourism, village residents do not concern themselves greatly with nature reserve issues. While there have been a couple of village residents employed in the Forest Service as guards, there is no specific effort made to involve local residents in organizational, technical or managerial training in conservation activities outside of tourism. This is an area where STIDUNAL would like to become more active. However, with the arrangement between STINASU and STIDUNAL, the latter is left on its own to implement projects out of the revenues it collects from tourism. In this arrangement, once again, it is through village councils that village projects are created and implemented, generating high degrees of empowerment and autonomy in the distribution of tourism benefits.

Sustaining local participation in conservation and development has been very effective in the Galibi co-management arrangement. STIDUNAL, a local organization, run strictly through the village and accountable only to the village, is an excellent example of the use of local institutions to achieve sustained participation in conservation and development. Marine turtle conservation and tourism activities that are undertaken by STIDUNAL are incorporated into the routine in which the community functions. Tourism operates on a communal basis, there are no independent operators. Decision-making procedures follow the community approach and are discussed in village council meetings where everyone has the opportunity to voice their opinion. With a local

institution involved, conflicts occur at the village level and are resolved at the village level, keeping the Forest Service and STINASU out of local- level conflicts. Village residents are also responsible for getting the most out of arrangements and do not rely on STINASU to provide for them, which eliminates the welfare approach to development.

Overall, local residents are empowered, participate in benefits, planning and implementation and participation is sustained through local institutions. However, in many instances, local participation is limited to merely consultation. In the consultation committee, local concerns are considered in all activities, but the ultimate authority remains with the Nature Conservation Division of the Forest Service to carry out conservation objectives. This is highly unlikely to change because of the national and international pressure for sea turtle conservation. Conservation of marine turtles is a global conservation objective with support from many international organizations and, therefore, it is the number one priority.

In the arrangement between STINASU and STIDUNAL, there is greater participation with the village residents at all stages than in the consultation committee. However, for tourism to be a sustainable part of the future for the village, greater tourism revenues must be achieved or other approaches to generate economic benefits must be included in order to encourage greater participation from village residents. Right now, STINASU has exclusive right to lodging and food revenues in the nature reserve which competes directly with the small guest house located in the village. Greater involvement in tourism for the village and STIDUNAL would require STINASU to increase the role and responsibilities of STIDUNAL for nature tourism. If that were to occur, STINASU could focus more energy and resources on promoting ecotourism to other nature reserves while maintaining a supervisory role in Galibi. STIDUNAL would receive greater

income and control and the village would become more involved in conservation activities because there would be increased economic benefits in it.

6.3 Integration of Common Property Resource Management

The primary goal of the Galibi Nature Reserve is to protect endangered marine turtles and their nesting habitat. The integration of common property resource management systems with state-led resource management, through co-management, plays a vital role in conservation in examples from the literature (Sekhar, 2000). However, in the villages of Christiaankondre and Langamankondre, a CPR system for management of turtle eggs has never evolved. Sekhar (2000) suggests that if a resource plays an important role in subsistence and is not relatively abundant, then rules governing the use of the resource will develop. In the two Amerindian villages, turtle eggs were never seen to be scarce and therefore a rigorous CPR system did not evolve. Eggs were also not a primary concern from a subsistence point of view, but rather a source of alternative income.

Unlike hunting grounds, agricultural plots or fishing grounds, for which there are recognized CPR rules in place in the communities, however weak, turtle eggs were collected in an *ad hoc* manner where individuals marked claim to a nest and collected all of the eggs. Once a nest was claimed, through a combination of traditions and customs, it was considered to be off-limits to other egg harvesters and very little conflict occurred (Kloos, 1971). The harvesting of turtle eggs in the past was seen as a quick source of supplementary income for village residents, a source of income that was not taken advantage of by all village residents.

