

The Biodiversity Support Program's

Biodiversity Conservation Network

Evaluating an Enterprise-Oriented Approach to
Community-Based Conservation in the Asia/Pacific Region

Final Technical Report

October 1, 1992 - September 30, 1999

Cooperative Agreement Number AEP-A-00-92-00043-00

The Biodiversity Conservation Network is administered by the Biodiversity Support Program, which is implemented by a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute. BCN is funded by the United States-Asia Environmental Partnership, which is led by the United States Agency for International Development (USAID). BCN is managed by USAID's Center for the Environment in the Bureau for Global Programs, Field Support, and Research.

BCN PROGRAM DESCRIPTION – September 1999

Background In the early 1990s, staff at the Biodiversity Support Program and their USAID colleagues identified three factors affecting biodiversity conservation efforts. First was the observation that many integrated conservation and development projects being implemented in areas of high biodiversity were not likely to succeed because they lacked a link between some of the economic activities proposed and the need to conserve biodiversity. Second was the perceived increased interest in consumer markets for “rainforest products.” The presumption was if products from biologically diverse areas had a recognized value in the marketplace, people living in and around the ecosystems might conserve biodiversity in order to capture some of these economic benefits over the long-term. Finally, it was observed that even though many projects promoting economic activities in areas of high biodiversity claimed to be sustainable, no one was certain of what the long-term biological, social, or economic impacts of these projects were on the biodiversity of an area and the local and indigenous people living and working there. An opportunity to evaluate enterprise-based approaches to address these issues was presented by the creation of the United States-Asia Environmental Partnership (US-AEP) program. Within this context, the Biodiversity Conservation Network for the Asia and Pacific Regions was initiated.

Program Overview The Biodiversity Conservation Network (BCN) was established to 1) support site specific efforts to conserve biodiversity at a number of sites across Asia and the Pacific and 2) evaluate the effectiveness of enterprise-oriented approaches to community-based biodiversity conservation. To achieve these goals, BCN brought together organizations in Asia, the Pacific, and the United States in active partnerships with local and indigenous communities. The Network provided grants for projects that encourage the development of enterprises that are dependent on sustained conservation of local biodiversity. Projects supported by BCN grants had to monitor the social, economic, and biological impacts of this enterprise-oriented approach to community-based conservation. A key outcome of BCN's efforts, in addition to supporting site-specific conservation programs, is providing information to policy makers, the donor community, and environmental and development organizations about the conditions under which these enterprise-based approaches can contribute to biodiversity conservation.

Approach BCN awarded two types of grants through a rigorous, competitive process: Planning Grants and Implementation Grants. The Planning Grants – in essence, feasibility study funds – were awarded up until April 1994 to offset the costs of project design. Three-year Implementation Grants (some of which were given no-cost extensions beyond the original three-year period) were awarded to those groups whose projects met BCN's requirements for potential enterprise viability and the development of monitoring plans to assess the biological, social, and economic impacts of the enterprises.

Organization and Funding Biodiversity Conservation Network was a 20-million dollar, 7-year program initiated in late 1992 with funding from the US-AEP, which is led by the United States Agency for International Development (USAID) under cooperative agreement number AEP-A-00-92-00043-00. The BCN was a USAID attribution to the Global Environmental Facility (GEF). The program was part of the Biodiversity Support Program (BSP), which is implemented by a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute. BSP works to conserve biological diversity in developing countries by supporting innovative on-the-ground projects that integrate conservation with social and economic development, research and analysis of conservation and development techniques, and information exchange and outreach.

US-AEP is a coalition of Asia/Pacific and American businesses, community groups and governmental institutions. The coalition enhances environmental protection and promotes sustainable development in Asia and the Pacific by mobilizing U.S. environmental technology, expertise, and financial resources. US-AEP is supported by a USAID program under the guidance of the inter-agency Trade Promotion Coordinating Committee. For most of BCN's existence as a program, USAID's Center for the Environment in the Bureau for Global Programs, Field Support, and Research had management responsibility.

The Biodiversity Support Program's

Biodiversity Conservation Network

Final Technical Report

October 1, 1992 - September 30, 1999

Table of Contents

1	INTRODUCTION	1
2	DISCUSSION OF ACTIVITIES AND INDICATORS BY OBJECTIVE	2
	OBJECTIVE A Institutional Structure & Grants Program	3
	OBJECTIVE B Balanced Portfolio of Projects	5
	OBJECTIVE C High Quality Projects	8
	OBJECTIVE E Communication Leading to Impacts on Policy and Practices	18
	CROSS-CUTTING OBJECTIVE X1 Skills Development	21
	CROSS-CUTTING OBJECTIVE X2 Partnerships	23
3	PARTING COMMENTS	25
	APPENDIX A BCN PUBLICATIONS	26
	APPENDIX B FINAL ANALYTICAL RESULTS	28

1 INTRODUCTION

In its original design, BCN was a five-year program. As the result of two no-cost extensions of the cooperative agreement under which BCN is funded, the program was stretched to a full seven years. Those two extra years were critical for BCN since it has been clear, from the first year of implementation, that five years was not going to be enough to meet BCN's twin goals of supporting on-the-ground conservation efforts and testing a strategic hypothesis. Among other things, those two extra years resulted in

- 1 A much more effective grants selection and management process whereby a strong portfolio of projects emerged and closer working relationships developed between BCN and its partners,
- 2 A large subset of projects which themselves were given no-cost extensions, often giving BCN and partner staff up to four years to develop monitoring and enterprise-related skills and, quite simply, to have a greater impact on conservation of local biodiversity and the lives of people living in the project sites, and
- 3 A far more comprehensive and useful set of analyses and BCN publications which, together, test the original BCN hypothesis and convey important lessons learned and practical knowledge gained at both the program and project levels

This document is BCN's Final Technical Report. Its primary purpose is therefore to address each of BCN's programmatic goals and objectives in the context of this seven-year history, with particular attention given to activities conducted between April 1, 1999 and September 30, 1999 the six-month period which covered BCN's second no-cost extension and which as of yet has not been reported upon (see BCN's *Close-Out Work Plan 1 April 1999 - 30 September 1999*). Because we are attaching key analysis documents, this Technical Report is largely descriptive – and not analytical – of BCN's activities over the past seven years. In short, this Technical Report

- 1 Briefly reviews BCN's goals, objectives, and activities over both the past seven years and, in more detail, during the last six months (Section 2),
- 2 Provides a list of publications available regarding the BCN program and the projects supported by BCN over the past seven years (Appendix A), and
- 3 Includes BCN's analysis of the original hypothesis, and some of the conditions under which this enterprise-based strategy to biodiversity conservation did and did not work (Appendix B)

Throughout the report, we have included relevant comments made by our grantee partners in their final technical reports to BCN that we feel independently illustrate certain points that we are making. Please note that these comments reflect an Indo-Pacific bias that is representative of both a) the authors' (Indonesia and Pacific Program Officers) geographic bias in terms of the projects they worked closest with, and b) the fact that all of BCN's extension grantees are located within the Indo-Pacific region. The report concludes with a few "parting comments" from BCN's Director and Senior Program Officer.

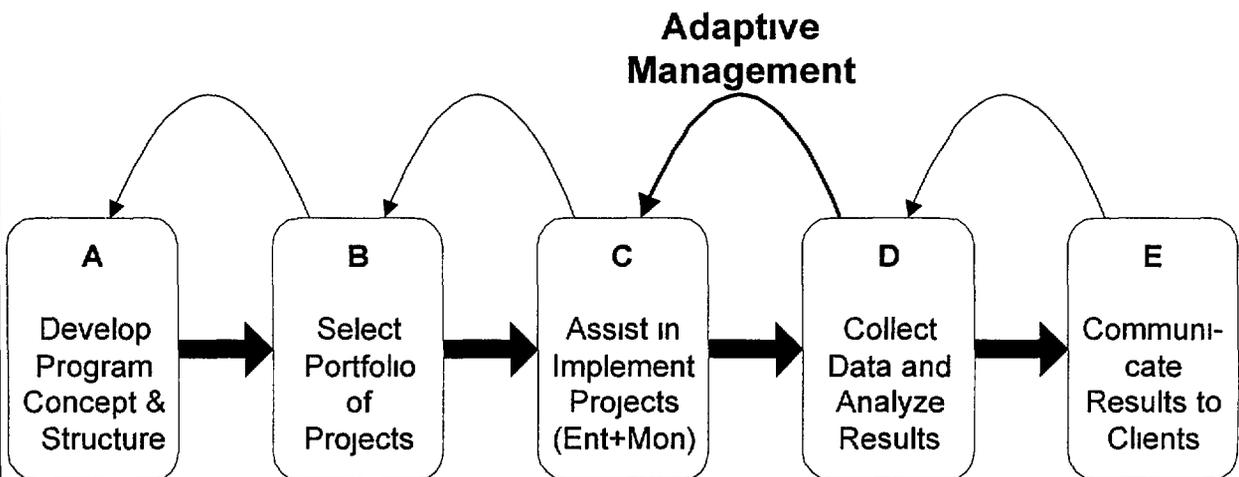
The Programmatic "Road Map" BCN Used

Throughout its seven years, BCN developed and used a guide, or "road map", to achieve its twin goals of conservation impact and an evaluation of the enterprise-approach to conservation. To give a sense for how BCN structured its program work, it is worth reviewing here

BCN focused on five specific objectives, each of which are linked to the program's five major components (see Figure 1). In our first two years, BCN staff focused on developing an institutional structure (Component A) and selecting a balanced portfolio of projects (Component B). In our third and fourth years, many of our energies went toward technically assisting our partners "in the field" in their implementation of high quality projects (Component C). During 1998, our fifth year, we continued work on Component C, but also put much more effort into gathering data, conducting analyses over information gathered (Component D), and communicating "lessons learned" to decision makers, conservation practitioners, and academia (Component E). In the last six months of BCN's close-out extension, we wrapped up the overall program (including the financial and technical support we provide to our partners under Component C), focusing heavily on completing objectives tied to Components D and E.

In addition to this, BCN pursued two other, distinct objectives which cut across all five of the sequential components in Figure 1. Those two Cross-Cutting Objectives are skills development and partnership building. Work related to these two objectives is also presented in this report.

FIGURE 1
Overview of the BCN Program Components



Note The above diagram focuses exclusively on BCN's staff's activities. The communities and groups implementing the projects in the BCN portfolio are concurrently addressing the similar issues as they design and implement their projects.

2 DISCUSSION OF ACTIVITIES AND INDICATORS BY OBJECTIVE

In the following discussion of each of BCN's five component and two cross-cutting objectives (which are taken from BCN's original work plans that were updated annually), we present

- 1 A general, overall account of major activities undertaken during the seven year program, October 1992 through September 1999, and
- 2 A more detailed update on activities implemented in the past six month close-out extension period, April through September 1999

OBJECTIVE A Institutional Structure & Grants Program

The BCN s organizational structure is designed and implemented and a competitive grants program is established to meet the evolving needs of BCN s primary clients

1992-99 This objective was successfully met. In doing so, several important events took place. Those were

- 1 *BCN Structure* – In June 1993, the BCN was operating with just one permanent staff member and two short-term hires. All of them were based in the Washington, D C headquarters office. From this beginning, BCN’s structure evolved a great deal by
 - a Recruiting heavily so that a core D C -based staff team was hired by end the of 1993,
 - b Opening a Regional Field Office in Manila, Philippines, which was fully staffed by late 1994, and
 - c Opening a series of 1-2 person “satellite” field offices in other locations where there was a critical mass of BCN-funded projects: an Indonesia office in Jakarta in early 1995, a South Asia office in New Delhi, India in late 1995, and a Pacific office in Suva, Fiji in early 1997. This resulted in a relatively decentralized operations structure (including supervisory relationships between staff), with the Washington, D C office acting as program headquarters. The utility of this decentralization is discussed below under point 3.

At its peak, BCN had 5 full-time staff based in Washington, D C , 10 full-time staff in Asia and the Pacific, and several interns and part-time staff in the field offices and Washington D C headquarters.

- 2 *Competitive Grants Program* - By the end of 1993, a systematic process of receiving, reviewing, and responding to proposals was in place, though that process did adapt over time. As an example, BCN recognized early on the need to get staff in the field to interact with grantees and potential grantees, work with them on their project ideas and designs (especially in India and Indonesia). This process made for a *much* stronger, proactive and competitive grants program. At the same time, it made the review process more effective. Internally, BCN staff was able to work with more and better quality information. Externally, when BCN convened the international Peer Review Committee to assist with the selection of Implementation Grants, BCN staff was able to provide important, "ground-truthed" supplementary and background information to the Peer Review members that could not be found in the proposals that had been submitted. This proactive strategy, according to the positive feedback BCN received from its many partners in the field, worked to the benefit of all parties involved. In hindsight, BCN still believes this was the most effective and objective process in distributing support to grantee partners. The lessons BCN learned about this process – what worked, what didn’t and why – have been well documented in previous Annual Reports, so will not be repeated here.
- 4 *Decentralization and Communications* – Through the opening of regional and “satellite” offices, BCN was able to cost-effectively reduce staff and overhead costs in Washington, D C , while more importantly ensuring closer communications, more effective grants management, and stronger capacity building of grantee projects and partners in the field. As one Pacific grantee partner reported to BCN during mid-1999 on the field offices

The sense of partnership with several management staff was a very positive aspect of BCN people actually helping to do things and achieve project goals in the field. Decentralizing technical project staff throughout the project area helped achieve this sense of partnership. On the other hand decentralizing administrative staff was often of a hindrance to us as the Manila office was difficult to work with and most things had to go back to Washington anyway.

Due to its decentralized operations, one of BCN's continuing challenges was the need to develop effective communication systems that could span the geographic and time-zone distance between BCN staff members and project teams. Throughout the seven years, BCN staff refined their ability to exploit remote communications tools through the use electronic mail, facsimile, and telephone to communicate effectively with both one another and project partners. However, it is necessary to point out here that one important lesson that BCN learned from its decentralization is that remote communications are not always a sufficient substitute for "face time" (team meetings) when program-wide strategic planning and analytical activities need to occur. As a consequence, BCN staff occasionally came together in various locales and team configurations (depending on the event) to ensure critical strategic, managerial, and analytical issues were adequately discussed and resolved. There were, undoubtedly, financial and other costs (e.g., late nights on the phone from homes during cross-time zone conference calls), but the decentralized communications system worked well for both BCN as a grants management and technical assistance program, and, usually, for our project partners.

April - September 1999 Within the context of Objective A, BCN activities over the last six months were concentrated on three areas

- 1 *Implementation of the New Institutional and Managerial Structure* – Despite high staff attrition and loss of leadership during late 1998 through March 1999, BCN successfully managed to implement a new, flexible institutional and managerial structure whereby, during the last six months of the program, the Director was based in Jakarta and a reduced headquarters staff of two full-time (a Senior Program Officer and a Communications Coordinator/Senior Administrative Assistant) and two part-time (a Program Coordinator and Research Assistant) employees were based in Washington, D C. This team worked through existing communication channels and built new ones to ensure a smooth transition both as BCN continued to lose employees and also as new supervisory roles and relationships were assumed. This was not an easy undertaking given the amount of work to be completed during the extension period and the very high level of ambiguity with which the program worked day-to-day to prepare for the program's close.
- 2 *Concentration of Analysis and Communication Work in Washington D C* – With all of the field offices closed (except Jakarta), Washington, D C became the focal point for the analysis and communications work. It also became the node for publication of all final communication products (i.e., the Final Annual Report, Final Analytical Results paper, Lessons from the Field series, and Patterns in Conservation). These products were prepared jointly between Jakarta, Washington, Manila, Chicago, Vancouver and other locales where former BCN employees and consultants continued to contribute quality work, often *pro bono*, to further "get the word out" and contribute toward meaningful communication products. This report is part of this process. Appendix A of this report contains a full list of BCN's communication products.
- 3 *Completion of Program* – As of September 30, all of BCN's field offices and the Washington, D C office were successfully closed. As both a competitive grants management program and an "institution", BCN successfully ended its seven-year lifetime with its twin programmatic goals of

conservation and enterprise evaluation achieved. Funding for all projects ended on June 30, 1999, and all other small grants (e.g., for assistance in completing communications products) ended by September 15, 1999. With the exception of two projects (BScC/Gunung Halimun and NATRIPAL/Palawan), all outstanding financial and programmatic matters were completed with partners in the field. Through the support of the Biodiversity Support Program (BSP) Operations Division, BCN's financial books will be closed for the program by December 30, 1999. BSP and World Wildlife Fund (in its capacity as lead agent in the BSP Consortium) have agreed to ensure that any outstanding issues which may arise beyond September 30 are properly addressed and resolved.

OBJECTIVE B Balanced Portfolio of Projects

By January 1997 a balanced portfolio of up to 22 Implementation Grants is created with grants awarded to teams with the highest quality proposals as determined by a competitive and fair process

1992-99 This Objective was successfully met. By 1996, BCN had awarded 37 six- to twelve-month Planning Grants and 20 three-year Implementation Grants from an original pool of approximately 400 proposals and concept papers received. The 37 Planning Grants were spread throughout 10 countries. The 20 Implementation Grants were concentrated in seven countries (Nepal, India, Indonesia, Philippines, Papua New Guinea, Solomon Islands, and Fiji), with only Thailand, Western Samoa and Sri Lanka receiving Planning, but not Implementation, Grants. Indonesia had twice as many (six) Implementation Grants as any other single country. India, Papua New Guinea, and the Philippines each had three Implementation Grants, Nepal and Solomon Islands two, and Fiji just one.

This 'pilot' process of awarding Planning Grants to assess project performance prior to full award of Implementation Grants was seen as useful not only by BCN and its program constituents, but also by project partners. This is exemplified through the following feedback that further builds on the pilot process idea, received within the University of South Pacific (Fiji) Final Technical Report:

The planning grant approach was a useful one in that it gave project partners a chance to get to know each other and see how they could work together. Even then a six-month period is fairly short for this. A concept of a pilot phase of perhaps a year following the planning grant in which there are agreed outputs and the potential of the project team to work together and meet those outputs could be a useful one to test.

As the program evolved, BCN got much better at selecting (along with the Peer Review Committee) strong projects that would allow it to meet its twin goals of conservation impact and hypothesis-testing. Early on, BCN created a systematic review process and a list of criteria and important characteristics to ensure that a diversified portfolio of projects would emerge. As a consequence, BCN's portfolio of projects involved enterprises representing everything from bioprospecting to ecotourism, timber harvesting to handicrafts. Projects were based in coastal and marine habitats and tropical forests, and were implemented by local and international NGOs, consortia, through partnerships with private businesses, and collaborations between universities, government entities, and churches. This approach of actively managing a diversified portfolio and seeking out characteristics where the portfolio was "weak", or needed diversity, proved essential to developing a competitive grants program and rigorously analyzing the social and conservation impacts BCN had (e.g., the last two Implementation Grants awarded went to Yayasan Hualopu of Indonesia and the University of South Pacific of Fiji – both marine projects and, as it turns out, two of our best examples of innovation and conservation impact).

