

COMMUNITY MANAGEMENT OF PROTECTED AREAS FOR CONSERVATION
(COMPACT): A Promising Approach to Integrated Conservation and Development

Projects (ICDPs)

By

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ABSTRACT OF THE THESIS

COMMUNITY MANAGEMENT OF PROTECTED AREAS FOR CONSERVATION
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Integrated conservation and development projects (ICDPs) aim to combine the goals of biological conservation and socio-economic development. In this thesis I explore the historical context of ICDPs, analyze the debate around ICDPs, and put forth recommendations for future ICDPs. I then go on to examine the Community Management of Protected Areas for Conservation (COMPACT), a suite of ICDPs implemented by the Small Grants Programme of the Global Environment Facility. I analyze the COMPACT methodology and approach to understand why COMPACT initiatives are innovative and successful. I use COMPACT projects implemented in the Sian Ka'an Biosphere Reserve and World Heritage Site as a case study in this analysis. I conclude by highlighting the key aspects of COMPACT's methodology and approach that have enabled it to successfully combine conservation and development goals.

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DEDICATION

I dedicate this work, as I do everything, to my mother, Sikha Ghosh. You are my *janma janmantar ki janani* , my mother in every life— past, present, and future.

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INDEX OF ACRONYMS

CAS	Council for Support and Monitoring
CBD	Convention on Biological Diversity
CBO	Community-based organization
COMPACT	Community Management of Protected Areas for Conservation
CoP7	Seventh Conference of the Parties
GBO2	Global Biodiversity Outlook 2
GEF	Global Environment Facility
ICDP	Integrated Conservation and Development Project
IUCN	The World Conservation Union
LCB	Local Consultative Body
MA	Millennium Ecosystem Assessment
MDGs	Millennium Development Goals
NGO	Non-governmental Organization
SGP	Small Grants Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
WHS	World Heritage Site
WWF	World Wide Fund for Nature

1. INTRODUCTION

1.1 Definitions

The term 'integrated conservation and development project' (ICDP) is a 'collective label for a new generation of projects that started to go outside park and reserve boundaries and pay particular attention to the welfare of local people' (McShane and Wells 2004). The ICDP approach attempts 'to ensure the conservation of biological diversity by reconciling the management of protected areas with the social and economic needs of local people' (Wells and Brandon 1992). ICDPs represent 'an approach to the management and conservation of natural resources in areas of significant biodiversity value that aims to reconcile the biodiversity conservation and socio-economic development interests of multiple stakeholders at local, regional, national and international levels' (Frank and Blomley 2004). According to Salafsky and Margoluis (2004), ICDPs are not a 'specific conservation intervention'; rather, they are 'a loose cluster of strategies and tools brought together to achieve both conservation and development goals'.

1.2 Approach

ICDPs can be put in 3 general categories, based on their specific objectives: those that seek to 1) conserve species; 2) maintain ecosystem health; and 3) promote human livelihoods (Robinson and Redford 2004). ICDPs have a multitude of approaches, but over the last decade they have developed a distinct 'menu': those that focus on sustainable development objectives use the approaches of poverty alleviation, capacity

building, and participation and empowerment; those that have conservation objectives focus on park protection and management, and management of natural resources (Robinson and Redford 2004). The term 'integrated' might be a misnomer, since some ICDPs aim to accomplish development using conservation methods; some are conservation projects with development involvement; and some have dual objectives of both (Robinson and Redford 2004).

Conservation activities can be grouped into 4 broad categories: direct protection and management; law and policy; education and awareness; and changing incentives (Salafsky and Margoluis 2004; Salafsky et al. 2002). Each category contains approaches; each approach employs certain strategies; and each strategy uses certain tools (Salafsky and Margoluis 2004; Salafsky et al. 2002). ICDPs employ approaches from all 4 categories, but certain approaches are more common (Salafsky and Margoluis 2004).

Within the direct protection and management category, the most commonly used approaches are protected areas (PAs), managed landscapes, and species and habitat restoration (Salafsky and Margoluis 2004; Salafsky et al. 2002). Within the law and policy category, ICDPs commonly use enforcement approaches (Salafsky and Margoluis 2004; Salafsky et al. 2002). Within the education and awareness category, informal education approaches are most common (Salafsky and Margoluis 2004; Salafsky et al. 2002). Within the changing incentives category, ICDPs most commonly use approaches associated with conservation enterprises, economic alternatives, conservation payments, and nonmonetary values (Salafsky and Margoluis 2004; Salafsky et al. 2002).

1.3 Controversy

ICDPs are ‘one of the most widely implemented and yet controversial approaches to biodiversity conservation’ (McShane and Wells 2004). This controversy is related to debates surrounding assumptions and expectations behind ICDPs; the validity of combining conservation and poverty reduction goals; the effectiveness of ICDPs in securing these goals; the sustainability of ICDP initiatives; and shortcomings in their methodology and implementation.

1.4 The Community Management of Protected Areas for Conservation (COMPACT) Program

COMPACT is part of the Global Environment Facility’s (GEF) Small Grants Program (SGP). Its objective is ‘to demonstrate—by complementing and adding significant value to existing conservation programs—how community-level initiatives can significantly increase the effectiveness of biodiversity conservation in globally significant protected areas’ (GEF SGP 2004).

COMPACT grew out of the opportunity offered by the need to conserve biodiversity on a landscape and ecosystem scale, while demonstrating the contribution of biodiversity conservation and protected areas to the achievement of the Millennium Development Goals (MDGs); and the vision that participatory approaches to biodiversity conservation in protected areas that were built on successful experiences in the field offered a realistic chance of success (GEF SGP 2004).

Based on a critical reading of the literature directly related to ICDPs, in this paper I attempt to explore and analyze the historical context that informed the expectations and assumptions underlying the ICDP approach; and the hypotheses and approaches that relate to the conservation/biodiversity–development/poverty reduction dialogue. It also examines the conclusions regarding effectiveness, sustainability, and methodology of ICDPs. It then describes the critical elements of the COMPACT suite of projects, and comments on how it has incorporated key lessons from past ICDPs into its framework, in order to develop a methodology that promotes effectiveness and sustainability. Finally, this paper presents a critical overview of COMPACT's achievements in meeting its own objectives, and offers recommendations for future directions.

2. THE HISTORICAL CONTEXT OF ICDPS

The development of ICDPS, their prevalence and popularity, and their current fall from grace, have been influenced by a number of international multilateral agreements. The push to combine development goals with conservation goals was the original impetus for the growth of ICDPs (refs) and the recent focus on poverty reduction as a development imperative has been translated into changes in funding trends that have impacted the implementation of ICDPs, as well as the perception of their efficacy and necessity. In order to understand the history of ICDPs it is necessary to consider how key international multilateral agreements have framed the relationships between biodiversity conservation and development/poverty reduction, and how this in turn has influenced the conservation/development priorities of donor agencies, governments, and NGOs.

2.1 Framing the drivers of biodiversity loss: poverty versus consumption

The Brundtland Commission of 1987—*Our Common Future*—posits poverty as the key driver of biodiversity loss, and argues that poverty in the South causes overuse of natural resources, and degradation of the environment (Roe and Elliott 2005; WCED 1987). While it does also stress unlimited economic growth as harming the environment, the effects of poverty on the environment are described in much stronger language. Factors complicating the simple ‘poverty equals biodiversity loss’ equation—such as governance, inequality and population—are all listed, but the overall emphasis remains on the negative effect that poverty has on the environment. The role of developed

countries and international and national economic policies in resource exploitation are mentioned, but not stressed as the underlying causes of poverty. Thus, rather than problematize the relationship between poverty and environmental degradation, the Commission reiterates what are now seen as truisms: poverty causes overexploitation and degradation.

A change in perspective was apparent at the 1992 Rio Earth Summit, which was the forum for the creation of the Convention on Biological Diversity (CBD). In contrast to the Brundtland Commission, the GBO2 (SCBD 2006) identifies increasing demographic pressures and consumption levels as being the key drivers of biodiversity loss. It states that 'each person has the right to adequate clean water, food, shelter and energy, the provision of which has profound ecological implications', and goes on to say 'the growing appetite for consumer goods and services beyond the necessities of survival and the wasteful consumption of available resources by the more privileged segment of global society are exacerbating the strain on the Earth, with consequences for all.' These statements clearly make the distinction between consumption of essential goods and services at a level that is necessary for survival, versus 'wasteful consumption'. They also clearly lay the burden of guilt on richer sections of society, in a manner that is markedly different from the Brundtland Report.

2.2 Sustainability as a guiding principle

The emergence of sustainability as a key concept was evidenced at the Rio Earth Summit, which used the discourse of sustainability to frame the issue of biodiversity loss

and emphasized the 'triple bottom line' concept of sustainable development as one that encompassed ecological, social and economic sustainability.

This guiding principle of sustainability was enshrined in the CBD. This agreement represents an international commitment to the principles of ecological and economic sustainability, by establishing three main goals: (i) the conservation of biological diversity; (ii) the sustainable use of its components; and (iii) the equitable sharing of benefits from genetic resources. The CBD states that biodiversity is fundamentally important to the maintenance of ecosystem goods and services, which underpin all life on earth (SCBD 2006). To this end, it sets an ambitious target of reducing biodiversity loss by 2010.

2.3 Linking biodiversity conservation and poverty alleviation

The 2010 Biodiversity Target of the CBD is "to achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on earth." Thus, the Convention implies that biodiversity loss is a crucial factor in poverty alleviation.

The GBO2 explores the socioeconomic causes and consequences of biodiversity loss in some depth. In particular, it stresses how biodiversity loss and ecosystem disruption affect poorer sections to a greater degree: 'The consequences of biodiversity loss and ecosystem disruption are often harshest for the rural poor, who depend most immediately upon local ecosystem services for their livelihoods and who are often the least able to access or afford substitutes when these become degraded... Ecosystems

then serve the additional function of social safety nets, insuring families against absolute poverty and starvation.'

The GBO2 does not solely make observations (e.g., biodiversity loss is increasing) or create ecological chains of cause and effect (e.g., biodiversity loss leads to the disruption of ecosystem services); it clearly addresses the underlying socioeconomic factors behind biodiversity loss. It contains stringent indictments of the effects of inequity; the marginalization of poor and rural communities; the cooption by elites of economic benefits from conversion, while the poor bear the cost of lost societal benefits; and the role of governments in ignoring sustainable development in favor of immediate private gain.

Citing the case of intact mangrove ecosystems along the Thai coast being converted into private shrimp farms, the Convention states:

The marginal position of rural communities in society often allows more powerful interests to capture ecosystem benefits for private gain, frequently through the conversion of ecosystems to other uses. Although studies are few, in every case examined where the total economic value (i.e., market and non-market value combined) of ecosystems under alternative management regimes were compared, managing the ecosystem more sustainably yielded greater total benefits than conversion... Conversion of the natural ecosystem proceeded nonetheless, in part because those individuals standing to gain immediate private benefits did not have to bear the costs associated with the loss of ecosystem services. In some cases, government subsidies can exaggerate the private benefits of conversion, as ecosystems are degraded at public expense. The end result for the poor is further disenfranchisement.

In order to achieve the 2010 Biodiversity Target, the GBO2 recommends certain key actions in the planning and policy realm. These include translating "biodiversity related concerns outside the environment sector, [and] mainstreaming biodiversity into national policies, programmes and strategies on trade, agriculture, forestry and fisheries

and other relevant sectors.” Additionally, “biodiversity issues must also be mainstreamed into countries’ development planning, including through integration into Millennium Development Goal strategies and Poverty Reduction Strategy Papers.” It also suggests that biodiversity be incorporated “into environmental impact assessment and strategic environmental assessment approaches (to) ensure that national development proceeds in an economically viable, socially just and environmentally sustainable manner.” In addition, it urges Parties to encourage positive incentives for biodiversity and sustainable use, while removing negative incentives that cause overexploitation and degradation of ecosystems; and creating appropriate markets for ecosystems (SCBD 2006).