Probably the best reason for the lack of rigorous CPR institutions results out of the nature of shifting cultivation in the Carib society. Kloos (1971) described agricultural

plots, hunting, fishing and collecting as flexible components of the economy based on an abundance of resources that were used on an individual or family basis. The available area for agricultural plots, for example, far exceeds the population pressures, and families will often let old gardens lie fallow for up to fifteen years. Kloos (1971) also described the virtual non-existence of conflict over resource uses. When a resource is depleted in one area, resource users simply move to an area where the resource is more plentiful. Access to resources is limited through local values and customs, although conflict rarely occurs. If an area is being used by one group or family, it is generally off-limits for other users and people move on to another area.

While the development of rigorous CPR management systems has not occurred, and therefore, they have not been included in the co-management arrangement, the manner in which resources, property and individuals are viewed differs greatly between government and local resource users. It is the differences in values, traditions and activities of daily life that need to be incorporated into co-management arrangements. With the co-management arrangement for the Galibi Nature Reserve, attempts have been made at incorporating local customs and values into the management arrangement.

The question of property rights and resource claims generates a great deal of conflict between representatives of the nature reserve and local residents, and it is not dealt with in the co-management arrangement. The village residents use the resources surrounding the villages of Christiaankondre and Langamankondre, and consider such area their traditional land. The surrounding area includes the Galibi Nature Reserve. The government, through the Forest Service have recognized the right of local residents to access resources in the area, but have not recognized their traditional land rights. The conflicts over land rights reflect the different views and customs dealing with land. The

government has recognized the land rights within the village boundaries but has ignored the larger area that is needed for resources to support local residents' way of life.

The primary way in which local residents are involved with the nature reserve is through tourism. Through STIDUNAL, the village has been able to maintain its traditional values and methods of doing things, as in the example of maintaining a communal approach to tourism through the use of communal tour operators as opposed to private ones.

Since the Galibi co-management arrangement essentially covers one resource for which there does not exist a rigorous local CPR management system, integrating local CPR management systems with state resource management systems is not as important as in other examples from the literature. However, the integration of local customs and values is important. While the different management cultures and manner of resource use (such as communal as opposed to individual) are important, recognition of traditional lands is the primary concern. Village residents are more concerned with the recognition of traditional land rights and the effects of access regulations governing a nature reserve that is considered to be their traditional land, which would allow for the continuation of their traditonal activities and customs.

In summary, the Galibi co-management arrangement has been effective in linking conservation and development at the local level. Through the use of tourism dependent on the conservation of the sea turtles, the success of development activities is dependent on successful conservation. The co-management arrangement has also been effective at involving local participation in the planning, design and implementation of activities and regulations. However, while the integration of CPR management systems with state management systems is not as important in the Galibi case study, the co-management

arrangement has not dealt adequately with the integration of local values and customs as a result of the failure to recognize traditional land rights. The following chapter will revisit these findings by providing some recommendations and conclusions.

Chapter 7

Conclusions and Recommendations

The Galibi co-management arrangement is a viable framework that allows for the integration of conservation and development by involving local people. While it is not a perfect arrangement, it has been effective in linking conservation to local development activities. It has generated greater local participation in conservation and greater awareness of conservation issues. However, there are a number of areas in which the co-management arrangement could be improved, particularily with the resolution of the tradtional land rights issue.

The goal of this chapter is to re-examine the three guiding questions of the thesis, in light of the Galibi co-management arrangement, which will form the basis for conclusions. Following the conclusions, recommendations will be made for improvement of the co-management arrangement.

7.1 Conclusions

The first thesis question deals with the effectiveness of co-management in the integration of conservation and development objectives. In this area the Galibi co-management arrangement has indeed allowed for the integration of conservation of the sea turtle with nature tourism development activities. The literature on conservation, whether it be about ICDPs, decentralization, devolution or community-based conservation, stresses the need to generate local economic benefits in order to engage local residents in conservation activities. Through co-management, local stakeholders can generate local development activities that accommodate conservation objectives. The Galibi example benefits from the simplicity of the single purpose conservation objective

of sea turtle conservation and the relative isolation of the region that limits outside stakeholders. In such a situation, the number of stakeholders is reduced which makes it easier to create conservation and development linkages. With the involvement of proponents of local development and of conservation working together, mutual solutions to local development and conservation issues are generated which has enabled the integration of conservation and development. The closure of off-shore fishing during the primary sea turtle nesting season was frequently offered as an example, by both government and local representatives. The co-management arrangement between the Nature Conservation Division of the Forest Service, STINASU, STUDINAL and village residents has been effective at integrating local tourism development with the conservation of the sea turtle.