The process of selecting these 20 Implementation Grant recipients is believed to have been completed in as fair, objective, and transparent a process as BCN and the Peer Review Committee could have made it without compromising a necessary degree of confidentiality, even given the extraneous circumstances which affected the selection of two Implementation Grants

Within the context of this second programmatic objective of a balanced portfolio of projects, several points need to be highlighted

- 1 *No-Cost Extensions Awarded* – The vast majority (18 out of 20) of Implementation Grants awarded were given no-cost extensions. In each case, these extensions were awarded to projects which met three criteria: (a) they had progressively achieved on-the-ground conservation, enterprise development, and monitoring work during the initial three-year time period and appeared to be in a position to continue to build upon this foundation, (b) they had begun implementing smooth and thorough close-out grant plans, and (c) they had adequate funds available after the end of their initial three-year contract to extend conservation and enterprise activities. The Asian Economic Crisis of 1997 and 1998 in Indonesia and other countries stretched the US Dollar-based Implementation Grants to such an extent that some projects, with no additions to their existing contracts, ended up achieving four to five years of conservation work with only three years of budgeted funding. This is an interesting example of how some grantees were able to stretch the value of the initial investment made by BCN beyond projected conservation outcomes and timelines.
- 2 *Three Implementation Grants Closed Early* – It is important to note that BCN's Implementation Grants extensions were countered by early closure of other Implementation Grants. BCN actively managed its grants portfolio and took its accountability for a sound program very seriously. As a result, BCN made the hard decision to terminate funding for three projects earlier than expected. Conservation International's work in Indonesia and Philippines was ended early, as was its contract for work in Papua New Guinea. BCN also closed the BScC/University of Indonesia Grant early, despite the good work being done in the field in Gunung Halimun. In each case, the decision was well-documented and necessary.
- 3 *Four Implementation Grants Reorganized* – In addition to no-cost extensions and early closures, BCN worked with its partners to restructure four of its Implementation Grants. Before terminating the BScC Grant, we tried to restructure it by transferring financial and administrative management to an affiliated entity (University of Indonesia). Unfortunately, neither this new arrangement at BScC nor our efforts to do a similar transfer of an Implementation Grant from WWF-Philippines to its local partner, NATRIPAL, solve the issues at hand. These two projects constitute the most challenging managerial and administrative issues BCN faced. On the other hand, BCN worked successfully with WWF-Indonesia to transfer its Implementation Grant in full to its local counterpart, YBLBC, and to transfer nearly \$100,000 from the TNC-Indonesia Implementation Grant to the TNC-Solomon Islands one.
- 4 *A Small Grants Mechanism Was Developed and Used* – To support the work being done through the Implementation Grants, BCN initiated an internal Small Grants program. Through it, we supported work by, among others, the International MarineLife Alliance (a cornerstone study of the use of cyanide on coral reef fisheries in Indonesia and the Philippines), Bina Swadaya (community development assistance to the Harvard University project in West Kalimantan) and the Indonesian Center for Environmental Law (a comparative analysis of community timber harvesting in Indonesia). In all, we awarded over 15 Small Grants for various activities, all of which were

designed to support work being done in the field, and the majority of which were awarded to local organizations

- 5 *Strong Projects Attract Future Funding* – Early on, one of the USAID Performance Monitoring Indicators we reported on was the leveraging of funds from other donor sources for the work BCN was supporting. In a similar way, indicative of the strength of our portfolio of 20 Implementation Grant projects is that nearly all of them already have or are about to receive further funding. This funding is often a mix of traditional donor sources, private sector lending, and revenue generated by the project enterprises themselves. The project in Garhwal, India is emblematic of this. In its Final Technical Report to BCN, Enterprise Works Worldwide wrote

While BCN support ended in December 1998 the silk and honey enterprise activities are continuing and will be expanded with support from the Ford Foundation and the Small Industries Development Bank of India. We are intending to extend both project and company activities to four watersheds in addition to the two in which we are already active. In four years we aim to have a total of 1 100 families involved in the companies and conservation activities.

Similar situations exist for projects in Irian Jaya (Indonesia), Luzon (Philippines), Humla (Nepal), and Verata (Fiji). The point being made here is that because these strong projects are achieving good conservation work through their enterprise development and monitoring, they are being externally recognized for this strength and subsequently are being supported beyond the BCN lifetime. Their conservation work will continue.

April - September 1999 By June 30, 1999, all funding for the projects in the portfolio ended. Similarly, all Small Grants ended by July 31, 1999, with the exception of short-term, technical assistance Small Grants for audits and final communication products, which all ended September 15. Much of BCN's energy during the last six months was geared toward ensuring a complete and professional close-out of these contractual relationships. In particular, BCN

- 1 *Continued to Work with Partners* – BCN Program Officers continued to meet and correspond with project teams to ensure a smooth close-out and transition period, especially with those projects that were awarded no-cost extensions through June 1999 (most of which were in Indonesia). Financial management and auditing proved the most time consuming close-out activity, even for BCN's Small Grant recipients, and
- 2 *Assisted Partners in Planning for Future Work* – When time permitted, BCN staff worked with extension partners to assist them as they designed projects and proposals – and sought additional funding – for future work, especially where monitoring and enterprise development were concerned. This was especially true for the projects in Irian Jaya and West Kalimantan, Indonesia.

Lastly, BCN, with assistance from the BSP Operations team, successfully and comprehensively completed the archival of Grant Agreements, Amendments, audits, technical and financial deliverables, and other relevant information from both the headquarters and field offices. This systematic and organized archival process will ensure ease of reference, by others, of BCN activities past its lifetime.

OBJECTIVE C High Quality Projects

C1 Enterprise By March 1999 at least 10 enterprises that have been directly involved in the BCN program are operating on at least a break-even basis (without subsidies)

1992-99 The Objective was largely met, depending on the timeframe in which enterprise success was measured. Over the past six years, BCN staff worked closely with partners to develop their core enterprises. A total of 48 enterprises were initiated or supported through BCN funding. These enterprises can be categorized broadly as being either 'product' or 'service' oriented, and more specifically as focusing on either (a) timber harvesting, (b) non-timber forest product harvesting, (c) eco- and research-tourism, (d) fisheries, or (e) bioprospecting. If we include Planning Grants awarded, the number of enterprises increases to over 60. Many of these additional enterprises, such as *damar* tapping in Krui, Indonesia and *okari* nut harvesting on the Managalas Plateau of Papua New Guinea, continue to take advantage of the work achieved through the BCN Planning Grants they received.

With its Implementation Grant-supported enterprises, BCN continuously emphasized the importance of marketing, moving up the value-added chain, proper bookkeeping, and adequately accounting for all costs. Clearly, all of these steps are essential for financial viability. On-site technical assistance by BCN staff, cross-site visits to expose partner staff to better business practices, BCN sponsorship of selected staff at international and national exhibitions and trade shows, and building capacity of partners through BCN-funded consultancies were all used to enhance enterprise capacity. Observations shared by the Conservation International Solomon Islands team in their Final Technical Report regarding BCN's financial and technical enterprise support are as follows:

It goes without saying that the funding that BCN has contributed to the project has been of critical importance to the project particularly in relation to enterprise development. The attitude of BCN staff has been consistently enthusiastic, friendly, and understanding particularly in relation to the realities of field work. Their understanding and flexibility has been crucial to a successful working relationship.

The results of all of BCN's five years of assistance toward producing high quality are summarized within the following six points:

- 1 *Enterprises Have Attained or Are Approaching Financial Viability* – By July 1999, nearly half (46%, or 17) of the 37 enterprises with accurate profit and loss statements were "financially viable" (operating without subsidy), with 7 enterprises (19%) meeting opportunity costs (i.e., generating a profit) and an additional 10 (27%) reaching the break-even point, where all variable and fixed costs are being covered by sales revenues. Thirteen enterprises had covered their variable, but not fixed, costs. Lastly, 3 enterprises were generating some revenues, while 4 were not yet generating any revenues. Initially, a far greater proportion (48%) of the enterprises reported to BCN that they were profitable. However, BCN tempered this optimism through a more thorough analysis of all known costs (inclusive of monitoring and management costs), finding that most enterprises were not necessarily counting costs in the way they should. Finally, of the total 48 enterprises BCN has supported, the majority are "financially successful" if one takes into account a five-year time horizon (three years is arguably too short a time period to analyze true financial viability, even for businesses in the U.S.) and looks at projections for these enterprises. At present, it appears likely that nearly all of the enterprises will continue beyond the BCN funding horizon, with only one or perhaps two that certainly will not: the fisheries enterprise in Solomon Islands that, based upon all analyses and market outlooks, is expected to fold, and the timber harvesting business in Indonesia that never sold a plank, but could have a future if the political climate for the business remains encouraging. But

even when enterprises have struggled financially, there are still valuable outcomes, as evidenced through this final technical report feedback received from BCN's project partners implementing the struggling Solomon Islands fishery enterprise

Based on recent discussions with communities throughout the Arnavon Islands region there is strong and positive interest in the development of enterprises compatible with conservation objectives This interest is directly connected to the history of the project Inevitably with any new untried undertaking occasionally we are required to back up and change direction An approach of try review revise and retry must be used in the novel and groundbreaking work which we are attempting

[An] event that did not take place as hoped was the financial viability of the fisheries centers The centers still require a subsidy and will require support for some time We hope to find continued support that will allow the enterprises time to find out if they have the potential to achieve financial sustainability

The message being communicated in this excerpt is clear, and consistent throughout the BCN portfolio implementing financially viable community-based enterprises within a short time frame is a challenging task Subsidies designed to support enterprise activities that under-pin conservation efforts should be recognized as an often necessary and valuable mechanism in encouraging long-term sustainability These critical lessons on enterprise viability and subsidy have been validated through BCN's own enterprise evaluation (see BCN's *Final Analytical Results* in Appendix B)

- 2 *Production Improvements* – Nearly all of the projects demonstrated significant improvements in their production, quality control, and marketing systems over the past years – including the service-oriented "products", like ecotourism Upscale rattan handbags and butterflies from Indonesia, adventure tourism trips and *ngali* nut oil in Solomon Islands, essential oils and Rhino safaris in Nepal – in each of these cases, problems with filling orders, difficulties in obtaining permits, controlling for product spoilage and damage, and/or shortages in supplies were encountered by the project team and addressed with BCN support, some to the extent that these same enterprises have overcome their challenges and are now able to compete successfully within international markets
- 2 *Enterprises Moved up the Value-Added Chain* – Many of the enterprises (e.g., ATI-Nepal, TNC-Indonesia, YDT, UMass/TERI) moved up the value-added chain during their Implementation Grant phase, capturing significantly more revenues for local producers and, at the same time, allowing BCN to look at the impacts of the higher earnings on local incentives for conservation and more sustainable management of resources This was a very important objective both the BCN Program at individual project levels that has been achieved
- 4 *Implementers Separation of Project and Business Activities* – Many, but not all, of the project partners made the important step of separating their business records from their more traditional, socially and environmentally-oriented NGO project activities This was not an easy step for many of our partners, whether they were a local or international NGO This kind of business orientation is still quite new to most of these groups, some having done or presently are doing this orientation with much success As just one example, in 1998-99, YBLBC (managing the sales of butterflies ranches from the Arfak Mountains) established a legally registered for-profit branch, greatly easing product marketing logistics and clearing the way for community member ownership through share purchases This step is a critical one for almost all of the enterprises/projects BCN supported, in part because by doing it, they are able to approach traditional, commercially-based lending institutions like local

banks and credit systems. The projects in Garhwal, India and Humla, Nepal are also both indicative of this experience.

- 5 *Marketing Improved* - Marketing was, in almost all cases, an activity that was simply not taken seriously enough by our implementing partners. It was common for production and skills building to begin before the project staff began a serious analysis of the markets – the prices, the logistics, the demand, the consumer, the competition. By July 1999, there was vast improvement across the portfolio of projects, with YBLBC expanding its butterfly-buying market, KEF's jellies and jams finding shelf space in larger grocery stores, CI/SIDT winning a highly coveted global ecotourism award from Conde Nast Traveler Magazine for outstanding ecotourism venture, and YDT sponsoring both a subsector market analysis and visits by the village weavers themselves to major market centers (e.g., Bali, Yogyakarta) to get a better sense for what they are competing against, what the prices are, and what the markets want in terms of quality and quantity.
- 6 *Business Skills Improved* - Business operations and business principles were, for the most part, still very new to our partners. This general lack of business skills and knowledge was in some ways a major bottleneck, especially where marketing, financial management, and quality control were concerned. At the same time however, the vast majority of BCN's partners have stated that being able to learn and apply new business skills not only for their enterprises, but also in the operation of their NGO itself, was one of the greatest benefits of working with BCN and applying an enterprise-based approach to conservation. It was an important source of empowerment, BCN was told, for many of the staffs and NGOs. As staff from YDT reported:

BCN was like going to school. Now we have the confidence to do it on our own.

1999 Activities BCN staff continued to give some enterprise-oriented assistance over the last six months, mostly geared toward activities that would assist partners in strengthening their managerial and technical capacity to operate sustainable enterprises in the future. However, two main activities in regard to this Objective were achieved as follows:

- 1 *Providing Useful Analyses of Enterprise Viability* - As mentioned earlier, many of our projects were reporting profits or near profits when, in fact, if they counted all true costs involved in operating the enterprise, they were actually quite far from profitability. As a result, BCN staff spent a good deal of time analyzing the enterprises' various financial records not only to assist our partners, but also to assist BCN with its analysis of the conservation and socio-economic impacts these enterprises are having. In short, we used the period to consider enterprise complexity, current enterprise profitability (in terms of the extent to which variable and fixed costs are met), and the potential for future financial viability. By doing this, we were able to determine that the Verata, Fiji bioprospecting operation and fruit and honey processing units of Biligiri Rangan Hills, India had the best profit margins of any of BCN's enterprises, while the Solomon Islands fisheries project was furthest from viability. We also learned that the handbags in West Kalimantan, the butterflies in Irian Jaya, the essential oils in Nepal, and many others were either truly at a break-even point or very likely to be there soon. We also found that, across the portfolio, enterprise management costs were seriously underrepresented and would likely need to be an essential area (perhaps along with marketing) where donors should focus their dollars in future enterprise-based conservation strategies.
- 2 *Encouraging No-Cost Extension Partners to Use Remaining Funds to Improve Marketing* - Related to what was written earlier, we worked on-site with partners to encourage and think about new

marketing strategies for the future, through cross-site visits, facilitation and support of trips to various product expositions and related marketing opportunities, etc

C2 Project Monitoring By January 1998 at least 15 project sites are collecting sufficient social economic and biological data leading to at least initial conclusions regarding the conditions required for an enterprise-based approach to promote conservation

1992-99 The Objective was successfully met. Monitoring and data collection were always top priorities for BCN, but especially between 1997 and 1999. By the end of 1998, most BCN project partners did second and third iterations of their surveys, interviews, resource transects, etc, often simplifying and refining the process along the way. And all of the portfolio projects collected data useful for the BCN's ultimate analysis of the conditions under which enterprise-based approaches to conservation are or are not effective. With regard to this monitoring Objective, five events stand out as significant:

- 1 *BCN's Mid-Term Evaluation Emphasizes Better Monitoring* - When BCN was first designed, it was assumed that the Planning Grant phases could be used by partners to conduct their baseline surveys and, at the same time, develop their monitoring plans for a three-year implementation period. This, as it turned out, was *far* too optimistic. Very few of the Planning Grant recipients did either the baseline surveys or monitoring plans, much less both. What BCN and its partners learned is that no one – not even the large international conservation NGOs – really knew how to do effective, practical monitoring in the field, especially the kind of monitoring that community members could implement and, at the same time, would be useful for BCN's ultimate analysis. BCN staff also learned that projects too were unclear about what BCN expected from its partners. Early on, BCN convened a meeting of 'experts' in the field, drafting *Guidelines for Monitoring and Evaluation of BCN-Funded Projects*. From here, BCN began to work directly, though not systematically, with partners to strengthen their monitoring plans, especially those partners that already received Implementation Grants by mid-1994. Much additional monitoring work was done, but it did not appear to be working well and had little value. In April 1996, John Mellor Associates, Inc completed their mid-term evaluation of the BCN. They felt BCN was, largely, right on track with almost every aspect of the program, except the monitoring. The evaluation team felt BCN needed to do more to "Develop simple techniques for monitoring biodiversity, enterprise profitability, and social structures of participation." BCN needed to ensure that the monitoring would produce enough consistent and useful information for *both* local communities and BCN's own analysis of the enterprise-based strategy and its core hypothesis. In short, the team emphasized that BCN had to provide technical guidance on how to make the monitoring simpler, more cost efficient, and more appropriate to the skill and resource levels on site.
- 2 *Monitoring Framework Meetings held with Project Partners* - BCN took the mid-term evaluation's recommendation on monitoring to heart. Part of the response was a series of three regional workshops where, after BCN staff itself began to develop more realistic and cost efficient monitoring frameworks, project partners were brought together to help design individually tailored monitoring programs. These regional meetings in India and the Philippines were then followed up by individual and teams of program officers making on-site visits to help partners further refine and implement the biological, socioeconomic and enterprise monitoring plans. Within a short span of time, BCN staff had worked directly with all of the Implementation Grant recipients in the field. The amount of work this took and just how far most of the partners were from being able to implement these three monitoring components on their own cannot be overstated.

- 3 *Monitoring Plan Design and Implementation Assistance* – Over time, most of projects improved their community monitoring efforts a great deal as a result of BCN's highly hands-on technical assistance commitment, in terms of design training, and implementation of community monitoring techniques. Examples of this improvement include YDT became better monitors of socioeconomic impact, RCF refined their biological monitoring program, YBLBC and Hualopu/Rumsram demonstrated that, with training and assistance, Irianese villagers could really do solid monitoring and data collection, and CI/SIDT project residents ran periodic resource transects along their upland forests, assessing the biological impacts of their enterprise interventions. From the USP team, these words were offered to BCN on the subject of monitoring capacity building

The sense of partnership with several management staff was a very positive aspect of BCN people actually helping to do things and achieve project goals in the field. In our case this was especially the biological monitoring training of John Parks and the encouragement of Diane Russell to pursue the socioeconomic monitoring. The former has introduced a new skill in the region which is now much in demand.

All of these assistance achievements represented a very long process of continuous work, refinement, flexibility, and patience by all parties involved, particularly by the grantees. It was not always easy. In its Final Technical Report, the Verata, Fiji project principal investigator evaluates this shift made toward community monitoring assistance following the mid-term evaluation as follows

The flexibility in the BCN policy was both good and bad. Two main changes were a mid-stream requirement for a planning grant rather than it being optional and the drastic change in the approach to monitoring after the mid-term review. On the whole I think the changes were beneficial but it is better to get it right from the outset.