Thus, the GBO2 firmly places biodiversity conservation and economic development in the same policy arena, and underscores how initiatives in each must incorporate the perspectives of sustainability and equity when considering the impacts on the other.

2.4 The displacement of ‘sustainable development’ by ‘poverty reduction’

The current framework for international development is guided by the eight Millennium Development Goals (MDGs). Out of these eight, the seventh goal relates to the environment, and aims to ‘Ensure Environmental Sustainability’. One of the three targets of MDG7 is to ‘Integrate the principles of sustainable development in country policies and programmes; and reverse the loss of environmental resources’. The two

indicators for MDG7 that address conservation are the proportion of land area covered by forest, and the ratio of area protected to maintain biological diversity to surface area.

There is concern that within the MDGs the role of the environment is not seen as integral to the principles of sustainable development, as evidenced by the fact that the environment constitutes one of eight goals, rather than being integrated across all the goals (Roe and Elliott 2005; MDG 2000). Even within the environment goal, biodiversity loss is only tangentially referred to in the second half of one of the three targets ('Integrate the principles of sustainable development into country policies and programmes; and reverse the loss of environmental resources') and there is no clear acknowledgement of the link between sustainable development and biodiversity loss—that sustainable development principles are *necessary* to reverse environmental losses (Roe and Elliott 2005).

2.5 Changes in the international aid environment

Historically, biodiversity conservation was seen as an integral part of the sustainable development agendas of international donor agencies. However, after the framing of the MDGs—with their focus on poverty reduction rather than sustainable development—neither biodiversity conservation nor ICDPs seem to be a priority for international development agencies (McShane and Wells 2004). The discourse of poverty reduction has replaced that of sustainable development, leading to the marginalization of biodiversity conservation in development agendas (Roe and Elliott 2005). Biodiversity conservation 'is not perceived to be directly relevant to poverty reduction: it is

perceived as too long-term, too uncertain in its outcomes and their distribution amongst the poor, too demanding technically and moreover not amenable to significant scale-up or upstream policy leverage (Roe and Elliott 2005).

However, while poverty reduction is now an international political imperative due to global compacts like the MDGs and the 2002 World Summit on Sustainable Development (Roe and Elliott 2005), biodiversity loss remains a huge concern (MA 2005) and significantly reducing biodiversity loss by 2010 is also an international target (SCBD 2006). The dire threats to global ecosystems are reflected in the Millennium Ecosystem Assessment (MA), which warns that ecosystem services, essential to life on earth, are in a critical state.

Thus, conservation agencies now face the challenge of trying to situate their work within the recent international push for poverty reduction (Roe and Elliott 2005). However, despite significant evidence for critical linkages between biodiversity loss and poverty reduction (Pierce 2005; WRI 2005)—including the findings of the MA, which state that ‘in all regions, and particularly in sub-Saharan Africa, the condition and management of ecosystem services is a dominant factor influencing prospects for reducing poverty’—biodiversity considerations are rarely included in the poverty reduction strategies of development programs (Roe and Elliott 2005).

The particular emphasis on poverty reduction as the preeminent goal of international development, and the marginalization of biodiversity conservation and sustainable development on the international agenda, have resulted in changes in international aid trends and mechanism that are proving harmful to biodiversity

conservation, as well as to the environment in general (Roe and Elliott 2005). Donors are moving away from funding projects, to provide budgetary support to the governments of developing countries, who choose to spend them on priorities articulated in *Poverty Reduction Strategy Papers (PRSPs)* which frequently do not mention the environment or biodiversity in any significant way (Roe and Elliott 2005; Bojo and Reddy 2002). This is partly due to the fact that biodiversity goods and services are not included in national economic indices, and also because of the lack of qualitative and quantitative aggregate data on the importance of biodiversity to the poor (Roe and Elliott 2005).

When viewed in the light of this quagmire of competing national and international development imperatives; incipient ecological collapse; and horrifying inequity, suffering, and deprivation caused by a long history of unjust and unsustainable socioeconomic development; ICDPs are a brave and idealistic attempt to address the critical ecological and development needs of our times.

3. THE DEBATE AROUND ICDPS

ICDPs have the dubious honor of being very widely implemented, and also very controversial (McShane and Wells 2004). Every aspect of ICDPs, from their ideological head to their methodological toes, has been the subject of competing and contrary opinions. According to some, the failings of ICDPs "...are not of their own making, but should be seen in the light of the innocence of their conceptual antecedents. Born in the cacophony of inexplicit assumptions, confusion of objectives, and naïve expectations of win-win solutions, ICDPs, not surprisingly, have been criticized by conservationists, by social advocates, and by developmental economists alike" (Robinson and Redford 2004).

In an attempt to understand this contested nature of ICDPs, it is helpful to divide the themes that comprise the debate into assumptions, formulation, and execution.

3.1 Assumptions

ICDPs have been criticized for failing to make explicit and/or test major assumptions in projects (McShane and Newby 2004). Important examples are outlined below.

3.1.1 Poverty causes biodiversity loss

There is a widespread argument that poverty negatively affects conservation. In the arena of international compacts, this can be traced back to the Brundtland Commission (1987) which posits poverty as the key driver of biodiversity loss, and

argues that poverty in the South causes overuse of natural resources, and degradation of the environment (Roe and Elliott 2005; WCED 1987).

In contrast, GBO2 (SCBD 2006) refers to increasing demographic pressures and consumption levels as being the key drivers of biodiversity loss and states that “the growing appetite for consumer goods and services beyond the necessities of survival and the wasteful consumption of available resources by the more privileged segment of global society are exacerbating the strain on the Earth, with consequences for all.’

In the academic literature, the simple causal link between poverty and biodiversity loss has been problematized by a number of authors. The current general consensus among this group reflects the opinion that ‘poverty may contribute to biodiversity loss, but it is only one of a number of factors. Whether poor people conserve or over-exploit biodiversity is dependent on specific circumstances and contexts—and particularly on the influence of external governance factors—and not a question to which a generalized answer can be given’ (Roe and Elliott 2005).

Thus, a host of other factors aside from poverty have been implicated in biodiversity loss (Roe and Elliott 2005, Wood et. al 2000) including economic development models, international investment models, population pressures, inequality, global trade regimes, and inappropriate policies. For example, common property management, which in the past protected biodiversity in traditional societies, is now being affected by external factors like globalization, and threats from inappropriate policies, and wider economic and political forces (Roe and Elliott 2005).

The role of the rich—whether considering countries or community members—in increasing biodiversity loss by appropriating unfair shares of natural resources and increasing demands for natural resources from poorer countries due to their much higher levels of consumption—can arguably be seen as just as, if not more, devastating to biodiversity loss than poverty.

3.1.2 Poverty reduction will reduce biodiversity loss

Most ICDPs address poverty alleviation directly (Robinson and Redford 2004). This focus on poverty alleviation is based on an assumption that stems from the logic of sustainable development which implies that poverty alleviation is essential for successful project implementation (Robinson and Redford 2004). Also, a logical extension of the argument that poverty negatively affects conservation and causes environmental degradation is the assumption that therefore conservation organizations and activities need to address the issue of poverty reduction. The faith in this logic is evidenced by the concern that “much conservation money is still invested with only limited considerations of poverty and livelihood concerns, despite a growing consensus that poverty and weak governance are two of the most significant underlying threats to conservation” (DFID 2002).

However, the assumption that poverty reduction will reduce biodiversity loss has been treated with skepticism from many fronts. A major reason for this skepticism stems from the recognition of the ecologically unsustainable nature of most economic strategies. Thus, while it is true that poverty reduction can positively affect

conservation— via reduced direct dependence on natural resources, economic incentives to protect certain species (e.g. medicinal plants, food crops etc.), and private sector investments in environmental goods, including conservation (Roe and Elliott 2005)— unfortunately, current models of economic development can have very negative effects on biodiversity, even if they are in the name of poverty reduction (Roe and Elliott 2005; Wood et al. 2000; Sanderson and Redford 2003; Sanderson 2005).

Evidence of the detrimental effects of ecologically unsound development strategies abounds. Agricultural expansion, forestry and fishing have led to overexploitation of natural resources; infrastructure such as roads, while providing many benefits to poor communities, have caused land clearance and habitat fragmentation, as well as increasing the risk of resource exploitation in previously inaccessible areas. Agricultural trade liberalization can also have devastating impacts on biodiversity (Sanderson 2005).

The strongest criticism of this position is that it suffers from a lack of supporting evidence. The absence of a documented causality makes it difficult to establish a simple relationship between poverty alleviation and conservation gains (Robinson and Redford 2004). In general, broad comparisons have found no correlation between economic gains and successful conservation outcomes (Robinson and Redford 2004). For example, no general relationship could be found between successful economic enterprises and management of natural resources when reviewing ICDPs in Asia (Salafsky et al. 2001). At the local level too, there is little evidence to show that poverty reduction will have a positive effect on biodiversity (Roe and Elliott 2005). Factors such as governance,

security of land tenure, and access to resources are likely to be more significant in the long term (Roe and Elliott 2005; Angelsen and Wunder 2003).

3.1.3 Biodiversity is important to poverty reduction

While we are all dependent on biodiversity—which maintains critical ecosystem services—the poor are particularly so, since they often make direct use of biological resources to meet basic needs (Roe and Elliot 2005) and ‘income from ecosystems can act as a fundamental stepping stone in the economic empowerment of the rural poor’ (World Resources 2005). For this reason, they are also more vulnerable to biodiversity losses (MA 2003).

There is much anecdotal evidence that supports the conclusion that the poor are particularly dependent on biodiversity (Roe and Elliot 2005). However, this evidence is hard to quantify due to a lack of quantitative data that can be aggregated at the local, regional or national levels (Roe and Elliott 2005; DFID 2002).

While the importance of biodiversity in the livelihoods of poor people is not in question, there is debate concerning the importance of biodiversity to poverty *reduction* (Roe and Elliott 2005). One cause for concern is that the economic benefits of biodiversity-based initiatives may be significant only to certain groups in certain areas e.g., forest dwellers, or those living near protected areas (DFID 2002). Lack of equity is another complicating factor. While biodiversity may provide livelihood opportunities, power inequities frequently do not allow the poor to benefit from biodiversity (Roe and Elliott 2005). Lack of access to markets, and the appropriation of high-value resources

(e.g., timber, landscapes with high tourist potential) by the more powerful make it difficult for economic benefits from biodiversity to reach poorer sections (Roe and Elliott 2005). Also, since poverty-reduction measures frequently focus on agriculture, it is essential to more convincingly demonstrate the links between biodiversity and agriculture, and biodiversity and ecosystem services (that support agriculture as well as provide other benefits) in order to argue that biodiversity has a significant role in poverty reduction (Roe and Elliott 2005).

3.1.4 Importance of local threats

ICDPs have tended to focus on small-scale, local threats, building on the assumption that the activities of poorer people in and around protected areas constituted the major threat to biodiversity in the area (McShane and Newby 2004). However, the small-scale hunting and farming activities of local communities are frequently less harmful than large-scale activities, like mining, logging, road building, dam construction etc., which are usually backed by powerful commercial and political interests (Wells et al. 2004). These threats are difficult to confront (Child and Dalal-Clayton 2004) and are usually far beyond the sphere of ICDPs (Brandon et al. 1998; McShane and Newby 2004; Brandon and O'Herron 2004). Thus, ICDPs have often been a poor use of resources, since they targeted the wrong threats (Wells et al. 2004).

3.1.5 Importance of Participation

Empowerment and participation are encouraged by most ICDPs, on the grounds that they increase project effectiveness; local knowledge and resource management institutions are critical for project success; and ignoring local rights to resources or failing to compensate local communities for denied access will lead to opposition to conservation activities (Robinson and Redford 2004). Ross and Elliott (2005) conclude that for conservation to be successful in the long term, it is necessary to involve local people. If not, local people may be perceived as undermining conservation, and may indeed do so. Also, unless local people are involved in conserving biodiversity that is critical to their livelihoods, it will be difficult to obtain broad-based and long-term support for globally threatened biodiversity (Ross and Elliott).