An interesting avenue for further research would be to examine the relationship between co-management arrangements and how conservation and development were linked. More specifically, is it possible to link conservation and development without effective co-management? Alternatively, can co-management be effective without linking conservation and development activities? It is unclear in this research whether effective co-management has led to conservation and development linkages, or whether the creation of conservation and development linkages has led to effective co-management.

The second thesis question refers to the ability of co-management to lead to greater local participation. Without question, there is greater local participation in sea turtle conservation because of the co-management arrangement. The question that remains is whether co-management provides greater opportunities for local involvement in conservation and development than other approaches.

The Galibi co-management arrangement includes local participation beyond

merely consultation. Local objectives are expressed through the consultation committee, where the views and concerns of local representatives are not merely consulted, but can affect the outcome of management decisions. The arrangement between STINASU and STIDUNAL leaves local development entirely in the hands of local residents, through STIDUNAL. However, STIDUNAL has been criticized for promoting the interests of those involved in tourism and not the interests of the wider village community. One other problem relates to the method of developing local economic benefits. Nature tourism as a form of local development was not a local initiative, was not embraced by the entire village, and therefore, has limited local participation.

Unfortunately, it was not possible to determine conclusively whether greater local participation has led to more effective conservation or development. Data on sea turtle populations is sporadic and incomplete, especially over the last decade, and it was impossible to obtain the economic impacts of local nature tourism development. It is, therefore, difficult to determine if greater local control leads to more effective conservation and development or more effective species management. However, in order for greater local participation to occur in nature tourism as a form of local development, and in turn local conservation, greater economic benefits must be generated as an incentive.

The final question in this thesis relates to whether co-management allows for the integration of classical environmental management with local common property resource management systems. Due to the unique situation of the Galibi Nature Reserve's primary focus on sea turtle conservation and the lack of common property rules governing sea turtle egg collection, the integration of state-led environmental management with local CPR management systems was not as important an issue for sea turtle conservation. The

integration of local customs and values into the manner in which the co-management arrangement works, however, is more important.

By allowing local development to proceed on a communal basis, as opposed to an individual one, greater participation in the co-management arrangement has been achieved. While not everyone participated in tourism development, the entire village benefited from it.

The co-management arrangement has not been able to integrate state views on property with local views of traditional land rights. So far, the co-management arrangement steps around this difficult issue. Local residents and representatives view the nature reserve as existing within their traditional lands, and government representatives continue to overlook such claims, and the issue of ownership or property rights is not discussed through the co-management arrangement. The result is that many local residents resent nature reserve regulations that interfere with what they perceive to be their traditional lands. Some local residents are also unwilling to participate in activities that appear to increase government participation and control in the area.

7.2 Recommendations

The Galibi co-management arrangement is effective. However, there are a number of areas in which it could be improved. This section will examine potential avenues for change and the constraints for change at the local, national and international level.

Two of the main problems with the Galibi co-management arrangement deal with generating greater economic benefits in order to increase local participation in conservation and development, and with resolving the differences in views over land rights. The resolution of the land rights problem has the potential to solve both problems and to improve conservation and development in the area by granting greater local control

over resources, which in turn, would result in greater benefits to local residents. However, the recognition of land/traditional rights is always a difficult issue and there are a number of constraints to this solution. The government, the Forest Service, STINASU and the various international conservation organizations are all concerned about losing their control over actions in the area.

However, a compromise is possible that would further strengthen the co-management arrangement for the Galibi Nature Reserve. Under the current arrangement, STINASU, under the supervision of the Forest Service, is responsible for all nature tourism in Suriname. They obtain revenue from tourist bookings, lodgings, food and services and contract out the transport of tourists to STIDUNAL. However, STINASU's resources are limited and they are only active in a few of Suriname's nature reserves.