BCN staff, itself, became much better at this process, as well. The book "Measures of Success" was just one outcome and indicator of all this hard work and thinking. Another is the wealth of data that was collected, collated, and analyzed over time. This is not to say that all of the data collected would stand up to scientific scrutiny, or that we had perfect consistency in data sets across all of the projects. But community monitoring within the Network *did* work, and these opportunities to provide technical assistance gave BCN staff not only the opportunity to collect much needed data on site and solidify relationships with project partners during BCN's lifetime and for the future, it also created conditions under which it is more likely that the monitoring will continue even after BCN support has ended. BCN-supported projects in the Padaido Islands, Arfak Mountains, Humla, Verata, and others are all excellent examples of where "community monitoring" is *not* just rhetoric.

- 4 *BCN staff Collected the Minimum Data Set* – Program staff initially identified data gaps and areas where data quality was poor by reviewing through an array of project documents. Staff then worked closely with project teams to fill these holes and improve the data quality as needed to assess the efficacy of using an enterprise-oriented approach for conservation. On occasion, on-site data collection excursions and monitoring technical assistance trips coincided or were immediately followed by meetings among various BCN staff members to discuss revisions in the *BCN Analytical Framework*, the development of which was starting in mid 1997 to ensure that the data collected were consistently and systematically measured across project sites within a robust and logical analytical context. These intensive, face-to-face meetings between BCN staff, consultants, and project partners were invaluable in terms of solid data collection and analysis. The process began by defining BCN's unit of analysis, the project site. Because most of the Implementation Grant Projects were actually working in more than one project site, each site typically sustaining between one and

two enterprises, in the end these analytical meetings determined that BCN hosted 39 project sites representing 48 separate enterprises, as opposed to merely 20 grantees. This made monitoring and analysis more difficult for both BCN and the partner teams, but it also made analytical results more accurate, rigorous, and *real*. To give an example, initially the Nature Conservancy said its target was to conserve, using BCN funds and the enterprise strategy, all 117,000 hectares of Lore Lindu National Park. This was, of course, impossible given that they were, actually, concentrating their activities in three distinct areas around the Park – areas that, once we had a better physical, social, and temporal site definition for added up to only about 20,000 hectares of the Park. These efforts to get more realistic measurements of the site where project impacts were occurring was critical to BCN's overall analysis *and*, according to many of our partners, critical for them to implement projects that were far more effective than when they were first designed (see *Measures of Success* and *Measuring Conservation Impact*, both listed in Appendix A)

- 4 *Monitoring Techniques were Shared with a Wider Audience* – Project-level monitoring methods and lessons-learned were constantly being shared between project partners, and between project partners and the wider conservation community. After all, what good is all the information unless it is shared? Yayasan Rumsram staff were invited to write-up its monitoring program and experiences in an ICLARM book on the subject, UMass/TERI has published numerous articles on their work, starting in 1998, international workshops were held in India, Fiji, Papua New Guinea and the Philippines where all of our partners themselves presented monitoring methods, data and lessons learned, BCN and project staff (e.g., from RCF, TNC-Indonesia, USP, ATI-India, and PHF) made presentations in numerous, scientifically respected international fora like the Annual Meetings of the Society for Conservation Biology and the Pacific Science Congresses, BCN published in ODI's *Chainsaws as a Tool for Conservation?*, and monitoring results and analyses were shared via BCN's web site, *Lessons from the Field* series, and Annual Reports. As the Verata, Fiji staff wrote

Another positive point was encouraging project people to attend appropriate scientific meetings

At the program level, BCN's *Analytical Framework* (as well as the YDT and TNC-I projects data collection methods) received a great deal of attention from other peers, including (a) Conservation International, who are adopting much of the Framework's approach to measure conservation impacts within their own Enterprise Development Program, (b) CIFOR, which hosted a conference on the topic in Medan in February 1998, and (c) the Rural Development & Natural Resources Sector Unit of the World Bank, which used two of the Framework's variables within a community coastal resources study of their own undertaken in the South Pacific during 1998 and 1999. Of course, BSP/BCN's *Measures of Success* continued to be distributed widely, getting a lot of interest from within the field and academia.

1999 Many people have said that one of BCN's enduring legacies will be its focus on and approach to appropriate, simple, community-involved monitoring at the project level. Recognizing this, BCN staff continued, during the final phase of the program, to

- 1 *Assist Partners with Future Monitoring* - When requested, BCN staff continued to provide technical assistance to projects to refine their monitoring plans, to collect and analyze data that will be used for future project management, and to ensure that the monitoring will continue beyond the life of BCN (e.g., Rumsram/Hualopu and USP), and
- 2 *Disseminate Lessons Learned and Methodologies* - BCN and partner staff continued, through various means, to "get the word out" about appropriate monitoring methods and data collection, topics which

still seem to confound many large- and small-scale conservation and development projects. As just one example, BCN and the MacArthur Foundation sponsored an international workshop and conference in Fiji which brought together all of the BCN-supported, marine-based projects including village member representatives from Solomon Islands, Fiji, and Indonesia. First, the partner teams worked together in Verata village, talking about common lessons learned, principles for conservation, challenges and successes. They even got in the water and compared monitoring methodologies resulting in a meaningful interaction on the subject, especially between the Padaido islands and Verata groups who as a consequence discussed planning a follow-up cross-site visit beyond the BCN lifetime, with the Fijians going to Irian Jaya. Next, this work was followed by a conference at the University of the South Pacific on the experiences of these marine-based projects and their recommendations on how best to implement community marine resources management, as told by the project implementers themselves. In the audience were academics, government officials, conservation and development NGOs and others. Mass media coverage of the event included a spot (with interviews of local community members) on the National Fiji Television evening news, newspaper articles, and a video taped proceedings.

Not all of this dissemination work on monitoring was "internal." BCN staff continued to share its work, methods, and experiences with the World Bank in Washington, D C, the MacArthur Foundation, the Indonesian Biodiversity Foundation, World Resources Institute, CIFOR, USAID country offices, Australian Public Radio, and many others. The main message being delivered to all was that community members *can* do monitoring, and that the optimal mix for the sake of on-site conservation is collaboration between the scientific community (imparting skills and verifying data) and motivated community members and NGO practitioners implementing the work and providing the resources to get it done.

OBJECTIVE D High Quality Analyses

Throughout the life of the project meaningful analytical efforts are undertaken in conjunction with Grantees on all important topics identified by BCN staff and Grantees

1992-99 This objective was met. It is our collective feeling that some of the most rigorous, systematic analysis of a USAID conservation program has been implemented by BCN and its partners. Since about 1995, BCN staff's attention to high quality analysis of the hypothesis and the impact of the project's we support has been building. By 1997, it was a major focus of our time and collective energy. And throughout 1998-1999, BCN staff made continuous, intensive efforts to work with partners to gather data vital to BCN's final, overall *Analytical Framework*. At the same time, the Framework was being frequently refined in response to analytical and methodological strengths and weaknesses identified by BCN staff, project partners, and peer reviewers. Gradually, BCN staff began turning the refined measurements and collected data into exploratory analyses and analytical presentations. The result of this enormous analytical undertaking is not only the *Final Analytical Results* document (Appendix B), but also (a) an extensive set of *Data Text Documents* that contain all relevant qualitative and quantitative data for each of the projects and their respective sites and enterprises, (b) comprehensive files of all quantitative analyses that were conducted (particularly in regard to the non-parametric chi square tests and cumulative, annual, enterprise profit and loss statements) across all variables measured, and (c) the revised, expanded, *Analytical Framework*. All of these analytical outputs are to remain on file past the BCN lifetime with the BSP's Analysis and Adaptive Management Division.

Without going into great detail here (as Appendix B does this), we would like to list four major results, or "take-home" points, from BCN's analysis of using a community enterprise-approach to conservation

- 1 Enterprises *can* create incentives for conservation, but it is a strategy that should never be implemented alone. It must be supplemented by other strategies to work-- e.g., environmental education, attempts to address resource access or tenure, policy initiatives. Because many of the projects we supported recognized this, very real, very tangible conservation *did* happen at many sites like Fiji, Chitwan, Nepal, and the Padaido Islands, Indonesia (see BCN's *Final Annual Report*)
- 2 *Non-cash* benefits appeared, in our analysis, to be at least as important as cash benefits in creating incentives for conservation. By non-cash benefits, we mean resource access and tenure recognition, business and monitoring-related skills building, empowerment, knowledge of and connections to new markets (even for products and businesses that were not part of the project's original design), etc. The importance of non-cash benefits can be explained by, among other things, the fact that they tended to be enjoyed by more people than direct cash benefits, they tended to be more equitably distributed than cash benefits (important when a project is trying to build trust at the outset), and they are more "immediate" (which is important given the short three-year timeframe of many of the BCN-supported projects)
- 3 Land tenure is an important, but *not* sufficient, condition for conservation to occur. While it's true most of our greatest conservation "successes" were in areas where full, legal tenure is enjoyed by communities, our two most disappointing conservation results happened where full, legal tenure is enjoyed. In short, in Indonesia many conservation organizations are putting great effort into securing land tenure "for the people," claiming that it will lead to conservation. It might. But in Papua New Guinea, conservationists are complaining that the forests are owned by "the people," thus giving them the right to sell the resources to the highest bidder (e.g., a logging or mining company)
- 4 Communities *can* do resource monitoring that is both practical for decision-making on-site, and for more rigorous, "quasi-scientific" analysis. This point is important, because for too long the applied and the "pure" sciences have been separated in conservation, and for too long academics and NGO staffers alike (with important exceptions, of course) have assumed that people living in the communities were not in a position to do meaningful monitoring of resource use. Several projects demonstrated that community members *can* do meaningful monitoring work if there is constructive collaboration with scientists and practitioners. These situations became a win-win for all involved -- a bridge to more useful data and better decision-making, as well as adaptive management (i.e., testing assumptions leads to learning which allows adaptation of strategies used). KEF, Rumsram/Hualopu, YBLBC, KMTNC, CI-Solomons, USP, ATI-Nepal, UMass/TERI -- all of these projects, and more, demonstrated this success in monitoring to one degree or another. In the Mellor mid-term evaluation, it was recommended that BCN "Make sure that indigenous and local people are participating in all aspects of project activities." BCN feels it did this to the best of its abilities -- especially where monitoring was concerned, and only where it was appropriate to do so. This is to say, with some projects, it was not BCN's place to control such participation or to insist on it when it wasn't appropriate.

In addition to the "core" analytical work, we were very conscious of shining the light back on ourselves as a program -- taking a critical look at how BCN was implementing the grants management and technical assistance work, and how to be adaptive in doing this better. There are several documents that give the details of our analysis (e.g., BCN's *1996 Annual Report*, *Final Analytical Results*, and *Greater than the Sum of Their Parts*), all of which state, among other things, that future enterprise-based, site-specific programs should consider

- 1 Mixing grants with loans,
- 2 Allowing grants, if possible, to be awarded longer than a three to five year period,
- 3 Encouraging a "safe-fail" approach by valuing honesty, transparency, and the learning that results from openly acknowledging and communicating problems and mistakes along with successes,
- 4 Using small, up-front grants to meet the needs of initial feasibility studies and sound project design, and
- 5 Setting up a central office in the location where the funding originates, then opening small satellite offices that report to the "center" (i.e., as opposed to having a central, regional, and satellite offices as we did)

In terms of documenting the major analytical activities conducted between 1992-1999, it is worth highlighting here the following three overarching points

- 1 *'Refining' Analytical Meetings Were Periodically Held* – The BCN Analytical Framework was a document and a tool that evolved over a, essentially, a three-year period. Because of this, BCN staff combined almost all of its travel with meetings (often with different combinations of BCN staff and, at times, partner staff present) to refine and debate all aspects of the analytical agenda, including the factors being considered, data measurement and gathering techniques, data management and storage, analytical techniques to be employed, and merging results into focused communication products. An enormous amount of effort and thinking went into this endeavor. It began early on when BCN invited outside experts to assist in some of the initial conceptualization of the analytical approach. But then it really fell on BCN staff to get together and make things happen. These meetings took place in, for instance, Nepal (coinciding with site visits to projects in both Nepal and India), Manila (where the variables were finalized), Australia (coinciding with a Society for Conservation Biology meeting), Indonesia (coinciding with a follow-up monitoring trip to Arfak and the Padaido Islands), and in Washington, D.C. (when BCN field staff from each of the regions came to DC for a final "data dump" in tandem with communications work). The point here is that refining the analytical approach was neither the work of any one individual, nor was it an afterthought – it was a core element within all of BCN's work, evolving as the program itself did.
- 2 *A Data Management System Was Developed and Implemented* – BCN staff and partners designed and completed a data management system that was used to accommodate data collected from all 20 projects, 39 sites, and 48 enterprises. This focal point of this system, and thus the analysis itself, was the headquarters office. Finding a user-friendly data management system that could also accommodate the various sources and types of incoming information took a sustained, coordinated effort between Washington, D.C. and field offices. Data quantitative entry within BCN's database and subsequent export into a statistical analysis program lasted into 1999. Both qualitative and quantitative information was compiled within unpublished, individual project *Data Text Documents*, which were later used in BCN's qualitative analysis and development of the *Final Analytical Results*.
- 3 *Analyses were Completed* – BCN, as previously mentioned, completed a number of analyses based on the qualitative and quantitative data collected since 1993. These analyses cover a lot of ground – the process of grants management at both the individual project and overall BCN program level, hypothesis-testing, effectiveness of community-based monitoring, enterprise viability and value-added chains, etc. The culmination of these efforts resulted in the development and publication of BCN's *Final Analytical Results* (attached as Appendix B).

It is important to note here that BCN's overall hypothesis-testing approach did not always easily translate to a local project level. This being said, however, the underlying utility behind the approach of

employing science to test commonly held conservation assumptions was recognized as an important element of BCN by project partners, as illustrated from these three excerpts first from USP

The issue of hypothesis-based approach did not affect us in the field very much but was more of an issue at top levels (Washington DC) As a scientist it was satisfying to be part of an initiative that was actually trying to find out something useful beyond just doing good works

also from TNC

I am not sure I am clear how this "hypothesis-testing approach" manifests itself to us or to the project While I support an experimental design that loops back on itself offering opportunity to amend alter or abandon assumptions I don't think we have yet reached the point that will allow us to do so

and lastly from CI

The timeframe of five years for testing such a hypothesis was far too short and the way that data was gathered makes it very difficult to assess and compare between sites However this is not to say that there have been some very useful lessons learnt Indeed the report structure which has emphasized lessons learnt rather than empirical data has been a pragmatic and helpful approach

1999 Analysis and the dissemination of the results of the analysis was BCN's highest priority for 1999 In summary, BCN and its partners achieved two major objectives

- 1 *Completion of Conservation Impact and Process Analyses and Products* – As previously mentioned, BCN and its partners successfully completed all of its analytical activities and corresponding publications, as outlined within the *Analytical Framework* and listed within Appendix A of this Technical Report. These analytical studies resulted in the following outputs
 - a Documentation of the projects' and program's conservation impact (see *Final Annual Report*),
 - b A series of practitioner-oriented issues briefs with themes ranging from project replicability to the community-based monitoring (*Lessons from the Field*),
 - c A compilation of six project-specific case studies written by BCN staff and consultants in the field emphasizing lessons learned (*Patterns in Conservation*), and
 - d An analysis of the effectiveness and process of implementing a hypothesis-testing grants program, at both the project and program levels (*Greater than the Sum of their Parts*)

Completing and writing up these analyses was a principal focus of remaining and former BCN staff between April and September 1999 The writing was coordinated electronically between Washington, Vancouver, Chicago, Manila, and Jakarta

- 2 *Completion of the Enterprise Evaluation* – Perhaps most importantly, BCN completed the thorough test and analysis of its core hypothesis As outlined within the *Analytical Framework*, the analysis examines the influence of each of the enterprise, benefit, and stakeholder factors identified by BCN on the outcome variable, conservation success The product of this overall analysis (BCN's *Final Analytical Results*) has been included with this Technical Report as Appendix B

OBJECTIVE E Communication Leading to Impacts on Policy and Practices

By March 1999 at least two cases are documented in (a) each country where BCN has Implementation Grants and (b) in the United States where change in local or national-level conservation practices and/or policies were a direct result of the BCN Program

1992-99 This objective was successfully met. Early on BCN worked to identify precisely who its clients and target audiences were, and then to devise ways of conveying what we had learned and experienced. Throughout the seven year program, BCN paid due attention to communicating this work. But by 1997, there was a very strong focus on disseminating lessons learned and reaching our target audiences through various media. This was primarily done by

- 1 *Establishing www BCNet org* – The BCN website was launched in October 1997. Since then, BCN staff worked to ensure that the site became the one-top repository of all BCN publications, maps, presentations, project highlights, etc. It was continuously updated, being used to quickly and efficiently disseminate findings and lessons learned to the public. It was also used to develop an on-line community of people interested in these issues of conservation and enterprise, and to place project products (e.g., rattan handbags, jellies, ecotourism destinations) in a marketplace where people could access information about purchases. This marketplace attracted attention from numerous butterfly buyers and enthusiasts in Indonesia, as well as importers of small handicraft items. And the “Lessons Learned” and country-specific sections were utilized by everyone from a 12 year-old Parklane Elementary school student in California researching tropical rain forests in Indonesia, to CITES authorities in London reviewing butterfly trade regulations and conservation practitioners throughout the globe looking for advice on developing simple and effective community monitoring systems. The response has been truly overwhelming at times in that it has sometimes been difficult to respond to the many queries for information and for discussion of important topics. Visitor ‘traffic’ within the website was tracked monthly, tripling a year following the initial launch in 1997 and peaking during early and mid-1999, at the height of BCN’s final communications outreach activities in Asia and in the United States. Maintenance of the web site was transferred to BSP and WWF-US to ensure that the information contained there will be available online until late 2005.
- 2 *Reaching Out to the Public through Mass Media* – Since 1992, BCN staff and partners pursued a variety of mass media sources to communicate the results of the projects and program. To cite a few examples, BCN’s portfolio of activities were featured within newspaper articles ranging from the London Financial Times and Vancouver Sun in the Northern Hemisphere to the national papers of Papua New Guinea, New Delhi, and Fiji in the Southern Hemisphere, several BCN projects were individually featured in Indonesia’s, India’s, Nepal’s, and the Pacific’s print and television media, including a half-hour long show featuring the USP project broadcast on the Fijian National Television station through a video produced by USP with assistance from BCN, BCN workshops were covered through local television news segments in Papua New Guinea and Fiji, with local community members being interviewed, BCN staff did interviews for radio newscasts in Australia, the Philippines, Canada, and Nepal, and even the write-up of one partner meeting in Indonesia was picked up by conservation websites in the Netherlands and distributed around the world. These are just a few examples of the ways in which BCN staff and project partners worked to find ways to “get the word out” through mass media – methods of communication that were frequently the appropriate alternative to that of dense, dry reports that are only seldomly read.
- 3 *Presenting Lessons Learned to Outside Practitioners Academia and Policy-Makers* – BCN staff and project partners participated in various conservation and community development conferences and

seminars throughout Asia, the Pacific and the United States, including (a) several annual meetings of the Society for Conservation Biology, where several BCN staff and partners led symposia on lessons learned from enterprise-based approaches to conservation, (b) the South Pacific Regional Environmental Program Conference on Nature Conservation and Protected Areas, where community members presented papers on their community monitoring methods to an enthusiastic and impressed group of academics and decision makers, (c) a BCN-supported Medicinal Plants Conference in India that brought together experts worldwide along with relevant BCN project partners and received world news coverage as far away as the United Kingdom, and (d) the Pacific Science Congresses, where strong, scientific peer review brought both constructive criticism and unsolicited praise to the BCN program. In all of these cases (and the many others that have not been listed here), BCN staff chose to attend the events only when it made strategic sense – when BCN actively contributed to the sharing and learning through hosting symposia or through presentations about the program and individual projects at highly specialized sessions of experts. These fora proved to be very effective vehicles for generating interest, enthusiasm, peer credibility, and support for the work BCN achieved and its partners continue to do.