However, there are those who point out that conservation activities can be successful without involving local communities if one disregards the welfare of these people (Brockington 2003; Adams et al. 2004). Therefore, one must move beyond justifying participation solely on the basis of its contribution to project effectiveness, and recognize the moral imperative behind participatory approaches.

The contribution of greater participation to conservation and livelihood goals is also questioned, even though it is an essential element of sustainable development, since there is little evidence to show that greater participation adds to poverty alleviation or conservation objectives (Robinson and Redford 2004). Overall, “more participation does not necessarily lead to a better project” (Sanjayan et al. 1997).

It is thus apparent that there exists a circularity between poverty and biodiversity, and despite the existence of numerous correlations, no definite causal relationship has been established. Any framework that factors these variables in must therefore be construed in a way that a causal relationship is not necessary, although a context created by them is evident. Later on I discuss how COMPACT creates a process that succeeds in doing this.

3.2 Formulation

The assumptions discussed above have informed the structure and process of ICDPs. This section discusses some of the major elements of discourse on the formulation process.

3.2.1 Should conservation and poverty reduction be separate policy realms?

A useful way to understand the poverty-conservation relationship is to create a 'conceptual typology' representing different approaches to the conservation-poverty-reduction debate (Adams et al. 2004).

At one end of this spectrum is the view that **poverty and conservation are separate policy realms**. According to this position, attempting to combine conservation and poverty reduction is risky, and might lead to the misallocation of scarce conservation funds, as well as compromising biodiversity (Adams et al. 2004). Conservation and poverty are separate policy concerns, and it is valid that they be pursued separately. The key conservation approach associated with this position is the

establishing and effective management of protected areas, or direct payments for conservation (Adams et al. 2004). If poverty is a stress on conservation, then the response should focus on increasing area under conservation, and stronger protective measures for these areas (Adams et al. 2004). Any benefit to poverty alleviation accruing from conservation measures is indirect (e.g. the maintenance of critical ecosystem services), though there might be situations where win-win opportunities are possible (e.g., ecotourism) (Adams et al. 2004).

A different view of the conservation-poverty-reduction debate states that **poverty is a critical constraint on conservation** (Adams et al. 2004). This approach is based on the argument that poverty affects conservation to such a degree that biodiversity conservation will fail unless it addresses poverty elimination (Adams et al. 2004). Poverty elimination is a means, and biodiversity conservation is the end. Thus, conservation projects and organizations must invest in poverty reduction for critical neighboring communities, including the dissemination of benefits to the poor, and avoidance of significant costs to local communities (Adams et al. 2004). Examples of poverty reduction strategies would include park outreach (local employment, participation in planning of park processes) and income-generating activities (revenue sharing, provision of acceptable alternatives to lost resources) etc (Adams et al. 2004).

A third point of view is that **conservation should not compromise poverty reduction** (Adams et al. 2004). This position reflects a moral obligation that goes beyond the previous two viewpoints. It recognizes that conservation can be successful despite negative social impacts; however conservation agencies should, at the very minimum,

not increase poverty or reduce livelihoods of the poor (Adams et al. 2004). Strategies of this approach might include codes of conduct for conservation agencies, social impact assessments of protected areas, and full payment of local opportunity costs arising from conservation activities. Income generation within the bounds of conservation (ecotourism, sustainable harvesting) should also be encouraged.

The fourth position on the 'conceptual typology' spectrum of approaches to the conservation–poverty-reduction debate states that **poverty reduction depends on living resource conservation** (Adams et al. 2004). This position sees conservation as a tool for poverty reduction. Since many poor and marginalized communities depend on species for livelihoods and ecosystem services, conservation and sustainable use of natural resources can be used for poverty reduction and social justice (Adams et al. 2004). Biodiversity benefits that are not immediately related to poverty reduction are seen as secondary. This approach might reject the primacy of protected areas if they were unlikely to achieve poverty reduction. Strategies would be geared towards sustainable management of harvestable species, such as fish and wildlife, and maintenance of ecosystem services (Adams et al. 2004).

In order to ensure that international goals like the MDGs and the CBD mutually reinforce each other it is important to integrate environmental concerns and poverty-reduction activities (Roe and Elliot 2004). This is essential since “we need approaches to conserving biodiversity that recognize the dynamism of systems, the dependence of local people on their natural resources, and the need to build redundancy into our systems of protecting biodiversity” (McNeely in Roe and Elliot 2004). In addition, the

MDGs need to address the complexity of relationships between biodiversity and the poor (Sanderson and Redford 2003).

Thus, there is a strong case for integrative policy relating to biodiversity conservation and poverty reduction since the formulation of a landscape management approach that recognizes the development value of biodiversity, allows both conservation and development benefits, recognizes the dependence of local people on natural resources, and integrates environmental concerns and poverty reduction activities (Roe and Elliot 2005) will require a 'systems' view from both the conservation and development communities.

3.2.2 Combining conservation and development goals

ICDPs continue to grapple with the dual mandate of socioeconomic development and biodiversity conservation (Robinson and Redford 2004). The divide between these two goals can be seen in the CBD (1992), whose preamble starts by noting the "intrinsic value of biological diversity", and ends with a statement to "conserve and sustainably use biological diversity for the benefit of present and future generations", thus stressing conservation, but promoting socioeconomic development at the same time (Robinson and Redford 2004).

The division between advocates and skeptics of 'pro-poor' conservation (DFID 2002) is widely represented in the literature. The argument for combining conservation and development is represented in the words of Mark Malloch Brown, (UNDP administrator 1999-2005): '...we need to go down a path that recognises that for rural

people living in poverty, development can't happen without the conservation of biodiversity. The real key to a sustainable future is to remember that our efforts towards poverty reduction and conservation are mutually reinforcing. In other words, our programmes should focus on 'biodiversity for development' not 'biodiversity or development.'

Whether or not ICDPs should have single or multiple goals, and how these can be defined, is an issue that a number of people have wrestled with (Robinson and Redford 2004; Salafsky and Margoluis 2004). The main challenges to integrating biodiversity conservation and poverty reduction strategies are a lack of consensus regarding the extent and nature of the relationship between the two, and a lack of understanding on how to address these linkages (Roe and Elliot 2005).

The linkages between poverty and conservation can be positive and negative (Roe and Elliot 2005). The argument against combining conservation and development goals is largely based on the existence of these negative linkages. Thus, while biodiversity might or might not contribute to poverty reduction/development, development activities are frequently detrimental to biodiversity conservation (refs). The negative impacts of current models of economic development on biodiversity are well documented (Roe and Elliott 2005; Wood et al. 2000; Sanderson and Redford 2003; Sanderson 2005). Agricultural expansion, forestry and fishing have led to unsustainable resource use and overexploitation of natural resources; infrastructure such as roads, while providing many benefits to poor communities, have caused land clearance and habitat fragmentation, as well as increasing the risk of resource exploitation in

previously inaccessible areas; economic incentives can increase immigration into sensitive areas (Roe and Elliott 2005). Agricultural trade liberalization can also have devastating impacts on biodiversity (Sanderson 2005: need to check this).

Conversely, conservation actions can negatively affect poverty reduction via reduced access to land and resources, opportunity costs of reduced resource use, relocation from protected areas, loss of traditional and cultural values etc. (Roe and Elliott 2005).

Another argument against combining conservation and development goals is that focusing on social gains diverts from conservation objectives (Spinage 1998). Also, the observation that 'states with high material wealth have low biodiversity wealth and vice versa' (Koziell and Saunders 2001) has been used as evidence of the incompatibility between biodiversity and development (Roe and Elliott 2005).

The argument for combining conservation and development is similarly based on the positive linkages between the two. Examples of positive impacts that conservation activities can have on poverty reduction include income opportunities, improved access to natural resources, protection of ecosystem services, etc. (Roe and Elliott 2005). Poverty reduction can help conservation via reduced direct dependence on natural resources, economic incentives to protect certain species (e.g. medicinal plants, food crops etc.), and private sector investments in environmental goods, including conservation (Roe and Elliott 2005).

Due to the shift in development priorities, we now also see *passive* negative impacts of poverty reduction on conservation, resulting from the delinking of

biodiversity conservation from the development agenda (Roe and Elliott 2005). '...continued (biodiversity) loss is assumed to have a marginal short-medium term impact on the poor; biodiversity has become a normative concept, assumed by development stakeholders to be defined only in relation to the needs of animal lovers in the north' (Roe and Elliott 2005).

Incompatible methods are another barrier to combining conservation and development goals. ICDPs aim to combine sustainable development—a stated imperative of the 1992 Rio Earth Summit—with biodiversity conservation. While the broad concepts of sustainable development have been operationalized at the project level as project methods by ICDPs the challenge is that these methods often have different and even contradictory outcomes (Robinson and Redford 2004).

The attempt to combine goals has also made deciding on clear, realistic goals problematic because of the dilemma as to whether conservation or development goals should take precedence (Robinson and Redford 2004; Salafsky and Margoluis 2004; Wells et al. 2004). Within projects, consensus has been rare, and this aspect typically remains unresolved, resulting in vague objectives that are hard to measure, and perpetuating unrealistic expectations that all groups' goals will be met (Wells et al. 2004; Salafsky and Margoluis 2004). The confusion of conservation and development goals and objectives can be seen in the fact that indicators for different objectives are different (Robinson and Redford 2004). Further barriers to success have been the difficulty in linking conservation and development activities, short time frames of projects, and the lack of sustainability (Wells et al. 2004).

However, there is potential that poverty alleviation can be achieved by finding innovative ways to integrate biodiversity conservation and rural development (Sanderson and Redford 2003). What is essential is a dedication to creating the right kinds of partnerships between the fields of conservation and development (Sanderson and Redford 2003).

Ultimately, conservation and development should be considered together because international conservation policy needs to shift its focus from primarily rare and endangered species, and the extension of PAs, to a landscape management approach that recognizes the development value of biodiversity, and allows both conservation and development benefits (Roe and Elliot year). We are faced with the challenge of integrating environmental concerns and poverty-reduction activities so that international goals like the MDGs and the CBD mutually reinforce each other (Roe and Elliot 2004) and ICDPs are an attempt to address this challenge.

3.2.3 Trade-offs between biodiversity and development

The dual mandate of socioeconomic development and biodiversity conservation that ICDPs continue to grapple with (Robinson and Redford 2004) results in inevitable trade-offs between the two goals. It is essential to recognize these inherent trade-offs accompanying the integration of conservation and poverty alleviation goals; else, neither will benefit and both will suffer (Sanderson and Redford 2003).

Since win-win situations are nigh impossible, at some point it is necessary to decide where these trade-offs are going to be: will biodiversity be conserved at the

expense of development, or vice-versa? The decision on where to make trade-offs is dependent on the overarching goal of the project, and one's conceptual approach to the conservation-poverty-reduction debate.

3.2.4 Sustainable development

In the 1980s and 1990s, the focus on sustainable development with conservation objectives had promise, but from the 90s onwards the focus has shifted from sustainability to poverty alleviation as a means in itself of achieving conservation (Sanderson and Redford 2003). Poverty alleviation has largely replaced biodiversity conservation (Sanderson and Redford 2003). Biodiversity is no longer part of the global discourse on sustainable development, and there has been a concomitant shift in funding away from biodiversity related projects (Sanderson and Redford 2003).

Poverty alleviation today is based on economic strategies from the 50s—boosting development by greater access to markets, infrastructural support, and economies of scale (Sanderson and Redford 2003). However, in the current context, demands for increased productivity are driven by urban consumption, and borne by a decreasing agricultural population (Sanderson and Redford 2003). “With a closed agricultural frontier in much of the world, minimal unclaimed fresh water, high levels of land degradation, and an increasingly skewed rural-urban income distribution, the world will demand that fewer and poorer agriculturalists produce more commodities with less inputs for a rapidly growing consumer population. To call this model sustainable requires great feats of imagination” (Sanderson and Redford 2003). Unless poverty

alleviation strategies are changed to achieve sustainability, the MDGs 2015 goal of halving the number of people living in extreme poverty will result in the death of biodiversity (Sanderson and Redford 2003).