Over time, under the current co-management arrangement, STIDUNAL could take over STINASU's role in the Galibi nature reserve. There are numerous examples of indigenous controlled forest reserves (Cox and Elmqvist, 1992) and partnerships between aboriginal groups and government for national park management (Hawkes, 1996; DeLacy, 1993; Davis and Weiller, 1992) that resolve land rights conflicts and generate greater local control over resources, while maintaining effective management. With such an approach, greater benefits would be received by the local residents, there would be greater local control over resources and STINASU would be free to become more active in other nature reserves that are currently neglected.

With such a proposal, STIDUNAL would gradually take over the relationship that currently exists between STINASU and the Forest Service for the Galibi Nature Reserve. The Forest Service would remain the ultimate authority and play a supervisory role, as it does now, but it would be STIDUNAL that organizes, runs and profits from nature

tourism and conservation. Such an approach would require a significant amount of effort to involve local residents in the organizational, technical or managerial training necessary for conservation and development activities.

By strengthening the role of STIDUNAL in the Galibi Nature Reserve, the linkage between conservation and development at the village level would be strengthened. Local participation in conservation and tourism would result at all levels, in the planning stages, implementation stages and there would be an increase in economic benefits. With greater responsibility at the local level, it is also more likely that nature tourism would receive more widespread support. With the transfer of authority to the local-level, greater local control over land and resources that are considered to be traditional territory would exist. The issue of property and traditional land rights would be addressed through partnerships between the local community, STIDUNAL and the Forest Service, where the local community and STIDUNAL would have the authority for conservation and development activities in the area, under the supervision of the Forest Service.

STINASU would also benefit from such a proposal. By gradually shifting control of nature tourism in the Galibi Nature Reserve to STIDUNAL, STINASU would be able to gradually increase its presence in the other nature reserves. The loss in revenue from the Galibi Nature Reserve could be off-set by implementing new nature tourism ventures to the other reserves that are currently neglected.

Such an approach would take time to implement. It would have to be established, through training and gradual increases in control, that local-level management has the capacity for effective resource management. It would also require a significant increase in the trust between local residents, STIDUNAL, STINASU and the Forest Service. By increasing local capacities and by increasing the trust between all stakeholders, those with

current authority (STINASU and the Forest Service) would be prepared to transfer that authority to the local level. This would also be an important step in the implementation of the peace accord that was signed in 1992 between the government of Suriname and the Amerindian and Maroon communities.

Under the current co-management arrangement, many of the problems associated with conservation and local residents have been addressed. Local residents receive benefits from conservation and they no longer perceive nature reserve regulations simply as a control over their access to resources. The people-park conflicts have been reduced and a forum for discussion of such conflicts has been created. The co-management arrangement has been successful in generating options to balance the development objectives of local residents with the national and international objectives of sea turtle conservation. However, the single greatest constraint to the improvement of the Galibi co-management arrangement is the issue of traditional land rights. The resolution of that issue will require continued improvements in good will and trust between all those involved. The challenge for improvement of the arrangement rests with the ability to increase local satisfaction with the co-management arrangement for the Galibi Nature Reserve without compromising the government and international conservation organization's sea turtle conservation goals.

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Appendix 1

Guiding Questions for Interviews

Guiding questions were used in interviews with key people from the village, NGOs and government that correspond to the following framework.

1) what is occurring at the local level in terms of conservation and development?

- what incentives/barriers exist in terms of local resource management, local culture and traditional knowledge and the local ecosystem?
- who is involved?
- what are the objectives?

2) what is going on at the national level in terms of conservation and development?

- what are conservation/development goals, economic implications and department policies?
- who is involved?

3) what is going on at the international level?

- what is the role of international NGOs and donors, international agreements?
- who is involved?
- what are the objectives?

The answers to these questions were used to determine what the effects of local, national and international interactions are on the ability to pursue conservation and development initiatives through co-management. It was hoped that such a framework would provide an indication of whether co-management is a viable option for the integration of conservation and development, as well as why, why not and how.