- 4 *Conducting Internal BCN Grantee Workshops* – Throughout its lifetime, BCN also frequently convened and sponsored its own internal workshops and meetings throughout the region. BCN and its partners held workshops in all seven countries where it supported conservation and enterprise development efforts. Because these intra-grantee workshops have been well documented to USAID within previous Progress Reports and Annual Workplan, their details will not be repeated here. However, it is notable that these workshops ranged in topics from project monitoring to exploring credit and loan mechanisms, from non-timber forest product operations and ecotourism marketing to policy development.
- 5 *Written Products* – BCN devoted a great deal of time and effort to designing and writing publications that would reach a range of audiences, including the five *Annual Reports* we produced (which improved, we might add, with each passing year), the *Lessons from the Field* series, our Conservation Impact and Project maps, various articles in trade and peer review journals, and books like *Patterns in Conservation* and *Measures of Success*. All of these written products proved effective in getting the message across to multiple audiences.

By employing the "Stories from the Field" format in our *Annual Reports*, we were able to convey both important programmatic information and the "voices" of our partners, who wrote about the project-specific narratives themselves. BCN's *Lessons from the Field* series (an off-shoot of the same BSP series) was project and thematic driven, using a format and tone that was more accessible to practitioners and, at the same time, conveying important conservation-oriented lessons and principles about projects in Papua New Guinea and Indonesia. We developed maps as a way of visually capturing and cross-culturally communicating the conservation impact each of the projects had on site. Articles on timber harvesting and a book on monitoring and project design (*Measures of Success*) were other, more formal means of capturing the work BCN has done. Our project partners, too, wrote articles in numerous books and periodicals. In short, we are leaving behind a small library of work (a sample of which is listed within Attachment B). But most importantly, thousands of copies of the documents that make up that library were disseminated to their targeted audiences. Over the years, we received very positive feedback from practitioners, academics, and decision makers around the globe, who have consistently noted on the readability and usefulness of BCN's publications. The one piece of feedback that we received and about which we are quite pleased is the appreciation for the candor and objectivity with which our publications discuss both the successes and frustrations we and our partners have experienced.

Finally, BCN will leave behind a legacy of these written materials through its targeted distribution of such materials to regional libraries in Asia and the Pacific as well as here at home. BSP's Communications Division will also continue to disseminate BCN's remaining publications past its programmatic lifetime upon request from external audiences.

1999 1999 was the final crunch period for "getting the word out". In the final six months of the program, we completed several communication activities to this end:

- 1 *Final Workshops and Presentations of Lessons Learned* – Since late 1998, BCN and its partners held final workshops in India (for both India- and Nepal-based projects), Papua New Guinea (for all Pacific-based partners), the Philippines, and Indonesia. In addition, a thematic workshop for BCN's three marine grantees was held June 1999 in Suva, Fiji. All of these final workshops served several purposes. At one level, they were intended to put a somewhat formal close to the period in which the various projects were supported by BCN, and to present the future of these projects to outside audiences. At another level, these workshops were used to bring representatives (mostly the staff members working "in the field") from the various projects together to share experiences and discuss common conservation problems and strategic solutions. These workshops emphasized the *network* component of BCN that had been built over seven years and, at the same time, produced results that were factored into the BCN's overall analysis. The workshops also identified analyses and adaptive management principles which were adopted by the individual projects themselves. Each of these "internal" workshops between BCN and its partners were coupled with "external" audience presentations made by project staff to national and regional level audiences. BCN grantees made detailed and technical presentations about what they have learned to key decision makers from government and other relevant organizations. In each case (with the exception of Indonesia), the grantees reached policymakers and practitioners with their message in the hopes of having an impact on policy development in the area of enterprise-based approaches to conservation. And some projects were able to have a direct impact on policy development on their own. As reported by the partners themselves, the TNC-Indonesia project

has had significant input into project design for the large Central Sulawesi Integrated Area Development and Conservation Project [an ADB funded project]

Similarly, USP reported that impacts from their successful equitable prospecting agreement development were felt region-wide:

In addition there are frequent email requests to provide project information for people doing studies on access and benefit sharing agreements. Policy in Fiji and the Pacific region have been informed by the project activities.

In addition to the final workshops, other "external" audience presentations on BCN and its final results were made in (a) Sydney at both the Pacific Science Congress and World Wide Fund for Nature Australia office, and (b) Washington D C at USAID, The Nature Conservancy, the World Bank, World Wildlife Fund, Conservation International, and at the Annual Society for Conservation Biology Meeting.

- 2 *Placement of all BCN Products onto the BCNet Website* – By thinking strategically about which communication products we wanted to leave on the BCNet website for the next several years as a 'living' legacy of the learning and conservation that was achieved, BCN worked closely with the

- website server to ensure that this set of legacy products were posted in a timely manner while also being easy to locate and navigate online. This included written materials such as *Annual Reports* and *Lessons from the Field*, as well as a photo gallery, maps, and purchasing information of the natural products and services offered through BCN's partners.
- 3 *Two New "Lessons from the Field" Editions Released* – Featuring projects led by Yayasan Dian Tama in Indonesia and the Research and Conservation Foundation in Papua New Guinea, two additional installments in BCN's practitioner-oriented series were published and disseminated.
 - 4 *Final Publications Produced* – Pursuant with its twin goals of conservation and enterprise-approach evaluation, as well as the non-formalized goal of documenting process lessons, BCN wrote, published, and broadly released its final communication products (a) in documenting BCN's conservation impact, the *Final Annual Report* and *Patterns in Conservation* (a compilation of six project case stories written from BCN's perspective) were produced, (b) in documenting the results of BCN's evaluation of using an enterprise-approach to conservation, BCN's *Final Analytical Results* was produced, and (c) in documenting BCN's principal process lessons regarding adaptive management and hypothesis-testing, *Greater than the Sum of Their Parts* was produced.
 - 5 *Interview Aired on Australian Public Radio* – Following the Pacific Science Congress held in Sydney, Australia where BCN staff gave three presentations and chaired a session on community monitoring, a Project Officer was interviewed by a news representative from Australian Public Radio on the BCN Results, which was aired nation-wide on July 11, 1999.
 - 6 *Appearances on Television and in Print Media in Fiji* – Following the international workshop BCN convened for its marine-based projects from Fiji, the Solomon Islands, and Indonesia, staff from the Fiji and Solomons projects were interviewed on the workshop by Fiji One, the national television station, which was later aired that evening on the national news. In addition, there news articles circulated on the workshop within the national newspapers.
 - 7 *Disposition of BCN's Photographic Slide Files to Respective Project Partners* – Over the seven years, BCN staff and consultants took many photographs of project sites and activities – photos that we used to build BCN's many presentations and publications. The best of BCN's large slide file for each project were digitized and archived onto CD-ROM for future BSP/WWF use. The original slides, rather than being thrown out or stored away, were sent to the appropriate project partners so that they could continue to be used within future presentations and marketing activities by the project partners themselves.

CROSS-CUTTING OBJECTIVE X1 Skills Development

Throughout the life of their projects, BCN Grantees develop and improve the skills necessary to enhance the quality of their projects (examples of skills include proposal writing, financial management marketing social monitoring and analysis and communication of results)

1992-99 From the beginning of the BCN program, it was clear that implementing a project in the field with four disparate elements – biological monitoring, enterprise development, socioeconomic monitoring, financial and administrative grants management – would be difficult for any single organization or, even, collaborative efforts of several NGOs. We especially thought this would be true of

the national and local level NGOs we supported. We were right. But we erred a bit in underestimating how important was the need for skills development, in general, and in thinking that the larger, international NGOs would not require much technical assistance.

It was clear within the first two years of the program that the areas needing the most consistent attention were (a) project and proposal design, (b) monitoring and evaluation design and implementation, (c) enterprise management (especially cost accounting), (d) product marketing, (e) financial reporting (especially to meet USAID's A-133 audit standards), and (f) communication of accomplishments. And NGOs both big and small required the assistance.

BCN was designed, essentially, as a donor agency to test a hypothesis and to have an impact on conversation. But it is fair to say that, especially after the first two years of the program and after most of the grant recipients were selected, BCN became an active partner in all of the projects, providing technical assistance (or arranging for other contractors to provide technical assistance) far beyond what was originally expected.

Examples of how we (collectively— both BCN and project partner staff) increased skills include

- 1 Sponsorship of staff members from half a dozen projects to attend, give presentations, and lead symposia at the Society for Conservation Biology's annual meetings in the USA, Australia, etc ,
- 2 Collaboration with each of the projects in writing "Stories from the Field" for the Annual Reports, in developing marketing tools, such as posters, brochures, and web-site pages,
- 3 Support for cross-site visits and national level partner meetings— in all of the seven countries where BCN supported projects— to allow projects to share lessons learned and combine efforts on various project activities, and to provide a venue for project staff to make presentations before the public, government officials and others in the conservation and development community,
- 4 Technical assistance on financial management (especially in Indonesia), including audits, financial management training courses and direct assistance from BCN staff in the field,
- 5 Technical assistance on biological and socioeconomic monitoring (from BCN staff as well as project to project interchange) for projects in all 7 countries where BCN is working,
- 6 Technical assistance on enterprise development and marketing in, especially, Indonesia and the Philippines (e g , sponsorship of YDT's participation in international exhibitions and, as the TNC-Indonesia staff wrote, " the major impediment to success [for the enterprise] was actually group management and enterprise development – even if the technical aspect was mastered, group management would still be an issue "
- 7 Using BCN's Small Grant mechanism to coordinate technical assistance and build new collaborative efforts (e g , BCN's grant to Bina Swadaya to assist with the Harvard project in West Kalimantan), or to facilitate skills building activities (e g , BScC staff visiting ecotourism ventures in Belize, which was part of a Small Grant to Wildlife Preservation Trust International to do work with TNC-Indonesia and BScC)

In Indonesia, the BCN's impact has gone well beyond its immediate partners. As just one example, the Indonesia Biodiversity Foundation (Kehati) bases its contracts on the format and process used by BCN

It also re-drafted its proposal requirements to mirror BCN's, using the guidelines BCN developed that integrate the three socioeconomic, biological, and enterprise pillars. In addition, *Measures of Success* and the Threat Reduction Assessment tool developed by BCN are both being used by Kehati's program staff to work with its grantees in developing indicator and reporting systems. And now Kehati is considering emulating BCN's "Lessons from the Field" format.

1999 In 1999, BCN staff was less proactive in trying to help its partners build capacity, simply because the focus had to be on the analysis, communicating results and closing the program. It was largely left to project staff to initiate skills building ideas and exercises. Nonetheless, BCN did continue to work with its partners on

- 1 *Enterprise Development and Marketing*, especially by working with certain projects on improving their financial record-keeping, putting their products on the web and advertising through brochures, etc ,
- 2 *Refining Biological and Socioeconomic Monitoring Systems* so they can be adapted for post-BCN use (e.g., at the Fiji meeting in June 1999, and in Indonesia with the four BCN projects that are to receive funding from the Indonesia Biodiversity Foundation),
- 3 *Closing out all financial aspects of the grants*, especially with those partners who received no-cost extensions through June 30, 1999 and are having a difficult time closing their books, and
- 4 *Building Strategies for a Project's Follow-up Activities* after BCN funding ends (i.e., fundraising strategies and skills)

CROSS-CUTTING OBJECTIVE X2 Partnerships

Throughout the life of their projects BCN Grantees develop and maintain the partnerships with each other and with other organizations that are necessary to enhance the quality of their projects and conservation

1992-99 This objective was met. The relationships between projects – i.e., the Network – were strengthened over the years and, in several instances, new relationships were created in an effort to complement existing organizational skills with those of others. And, again, in most cases the partners were able to make important, strategic connections with outside academic, private sector and donor organizations. This was primarily done by

- 1 *Coordinating meetings* at the regional and national levels (as mentioned earlier) to get BCN-supported projects together to share lessons learned, get the word out on the work that they were doing, and devise strategies to collaborate in the future on common goals and agendas (this was particularly successful in Papua New Guinea and Fiji). With the exception of the monitoring meetings, which were convened in 1995,
- 2 *Encouraging the Development of an On-line Community* on the BCNet World Wide Web site,
- 3 *Assisting Project Partners to Link with Other Funding Sources* by working with them to present their work to wider audiences, and to strengthen their collaborative efforts to make them collectively more attractive to donor agencies (e.g., the Indonesia Biodiversity Foundation will fund YBLBC,

Rumsram, and YDT in 1999-2000, in large part because it is attracted to their collective monitoring and enterprise development work), and

- 4 *Using BCN's Small Grants to Start Strategic Alliances*, such as BCN's grant to Bina Swadaya, a community development organization, to assist LTFE in West Kalimantan

In spite of these many successful and productive collaborative efforts within the Network of projects, there were two cases where internal project relationships deteriorated over time, despite efforts by BCN to mediate. The projects in Gunung Halimun National Park and the Arfak Mountain Nature Reserve, both in Indonesia, saw a steady and deep-seeded rift develop between groups that, at the outset of BCN funding, were close collaborators. On the other hand, BCN was successfully able to mediate a rift between partners at the Crater Mountain project in Papua New Guinea. But, as mentioned, these were problems internal to a given project. BCN rarely had control over events, though we were asked—as a partner and not a donor—to assist in mediating the problems. And usually these internal rifts did not affect the ability of these projects to make productive links with other projects in the Network.

1999 We worked with the staff of several Network projects to identify ways to promote future collaborative conservation efforts. BCN did this by

- 1 *Sponsoring Workshops, Conferences, Meetings, and Analytical Work* that brought together project staffs, such as at the June 1999 meeting of marine-based projects in Fiji, representation of three BCN-funded projects at a CIFOR conference on NTFPs and their impact on conservation, and a comparative analysis of community-based timber harvesting in Indonesia
- 2 *Devising a Strategy for the BCN Web Site* to continue to be used as a means of communication between project partners and the larger conservation and development community, even after the BCN program has formally ended

3 PARTING COMMENTS

The authors of this report have been with BCN since its earliest days. We have seen BCN evolve and were part of its evolution. We agree that, as individuals, the most important aspect of the work was the fact that, everyday, we were aware of the fact that we would be continually learning something new. BCN was a learning organization. It valued mistakes and even failures often as much as successes. This atmosphere allowed us and our partners to be honest about what we did that worked, what didn't, and how we might do it better the next time. There were, as with any job, many frustrations. Some of those were our own doing, others we had little control over. But in the end, we are proud of the work we did and are deeply appreciative of the opportunities we have had to work with smart, dynamic, and committed people in Washington D C and throughout Asia and the Pacific. As we often say, the BCN program is ending, but the projects we have supported are going to continue, and so are the relationships we have built over the years between ourselves, other BCN staff, and with our project partners in the field, such as the Verata communities at the University of the South Pacific project in Fiji, with the Yayasan Hualopu, Rumsram and Dian Tama in Indonesia, with the staff from the Research and Conservation Foundation in Papua New Guinea, and many others.

We genuinely feel that we professionally met all objectives set out for BCN, and that we met them well. Throughout the past seven years, we would ask ourselves whether or not it was all "worth the investment," and whether or not reaching those objectives justified the nearly \$20 million of tax payer' earnings spent since 1993. At the project level, we feel strongly that, with the exception of two or three individual cases, the money was well spent. As has been documented, conservation definitely happened, national and local institutions were strengthened, resource management policies were changed for the better, important conservation lessons were learned, projects were re-designed to meet threats more effectively – and all of it was done for a relatively small amount of money when considering the relative value of the scale at which BCN's financial and technical support were applied towards the conservation of the world's rich epicenter of biodiversity. It is clear that at many of the sites, more coral reefs would have been destroyed and more forests would have been cut unless the projects were there to offer the local communities an alternative.

At the program level, we believe the funds were, on balance, used effectively. In hindsight, we would have made some important structural changes, such as not opening a regional field office (which was neither cost effective nor efficient) and, instead, focusing principally on the "satellite" offices in the countries/regions where a concentration of grantee projects existed. But these "liabilities" are easily offset by BCN's assets:

- the projects that will continue to achieve conservation, the enterprises which are sustainable and financially viable,
- the lessons and learning emerging from BCN's analyses that will continue to be shared and disseminated by those who wish to undertake an enterprise-based approach in conservation and development activities,
- the data that have been collected and add to the existing knowledge base about our natural world and those who inhabit it,
- and the new relationships that were made between individuals and institutions, including between USAID field offices and many of the international, national, and local NGOs which BCN supported.

Finally, on behalf of everyone who has worked with BCN over the past seven years, we want to genuinely thank USAID for the opportunity to support such an important geographic effort and its wondrous array living diversity – both in terms of the people there and the biota surrounding them.