Given the failure—for biodiversity and people both—of historical models of rural development focusing on primary resource production (Roe and Elliott 2005) there is a need for innovative approaches to poverty reduction that recognize the critical importance of local processes, institutions and knowledge in combating biodiversity loss and meeting the MDGs (Roe and Elliott 2005; Bigg and Satterthwaite 2005) and the importance of integrating environmental concerns and poverty-reduction activities so that international goals like the MDGs and the CBD mutually reinforce each other (Roe and Elliot year). ICDPs represent such a sustainable development alternative.

Through the ICDP approach, there is potential for conservation activities to aid long-term poverty alleviation efforts by working with small-scale, low-output producers at ecological frontiers (Sanderson and Redford 2003). This small-scale conservation could prove very valuable to those who are not benefited by traditional development strategies (Sanderson and Redford 2003). Also, long-term field conservation in remote, fragile ecosystems with small populations can effectively combine biodiversity conservation with supporting human needs (Sanderson and Redford 2003).

Poverty alleviation can be achieved by finding innovative ways to integrate biodiversity conservation and rural development (Sanderson and Redford 2003). What is essential is a dedication to creating the right kinds of partnerships between the fields

of conservation and development (Sanderson and Redford 2003). ICDPs represent a promising forum for such partnerships.

3.2.5 Institution and capacity building

The argument for institution and capacity building is that if people have rights and control over resources they will act as stewards, hence the need for strengthening tenure and usufruct rights (Robinson and Redford 2004). However, there is doubt that institution and capacity building will benefit both livelihood and conservation goals. A lot depends on who are chosen to be beneficiaries of development assistance, and most ICDPs have an impact only on a small percentage of the local people. Also, institution building creates room for criticism on all fronts, depending on one's perspective. If one's aim is poverty alleviation, then economic growth is the answer, not institution and capacity building; whereas from a conservationist point of view, community-based management might seem ineffective (Robinson and Redford 2004).

3.2.6 Empowerment and participation

Empowerment and participation are encouraged by most ICDPs, on the grounds that they increase project effectiveness; local knowledge and resource management institutions are critical for project success; and ignoring local rights to resources or failing to compensate local communities for denied access will lead to opposition to conservation activities (Robinson and Redford 2004). ICDPs recognize that community-

based conservation offers opportunities for rights-based natural resources management, and local governance and decision-making (Roe and Elliot year).

3.2.7 The role of protected areas

A common arena of action for ICDPs is in park protection and management, given the preeminent position that protected areas have in the conservation of wildlife and habitat (Robinson and Redford 2004). ICDPs attempt to compensate local communities for their exclusion from protected areas and resources via project activities that return park profits to local people (e.g. involving locals in ecotourism). However, park management does not usually contribute significantly to livelihood goals (Robinson and Redford 2004) and parks cannot be expected to cure “structural problems such as poverty, unequal land distribution and resource allocation, corruption, economic injustice and market failures” (Brandon 1998). Also, park management is frequently in conflict with other project objectives (Robinson and Redford 2004) and ICDPs that attempt to mitigate resource degradation and encroachment can be seen as nullifying their social contract with local people (Wells and Brandon 1992).

There is little evidence to show that there was any substantial basis to the assumption of ICDPs that protected areas could generate sufficient benefits that could be distributed equitably within local communities, thus providing alternative livelihoods which would decrease local pressures on protected resources (Robinson and Redford 2004; Wells et al. 2004). However, the argument that poverty negatively affects conservation and therefore increasing the incomes of communities around protected

areas will automatically translate into more effective biodiversity conservation (Wells et al. 2004) persists even though there is a paucity of hard evidence to support this, and it might be equally likely that increased incomes could lead to more land clearing for agriculture (Wunder 2001).

On the other hand, protected areas can be seen as having a valid role to play in ICDP initiatives, especially to make reparation for conservation actions causing reduced access to land and resources, opportunity costs of reduced resource use, relocation, loss of traditional and cultural values etc. One of the reasons ICDPs still remain relevant in spite of currently experiencing a fall from favor, especially with the MDG focus on poverty alleviation rather than sustainable development, is because of the need to maintain protected areas while simultaneously addressing the requirements of local populations (McShane and Wells 2004).

The review of the literature suggests that moving out of the poverty-biodiversity circularity and conundrum leads us to the inescapable and overarching focus on the issue of sustainability. Once *this* becomes the guiding principle behind formulation of conservation and development initiatives, the nuances for successful achievement of goals lie in how the complexities of execution are managed.

3.3 Execution

3.3.1 Effectiveness

There is much debate surrounding the effectiveness of ICDPs. When considering the utility and effectiveness of ICDPs, there are three prevailing viewpoints: 1) ICDPs are ineffective and represent a bad investment of precious conservation dollars; 2) ICDPs are effective and best-practice; and 3) ICDPs work in certain contexts.

The view that ICDPs are ineffective is supported by the fact that the popularity of ICDPs has been affected by a lack of documented success (McShane and Wells 2004). ICDPs have proved disappointing from the objective of improved biodiversity conservation (Wells et al. 1992; Oates 1999). They saw a rapid increase in popularity, despite a lack of convincing evidence of their efficacy, and a subsequent fall from favor, for failure to meet expectations. Investments in ICDPs have not delivered the expected conservation benefits (Wells et al. 2004).

ICDPs aim to combine sustainable development—a stated imperative of the 1992 Rio Earth Summit—with biodiversity conservation. However, over the last 2 decades, and especially in recent years, they have increasingly come under criticism as delivering neither conservation nor development goals. They have also been criticized for having unrealistic expectations, based on weak assumptions (Wells et al. 2004).

The argument in favor of the effectiveness of ICDPs stems from the opinion that they represent a ‘best practice’ approach, since they recognize the development value of biodiversity, and allow both conservation and development benefits by integrating environmental concerns and poverty-reduction activities (Roe and Elliot 2005).

Critiques of the effectiveness of ICDPs state the importance of the context in which ICDPs are applied. Biodiversity-based initiatives may be significant only to certain groups in certain areas e.g., forest dwellers, or those living near protected areas (DFID 2002). Conservation activities can aid long-term poverty alleviation efforts by working with small-scale, low-output producers at ecological frontiers (Sanderson and Redford 2003). Also, long-term field conservation in remote, fragile ecosystems with small populations can effectively combine biodiversity conservation with supporting human needs (Sanderson and Redford 2003). Direct payments as an alternative to ICDPs might be more cost-effective in many cases (Kiss 2004).

The benefits generated from ICDPs are usually not sufficient to protect PAs via the generation of alternative livelihoods, and caution should be exercised when planning to use protected areas as the basis for poverty reduction (Wells et al. 2004; Brandon and O'Herron 2004). The types of income-generating activities employed by ICDPs have tended to focus on production rather than financial viability and marketing and have therefore been disappointing (Wells et al. 2004). Even when ICDPs have generated economic benefits, it has been unclear how this translated into benefits for biodiversity conservation (Robinson and Redford 2004; Wells et al. 2004).

3.3.2 Equity and participation

Local participation is an integral part of ICDPs, yet is beset with difficulties (Wells et al. 2004). The extent of this participation varies widely among ICDPs

(Robinson and Redford 2004), and analyses indicate that there has been little success in achieving the objectives of participation (Agrawal and Yadama 1997).

The concepts of decentralization and local decision-making for natural resource management have become widely accepted, yet the optimal level of local participation has yet to be decided. The notion of an idealized homogenous 'community' is questionable and there is a need for ICDPs to recognize the diversity of local interests and stakeholders around protected areas. Given this complexity within the 'community' it is also necessary to acknowledge that it is not feasible to involve all stakeholders in decision making (Wells et al. 2004). Also, local interests might be incompatible with those of national governments and/or the international community when it comes to the management of ecologically important resources in protected areas (Brandon and O'Herron 2004). In the light of these complications, it is not surprising that the extent of genuine local participation in ICDPs has been very varied (Wells et al. 2004).

While they are the targeted beneficiaries, the decision to implement an ICDP rarely comes from the local community. Trying to encourage local participation in the absence of the appropriate legal and institutional framework is difficult, especially given the long time frame that is required to strengthen the capacity of local institutions (Wells et al. 2004). Contradictions in the conventional project framework include the question of how locals can achieve ownership, and activities be sustainable, when most major factors (design, budget, time frame etc.) are decided by outsiders (Sayer and Wells 2004).

Power inequities frequently do not allow the poor to benefit from biodiversity (Roe and Elliott 2005). A lot depends on who are chosen to be beneficiaries of

development assistance, and most ICDPs have an impact only on a small percentage of the local people (Robinson and Redford 2004). Lack of access to markets, and the appropriation of high-value resources (e.g. timber, landscapes with high tourist potential) by the more powerful make it difficult for economic benefits from biodiversity to reach poorer sections (Roe and Elliott 2005).

3.3.3 Monitoring and evaluation

Poor monitoring of biodiversity and livelihood impacts of ICDPs has prevented learning (Shepherd 2004). It has also prevented demonstration of success.

3.3.4 Issues of scale

There has been a paradigm shift in conservation from the local-scale approaches, used by most ICDPs, to large-scale approaches that focus on ecoregions, landscapes, bioregions, hotspots etc. (McShane and Wells 2004). Some say this large-scale perspective has better potential for reconciling conflicting stakeholder needs than a local approach (Maginnis et al. 2004). Are these large-scale approaches the new paradigm for ICDPs (Franks and Blomley 2004)?

A landscape-level approach offers a means of addressing both conservation and development goals, since the heterogeneity of land uses allows a variety of outcomes, and different areas can be used for different activities (Robinson and Redford 2004). The most effective ICDPs undertaken by WWF were those that were implemented at the landscape level (Larson et al. 1998).

The tendency of ICDPs to target small-scale, local threats has often been a poor use of resources, since these threats are often not the most serious (Wells et al. 2004). It is therefore critical for ICDPs to analyze and act on threats to protected areas at a range of spatial scales (Robinson and Redford 2004) and to be more active in regional development and land-use planning, where many potentially harmful decisions originate (Wells et al. 1999).

3.3.5 Financial sustainability

Although their original aim was to become self-financing, most ICDPs require continued funding following the initial phase in order to carry on. Environmental trust funds have proven to be one of the few reliable sources of sustainable funding (Wells et al. 2004).

4. RECOMMENDATIONS

The relevance of the ICDP approach still holds, in spite of the many criticisms and difficulties surrounding it. Thus, “the question is not whether conservation and development should be integrated, but how” (Robinson and Redford 2004).

The institutional characteristics of ICDPs are critical: their institutional forms should have the capacity to deal with ecological, social, political and economic change (McShane and Wells 2004). According to Chan et al. (2007), the conservation community needs:

1. to better integrate social scholarship into conservation
2. a detailed understanding of the social, temporal, and spatial distribution of costs and benefits of conservation; and these must be equitably distributed
3. to better acknowledge social concerns, but sometimes recognize the necessity of arguing for conservation for biodiversity’s sake, and not for direct human benefits.

Robinson and Redford (2004) propose five principles for success that need to be addressed by the next generation of ICDPs:

- 1) Specify goals: “Projects must have clear, measurable, achievable, and appropriate goals” (Robinson and Redford 2004). There needs to be a clear distinction between the goals of socioeconomic development and those of conservation and each ICDP must acknowledge the primacy of one set of goals. ICDPs can be separated into development projects with conservation (DPC) and conservation projects with development (CPD) in order to avoid seeking win-win projects, which have proved

- elusive (Redford and Sanderson 1992). The parameters of the project will vary, depending on whether it is a DPC or a CPD.
- 2) Acknowledge trade-offs: Human use usually reduces biodiversity (Robinson 1993) with different uses affecting different components of biodiversity (Redford and Richter 1999). The trade-offs between use and conservation must be calculated in order to make management decisions (Robinson and Redford 2004).
 - 3) Respect context: There has been a historical lack of comprehensive assessments of the ecological, social, and political contexts of different sites before deciding which tools would be most appropriate (Robinson and Redford 2004). No one approach is appropriate for all situations (Newmark and Hough 2000; McShane and Newby 2004). ICDPs are best applied where threats and solutions are both local (Robinson and Redford 2004). ICDPs have been most successful in contexts where:
 - a) a primary threat to biodiversity is from local people living in the immediate vicinity of the protected area;
 - b) the types and scales of pressures are relatively limited;
 - c) realistic opportunity exists to generate income from limited local development activities;
 - d) policies exist that are conducive for dialogue among stakeholders;
 - e) communities are strong and intact;
 - f) immigration (or emigration) is controlled; and
 - g) resources of economic value to the outside world can be exploited sustainably.

(Robinson and Redford 2004)

- 4) Respect scale and heterogeneity
- 5) Learn from doing: There has been a lack of learning in the past. In order to learn from successes and failures it is essential for ICDPs to use an adaptive management approach when designing, implementing, and monitoring projects (Robinson and Redford 2004; Salafsky et al. 2001). Using this approach, projects would be based on a conceptual model that would define goals, causes and effects, and would make assumptions explicit. The adoption of adaptive management models would result in significantly greater benefits from project implementation. These potential benefits, which are currently being squandered, should be harnessed (Robinson and Redford 2004).

4.1 Adaptive management as an essential tool for ICDPs

In answer to the question “Do integrated conservation and development projects work?” Salafsky and Margoluis (2004) suggest that an adaptive management approach be used to answer fundamental questions that are embedded within this question. These questions include: 1) What specific strategies and tools do ICDPs use? 2) What is the goal of an ICDP? 3) Under what conditions does each strategy/tool work?

At the project level, adaptive management would begin by assessing conditions and determining major threats to biodiversity at the project site. This would be followed by the creation of a conceptual model. This model would be used to specify key factors and the relationships between them; to develop a management plan outlining specific

actions for desired results; and to develop a monitoring plan to assess progress in project implementation. Once the conceptual model, management plan, and monitoring plan are in place, implementation of program activities and monitoring can commence; to be followed by data collection and analysis, and communication of the results (Salafsky and Margoluis 2004; Margoluis and Salafsky 1998). The results and analysis can be used to modify any of the preceding steps.

The important point is that monitoring is integrated into the project design and management, so that new information can be integrated into project design, and different assumptions can be tested (Salafsky and Margoluis 2004).

A network of projects can be brought together in a 'learning portfolio' to maximize the advantages of the adaptive management approach. This is most effective when the projects share a similar conservation goal and strategy to achieve this goal. Managers and stakeholders in the learning portfolio develop a 'learning framework' that clearly outlines the basic assumptions behind the common strategy being used by the projects in the portfolio. The learning framework enables the project members to test assumptions, collect discussed data, share experiences, and promote peer mentoring, thus increasing the learning experience of portfolio members (Salafsky and Margoluis 2004).

A preliminary step in adaptive management of ICDPs is to identify the approach, strategy, and tools being used to accomplish the desired goals. These strategies and tools can be defined according to the scale at which they will be implemented (Salafsky and Margoluis 2004).

Another important preliminary step in the adaptive management process is the defining of goals, which is particularly crucial for ICDPs, since they aim to achieve dual goals, in both conservation and development. In many ICDP projects, these goals might be spatially disjunct, not well defined, and measured against different metrics. This makes it difficult to rely on one single approach to reach both goals simultaneously, and also makes it difficult to compare the positive or negative effects of progress towards one goal on progress towards the other goal (Salafsky and Margoluis 2004).

Advocates of ICDPs often assume that their multiple goals can be achieved with one set of project actions viz. a win-win situation in which both biodiversity conservation and improved human welfare are realized in tandem. In fact, though these goals might be related, they are not the same, and are frequently in partial opposition to each other. Having two or more divergent goals in an ICDP makes effective adaptive management challenging since it becomes difficult to create a simple model, decide on project actions, explicate assumptions, and decide what data to collect (Salafsky and Margoluis 2004).

ICDPs should identify one primary goal, and create a conceptual model that specifies this goal as the primary target. The conceptual model will depict a range of factors that affects this ultimate goal, but the project members should concentrate on project actions that address those factors that fall within their area of expertise. Thus, the ultimate goal specified at the outset remains relevant, but the focus of project activities may address only certain factors that affect this ultimate goal (Salafsky and Margoluis 2004).

Another approach is to create separate models for each project goal, and decide how to allocate resources between the different goals, and how to address the inevitable trade-offs (Salafsky and Margoluis 2004).

These approaches essentially require a change in the traditional ICDP framework, from one in which a broad range of stakeholders worked on one project, to one in which each group defines its own project centered on its own specific goal. The challenge in this approach lies in creating effective interactions between the separate groups in order to achieve the desired outcomes (Salafsky and Margoluis 2004).

Adaptive management can be used to understand the important question of what tools/strategies work under what conditions. The effectiveness of tools, and the cost of implementation, varies widely according to the situation and type of tool. Since most ICDPs implement a variety of interventions simultaneously, project managers need to know how these tools function alone, and how they interact with other tools. The adaptive management approach facilitates this learning at both the individual project as well as the portfolio level (Salafsky and Margoluis 2004).

A learning portfolio helps develop 'general and yet nontrivial principles' (Salafsky and Margoluis 1999) that can be used by conservation projects both within and without the learning portfolio. These principles are neither too specific nor too general.

Salafsky and Margoluis (2004) make recommendations for future ICDPs:

- 1) Clearly define the strategies and tools that make up ICDPs, and recognize that ICDPs are a cluster of strategies/tools for development and conservation goals, rather than a single specific tool.

- 2) Clarify goals, and reconcile incompatibilities between multiple goals.
- 3) Either conservation or development should be identified as the primary goal.
- 4) If needed, reorganize large projects implemented by multiple stakeholders, into several smaller related projects.
- 5) Examine the conditions under which specific strategies/tools work, by analyzing case studies, and using learning portfolios.

4.2 Financial Sustainability

Although their original aim was to become self-financing, most ICDPs require continued funding following the initial phase in order to carry on. Environmental trust funds have proven to be one of the few reliable sources of sustainable funding. Important guidelines for financial sustainability of the next generation of ICDPs are:

- 1) Projects with poor potential for financial sustainability should either not be undertaken, or scaled back so that project activities are commensurate with local capacities.
- 2) PAs associated with ICDPs should focus on generating sustainable economic benefits without compromising biodiversity conservation objectives, which might require private sector involvement. The project design of ICDPs should reflect the reality that income-generation activities will probably not be sufficient to support both operating costs and benefit local communities.

- 3) Wealthier countries need to assume more of the costs of conservation in developing countries. The latter need to develop an atmosphere of political freedom where citizens demand better conservation through legitimate political avenues.

(Wells et al. 2004; Child and Dalal-Clayton 2004)

5. THE COMPACT APPROACH

The Community Management of Protected Areas for Conservation (COMPACT) program is jointly funded by the United Nations Foundation and the Global Environment Facility Small Grants Program (GEF/SGP). It is implemented and managed by GEF/SGP.

COMPACT grew out of the opportunity offered by the need to conserve biodiversity on a landscape and ecosystem scale, while demonstrating the contribution of biodiversity conservation and protected areas to the achievement of the MDGs; and the vision that participatory approaches to biodiversity conservation in protected areas that were built on successful experiences in the field offered a realistic chance of success (GEF SGP 2004).

“The objective of COMPACT has been to demonstrate how community-based initiatives can significantly increase the effectiveness of biodiversity conservation in natural World Heritage Sites (WHS) by adding value to existing projects and programmes” (COMPACT FNR 2004) and to “demonstrate effective ways of involving local stakeholders in the conservation and sustainable use of biodiversity in and around six natural WH sites” (GEF SGP 2004).

Phase I of COMPACT (2000-2004) saw the successful implementation of its approach in six WH sites: the Belize Barrier Reef WHS, Belize; Mornes Trois Pitons WHS, Dominica; Mount Kenya WHS, Kenya; Sian Ka’an WHS, Mexico; Puerto Princesa Subterranean River WHS, Phillippines; and Mount Kilimanjaro WHS, Tanzania (COMPACT FNR 2004).

At the strategic level, the COMPACT approach identified key lessons, which were to:

1. Engage civil society and a broad variety of stakeholders in protected area planning and decision-making;
2. Ensure that projects were designed with a clear understanding of their objectives in terms of yielding benefits to local communities as well as mitigating threats to protected areas;
3. Involve local stakeholders in: (i) defining the objectives of project interventions; (ii) monitoring progress; (iii) learning from experience; (iv) systematically documenting and disseminating findings; and to
4. Promote relatively simple and adaptive conservation and development initiatives consistent with an overall protected area strategy, but based on site-specific conditions and local community dynamics.

(GEF SGP 2004)

At the programmatic level, COMPACT was envisioned as a long-term program that would target activities in and around globally significant protected areas to:

1. Test, adopt and, where appropriate, replicate small-scale, environmentally-friendly, income generating activities for communities in and around protected areas;
2. Help develop a capacity for independent planning and action among emerging community-based organizations (CBOs) whose activities affect adjacent protected areas;

3. Employ education and awareness programs to broaden and deepen the constituency of support for biodiversity conservation;
4. Support protected area managers and their staff as they make a transition towards participatory approaches and work more constructively with local communities;
5. Use conflict resolution approaches where competing users dispute current or planned arrangements for the conservation or use of natural resources;
6. Reflect the pace of the community, rather than attempt to meet externally imposed deadlines;
7. Establish flexible disbursement arrangements consistent with local absorptive capacities, recognizing that neither higher levels of funding nor faster disbursement correlate with more successful community projects.

(GEF SGP 2004)

According to the Small Grants Program (SGP), “significant progress was made towards the overall objective of ‘complementing and adding significant value to existing conservation programmes’. Even though it is difficult to measure reduction in threats over such a short time frame—especially since threats often originate far beyond park boundaries—the first phase of the program did serve to demonstrate what could be achieved over a longer time frame (GEF SGP 2004).

The popularity of ICDPs has been affected by a lack of documented success (McShane and Wells 2004). As COMPACT heads into its second phase, there is a critical need to document successes from the first phase. The following section reviews Phase I of COMPACT with the aim of identifying examples of innovation and success in a number of key areas.

5.1 Innovative approaches and measurable successes

The Global Environment Facility (GEF) has been the largest single source of international funding for developing countries since 1992 (GEF SGP 2004). The COMPACT methodology is based on the standard procedures of the GEF's Small Grants Program (SGP), which provides grants of up to \$50,000 to CBOs for biodiversity conservation and livelihood activities in and around protected areas (GEF SGP 2004).

The COMPACT methodology begins by conducting a thorough **baseline assessment** at each WHS, to gather and analyze information on the status and trends of biodiversity and socioeconomic issues. This assessment includes:

- i. conservation objectives;
 - ii. economic activities;
 - iii. major threats;
 - iv. key management issues;
 - v. existing programs; and
 - vi. relationships with local communities.
- (Hay-Edie et al. 2004)

The assessment considered livelihood sources of local communities and relevant biodiversity users; the capacities of partner organizations; and key stakeholders, their interests, and any conflicts between stakeholder groups. The active involvement of local communities in all stages of planning and data collection was consistently emphasized at all project sites (Hay-Edie et al. 2004).

The baseline assessment was followed by the development of a **conceptual model** (Margoluis and Salafsky 1998; Salafsky and Margoluis 2004) “as a diagrammatic tool to document site-level processes, threats and opportunities believed to impact biodiversity conservation” (Hay-Edie et al. 2004). The conceptual model was used to ensure that proposed activities were properly alignment with, and relevant to, local priority needs.