APPENDIX A BCN PUBLICATIONS

The following list includes key BCN-related publications and documents. Documents marked with an asterisk are still available from the Biodiversity Support Program as of September 1999. Many of these items are also available on-line at www.BCNet.org

- Baron, Nancy. *Lessons from the Field*, Issue No. 1 (1998) Keeping Watch: Experiences from the Field in Community-based Monitoring. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (February 1998) *Analytical Framework & Communications Strategy*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1994) *Annual Report January 1 1994 - December 31 1994*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1995) *Annual Report*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1996) *Annual Report: Stories from the Field and Lessons Learned*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1997) *Annual Report: Getting Down to Business*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1999) *Final Stories from the Field*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1999) *Patterns in Conservation: Linking Business, the Environment and Local Communities in Asia and the Pacific*. Biodiversity Support Program, Washington, D.C., USA
- Biodiversity Conservation Network (1999) *Evaluating Linkages Between Business, the Environment and Local Communities in Asia and the Pacific: Final Analytical Results from the Biodiversity Conservation Network*. Biodiversity Support Program, Washington, D.C., USA
- Cordes, Bernd. *Lessons from the Field*, (1999) Doing Business in Borneo. Biodiversity Support Program, Washington, D.C., USA
- Johnson, Arlyne. (1999) Measuring Our Success: One Team's Experience in Monitoring the Crater Mountain Wildlife Management Area Project in Papua New Guinea. *BSP Lessons from the Field Issue BCN-3*. Biodiversity Support Program, Washington, D.C., USA
- Margoluis, Richard and Nick Salafsky (1998) *Measures of Success: Designing, Managing and Monitoring Conservation and Development Projects*. Island Press, Washington, D.C., USA
- Peters, Charles M. (1994) *Sustainable Harvest of Non-Timber Plant Resources in Tropical Moist Forest: An Ecological Primer*. Biodiversity Support Program, Washington, D.C., USA
- Salafsky, Nick. (1997) *Eleven Steps for Setting up Community-Based Timber Harvesting Enterprises: An Overview of the IRECDP Experience in the Islands Region, Papua New Guinea*. *European Union—Islands Region Environmental & Community Development Programme (IRECDP)*
- Salafsky, Nick. (1998a) *Community-Based Approaches for Combining Conservation and Development*. Pages 132-135 in Linda Koebner and Jane Sokolow (eds.) *Scientists on Biodiversity*. American Museum of Natural History, New York, N.Y., USA
- Salafsky, Nick. *Lessons from the Field*, Issue No. 1, BCN 1 (1998b) *If I Only Knew Then What I Know Now: An Honest Conversation about a Difficult Conservation and Development Project*. Biodiversity Support Program, Washington, D.C., USA

- Salafsky Nick and Lini Wollenberg (In Press) Linking Livelihoods and Conservation A Conceptual Framework for Assessing the Integration of Human Needs and Biodiversity *World Development*
- Salafsky Nick and Richard Margoluis (1999a) Greater Than the Sum of Their Parts Designing Conservation Programs to Maximize Impact and Learning Biodiversity Support Program, Washington D C , USA
- Salafsky Nick and Richard Margoluis (1999b) *Overview of a Systematic Approach to Designing Managing and Monitoring Conservation and Development Projects* In Saterson et al pp 7-15
- Salafsky Nick and Richard Margoluis (1999c) Threat Reduction Assessment A Practical and Cost-Effective Approach to Evaluating Conservation and Development Projects *Conservation Biology* 13 830-841
- Saterson Kathy Richard Margoluis and Nick Salafsky, eds (1999) *Measuring Conservation Impact An Interdisciplinary Approach to Project Monitoring and Evaluation* Biodiversity Support Program Washington D C USA
- Wollenberg, Eva and Andrew Ingles eds *Incomes from the Forest Methods for the Development and Conservation of Forest Products for Local Communities* (1998) Center for International Forestry Research Jakarta, Indonesia (See especially chapters 1, 3, & 6)
- Wagner John Victor Kohala and Francis Tarihao (1996) *The Collection of Size Class Structure and Recruitment Data of *Canarium indicum* by Local Communities in the Makira Conservation in Development Project Area Solomon Islands A Report on the Field Implementation of a Biological Survey* Biodiversity Conservation Network, Washington D C USA

APPENDIX B FINAL ANALYTICAL RESULTS



Evaluating Linkages Between Business,
the Environment, and Local Communities

Final Analytical Results from the
Biodiversity Conservation Network

Biodiversity Support Program
Washington, D C

Acknowledgements

This report represents the final analytical output from the Biodiversity Conservation Network (BCN). It is the product of literally hundreds of peoples' work. We would particularly like to acknowledge and thank our partners from the twenty BCN-funded projects who did the work and collected the data that form the foundation for this report. We also thank Molly Kux, David Richards and the other visionary individuals who set up the BCN program. The BCN Analytical Framework underlying this report was developed with the assistance of many people including BSP and BCN staff: Ganesan Balachander, Chiranjeev Bedi, Seema Bhatt, Hank Cauley, Chuck Encarnacion, Frank Hicks, Richard Margoluis, Stacy Roberts, Diane Russell, and Kathy Saterson. Assistance in compiling the data for these analyses was provided by Minnie Ames, Chiranjeev Bedi, Seema Bhatt, Chuck Encarnacion, Avi Mahaningtyas, Jennifer McLean, Karina Quintans, and Jessica Stabile. Administrative support was provided by Chato Capili, Connie Carrol, Jennifer Jordan, Hazel Mascuñana, and Bek May. We would also like to thank our colleagues in BSP, WWF, TNC, WRI for their support. We thank Gabriel Wishik for conducting the qualitative analysis. We thank Hank Cauley for his comments on a draft of this report. Finally, we would like to acknowledge the major role that Richard Margoluis played in helping us to conduct our analyses and prepare this report.

This report was made possible through support provided by the Office of Development Resources, Bureau for Asia, USAID under the terms of Cooperative Agreement Number AEP-A-00-92-00043-00. The opinions expressed herein are those of the authors and do not necessarily reflect the views of USAID. For more information, to give us feedback, or to order copies, please contact:

Biodiversity Support Program	Phone 202-861-8347
c/o World Wildlife Fund	Fax 202-861-8324
1250 24 th Street, NW, Suite 600	e-mail BSPonline@wwfus.org
Washington, D C 20037, USA	Web www.bsponline.org

This report is available online at www.BCNet.org or www.BSPonline.org

Please cite this report as:

Salafsky, Nick, Bernd Cordes, John Parks, and Cheryl Hochman (1999) *Evaluating Linkages Between Business, the Environment, and Local Communities: Final Analytical Results from the Biodiversity Conservation Network*. Biodiversity Support Program, Washington, D C, USA

Credits

Research, Writing, and Editing	Nick Salafsky, Bernd Cordes, John Parks, and Cheryl Hochman
Additional Analysis and Editing	Richard Margoluis
Production Coordinator	Connie Carrol
Cover Art	Anna Balla
Cover Layout	Keith Dana
Printing	Balmar, Inc
BCN Director	Bernd Cordes
BSP Executive Director	Judy Oglethorpe

© 1999 by World Wildlife Fund, Inc., Washington, D C

All rights reserved. Reproduction of this publication for educational and other noncommercial purposes is authorized without prior permission of the copyright holder. However, WWF, Inc. does request advance written notification and appropriate acknowledgement. WWF, Inc. does not require payment for the noncommercial use of its published works and in no way intends to diminish use of WWF research and findings by means of copyright.

Contents

1 BCN AN INTRODUCTION	1
1 1 THE BASIC BCN CONCEPT	2
1 2 BCN S GOALS AND PROGRAM	2
1 3 STRUCTURE OF THIS REPORT	3
2 OVFRVIFW OF BCN'S ANALYTICAL FRAMEWORK	4
2 1 BCN'S CORE HYPOTHESIS	4
2 2 ANALYTICAL APPROACH	6
Research Design	6
Data Collection	7
Data Analysis	7
2 3 SELECTING THE SAMPLE OF PROJECTS	8
2 4 DEFINING STUDY SITES AS OUR UNIT OF ANALYSIS	10
3 RESULTS OF TESTING BCN S CORE HYPOTHESIS	12
3 1 ASSESSING SUCCESS	14
Measuring Conservation Success	14
3 2 LINKED ENTERPRISE FACTORS	16
Enterprise Linkage With Biodiversity	16
Enterprise Profitability & Bookkeeping	18
Enterprise Success	20
Enterprise Ownership and Management	22
Enterprise Marketing and Logistics	24
3 3 BENEFIT FACTORS	26
Cash Benefits	26
Non-Cash Benefits	28
Timing and Frequency of Benefits	29
3 4 STAKEHOLDER FACTORS	30
Stakeholder Group Organization	30
Stakeholder Group Leadership	31
Resource Control and Policing	32
Stakeholder Homogeneity	34
3 5 EXTERNAL AND PROCESS FACTORS	35
Chaos	35
Policy Environment	35
Project Effectiveness and Stakeholder Buy-In	36
4 AND THE ANSWERS ARE	37
4 1 CAN AN ENTERPRISE STRATEGY LEAD TO CONSERVATION?	37
Yes, But Only Under Limited Conditions	37
And Never on Its Own	40
4 2 CAN AN ENTERPRISE STRATEGY PAY FOR CONSERVATION?	42
Subsidies are Required, Especially for Management	42
but a Partial Subsidy Means There Is Also a Partial Return	42
4 3 HOW CAN WE IMPLEMENT MORE EFFECTIVE PROJECTS AND LEARN FROM OUR EXPERIENCES?	43
Project Level Adaptive Management	43
Program Level Adaptive Management	45
5 WHEN SHOULD YOU USE AN ENTERPRISE STRATEGY?	46
6 NEXT STEPS ALONG THE PATH	49
SELECTED BCN PUBLICATIONS	50

1 BCN An Introduction

The Biodiversity Conservation Network One core hypothesis Seven years of work Seven countries across Asia and the Pacific Fifteen staff members Twenty projects and thirty-nine sites Forty-eight community-based enterprises Hundreds of project staff Thousands of community members Twenty-million dollars of US taxpayer money And now we are going to sum it all up in a few brief pages What was it all about? What happened? What did we learn? Was it worth the investment? What practical lessons can you take away from this?

BCN's publications are designed to share what we learned along the way – both our successes and our failures This report is no different It presents an overview of our Analytical Framework, a summary of our data and results, and a discussion of the lessons we learned As in other BCN publications, we tried here to retain our candor and objectivity by stating our assumptions, by describing where and why those assumptions held or were proven wrong, and by presenting some of the successes and frustrations we experienced – at both project and program levels

This report is only the tip of the iceberg Across the Network, we have collectively compiled files of data, drawers of photos and reports, volumes of stories, and years of experiences Unfortunately, in this report we can only present a tiny fraction of this wealth of information – a brief introduction to BCN's analytical results and a guide to finding out more In the main narrative, we present an overview of our core analyses In the sidebars we present links to other sources where you can get more detail Through this summary and links to our other data, reports, stories and experiences, we hope you will be able to see what lies below the surface

Obtaining Additional Information

Most of the sources outlined in the sidebars can be obtained via the BCN web site at www.BCNet.org even after BCN ends Specific web pages within the site are referenced using underlined text as above A map of BCN's web site is at www.BCNet.org/sitemap.htm or in BCN 1997 (p 3)

Printed copies of many documents are also available from the Biodiversity Support Program by mail or by ordering from www.BSPonline.org A list of these publications is included at the end of this report

Jumping to Conclusions

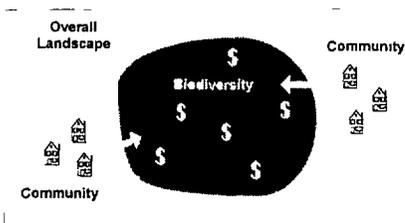
For those of you who don't want to wait for the answers we will give you a preview of where we are heading BCN was established to test a specific hypothesis about the conditions under which an enterprise-based strategy might help local communities conserve their biodiversity

We found that

- 1 An enterprise strategy can lead to conservation but only under limited conditions and never on its own
- 2 An enterprise strategy can be subsidized and yet still create a net gain for conservation, and
- 3 To determine how to optimally use an enterprise strategy (as well as any other conservation strategy), you need to use adaptive management at both project and program levels

To find out how we arrived at these conclusions and the rich detail that lies behind them we encourage you to read on

Comparing Different Strategies The BCN enterprise strategy for conservation can best be understood in comparison to other conservation strategies like direct protection or economic substitution. A basic discussion of these strategies can be found at www.BCNet.org/about/paradigm.htm or in Salafsky (1998a). A more technical discussion of the models behind these strategies can be found in Salafsky and Wollenberg (in press).



BCN's Institutional Structure A more detailed discussion of BCN's institutional structure can be found at www.BCNet.org/about/overview.htm or in BCN's 1996 Annual Report (p. 69). Details about BSP can be found at www.BSPonline.org. Information about USAID is online at www.USAID.gov. Information about BSP's consortium partners is available at www.TNC.org, www.WorldWildlife.org, and www.WRI.org.

BCN's Conservation Impact For an overview of BCN's impact see the map in BCN's 1999 Annual Report (pp. 2-3) or online at www.BCNet.org/results/impact/index.htm.

Key Clients BCN early on identified seven different types of clients. A complete list of these clients can be found at www.BCNet.org/learning/analytical/intro.htm.

1.1 The Basic BCN Concept

BCN was established in September 1992. At that time, a number of conservationists were excited about the prospects of using community-based, environmentally-friendly businesses to "save the rainforest" and "protect the coral reefs." As shown in the figure below, the basic concept was to avoid dividing the landscape into a core area for biodiversity and outside areas for human use, as is done under a protected area approach. Instead, conservationists began to look at the overall landscape as an integrated whole, using eco-enterprises to develop direct links between the biodiversity and surrounding human populations.

The key hypothesis behind this enterprise-based conservation strategy is that if local people directly benefit from a business that depends on the biodiversity at a given site, then they should have the incentive to act to protect it against both internal and external threats to its destruction. There was some anecdotal evidence at the time that this strategy might work, but no one had systematically tested the idea. That's where BCN came in.

Perhaps the most important feature of the BCN program was that we did not say "this enterprise approach is a good idea, so we should try to replicate it everywhere." Instead, our approach was more cautious. We said, "This is an interesting idea. We should test it to see where it works, where it does not work, and why." BCN was thus set up as a large-scale experiment to look at three key questions:

- Can an enterprise strategy lead to conservation?
- Can an enterprise strategy pay for conservation?
- How can we implement more effective projects and learn from our experiences?

1.2 BCN's Goals and Program

BCN was specifically established to address these questions. We set out to fulfill two main programmatic goals, as well as a third that, though it was not part of the original BCN design, emerged over time:

- 1 *Conservation Impact* – Support the implementation of enterprise-based biodiversity conservation strategies with communities across Asia and the Pacific,
- 2 *Enhanced Knowledge* – Evaluate the effectiveness of these enterprise strategies and provide lessons and results to BCN's clients and audiences,
- 3 *Process Lessons* – Learn how to design, manage, and monitor both conservation projects and hypothesis-testing programs more effectively.

To achieve these goals, BCN brought together organizations in Asia, the Pacific, and the United States in active collaboration with local and

indigenous communities The program provided grants for projects that encouraged the development of enterprises dependent on sustained conservation of local biodiversity Through a competitive review process, BCN funded 20 three-year Implementation Grants in seven countries A key feature was that each project, with support from BCN staff, had to monitor the social, economic, and biological impacts of their interventions These data are the basis for many of the analyses in this document

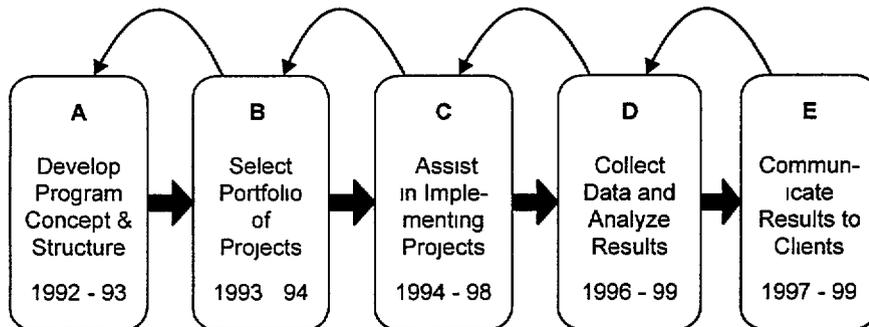
BCN Grants A complete list of the grants that BCN made can be found at www.BCNet.org/learning/analytical/intro.htm or in BCN's annual reports

The overall BCN program had five roughly sequential components, as outlined in the figure below

Program Components A detailed description of these steps can be found at www.BCNet.org/learning/analytical/intro.htm Highlights of each year's program activities are presented in BCN's Annual Reports (1994 pp 2-11 1995 pp 2-13 1996 pp 1 4 and 1997 pp 1 4)

Overview of the BCN Program Components

These steps were generally undertaken in a sequential manner as indicated by the large arrows in the diagram going from left to right A key premise behind this diagram however is that the activities and products of each step were highly interconnected Furthermore although the general flow of the program was sequential from left to right there was also an iterative feedback process (represented by the curved arrows on top of the diagram) between the steps Although we worked on all five components throughout the life of the BCN program, the diagram shows the years each component was a primary focus



1 3 Structure of This Report

BCN's analytical efforts correspond directly to our three goals and involve 1) documenting our conservation impact, 2) testing an enterprise strategy, and 3) developing process lessons In this report, we present our formal analyses related to testing an enterprise strategy Section 2 presents an overview of our analytical framework Section 3 shows some of our basic results Section 4 discusses major lessons that we learned Finally, Section 5 provides our overall conclusions, and Section 6 outlines recommendations for future work The formal analyses presented in this report are only half the picture The other half involves drawing upon the experiences of our project partners outlined in the *BCN Stories from the Field* series described in the sidebar

Project Experiences The analytical lessons developed by our project partners are presented in the three volumes of the *BCN Stories from the Field* series (in BCN's Annual Reports from 1996 1997 and 1999) and are also available on line at www.BCNet.org/learning/bcn/bcn.htm

2 Overview of BCN's Analytical Framework

2.1 BCN's Core Hypothesis

BCN Analytical Framework A more complete presentation of the Framework can be found at www.BCNet.org/learning/analytical/af_toc.htm

Background Literature Over the past decade there has been an explosion of interest in enterprise-based strategies to conservation

Jason Clay and others working at Cultural Survival did some of the pioneering work in this field. An early product that defined an enterprise approach to conservation and sparked interest in the concept was the Rainforest Crunch candy marketed by Ben & Jerry's.

Since those early days there have been many other examples where different groups have tried an enterprise strategy for conservation. In 1998 BCN commissioned a study of different examples of this enterprise strategy. The results of this survey are available at www.BCNet.org/learning/biblio/bib.htm. A key feature of this web site is that it enables users to add other examples to the list. As of late 1999 the list contains 63 examples from 31 countries.