The conceptual model was followed by the development of a **site strategy**, highlighting major threats, opportunities and priority actions. This strategy provided the framework for the allocation of resources; selection and implementation of grants; and results assessment (Hay-Edie et al. 2004).

At this stage, grant applications were solicited from organizations that had participated in the baseline assessment and development of the site strategy. The range of eligible projects included:

- Income-generating activities addressing the immediate needs of local communities and reducing pressure on natural resources;
- Awareness, dialogue and consensus building among major stakeholders (local communities and governments, protected area authorities, etc.);

- Workshops and consultations on ways to involve communities in protected area management;
- Improved natural resources management (crops, soil, water etc.) in buffer zones in order to increase productivity of agro-ecosystems and reduce pressure/encroachment on protected areas;
- Reduced consumption of wild-gathered resources, and identifying substitutes for wild species;
- Enforcement of customary law, restoration of degraded areas, and demarcation of site boundaries;
- Enhancing biodiversity management by the inclusion of knowledge, innovations and practices of traditional and indigenous communities;
- Legal and socioeconomic incentives for conservation and sustainable use of biodiversity; and
- Removal of economic and legal barriers to the conservation of WH sites and associated buffer zones.

(Hay-Edie et al. 2004)

The institutional arrangements at each WHS included a Local Coordinator, reporting to the SGP National Coordinator, who was responsible for the planning and implementation of site-based activities, and provided the key link among local communities, stakeholders, and the SGP National Steering Committee (Hay-Edie et al. 2004).

A Local Consultative Body (LCB) was established at each site, comprised of key stakeholders, including protected area management authorities, representatives of local communities, locally active NGOs, local academic and research institutions, local governments, private sector partners, and donors. The LCBs played an invaluable role in ensuring dialogue, consensus-building, and coordination among key stakeholders at the protected area level; made recommendations on the selection of grant proposals; providing opportunities for government agencies and NGOs to work together as partners rather than adversaries; sharing expertise and experience with grantees through site visits and workshops; building the capacities of emerging CBOs; bridging the gap between community-level activities and national planning agendas; and working with different levels of government to overcome political and institutional obstacles to program implementation and success (Hay-Edie et al. 2004).

The COMPACT methodology above, developed and tested during its first phase of activities, is considered a key achievement for the program since it offers some valuable advances for the ICDP approach (COMPACT FNR 2004; GEF SGP 2004):

- 1) It is cost-effective;
- 2) A lengthy preparatory phase identifies key stakeholders;
- 3) It employs a site-specific approach to identifying stakeholders, and creating institutional arrangements and partnerships;

- 4) Site selection is based on criteria that promote success: it considers the institutional capabilities of the area, the level of government commitment, and defines a tractable set of problems;
- 5) It uses a conceptual model to identify and prioritize threats, opportunities, and activities;
- 6) Develops a site strategy that is very specific regarding the allocation of resources, the roles of NGOs, CBOs, and other partner organizations, and the assessment of results; and
- 7) It employs a landscape approach.

One of the criticisms of ICDPs is that their objectives are based on unrealistic assumptions (McShane and Wells 2004). The baseline assessment used by COMPACT, followed by the conceptual model, and the specific site strategy all contribute to a clear delineation of goals, and planning of community interventions. This also addresses the criticism that ICDPs tend to have unrealistic expectations, and target the wrong threats. The COMPACT methodology chooses a tractable set of problems that can be addressed given the institutional and other capacities of the area.

5.1.1 Combining conservation and development goals

The first phase of COMPACT funded a portfolio of 153 projects around the six WHS, which included

“an impressive range of innovative projects that address both ecosystem conservation and the needs of local populations. Examples include: access to renewable energy technologies to reduce pressure on forest resources; water management strategies to minimize conflicts and allow community control of key resources; technology applications for natural resource monitoring and sustainable use (e.g., sustainable fisheries and sustainable forestry); certification of products and access to specialized market niches to add value to community produced goods and services; as well as alternative livelihood opportunities, such as ecotourism, and beekeeping” (COMPACT FNR 2004).

5.1.2 Funding

The advantages that the COMPACT approach offers in the above context are that it funds projects, rather than programs, in an environment where aid is now channeled through governments; funds go directly to CBOs. COMPACT still provides direct funding for community-managed site-based biodiversity conservation at a time when ‘global’ and ‘large scale’ projects are the mode, and when there has been a dramatic decrease in direct funding to biodiversity projects.

5.1.3 Landscape approach

There has been a paradigm shift in conservation from local-scale approaches (like most ICDPs) to large-scale approaches that focus on ecoregions, landscapes, bioregions, hotspots etc. (McShane and Wells 2004). Some say this large-scale perspective has better potential for reconciling conflicting stakeholder needs than a local approach (Maginnis et al. 2004). Are these large-scale approaches the new paradigm for ICDPs (Franks and

Blomley 2004)? Where does COMPACT fit on the scale spectrum? On the one hand, COMPACT activities and site strategies are local and site-specific, but on the other hand COMPACT has a landscape perspective since it implements a variety of projects in the same landscape/WH site.

The landscape approach of COMPACT meant that 'at the portfolio level, clusters of livelihood projects with multiple synergies have been found to be a cost-effective strategy to address critical threats and pressures to protected areas' (COMPACT FNR 2004). This approach also encouraged learning amongst a wide range of projects around the Sian Ka'an and Mt. Kenya WH sites, and this was frequently translated into better communication with the concerned WH authorities and into advances in capacity and institution building. In addition, "many grantees have also become advocates for protected area conservation as a result of the exposure received from understanding the project portfolio for the entire WH landscape" (COMPACT FNR 2004).

5.1.4 Equity, participation, and capacity building

Due to its local approach, the distribution of benefits is easier to measure, and control; and it empowers local communities in designing and managing sustainable development initiatives. The Local Consultative Body (LCB) provides an arena for dialogue between key stakeholders at the site level. Community involvement is emphasized at all stages of data collection and planning. In an effort to increase participatory synergies, a number of COMPACT teams have developed participatory

mechanisms to encourage exchanges between grantees, and between donors through a regular 'Donor Forum', which operates at the WHS level (COMPACT FNR 2004).

The COMPACT approach encouraged learning and exchange between projects and institutions at the landscape level, resulting capacity-building benefits. "In total, COMPACT grantees have established over 100 partnerships between protected areas authorities, government bodies, NGO networks, utility companies, hoteliers, tourism associations, foundations, national universities, research centers and many others. The overall effect has been to build a broader grassroots constituency for the conservation of WH sites, ensuring that the impact of COMPACT is greater than the combined achievements of individual projects. Many grantees have also become advocates for protected area conservation as a result of the exposure received from understanding the project portfolio for the entire WH landscape" (COMPACT FNR 2004).

5.1.5 Sustainability

COMPACT has been assessed as being a "low-cost, innovative and replicable institution" (Wells 2003) "for the effective management of WH sites and their surrounding landscapes" (COMPACT FNR 2004). The LCB of COMPACT was cited as being a model worth replicating and including in the nomination of each natural and mixed WHS.

Financial sustainability of COMPACT has good potential since a number of donors have been favorably impressed by its structure and modalities, and have pledged support to the WH sites where it operates. The COMPACT-initiated

Donor/Partners Forum in the Mt. Kenya WHS has been particularly successful in attracting donor support for projects with complement COMPACT initiatives within the WH landscape, including projects on critical watershed management (COMPACT FNR 2004).

The success of COMPACT in addressing the need to find synergies between conservation and development goals has been recognized by the fact that, due to its “promising track record of encouraging landscape-level conservation, and of bringing about positive synergies between multilateral conventions, an official Memorandum of Cooperation was signed on February 2004 between the Secretariat of the CBD, the World Heritage Centre, and the SGP at the 7th Conference of the Parties (COP7) of the CBD. The Memorandum expects COMPACT to substantially contribute to meeting 2010 CBD targets as agreed by the Parties and also to support the implementation of the CBD protected area programme of work” (COMPACT FNR 2004).

5.1.6 Conservation and development benefits

COMPACT has been able to demonstrate significant gains in both conservation and development arenas. According to Jeanett Acosta, Coordinator of the Public Use Programme of the Sian Ka’an WH site and Biosphere Reserve: “As a result of COMPACT, the self-management capacity of the social enterprises has been strengthened. The quality of tourism services has improved while at the same time the environmental impacts have been reduced... A universe of action has opened for the

coordination and collaboration among civil society, government, and international organizations” (COMPACT FNR 2004).

5.1.7 Learning

The COMPACT approach encouraged the type of portfolio-level learning advocated by Salafsky and Margoluis (2004) by encouraging information exchange and knowledge sharing between different projects at the level of the WHS landscape.

5.1.8 Monitoring and evaluation

One of the hallmarks of the COMPACT is the recognition of the need for ongoing monitoring of the projects funded. The baseline assessment methodology provides a starting point and yardstick for this. This methodology requires the development of indicators which are both relevant to project objectives and show short- and long-term impacts. COMPACT recognizes the importance of involving key stakeholders in an ongoing review of the appropriateness of these indicators. It does this by not only including the immediate stakeholders, such as the grantees, but others likely to have special knowledge of the local region, such as universities, CBOs, and NGOs.

The portfolio of projects implemented in the Sian Ka’an Biosphere Reserve and WHS in Mexico represent a successful example of the COMPACT approach. Some key highlights of the Sian Ka’an WHS projects are described in the next section, to

demonstrate the processes through which the COMPACT methodology is implemented, and identify areas of success and innovation.

6. CASE STUDY: SIAN KA'AN BIOSPHERE RESERVE AND WORLD HERITAGE SITE

Between 2000 and 2004, COMPACT funded a number of initiatives in the Sian Ka'an Biosphere Reserve in Mexico. The range of projects implemented here began by addressing the strengthening of environmental education, and generating awareness and support for the Sian Ka'an WHS. They continued by addressing key issues relating to initiatives that integrated biodiversity conservation and sustainable livelihoods. A case study of COMPACT activities in Sian Ka'an over the four-year period under survey (as noted in the COMPACT FNR 2004) is presented below, and an analysis of their relevance to key issues in the ICDP debate is provided.

6.1 Democratic institutional arrangements

COMPACT established a regional-level mechanism for exchange that would enable all grantees to participate in program implementation, called the Council for Support and Monitoring (CAS). The Council included representatives of all grantee organizations, representatives of the Sian Ka'an Reserve and the municipality, as well as from the LCB, the SGP National Coordinator, and the COMPACT Local Coordinator. The functions of the CAS were to support grantees by providing technical assistance and helping with information exchange; promoting productive integration; supporting dissemination of the program; and promoting linkages with other programs for commercial and funding purposes. The resolutions were intended as recommendations for grantees, and were determined by consensus. The CAS meetings were to be held

every three months, at different project sites, and the host group was to demonstrate the working of their project.

The COMPACT LCB functioned with a high degree of professionalism and dedication over the entire four-year period. It included members from regional academic organizations; government organizations addressing indigenous and cultural concerns; a national NGO; a private bank; the Director of the Sian Ka'an Reserve; the Mexican representative of the Mesoamerican Biological Corridor; and the Mexican coordinator of WWF. The LCB oversaw the applications of prospective grantees, and made field visits to prospective project sites.

Consensus-based decision making, which allowed for identification of technical skill gaps and projects to address these, was one of the success factors. The recognition of legitimate professional sources of local knowledge integrated into the consensus-based decision-making process improved the quality of information that at a later stage helped in development of appropriate indicators for monitoring and execution.

6.2 Monitoring

Monitoring of biodiversity threat reduction was a priority from early on, and the baseline assessment was used as a yardstick to measure project impacts on the reduction of threats identified in the baseline assessment, particularly those reductions arising from activities of the target communities. The indicators discussed above formed the basis for this effort.

As part of this effort, project participants identified indicators for biodiversity and ecosystem health, and collaborated with a variety of technical and academic institutions, as well as local, national and international organizations active in the Sian Ka'an region, including municipal and state authorities, the National Institute for Indigenous Affairs, the Mesoamerican Biological Corridor, and The Nature Conservancy.