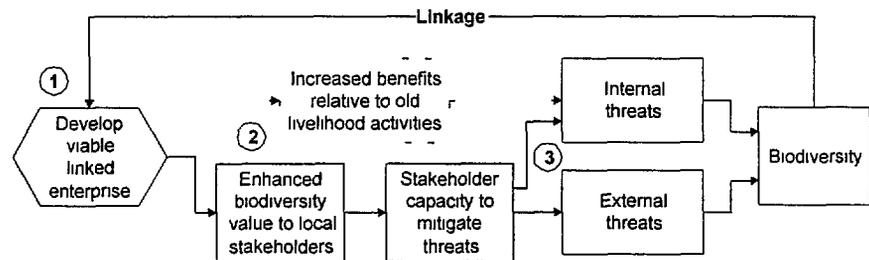
BCN's Core Hypothesis is illustrated in the diagram below. It states that if an enterprise approach to community-based conservation is going to be effective, then there must be

- 1 **Linkage Between a Viable Enterprise and Biodiversity** The enterprise must be financially viable. But it also must directly depend on the *in-situ* biological resources of the region so that the enterprise will fail if this biodiversity is significantly degraded.
- 2 **Generation of Short and Long-Term Benefits** The enterprise must generate benefits (economic, social, and/or environmental) for a community of stakeholders both in the short run and with a high probability, in the long run, after BCN funding ends.
- 3 **Stakeholder Involvement** The enterprise must involve members of the local community, who are stakeholders in the enterprises and biodiversity of the area, and who have the capacity to take action to counter threats to the biodiversity.

In effect, the hypothesis is that if local communities receive sufficient benefits from a viable enterprise that depends on biodiversity, then they will act to counter internal and external threats to that biodiversity.

A Conceptual Model of the BCN Core Hypothesis

The solid lines represent the BCN Core Hypothesis, with the numbers corresponding to the elements of the hypothesis stated above. The dashed lines represent an alternative pathway (technically an economic substitution strategy) by which the enterprise can also help mitigate internal threats. The enterprise provides alternative sources of income to residents who are currently engaged in livelihood activities that damage biodiversity such as swidden agriculture or overharvesting of marine resources.



Source Adapted from Salafsky and Wollenberg (in press)

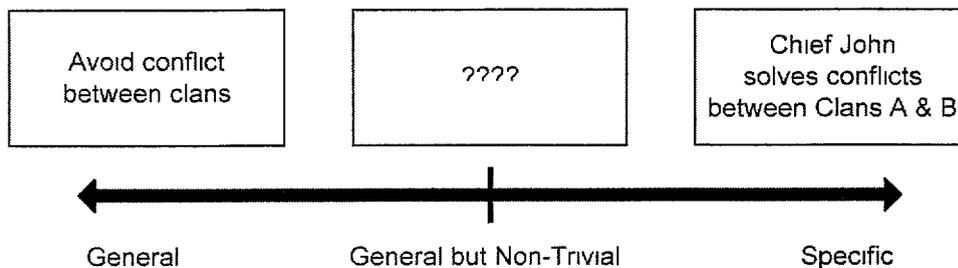
A Tough Standard Developing principles that meet this standard of being general and yet non-trivial actually proved to be fairly difficult to do. As you read through our principles, you can best judge whether or not we succeeded in this regard.

We are not interested in testing this hypothesis as an academic exercise. Instead, we'd like to inform conservation practitioners and managers about the specific conditions under which it might make sense to adopt an enterprise strategy – and, just as importantly, the specific conditions under which it might not. To this end, as outlined in the following box, our analysis is focused on developing *general and yet non-trivial guiding principles* for using an enterprise strategy.

What Are General and Yet Non-Trivial Guiding Principles?

In navigating the conservation and development landscape there is no single path – no magic formula – that will lead a group to success. There are no guarantees that an intervention that works at one site in Indonesia will work equally well at another site in Brazil – or even at the same site in Indonesia the next year. On the other hand, it seems likely that there also is not an infinite number of paths leading to success. To be sure, the exact path that any group needs to follow depends on its starting point, its goals, the changing conditions at the site, and the conditions in the broader social, political, and economic context in which it is operating. But to say that there are no common aspects – that everything is site-specific – implies that there is no need for any kind of systematic science.

Between the endpoints of this spectrum of possible paths is a vast middle ground in which there is some finite number of paths through the landscape. It is impossible to advise a project team exactly when and where it will encounter a given obstacle or catalyst, or what it should do upon encountering them. But is it possible to provide advice about commonly occurring catalysts and obstacles? Can we develop general knowledge about the obstacles groups are likely to run into – how to avoid them if possible and how to deal with them if they must? And can we discover catalysts that help groups to move towards their goal in a more efficient manner? If this middle ground exists, it is most likely to take the form of general and yet non-trivial guiding principles.



As shown in the right side of the diagram, at any given site there are *specific* principles that are of great use to people working at that site. For example, project team members working at a site in Papua New Guinea might develop a principle such as

P – Use Chief John to help settle any conflicts that arise between different clans

Unfortunately, site-specific principles do not really help a person working at the next site over, let alone at a site halfway around the world.

On the far-left side of the diagram are *general* principles that apply to most or all sites as illustrated by the example

P – Avoid conflict between clans

Unfortunately, most of these principles tend to be trivial – they are true but not very helpful to practitioners.

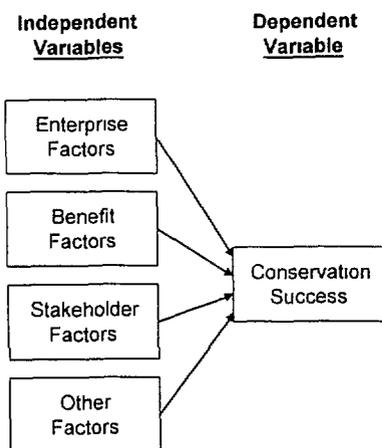
The question thus becomes, “Are there *general and yet non-trivial* guiding principles?” as shown in the center of the diagram? It is most likely that, if these general and yet non-trivial principles exist, they will take the form of conditional probability statements. For example, we might develop the principle

P – In Melanesian type social systems, it is generally better to work with the big man to solve conflicts, unless he is corrupt.

This principle applies in more than one place (throughout Melanesia) but not everywhere. Furthermore, it is not guaranteed to work in all instances. The user has to be smart enough to apply it to his or her own situation – for example, to determine if the big man is corrupt or not. Our job thus becomes determining not just what the principles are, but also under what conditions and with what probability of success each principle is likely to work.

2.2 Analytical Approach

The BCN did not begin work with a pre-determined analytical framework. Instead, we developed our approach over the first few years of the program. We started by thinking about what we might ideally do, and then scaling our work back to what we could feasibly accomplish. The compromises that we made to ensure feasibility lead to some important caveats to our overall findings as outlined below.



Research Design

Testing the BCN Core Hypothesis involved examining the conditions under which projects can use an enterprise strategy to achieve biodiversity conservation. In effect, as shown in the diagram in the sidebar, we looked at the relationship between a series of *independent variables* or *predictors* on conservation success, our *dependent variable* or *outcome*.

Analytical Timeline As discussed in Salafsky and Margolius (1999b) the BCN Analytical Framework was developed over a series of steps:

- 1992 Initial program design
- 1993 Monitoring matrices (*Most BCN staff hired*)
- 1994 Comprehensive guidelines for potential monitoring questions
- 1995 Common sets of questions M&E workshops (*Final Implementation Grants awarded*)
- 1996 Projects develop M&E plans BCN staff develop framework for key variables
- 1997 BCN framework completed T mid data collected
- 1998 T final data collected (*Grants completed*)
- 1999 Analyses completed

- **Model Specification** – Ideally, we would have specified a complete model that contains all relevant factors. Owing to data and resource constraints, we could only select key factors shown in the table at the bottom of the page.
- **Quantitative vs Qualitative Multi-Variate Analyses** – Ideally, we would have liked to run a quantitative multi-variate analysis so as to be able to systematically examine the interactions between different variables. Owing to data constraints discussed below, however, we could not do this quantitatively. Instead, we conducted a series of bivariate analyses and qualitatively examined the interactions between factors.
- **Prospective vs Cross-Sectional Analyses** – Ideally, we would have liked to specify our working sub-hypothesis about the relationship of each variable to conservation success at the start of the program and then collect baseline and follow-up data to test these predictions. Since the analysis was only initiated after the program started, we were only able to specify our sub-hypotheses midway through the program. The lack of true baseline data meant that we conducted a cross-sectional and historical prospective analysis rather than a true prospective analysis, limiting our ability to make inferences about true causality.

Variables That We Considered in Our Analyses

DEPENDENT VARIABLES	INDEPENDENT VARIABLES			
	Linked Enterprises	Generation of Benefits	Community of Stakeholders	Process Factors
<ul style="list-style-type: none"> • State of Biodiversity • Threats to Biodiversity * • Process • Institutional Development <p>* This is the primary measure we used</p>	<ul style="list-style-type: none"> • Enterprise Linkage • Profitability & Future Success • Ownership & Management <ul style="list-style-type: none"> - Local participation - Enterprise complexity - Technical skills - Enterprise skills • Market Demand <ul style="list-style-type: none"> - Market competitiveness - Distance to market 	<ul style="list-style-type: none"> • Cash Benefits <ul style="list-style-type: none"> - Distribution - Absolute amount - Relative amount - Variance • Non-Cash Benefits • Timing of Benefits • Frequency of Benefits 	<ul style="list-style-type: none"> • Stakeholder Group <ul style="list-style-type: none"> - Existence and strength - Representativeness - Population homogeneity • Leadership of Group • Resource Governance • Community Policing 	<ul style="list-style-type: none"> • Chaos • Project Effectiveness

Data Collection

As outlined in the sidebar, data for this analysis came from many sources. An initial list of key variables and potential methods was developed at a series of workshops with BCN project partners. This list was boiled down over time by BCN staff in consultation with our partners. The BCN Analytical Framework was then sent to all project partners who used it to varying degrees in writing their six-month technical reports. In 1997, BCN program officers also began meeting with each project team during site visits to fill in the data for the framework. The final rounds of data collection were made in 1998.

- *A Range of Methods* – Ideally, all projects would have collected data for each variable using identical methods. Since, however, we wanted to make sure that projects first and foremost collected data that would meet their management needs, projects ended up using a range of methods. Furthermore, since some projects did not collect data for all variables, we had to work with BCN program officers to collect additional data for some variables.
- *Quantitative vs. Qualitative Data* – Ideally, we would have collected a complementary mixture of quantitative and qualitative data. As it proved to be difficult to collect quantitative data for many variables, we had to rely on expert rankings made by BCN program officers, often in consultation with the project teams. Rankings were made according to strictly defined criteria and efforts were made to apply them in a standardized fashion across all sites.
- *Researcher Objectivity* – Ideally, from a scientific perspective, we would have liked to have had data collected by impartial observers. Given, however, that this was action research, the data were collected by people involved in the projects and the BCN program. As discussed in the sidebar, this action research also had some major benefits.

Data Analysis

We analyzed our data using a combination of quantitative and qualitative techniques supplemented with anecdotal evidence and our experiences.

- *Sample Size* – Ideally, we would have had a sufficient sample size (“n”) to have the power to resolve minor differences between variables. In reality, our sample size was restricted. As outlined in the following pages, we ended up with a sample of 20 projects that included 39 sites and 48 enterprises. The variation in the “n” in our analyses is because for some analyses we used the site as our basic unit, whereas for others we used projects or enterprises. In a few cases, we have reduced sample sizes where data are not complete. The small sample size also meant that it was hard to run statistical tests that involved dividing the sample into two or more groups.
- *Non-Parametric Tests* – Ideally, we would have had normal data on which we could have used parametric statistical tests. In reality, we had to rely on chi-square analyses and other non-parametric tests.

Data Sources We used a wide range of sources which enabled us to triangulate our findings. Key sources included:

Quantitative Data

- Grantee reports
- Inspection of project records
- Interviews

Qualitative Data

- Grantee reports
- Staff trip reports
- Key informant interviews
- Grantee stories and publications
- Program officer rankings

Accuracy of Ranking Data In assigning ranks to different variables, we used a combination of 5- and 10-point scales. Although the use of the 10-point scale may seem like false precision, in doing rankings, we often had long debates as to whether a given site should be ranked a 6 versus a 7. As a result, differences of three or four ranking points are probably meaningful.

Conservation Benefits from Action Research Having the process of data collection influence projects is not all bad. The best example was the collection of the Threat Reduction Assessment rankings (p. 14) which forced project teams to think about the major threats to the biodiversity at the site and in some cases caused them to modify project activities in response.

BCN's Grants Competition BCN received over 400 concept papers and proposals. Based on these proposals 35 projects received Planning Grants and 4 projects received Implementation Grants. From these 35 Planning Grants 16 projects went on to receive full Implementation Grants giving a total of 20 projects.

Although BCN staff initially screened applications a Peer Review Panel composed of people with expertise on the geographic regions made final decisions and various disciplines related to BCN.

A more detailed description of our proposal review process can be found in Salafsky and Margoluis (1999a) or on the web at www.BSPonline.org

2.3 Selecting the Sample of Projects

BCN was set up as a competitive grants program. Projects were eligible to apply from 18 countries in Asia and the Pacific. BCN published an initial request for proposals in 1993 and a modified version in 1994. Concept papers and proposals were first screened by BCN staff to see whether they met basic eligibility criteria and then other, secondary criteria outlined in the Request for Proposals. If a proposal met the second-screen criteria, it was brought before our Peer Review Panel. In selecting which projects would receive funding, BCN staff and the Review Panel deliberately set out to 1) fund the best possible projects, and 2) develop a portfolio of projects that covered a range of characteristics that BCN felt were needed to adequately test the BCN hypothesis (for example, a representative spread of countries, regions, habitats, enterprise-types and local, national and international organizations).

This selection process had three important implications for our analysis:

1. *Our sampling frame did not represent the complete universe of potential projects* – Our sampling frame was limited to those projects that chose to apply to us for funds. This limitation means that we must be careful in extrapolating our results to the universe of potential conservation and development projects. In particular, the restriction prohibiting BCN from funding for-profit entities meant that very few private sector firms played major roles in the projects.

Table of BCN Project Sites

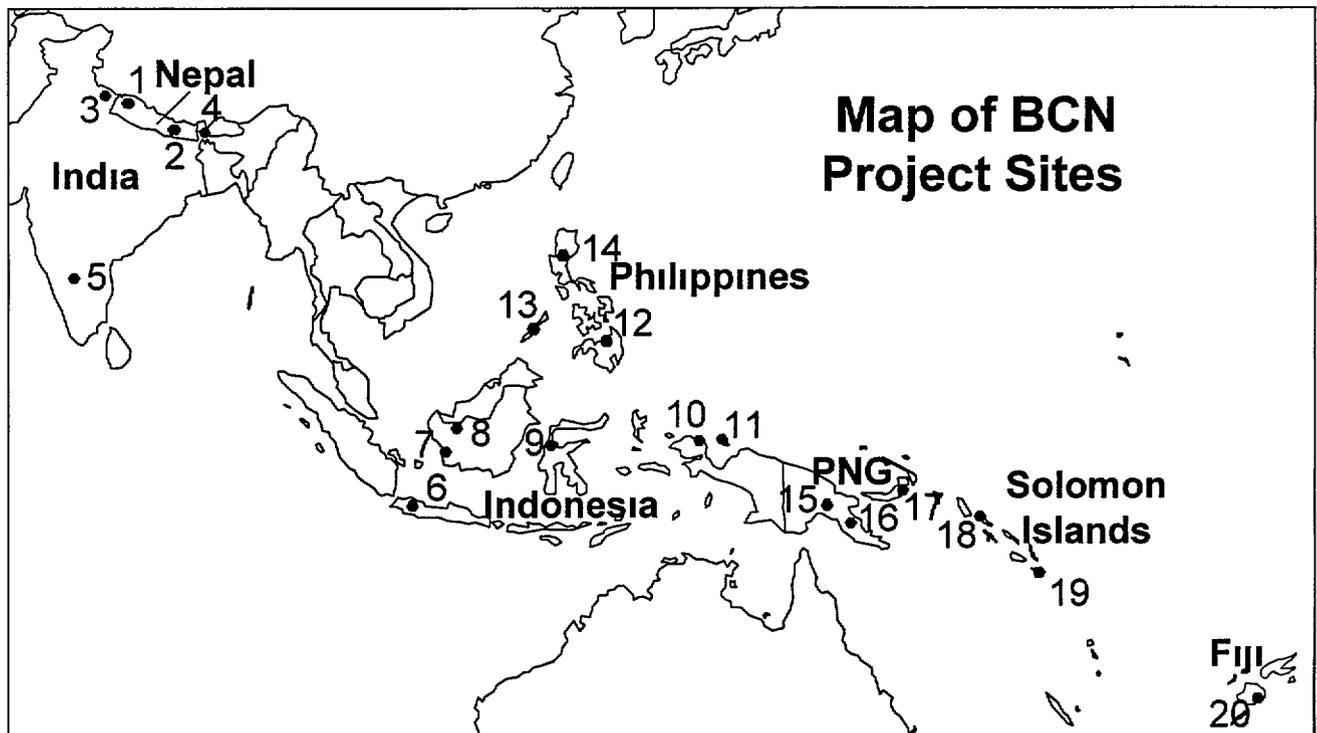
Project Name and Number	Sites	Habitat(s)	Enterprise Types
SOUTH ASIA			
HUMLA NEPAL (#1)	1	alpine forest	essential oils
ROYAL CHITWAN NEPAL (#2)	2	grassland/savanna	ecotourism
GARHWAL INDIA (#3)	1	temperate and alpine forest	silk and honey
SIKKIM INDIA (#4)	2	temperate forest	ecotourism
BILGIRI RANGAN HILLS INDIA (#5)	1	sub-tropical/deciduous forest	fruit and herbal medicines
SOUTHEAST ASIA			
GUNUNG HALIMUN INDONESIA (#6)	3	tropical forest	ecotourism
GUNUNG PALUNG INDONESIA (#7)	1	tropical forest	timber
SANGGAU INDONESIA (#8)	1	tropical forest	rattan and bamboo handicrafts
LORE LINDU INDONESIA (#9)	3	tropical forest	butterfly farming, honey and rafting
ARFAK MOUNTAINS INDONESIA (#10)	1	tropical forest	butterfly ranching
PADAIDO ISLANDS INDONESIA (#11)	3	marne	ecotourism and fishing
MINDANAO PHILIPPINES (#12)	1	tropical forest	abaca fiber and handicrafts
PALAWAN PHILIPPINES (#13)	3	tropical forest	non-timber forest products
KALAHAN PHILIPPINES (#14)	1	tropical forest	jams and jellies
PACIFIC			
CRATER MOUNTAIN PNG (#15)	3	tropical forest	research, tourism and handicrafts
LAKEKAMU BASIN PNG (#16)	2	tropical forest	research, tourism and ecotourism
EAST NEW BRITAIN PNG (#17)	6	tropical forest	timber
ARNAVON SOLOMON ISLANDS (#18)	1	marine	fishing
MAKIRA SOLOMON ISLANDS (#19)	2	tropical forest	ecotourism and nut oil
VERATA VILLAGES FIJI (#20)	1	marine	biodiversity prospecting

we funded. In effect, we ended up testing the hypothesis, “Can conservation and development NGOs implement an enterprise strategy for conservation?” and not the broader hypothesis, “Can any organization implement an enterprise strategy for conservation?”