Resource constraints led to innovative methods of monitoring project progress. The internal processes of project progress were evaluated using feedback mechanisms such as workshops, site visits, seminars. Self- and peer-evaluation conducted through discussions, dialogue, and some oversight by SGP representatives (who are locally selected) created a non-threatening atmosphere conducive to recognition of errors and self-correction systems.

6.3 Inclusive communication strategies

COMPACT made a commitment in Mexico to guaranteeing that all project documents would be bilingual—in Spanish as well as Maya—and would be kept simple and clear. Information dissemination and exchange efforts were catered to the region by experimenting with the use of video to share lessons and experiences, given the low rate of literacy in the area. In addition, much effort was put into providing technical assistance to Mayan communities that had no previous experience with designing and implementing projects.

6.4 Diverse and multi-tiered project portfolio

In the first two years, 31 projects were implemented in Mexico (see Appendix 1), double the expected maximum number. Project activities were reviewed and monitored by the LCB, the Local Coordinator, and the CAS. Importantly, grantees were able to discuss and analyze project progress, and exchange visits were conducted between inland Mayan organizations and coastal communities. Out of the 31 projects underway by 2002, 18 grants were awarded directly to CBOs, 11 to NGOs, and 2 were for technical assistance, and monitoring and evaluation for the entire program. Mayan organizations comprised 15 out of the 18 CBOs that received grants, reflecting the ethnic and cultural makeup of the Yucatan.

An analysis of the project titles and objectives, and recipient organizations, demonstrates the multi-tiered and diverse nature of the project portfolio. The portfolio is unique in that it combines short-, medium- and long-term initiatives, that have impacts at individual, group, and community levels. Replacing outboard motors with environmentally-friendly motors is an example of a project that can be quickly implemented at the individual-level. Moving up the spatial and temporal hierarchy of initiatives, we have a project targeting sustainability implemented at the level of a cooperative, in this case sustainable management of lobster fisheries. At the highest level of complexity are projects that target community-level impacts over the entire region, e.g., knowledge and recognition of the importance of biodiversity through knowledge creation (integrating indigenous knowledge) and education programs.

The diversity of the project portfolio is apparent from projects that focus on providing sustainable livelihoods for women, to educating indigenous communities, raising awareness among youth regarding traditional Mayan medicine and prayers, supporting traditional healers through documentation of medicinal plants, to the promotion of indigenous law to strengthen Mayan culture, to ecotourism services, to improving the administrative and financial capacities of a private (SmartWood compliant) logging company in the region.

COMPACT projects in Sian Ka'an clearly demonstrate the success of a multi-tiered, diverse set of projects that create synergistic benefits for both conservation and development.

6.5 Capacity building

Capacity building and technical support are fundamental components of COMPACT projects, and took place for all 35 organizations funded by COMPACT in Mexico between 2000 and 2004. These consisted of 25 CBOs, 7 NGOs and 2 academic institutions. Out of the 25 CBOs, 19 were Mayan groups that had little organizational experience. The capacity-building component compromised about 70% of the support provided for production projects that were aimed at diversification and discovering environmentally-friendly alternatives. CBOs were assisted by NGOs and academic institutions with the relevant experience. The different areas in which such assistance was provided included wildlife conservation and use units; apiculture; organic agriculture; forest management; environmental education; and marketing studies.

Capacity building comprises physical infrastructure, technology, processes (e.g. legal, marketing and feasibility studies), learning, and knowledge management. An analysis of the projects funded seems to indicate that investment in physical infrastructure is not an explicit priority, though there are examples of funding for infrastructure related to hydroelectric and water management in the Mount Kenya National Park WHS. It appears as though leveraging and supplementing existing infrastructural capacity is the approach.

Providing new technology and transferring best practices seems to be a major priority for COMPACT projects. This is particularly evident in sustainable agriculture, apiculture, wildlife conservation, and forest management. Further, COMPACT assists in the development of capability for conducting feasibility and marketing studies, and setting up distribution processes. It also assists in developing legal procedures within each country context, to ensure long term sustainability of program activities. They have facilitated grantees playing advocacy roles to create systemic and procedural changes conducive to sustainability.

COMPACT places a great emphasis on learning, education, knowledge management, and dissemination, as discussed below.

6.6 Learning

Learning took place at the international, country and local levels, through workshops, meetings and site visits. At the international level, a COMPACT orientation workshop was held in 2000, and included COMPACT Local Coordinators, SGP National

Coordinators, and various experts in relevant fields. In 2001, the second COMPACT Workshop and SGP Global Workshop were held, which allowed GEF/SGP and COMPACT staff to exchange information and experiences. This workshop allowed an examination of the application of the COMPACT planning methodology across a range of socioeconomic, cultural, and geographic contexts. It also allowed Local Coordinators to discuss priority-setting processes; criteria for project selection to maximize synergy and impact; strategies to address broader policy issues; and fundraising methodology. The COMPACT Workshop and SGP Global Workshop in 2003 allowed further exchange of experiences between SGP and COMPACT staff. A Knowledge-Gathering Workshop in 2003 at the 5th IUCN World Parks Congress allowed SGP staff and COMPACT Local Coordinators to present COMPACT's work. In 2004, a consultation workshop allowed a review of COMPACT's achievements between 2000-2004; a discussion among existing and potential project partners about the potential of consolidating and expanding COMPACT activities in a second program phase; and examining the contributions of COMPACT to the CBD Plan of Work.

At the national and local levels, the activities of the CAS, LCBs, Local Coordinators, and National Coordinators—through the fora of meetings, workshops, and site visits—allowed portfolio-level learning and knowledge exchange, as recommended by Salafsky and Margoluis (2004), and one of the stated goals of COMPACT. Meetings of the CAS at different project sites, and meetings of the CAS sub-groups for various types of activities yielded benefits by allowing integrative initiatives, and collaborative knowledge exchange. These meetings allowed the

identification of common needs, and the potential for integrative projects that would address the needs of several organizations simultaneously. These integrative projects were carried out by various groups and institutions, including NGOs and academic institutions. They included organic agriculture projects; the management of flora and fauna; developing markets for community tourism. Also, experienced groups offered to assist new COMPACT grantees by providing information and technical support (e.g., a sustainable timber initiative, NohBec, offered to share their expertise in forest management with other communities).

6.7 Education, knowledge, and dissemination

COMPACT projects also contributed to environmental education, knowledge management, and knowledge dissemination.

The environmental education activities of COMPACT focused on raising awareness of the ecological resources and biodiversity of the area. An estimated 5,000 children and 5,000 adults, comprising about a third of the residents around Sian Ka'an, benefited directly from COMPACT's educational projects. The educational materials were bilingual in Spanish and Maya, and consisted of books, pamphlets and posters about the Sian Ka'an Biosphere Region. The topics covered the biodiversity of the area, the sea and its resources, wetlands, forests, birds, mammals and fish.

In addition to targeting environmental education, COMPACT emphasized knowledge management of indigenous and local knowledge, culture, and practices. A number of COMPACT projects focused on Mayan culture and knowledge. Twelve

projects were on the promotion of Mayan culture and knowledge of biodiversity. Five of these projects were on traditional Mayan medicine, and involved the study and management of 128 plant species at two medical centers. Activities include helping to heal with traditional medicine, preparation of traditional medication, and passing on Mayan learning and health philosophy to the younger generation. A book on traditional Mayan medicine was planned to be published by one of the centers. Two additional projects concerned the recovery of Mayan cultural traditions and customs regarding the resource management. Workshops on Mayan literacy were also held in a number of communities.

Over four years, the dissemination of COMPACT objectives and activities was considerable, and spanned the local, national, and international scales. At the international level, COMPACT's work was widely publicized, and received considerable acclaim. In 2002, COMPACT presented and discussed its innovative methodology, operational structure, and activities and results, to international audiences, via a number of major events. These included: the 6th Conference of the Parties to the CBD; the Africa Mountains High Summit; the African Mountains Association Conference; the World Summit on Sustainable Development; the Bishkek Global Mountain Summit; the GEF Council and GEF Assembly; and the 30th anniversary of the UNESCO World Heritage Convention. In addition, three COMPACT projects from Belize were featured in the World Heritage Virtual Congress, which was organized as part of the 30th anniversary of the UNESCO World Heritage Convention. In 2003, COMPACT activities were discussed at the 5th IUCN World Parks Congress. In 2004, COMPACT was featured at

the 7th Conference of the Parties (CoP7) of the CBD, and 'Partner's Day' of the World Heritage Committee. The value of COMPACT's approach and achievements was recognized by the CBD Secretariat at CoP7. COMPACT's potential to contribute significantly to meeting the 2010 CBD target, and to supporting the implementation of CBD's Program of Work on protected areas, led to the signing of an official Memorandum of Cooperation between the Secretariat of the CBD, the UNESCO World Heritage Center, and the SGP at CBD CoP7.

At the national level, information dissemination took place through a variety of media and fora. COMPACT National Fora brought together key stakeholders, grantee organizations, and governmental bodies. In Sian Ka'an, examples of media outreach and dissemination of COMPACT programs include were the subject of radio broadcasts, which included the participation of 14 grantee organizations. The broadcasts were bilingual and totaled 28 hours. In addition, the COMPACT activities were the subject of 14 print articles. In 2004, a COMPACT project produced a bilingual radio program airing six days a week on the subject of sustainable development programs in the Sian Ka'an region.

6.8 Documented successes

COMPACT was able to demonstrate significant results, at a very low cost. At a conservative estimate, COMPACT was responsible for bringing approximately 60,000 hectares of community lands—representing over 10% of the total—in and around the Sian Ka'an Biosphere Reserve under sustainable management, at a cost of about \$12/ha.

With five additional years of support it was believed that COMPACT would enable the entire area of influence around the Biosphere Reserve, about 500,000 ha, to be brought under sustainable management.

An independent assessment of COMPACT by Jeannett Acosta, Director of the Sian Ka'an Reserve Public Use Program, concluded that COMPACT activities had:

- Increased appreciation and valuation of natural and cultural resources in the region surrounding the Biosphere Reserve;
- Provided knowledge and tools for the sustainable management of natural resources in the area;
- Strengthened administrative and management capacities for natural resources;
- Raised quality standards for extraction and processing of non-timber products;
- Reduced the extraction of timber products
- Reduced the amount of agricultural clearing;
- Reduced the use of agrochemicals;
- Reduced oil and gas residue discharge by outboard motors into seaways; reduced stress levels, caused by engine noise, in marine species (especially turtles and dolphins); and was simultaneously able to improve the quality of the tourist experience.

7. CONCLUSIONS

The Community Management of Protected Areas for Conservation (COMPACT) represents a promising approach to integrated conservation and development projects (ICDPs). It goes a long way towards resolving the debate surrounding assumptions, formulation, and execution of ICDPs, discussed earlier. It does this by first and foremost demonstrating and documenting that the ICDP approach can be extremely successful when formulated, implemented and managed in a context-specific, flexible, self-reflexive, inclusive, and focused manner.

In the final analysis, the success of COMPACT lies in its ability to learn from past experiences; create innovative adaptations to local needs; target focused and clearly defined goals; create democratic institutional arrangements for participation and communication; develop a learning structure and create meaningful inter-organizational partnerships that enhance synergy; and engender a culture of sustainability.

Using WH sites as the basis for landscape-level initiatives has proven to be a very effective and efficient approach. The diversity of natural resources, institutional arrangements, community requirements, and existing capacities has allowed COMPACT to implement a wide array of initiatives that target site-specific goals, yet come together to generate opportunities for synergistic gains in learning, collaboration, and achievements. Given the significantly smaller size of awards made, this landscape approach has allowed COMPACT to be very cost-effective. The landscape approach of COMPACT allows the creation of multi-tiered and diverse initiatives that involve individuals, groups, and the larger community.