- 2 *Our sample of projects was not randomly selected* – Our selection process was deliberately biased so as to 1) choose those projects that seemed most likely to achieve success and 2) enable us to develop a portfolio of projects that spanned the range of key criteria and characteristics. This deliberate bias towards what we thought were potentially successful projects means that, if we conclude that an enterprise strategy for conservation does work, then we cannot extrapolate this finding to the universe of all conservation projects. If, however, we conclude that an enterprise strategy does *not* work, then we can extrapolate this finding because, in this case, our test was conservative.
- 3 *We were unable to establish strict controls* – It was impractical (and unethical) for BCN to set up control projects that received no support for enterprise development. Nonetheless, despite our efforts to select only “good” projects, a number of them were ultimately not successful. Although these less successful projects are not controls in the strict sense, they provided important learning opportunities.

BCN Project Sites In this document, we refer to each of the twenty BCN project sites by its geographic location as listed in the left-hand column of the table on the previous page. Each project site has its own home page on the BCNet web site at www.BCNet.org/projects.htm. These home pages also contain links to other web sites about the project. In addition, there are stories about each project in the BCN Annual Reports (refer to project number).

Map of BCN Project Sites



Selecting Project Sites Each BCN project has at least one site. However, many projects have multiple sites. In most cases, identifying the specific sites within a project was fairly straightforward. In a few cases, however, we chose to exclude potential sites that were included in the original project proposal because either 1) the project was not active in these areas or 2) the project did not collect sufficient data on these sites. For example, although the CRATER MOUNTAIN (#15) team in PNG originally planned to work with six different villages across the Wildlife Management Area, they ended up only working with four.

We also had to adjust many sites based on our site definition criteria. For example, at LORE LINDU, INDONESIA (#9), the original single project site constituting all of Lore Lindu National Park was later split into three separate sites, which is a much more accurate measurement. Conversely, two initially separate sites at BILGIRI RANGAN HILLS, INDIA (#5) were combined into one site.

Drawing Black Lines on Gray Areas

The process of defining study sites turned out to be both far more complex and far more interesting than we had initially imagined. In particular, we found that defining study sites involved trying to find standardized ways of drawing black lines on gray areas.

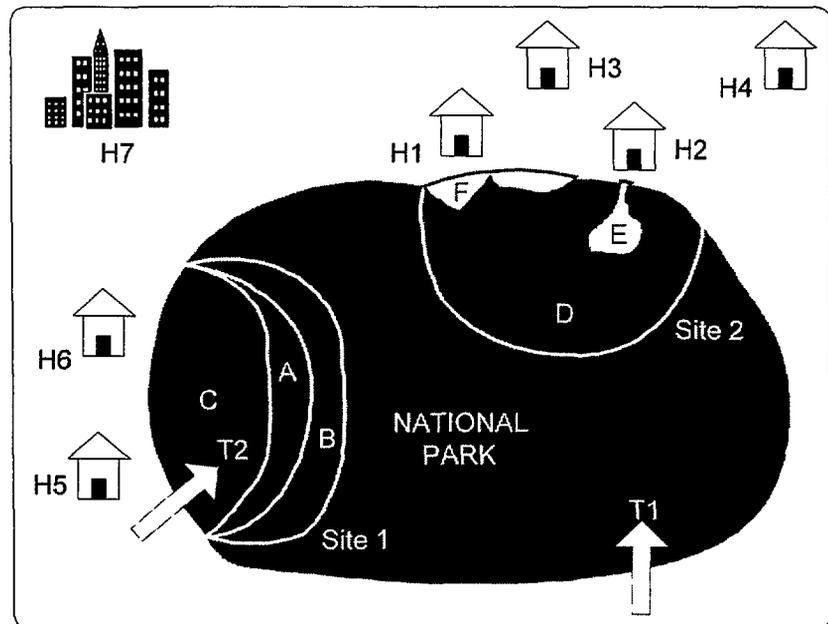
For example, in defining the spatial dimension for Site 1 in the drawing, we might choose Area A even though arguments could be made for a site as large as Area B or as small as Area C. Likewise, in defining the stakeholder dimension, we might include Houses 1, 2, and 3 but not 4, which is located further away from the site. We might also include H7, which is an urban resident, especially if the family plays a major role in deciding how the natural resources of the site are used.

In any of these definitions, good arguments can be made for positioning the line in any number of places. Ultimately, researchers need to pick one and go with it. The key here is to be consistent across the portfolio.

2.4 Defining Study Sites as Our Unit of Analysis

Our basic unit of analysis is a *project site*. Each project site was defined along four dimensions:

1. *Spatial Dimension* – What area should we consider as the project site? Given that BCN's primary goal is conservation, we defined the core site as the area of biodiversity habitat that the project is attempting to conserve. It is generally functionally equivalent to the area the stakeholders have the ability to manage or influence (either positively or negatively). Most projects initially attempted to claim a large site area. Over time, however, they began to realize that the actual area they were able to affect was much smaller. For example, as shown in the diagram below, it makes little sense for a project to claim they are affecting an entire National Park if their interventions cannot realistically expect to affect Threat 1 (T1 in the diagram), which occurs at the far side of the park. Instead, it makes more sense to claim a smaller area, such as that affected by Threat 2 (T2), as the actual project site.
2. *Stakeholder Dimension* – Who should we count as a *stakeholder* when analyzing participation, benefit distribution, and other social factors? At most sites, the definition of stakeholder was limited to those local residents who have a direct, actual or potential impact on the core biodiversity of the site.



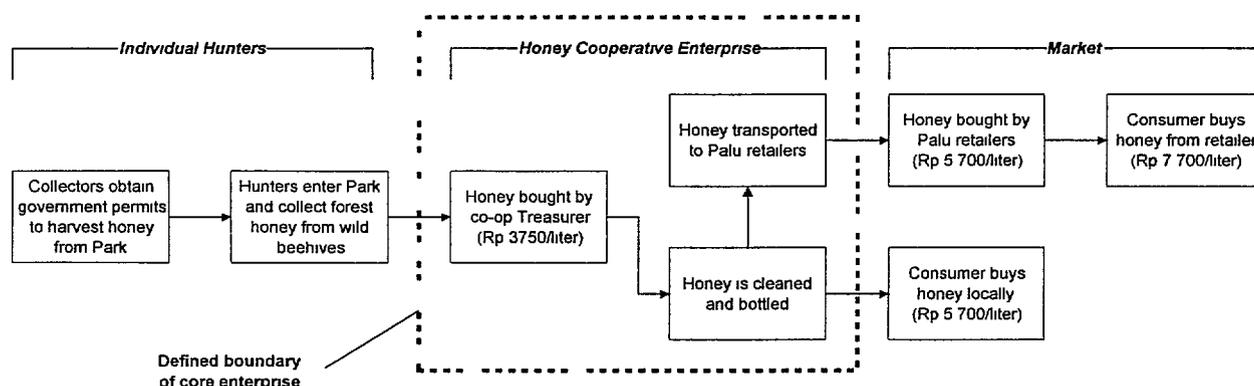
3. *Temporal Dimension* – Over what time period should we consider the effects of the enterprise? While some of the projects were operating for many years prior to receiving BCN funds, others got underway only after. To deal with these differences, projects were defined as starting at the onset of the BCN Implementation Grant. We then tried to collect data for the project's start, middle, and end. Most of our analyses were conducted using data from the final period. We also, however, tracked as separate variables the length of time that the project and enterprise had been active at the study site.

4 *Enterprise Dimension* – What activities are included under the definition of an enterprise? In most BCN-funded projects, there is an overlap between ‘enterprise activities’ (setting up production systems, marketing products, monitoring the impact of harvesting) and ‘project activities’ (organizing stakeholders, capacity building, monitoring social effects) that is sometimes difficult to separate. We thus carefully defined for each site what constitutes the *core enterprise* and what constitutes, more generally, the supporting *project*. This was most easily done through the use of an enterprise chain, as shown below, that outlines the steps in the production process and defines which steps we considered to be part of the core enterprise.

Analyzing Projects With Multiple Sites An important analytical consideration is how to treat projects with multiple sites. An extreme example is EAST NEW BRITAIN (#17) with six sites. If these six sites are not independent of one another, then including them as separate data points in any given analysis could bias the conclusions that we draw. We decided, however, since there were different conditions at each of these sites as well as different outcomes, that they were sufficiently independent to warrant inclusion in most analyses. Indeed, in some ways these multiple site projects are interesting mini-BCN experiments.

The Value-Added Chain for the LORE LINDU, INDONESIA (#9) Honey Hunting Enterprise

All values in Indonesian Rupiah



Summary of BCN Project Sites by Region

Dimension	South Asia	SE Asia	Pacific	All Sites
Number of Sites (total number)	7	13	19	39
Area (avg ± std dev hectares)	12 674 ± 17 666	11 064 ± 9356	20 645 ± 16 796	16 719 ± 15 624
Stakeholders (avg ± std dev individuals)	4739 ± 3877	3164 ± 2413	1008 ± 1514	2477 ± 2865
- major stakeholder sub-groups	castes	ethnicity	clans	-
- tenure system	state control	state control	local control	-
Project Length (avg ± std dev years)	4 00 ± 0 71	3 71 ± 0 76	3 88 ± 0 64	3 85 ± 0 67
Enterprises (total number)	9	14	25	48
- minimal value-added	0	4	3	7
- some value-added	2	2	8	12
- finished product or service	7	8	14	29
BCN Funding (% total)	31	35	34	100

3 Results of Testing BCN's Core Hypothesis

In the following pages, we present our results for some of the key sets of factors that we identified. We present each of those factors using the format shown below.

A brief description of methods used to measure the variables

Dashed line indicates our working sub-hypothesis developed before the analysis was begun

Solid line in scatterplots is OLS regression. It is presented only for visual guidance - no statistical significance should be inferred.

Statistical analyses of bivariate trends based on 2 x 2 Chi Square tests formed by dividing independent and dependent variables at their respective medians

Qualitative analyses excerpted from the results of our formal qualitative analysis available on the BCNet web site

Anecdotal examples with links to original stories or sources

Descriptive stats presented in tables and bar charts

The factor being analyzed

Illustrative examples of BCN projects

Enterprise Ownership

Types of Ownership

Category	# Ents	Example
Private limited	12	NEW BRITAIN PNG (#17)
Private partner	12	LORE LINDU INDON (#9)
Sole prop	6	SIKKIM INDIA (#4)
Cooperative	6	BR HILLS INDIA (#5)
Communal	12	CRATER MTN PNG (#15)

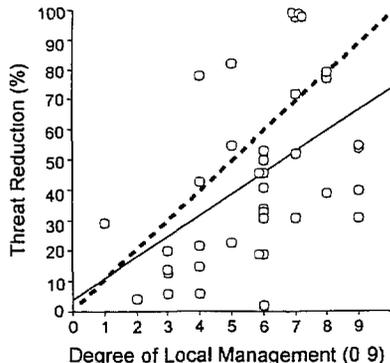
There is a significant association (n = 38)
 $\chi^2 = 9.73$ $p = 0.002$

P - _____

H - _____

A Guide to Our Basic Statistical Procedure

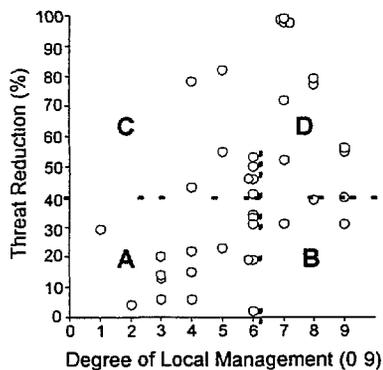
The basic statistical procedure that we use in this document is to test a specific sub-hypothesis about the association between two variables. For example, we might be interested in the association between the degree of local management of an enterprise and conservation success. To test this



sub-hypothesis, we first create a scatterplot showing the relationship between the two variables as shown in the diagram on the left. The dashed line represents our prediction as to the direction of the association.

If both variables were normally distributed and continuous, we could conduct a regression analysis that plots the line that minimizes the distance between all points on the graph as shown by the solid line. In cases where either variable contains ranking data, then technically we are violating the assumptions required to conduct a regression analysis. In these cases, the regression line should only be used as an indication of the direction of the association that we are testing. No inference can be made about the slope of the line.

To look at whether this association is statistically significant, we first state a *null hypothesis* that there is no association between the variables. We then divide the graph into four quadrants, positioning the dividing lines between the quadrants so that there are roughly equal numbers of points on each side of the lines (splitting variables at their median value). If there are roughly equal numbers of points in all four quadrants, then there is no association between the variables. If there are more points in quadrants A and D, then we have a positive association. If there are more points in quadrants B and C, then we have a negative association.



Threat Reduction	Degree Local Management		Totals
	Low	High	
Low	O 16 E 12.8	O 4 E 7.2	20
High	O 9 E 12.2	O 10 E 6.8	19
Totals	25	14	39

$n = 39, \chi^2 = 4.51, p = 0.034$

To test the statistical significance of this association (determine the probability that we can reject our null hypothesis and say this association is "true"), we first create a frequency table as shown on the above right. The cells of the table correspond to the quadrants of the graph as shown by the bold letters. The number after the "O" represents our observed results for each quadrant. The number after the "E" represents the expected values for the quadrant if there was a completely random distribution (our null hypothesis). This expected number is calculated by multiplying the row total by the column total and dividing by the total number of data points.

The chi-square test statistic (χ^2) is calculated following the standard formula and then a probability value (p) is computed to measure the chance we are making an error in rejecting the null hypothesis. For the purposes of this analysis, we term p -values between .1 and .05 as being marginally significant (there is less than a 10% chance that we are making an error in rejecting the null hypothesis), and p -values between .05 and 0 as being significant (there is less than a 5% chance that we are making an error).

Measuring Conservation As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendB.htm) we wanted to measure four variables related to conservation success

State of the Biodiversity – We first tried to measure this variable by looking at changes in 1) area of key habitats at the project site 2) densities of key indicator species and 3) ecosystem functioning. When these indicators proved difficult to operationalize we tried to simplify things by only looking at changes in habitat area and changes in stock of the key resource used by the enterprise. Despite strong encouragement and extensive technical support however most of our project partners did not collect the baseline data required to make even these most basic assessments. Furthermore in the few cases where these biological data were collected they proved to be insensitive to changes in the state of the system.

State of the Threats to the Biodiversity – We measured this variable by using the Threat Reduction Assessment (TRA) Index described by Salafsky and Margolius (1999c). The core principle behind TRA is that if a project team can accurately identify the threats to the biodiversity of a region then the team can assess its progress in achieving conservation by measuring the degree to which these threats are reduced. The
(continued on next page)

3.1 Assessing Success

To test our Core Hypothesis, we needed to develop yardsticks by which we could judge the relative success or failure of a given project. In scientific terms, these are our *dependent* or *outcome variables*.

Measuring Conservation Success

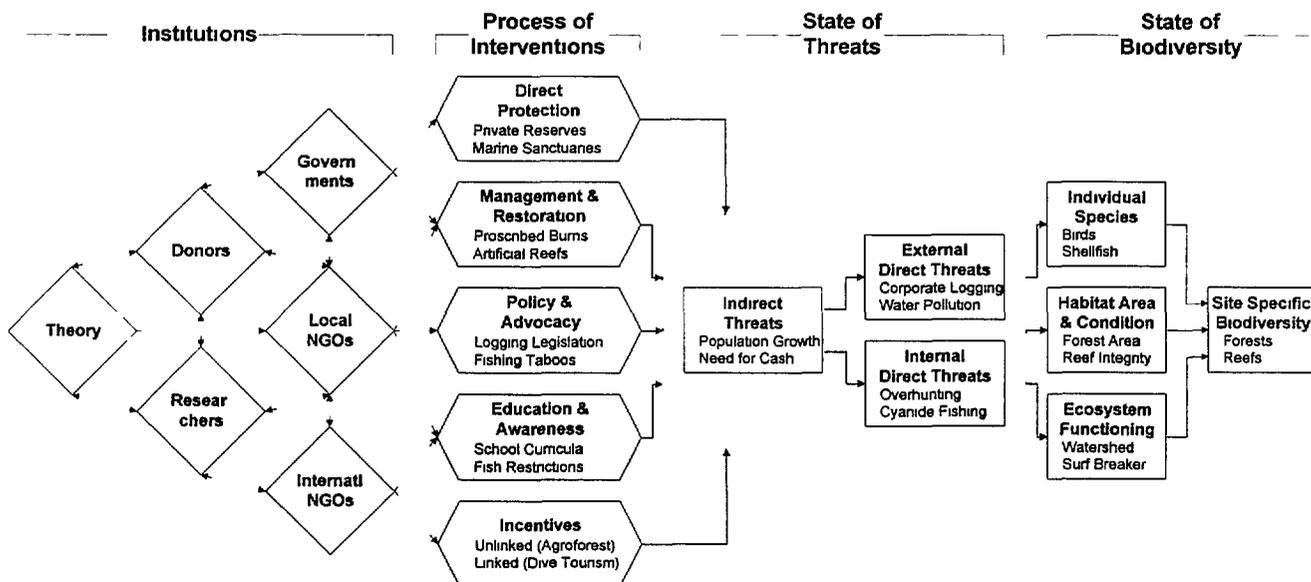
At the most fundamental level, the BCN Hypothesis is an examination of the effects of an enterprise strategy on biodiversity conservation. Biodiversity conservation was thus the most critical variable that we had to monitor at each of our sites. If we have learned anything over the past few years, however, it is that conservation success is extremely difficult to define, let alone measure, in biological terms, especially over the brief three- to four-year time period within which we were working.

As discussed in the sidebars, we initially attempted to develop indicators for each of the four areas in the model below. There were, however, problems in developing practical indicators, particularly for the state of the biodiversity and the process of implementing intervention strategies. This left us with two primary indicators of conservation success.

A Model of a Typical Conservation Project

Source: Adapted from Salafsky & Margolius (1999c)

A typical conservation project's success can be assessed in four areas: 1) state of the biodiversity at the project site, 2) state of the threats to the biodiversity, 3) process of implementing project intervention strategies, and 4) status of the institutions at the site. In theory, if we have a "perfect" conceptual model of a project, then we can assess its success by measuring the system at any one area of the model. In the real world, however, models are not perfect. As a result, it is actually better to assess a project in all four areas. This multiple assessment enables us to crosscheck the different measurements. If discrepancies are discovered they can be used to calibrate the different measurements or to revise the underlying model.