COMPACT brings together this multi-tiered, diverse universe of projects, people, and institutions through institutional arrangements that emphasize democratic participation. This participation is built on the principle of involving key stakeholders, and creating the most valuable types of partnerships between these stakeholders, and CBOs, NGOs, academic institutions, government bodies, and any other entities that could add significant value to projects. In order to ensure a truly participative environment, COMPACT emphasizes local knowledge creation and documentation. COMPACT awardees reflect the ethnic composition of the different project regions.

A fundamental proof-of-concept challenge for ICDPs has been to demonstrate the link between development gains and conservation benefits. COMPACT has been successful in documenting such joint benefits. The extent of its success in contributing to the combined goals of multinational conventions has even been recognized by the Convention on Biological Diversity. The COMPACT approach and methodology is being considered as a template for ICDP approaches internationally.

The success of COMPACT in generating conservation and development benefits, and in creating valuable private-public partnerships, has the potential to place the COMPACT approach, objectives, and methodology at the center of a new paradigm for future integrated conservation and development projects.

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9. APPENDIX

COMPACT Grants (2000-2004)¹

Sian Ka'an Biosphere Reserve, MEXICO		
Project Title	Recipient Organization	Objectives
Training women to produce <i>xunaan kaab</i> bees, birds and ornamental native plants	SPR Siiijil Kambal	To provide sustainable livelihoods to women as well as to strengthen their role in the community. To promote knowledge about Sian Ka'an biodiversity and to preserve indigenous knowledge and practices on natural resources use
Development and conservation strategy for three communities at the Maya zone of the State of Quintana Roo, and a video record of the COMPACT programme	U'Yo'olche A.C	To strengthen biodiversity conservation in the three communities and to increase the knowledge about the Sian Ka'an biodiversity. To share the conservation experiences among the COMPACT grantees and other groups and organizations
Initiative towards sustainability of lobster fisheries in the Sian Ka'an Biosphere Reserve	Sociedad Cooperativa de Pescadores Vigia Chico, S.C.L	To support livelihood and conservation activities of fishermen in Vigia Chico through structural tests and the use of new materials for the construction of lobster artificial refuges of less impact to the environment
Replacement of outboard motors with ecological motors	Sociedad Cooperativa de Servicios Turisticos Los Gaytanes, S.C.L	To improve environmental standards among small-scale tourist service providers.
Strategy for the production, quality control and commercialization of organic honey	Chi'lan Kaabo'ob, SSSA	To improve honey production, quality and marketing, and to recover habitat invaded by Africanized bees
Center for education, dissemination, and training about traditional medicine and Mayan prayers	K'oonex ki t'aan Yo'olal A.C	Awareness raising among the youth about the importance of Sian Ka'an biodiversity for the Mayan traditional medicine; to preserve Maya traditions linked to healing and conservation and management of natural resources
Medicinal plants from the Petenes	Yuum Ts'iil ku T'saak S.C	Support traditional healers. Spread among the clients of the Mayan Traditional Physicians, the importance of the biodiversity of the Reserve for the production of natural medicines; recovery of Maya traditions linked to the management and conservation of natural resources
Strengthening of activities for the conservation and use of natural resources of the Wildlife Management Unit (UMA) at Tres Reyes	U'tuukul Ootsil Maak S.P.R	To restore and conserve the vegetation cover around the biosphere reserve. To provide additional sources of income by supporting natural resources sustainable use in Tres Reyes.
Environment education programme to promote biodiversity conservation and management of the Biosphere Reserve	Econciencia A.C	To raise the awareness among 2000 students from Felipe Carrillo Puerto on the importance of Sian Ka'an ecosystems. Fifty teachers will participate in the project.

¹ Adapted from COMPACT FNR 2004

Knowledge and recognition of the Biodiversity importance of Sian Ka'an, traditional resource use and environmental education for all COMPACT grantees	Amigos de Sian Ka'an A.C	The project targets communities around the Biosphere Reserve and all COMPACT grantees
Chun yaxche's ecotourism services	Muyil, Conjunto de Aluxes, S.P.R	To support community livelihoods and enhanced management of ecotourism services around the Biosphere Reserve
Replacement of outboard motors with environmentally-friendly motors	Sociedad Cooperativa de Servicios Turísticos Vigía Grande	To preserve the marine environment in the Sian Ka'an Reserve and to support livelihood concerns of local communities
Ecotourism at the Maya zone	Sociedad Cooperativa Mots Maya	To contribute towards sustainable livelihoods through the promotion of community-owned ecotourism services
Replacement of outboard motors with Environmentally friendly motors	Sociedad de Servicios Turísticos Punta Alem	To preserve the marine environment in the Sian Ka'an Reserve and to support livelihood concerns of local communities
Sustainable management of the land, flora and fauna at the Dzula village	Muuch' Kanaantik ak K'aax, S.P.R	To support sustainable management practices of the community territory
Mayan traditions regarding animals and bushes in the Sian Ka'an zone	U Maalobil ti tu lakal mak A.C	To maintain and utilize traditional knowledge for the sustainable use of local biodiversity.
Technical assistance to COMPACT projects	U'Yo'olche, A.C	U'Yo'olche will support activities to ensure timely technical assistance to COMPACT grantees
Dictionary of Sian Ka'an biodiversity	Academia de la Lengua y la Cultura Mayas de Quintana Roo	To support collection of biodiversity terms and toponyms, and production of bilingual dictionary of biodiversity and toponyms covering areas surrounding the Sian Ka'an Biosphere Reserve.
Biodiversity training center for Ejido Cafetal Limones	Lol Chulte, Red de Mujeres de UNORCA de Quintana Roo, AC	To support establishment of center for training in the cultivation, handling, conservation, use and commercialization of ornamental native species at the Ejido Cafetal Limones
Center for the teaching, divulgation and attention of the traditional medicine and Mayan prayers	K'oonex Ki T'aan Yo'olal U Yaantal ti T'oon Toj Oolal, AC	Awareness raising among the youth about the importance of Sian Ka'an biodiversity for the Mayan traditional medicine; to preserve Maya traditions linked to healing and conservation and management of natural resources
Continuation and consolidation of the Environment education programme to promote biodiversity conservation and management of the Biosphere Reserve	Econciencia A.C	To raise the awareness among 2000 students from Felipe Carrillo Puerto on the importance of Sian Ka'an ecosystems. Fifty teachers will participate in the project.
Promotion of the Indigenous Law to strengthen Mayan culture and conserve biodiversity in the Sian Ka'an area	Asociación de Jueces Tradicionales de Comunidades Indígenas	Working with traditional judges, advisors, and magistrates, support the dissemination of the Indigenous Law and biodiversity information in 40 communities.

Ecotourism in Punta Herrero	Lancheros de la Bahía S.C. P. de S.T. y P.D.	Training in biodiversity inventories for cooperative and support for building an ecotourism reception area.
Environmental health in the Mayan communities of the Sian Ka'an Biosphere Reserve	Amigos de Sian Ka'an A.C.	Improve health and well-being of 3 communities through promotion of traditional medicine, including cultivation of medicinal plants and production of remedies.
Peten with medicinal plants	Yuun Ts'il Kuts'aak, S.C.	Support traditional healers and raise awareness about importance of Reserve biodiversity for the production of natural medicines; recovery of Maya traditions linked to the management and conservation of natural resources.
Institutional strengthening for the conservation of Sian Ka'an's area of influence	U'Yoo'ol Ché, A.C.	Strengthening of NGO U'Yoo'ol Ché in administration and management practices, allowing it to improve technical assistance and capacity building service provision to COMPACT grantees.
Translation into Mayan of the study "La gran selva maya" as a means of promoting biodiversity conservation	Amigos de Sian Ka'an A.C.	This project aims to provide state-of-the-art information on Sian Ka'an biodiversity to the region's majority Mayan population.
Promotion of integrated home gardens with native species.	Proselva Tropical de Quintana Roo, S.C.	Strengthening of the home garden organic farming system practiced by Mayan women to improve family diet and marketing of surpluses, thereby promoting organic agriculture and conservation of native species.
COMPACT grantee support program	U'Yoo'ol Ché, A. C.	Provision of technical assistance to CBOs and NGOs for the conservation of Sian Ka'an biodiversity.
COMPACT grantee technical assistance program	El Colegio de la Frontera Sur	Provision of technical assistance to five grassroots organizations funded by COMPACT.
Administrative and financial capacity building for NohBec	Productos de Bosques Tropicales Certificados NohBec, S.P.R.	Strengthening of administrative and financial capacity of NohBec community to manage logging, sawmill and timber processing concern in accordance with SmartWood sustainable forestry certification.
Conservation of biodiversity in the UMA of U Bel Cak Mool and in the Sian Ka'an Biosphere Reserve through alternative tourism	U'Bel Chac Mool, SC de RL	Conservation of 1,625 hectares of forest and savanna near Sian Ka'an through alternative tourism
Conservation of the Mayan language and culture, and the flora and fauna of the Señor community	X'aat, Palma Camedoria SC de RL	Community-managed tourism. The community of El Señor conserves mayan culture and language including its cuisine, music, and legends
Continuation and consolidation of the ecotourism project of Punta Herrero	Lancheros de la Bahía SC de RL	Consolidate the capacity, operations and infrastructure of the Cooperative to support sustainable tourism activities

Certificate course for the Management for the Conservation of Wild Life (UMAs) for the producers of the Mayan region	COBIOTEC AC	Capacity building, training, exchange of experiences for UMA members, including legal and technical aspects, and marketing of products
Dissemination of COMPACT results for Sustainable development in Sian Ka'an	CEQROODE, AC	Dissemination of COMPACT activities through 36 radio programs and 14 articles to encourage replication of experiences
Encounter with the biodiversity, traditions and folklore of Tihosuco	U beliek kaxtik kuxtal, SC de RL	The Museum of Mayan Casts War will provide the venue for a number of cultural activities, including traditional knowledge and practices related to biodiversity conservation and sustainable use.
Establishment of a nursery for the cultivation and growth of the <i>Plukenetia penninervia</i> , for the elaboration of handicrafts at the Kopchen community	Alfa del Caribe, SC	Research and capacity building on this plant species of ecologic and economic importance, and establishment of a nursery for the production of 60,000 plants and reforestation of 9 hectares
Extension of the Program of Environmental Education to seven communities in and around Sian Ka'an, to preserve biodiversity and strengthen management of the Reserve	Econciencia, AC	Environmental education concerning the Sian Ka'an reserve ecosystems. Each program will produce written and handiworks. Parents and the overall community will be invited to the final exhibit.
Enhancing sustainability of the center for dissemination of traditional Mayan medicine and prayers, and handbook of traditional medicine.	Kooneex Ki T'aan Yo'olal U Yaantal ti Toon Toj Oolal, AC	Second phase of an educational project on traditional medicine. Preparation and printing of a bilingual publication (Maya and Spanish) publication on it.
Intensive production, transformation and marketing of home garden organic vegetables	Ecotropico, Agencia para el Desarrollo Sustentable de Carrillo Puerto, AC	Capacity building for 22 women, and marketing of produce surplus, joining three other community organizations involved in organic agriculture.
Developing a marketing strategy for community tourism operations in the Mayan region	Universidad de Quintana Roo	Market research, focusing on consumers and tourism operators. Evaluation of capacities of community enterprises and potential for developing new tourist services
Production of bilingual (Maya-Spanish) educational material for Indigenous children and primary schools in the surrounding area of the Sian Ka'an Reserve	MAYAON, AC	Publication of 2,000 copies of a book on the culture and history of the region. Teachers' capacity building on using the book as an educational tool.
Technical, legal and organizational capacity building for the establishment of captive breeding programs as a strategy to conserve fauna and strengthen the organization named Uulum Kuuts, AC.	Uulum Kuuts, AC	Sustainable and legal management of wildlife as an alternative livelihood.
Tradition and Mayan Culture	Centro de Cultura Maya Maakan Xook, AC	Dissemination of Mayan cultural values, including ceremonies. Educational workshops about Sian Ka'an