The *Threat Reduction Assessment (TRA) Index* provides a static assessment of the percentage of identified threats at each project site that were

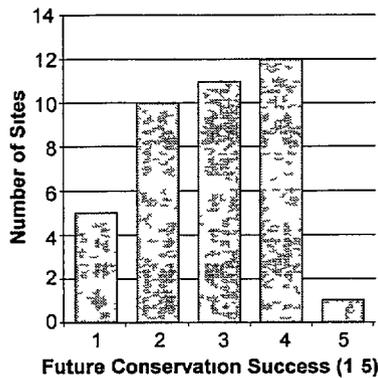
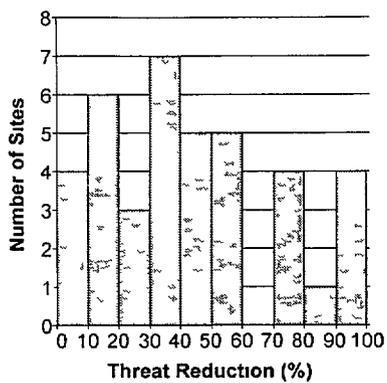
TRA Index Scores by Type of Threat

	Avg ± sd	n
All Threats	43.8 ± 28.4	39
Internal Threats	34.1 ± 21.5	23
External Threats	57.7 ± 31.9	16

t = 2.77 df = 37 p = 0.009

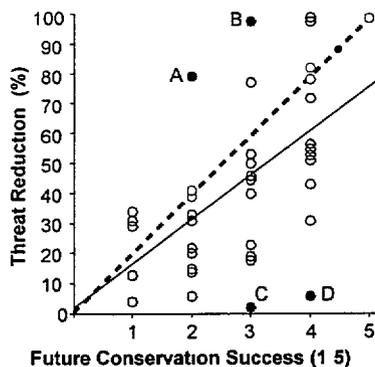
addressed over the life of the project. The average Threat Reduction Index for all our sites was 43.8 ± 28.4 % by the last year of the project. This means that, on average, projects met slightly less than half of all identified threats. The distribution

of Threat Reduction Index rankings is shown in the bar graph on the left below. Threats can be further subdivided into *internal threats* that are caused by the local stakeholders themselves and *external threats* that are caused by outsiders. As shown in the table, the average Threat Reduction Index score was significantly higher for projects facing a majority of external as opposed to internal threats.



The *Future Conservation Success Ranking* assesses the ability of the institutions at the end of the BCN funding period to respond to future threats, and is thus a more dynamic measure of conservation. The average ranking for our sites was 2.9 ± 1.0. The distribution of these rankings is presented in the bar graph on the right above.

There is a general correlation between these two indicators, as shown in the graph. Even the few outlying points are instructive. Since these two



indicators correlate with one another, we decided to use the Threat Reduction Index as our main indicator of conservation success, since it represents the incremental change over our study period. When we used a hybrid index of the Threat Reduction Index and Future Conservation Success rankings, however, our results were not substantially different.

Measuring Conservation (con't)

specific index we used involved identifying threats, ranking them according to their relative importance, assessing progress in meeting each of them, and then pooling the information to estimate the actual threat reduction as a percentage of total potential threat reduction.

Process of Implementing Project Interventions – We found that operationalizing this variable involved using an aggregate index of the independent variables described in the next section. As a result, it didn't make sense to use this as a dependent variable for this analysis since it would then create a circular chain of logic.

Status of the Institutions at the Site – We measured this variable by having BCN program officers rank each site. Rankings used a five-point scale ranging from (1) having no institution in place to make conservation happen to (5) having a solid institution that is regularly monitoring the site, analyzing data, and taking action.

As with the any ranking technique, both the Threat Reduction Index and, especially the Future Conservation Success rankings, could be biased. However, we made substantial efforts to ensure that the assessments were undertaken in a standardized manner. A comparison of rankings made by different program officers shows that their average Threat Reduction Index rankings are comparable.

Explaining the Outlying Points Points A and B represent two sites at EAST NEW BRITAIN PNG (#17) where the threat is primarily from foreign-owned logging companies. Although the project has so far succeeded in fending off the loggers, thus earning a high TRA score, it is doubtful the community will be able to stave off this threat in the future, resulting in low future success rankings. Points C and D represent two sites at CRATER MOUNTAIN PNG (#15) where the threat is primarily from local stakeholders overharvesting resources. Here the project teams have not yet succeeded in slowing down the resource harvesting, thus earning a low TRA score. However, the project has made substantial progress in developing community institutions that will be able to continue conservation work, therefore justifying the higher future rankings.

Measuring Linkage As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) BCN staff initially assessed whether a given enterprise is linked by asking the question "If the biodiversity of the site were to be damaged what would happen to the enterprise?" If the enterprise were to continue then the enterprise would not be linked to the biodiversity. If the enterprise were disrupted however then it would be linked to the biodiversity. Assessing linkage was not easy but it was crucial to our analysis. As described in greater detail in Salafsky & Wollenberg (In Press) we subsequently developed a more detailed 10-point ranking of linkage looking at

- 1 *Species Dependence* – Dependence of enterprise on maintaining species at site
- 2 *Habitat Dependence* – Dependence of enterprise on maintaining habitats at site
- 3 *Spatial Dependence* – Percent of site area on which enterprise depends
- 4 *Temporal Dependence* – Period and frequency of biodiversity use on which enterprise depends
- 5 *Conservation Value Dependence* – Dependence of enterprise on externally created incentives such as green marketing

Rankings presented in this analysis are based on an *overall linkage ranking* calculated by taking the average of the five rankings above

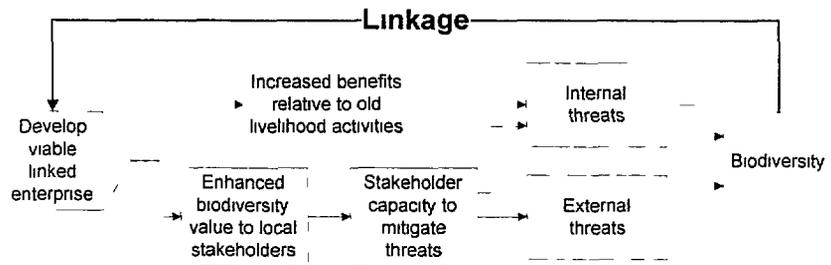
3.2 Linked Enterprise Factors

The first condition of the BCN Core Hypothesis states that there must be a viable enterprise that is linked to the core biodiversity of the site

Enterprise Linkage With Biodiversity

One of the most fundamental concepts behind the BCN program is the idea of linkage between an enterprise and the biodiversity of the project site. As shown by the heavy line in the following diagram, linkage is the factor that "closes the loop" in the hypothesis, providing the stakeholders with incentives to protect the biodiversity.

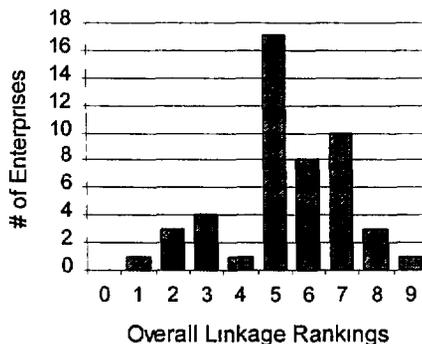
A Conceptual Model of the BCN Core Hypothesis



Source: Adapted from Salafsky and Wollenberg (in press)

When we look across the BCN sites, there is a wide range in the linkage rankings of the enterprises, as shown in the table below. However, most have at least a moderate linkage ranking. Given that we deliberately tried to select highly linked projects when developing our portfolio of projects, the fact that more than half the projects had a ranking of five or less is a bit surprising. This observation illustrates how difficult it can be to develop linked enterprises and how BCN's own thinking of what constitutes a "linked" enterprise became more accurate over time.

Some types of enterprises tend to be more linked than others. Most notably, *service* businesses such as ecotourism were significantly associated with higher linkage when compared with *product* businesses such as forest product harvesting ($n = 39, \chi^2 = 7.50, p = 0.006$).



Overall Linkage Rankings for 48 BCN Enterprises

Ranking	# Sites	Example (Enterprise and Site)
0 (no linkage)	0	-
1	1	Abaca Harvesting MINDANAO PHILIPPINES (#12)
2 (limited links)	3	Demersal Fishing ARNAVONS SOLOMON IS (#18)
3	4	Ngali Nut Oil MAKIRA SOLOMON IS (#19)
4 (moderate linkage)	1	White Water Rafting LORE LINDU INDONESIA (#9)
5	17	Tasar Silk GARHWAL INDIA (#3)
6 (strong linkage)	8	Ecotimber EAST NEW BRITAIN PNG (#17)
7	10	Butterfly Ranching ARFAK MTS INDONESIA (#10)
8	3	Dive Tourism PADAIDO ISLANDS INDONESIA (#11)
9 (complete linkage)	1	Ecotourism MAKIRA SOLOMON IS (#19)

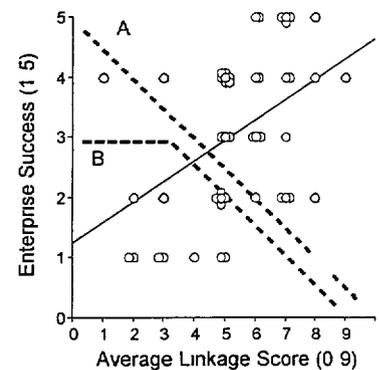
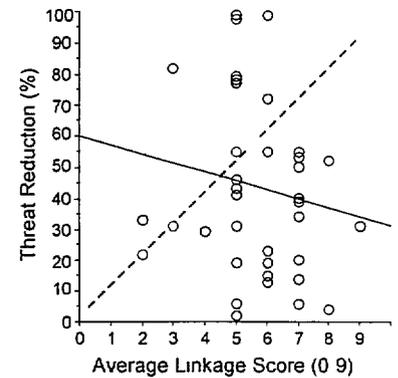
When looking at the relationship between linkage and overall conservation success, as shown by the dashed line in the sidebar, our working sub-hypothesis was that an increase in linkage should result in an increase in conservation success. When we plotted the average ranking across all sites, however, we found that, if anything, the relationship seems to be in the opposite direction. A chi-square analysis shows no significant association between linkage and conservation ($n = 39$, $\chi^2 = 2.09$, $p = 0.148$).

If, however, we plot linkage against enterprise success (see p. 20), our working sub-hypothesis states that we might expect either a steady decrease in enterprise success as linkage increases (Line A) or a decrease at higher levels of linkage (Line B). This is because we assumed that developing viable linked enterprises would be much more difficult than developing unlinked ones. For example, it is presumably much harder, from a strict business perspective, to develop an ecotourism business than a regular tourism business. Much to our surprise, the results actually suggest a weakly significant positive association between linkage and enterprise success ($n = 48$, $\chi^2 = 2.88$, $p = 0.090$). This finding could be due to the fact that our initial site selection was biased in favor of linked enterprises. As a result, our sample of low linkage enterprises is not truly representative of the universe of possible low linkage enterprises, which technically includes most businesses in the world from village stores to large multinational corporations.

The lack of a relationship between linkage and conservation success can in part be attributed to the fact that, based on the BCN Core Hypothesis shown in the model presented on the previous page, linkage is a necessary but not sufficient condition for conservation to take place. Thus, even if linkage is high, there still might be many other factors, such as the ability of the stakeholders to mitigate threats that keep conservation from occurring. This is one of the cases where our data set may be too small to parse out any real effects.

In addition, if we carefully think about the logic of the BCN Core Hypothesis, ultimately the “true” degree of linkage defined by a researcher does not really matter. Instead, it is the stakeholders’ “perceived” degree of linkage that is critical. If the community thinks an enterprise is linked to biodiversity, then they will take action to protect the biodiversity. If they do not see or believe in the linkage, then they will not take action. This concept of perceived linkage is difficult to test quantitatively. However, for a number of our project sites, we conducted key informant interviews with selected community members in which we asked them about enterprise linkage. The results are summarized in our formal qualitative analysis, which found that perceptions of linkage are important. Based on these results, we propose the hypothesis:

H – More than actual linkage, it is important to have a strong local perception of linkage, perhaps developed through environmental education efforts.



Environmental Education and Perceptions of Linkage A good example of the importance of community perceptions of linkage is the story told by the KALAHAN PHILIPPINES (#14) project team in which they discuss the need to do training and environmental education. They developed ecological webs to help community members understand links between plant and animal life and human activities in the forest they manage. See BCN 1997 (p. 77) or www.BCNet.org/projects/kalahan97_2.htm.

Qualitative Analysis BCN's qualitative analysis concluded: Enterprises that appeared to have a good perceived linkage in the minds of the community tended to score higher IRAs than the ones that were less linked.

For the full text of the qualitative analysis, see www.BCNet.org/qual.htm.

Measuring Profitability As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) each project team was asked to calculate a standard profit and loss (P&L) statement and balance sheet each year for each enterprise. This proved to be a difficult task for many project teams – despite our frequent encouragement and offers of technical assistance we got complete data from only a few projects. Furthermore, owing to the wild fluctuations in currency exchange rates caused by the Asian economic crisis it was very difficult to convert these figures into a common currency. As a result we developed the following general rankings to compare projects based on the enterprise's status:

- 1 *No Revenues* – Did not sell any product
- 2 *Some Sales Revenues* – Made some money from sales of product
- 3 *Variable Costs* – Covered the costs of producing a unit of output
- 4 *Fixed Costs* – Covered the costs of producing a unit of output plus its capital expenditures
- 5 *Management and Monitoring Costs* – Covered the above plus the costs of the people hired to manage it and the costs of monitoring
- 6 *Opportunity Cost of Capital* – Covered the above and paid a return on investment that is at least equal to a safe investment

An additional methodological problem involves defining the interval over which you assess profitability. Should it be the last year? The best year? An average over several years? To give our enterprises the benefit of the doubt we generally ranked them on their best year.

Enterprise Profitability & Bookkeeping

When talking about an enterprise, the first question that comes to most people's mind is, "Is it profitable?" As we learned, however, defining profitability is not an easy task. Strictly speaking, profits are simply defined as total revenues less total expenses. As a practitioner, the challenge comes, however, in deciding what specific line items your should include in your definition of revenues or expenses.

One important finding was that most enterprises had a very difficult time just tracking financial data. Despite substantial input from BCN staff, few enterprises were able to keep even simple accounting books. This seems to be due to a combination of NGO staff members not having the necessary business expertise and being too busy putting out day-to-day fires to worry about keeping good records.

As an example, the Reported Data column in the following table shows the budget sent to BCN by the CRATER MOUNTAIN, PNG (#15) project team for its research tourism enterprise. Although the enterprise had declining revenues over time, it seemed to be consistently profitable. The Estimated True Costs column shows BCN's estimates of the actual costs of the enterprise, adding the costs of the research station infrastructure (depreciated over 10 years) and management costs. Even though these estimates were made conservatively (using the low end of the range of possible costs) the enterprise was consistently, in reality, losing money.

P&L Summary Statements for Wara Sera Research Station

All values in PNG Kina as reported for that year. 1995 data are for six months only.

	REPORTED DATA			ESTIMATED TRUE COSTS			
	YEAR	1995	1996	1997	1995	1996	1997
REVENUES							
Total		15 165	8 989	1 247	15 165	8 989	1 247
COSTS							
Variable costs		14 400	7 674	850	14 400	7 674	850
Fixed costs		40	289	100	5 740	11 689	11 500
Management costs					8 750	17 500	17 500
TOTAL COSTS		14 440	7 963	950	28 890	36 863	29 850
NET PROFIT		725	1 026	297	(13 725)	(27 874)	(28 603)

The project shown in this example is typical of the BCN enterprises. The table below shows the rankings that the project teams reported compared with the estimated actual rankings that BCN staff calculated. For the 37 projects for which BCN was able to calculate estimated true cost figures, the bar graph on the next page shows the number of projects in each of our profitability categories, using both the reported figures and BCN staff estimates. Based on this analysis, it is clear that project teams are not accounting for all their costs, including, in particular, fixed infrastructure and management and monitoring costs.

Profitability Scale for BCN Enterprises

Category	Reported Costs (# of enterprises)	Estimated Costs (# of enterprises)
No revenues	7	4
Some revenues	7	3
Variable costs covered	8	13
Fixed costs covered	1	8
Management costs covered	0	2
Opportunity costs covered	22	7
TOTAL	45 (3 missing)	37 (11 missing)

It is perhaps not that surprising that many BCN projects were not able to cover 100% of their total true costs. What is a bit surprising, however, is the number of businesses that did not even cover their variable costs (7 in the table above and probably a good fraction of the 11 for which no data were available). The problem here is that with a negative variable cost business, you lose money for every unit of output that you produce. You can't make up the difference on volume. This finding leads to the principle

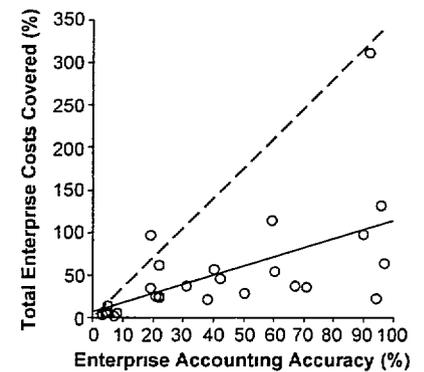
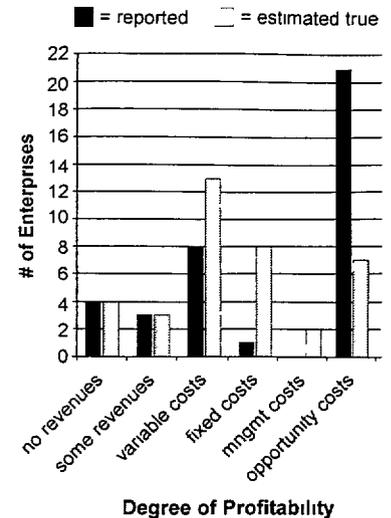
P – Avoid businesses that cannot cover their variable costs

When we plotted enterprise accounting accuracy against profitability for the 28 enterprises for which BCN estimated true costs, we found that those enterprises with more accurate bookkeeping were significantly associated with higher profitability ($n = 28, \chi^2 = 7.04, p = 0.008$). Dividing projects into those that included a development organization in their alliance versus those that did not, we also found that the former were significantly associated with more accuracy in their reporting than the latter ($n = 28, \chi^2 = 6.30, p = 0.012$). These findings lead us to the principle

P – Before starting a community enterprise a project team (especially conservation groups) must have bookkeeping skills

Broadly speaking, although our quantitative data do not show a significant association, we believe that conservation NGOs have a more difficult time implementing viable enterprises than development-oriented groups. As discussed earlier, one of the limitations of the BCN sample of projects is that we did not attract as many development NGOs and for-profit businesses as we would have liked. We therefore propose the hypothesis

H – If conservation groups want to use an enterprise-based strategy they should collaborate with groups that have experience doing enterprises



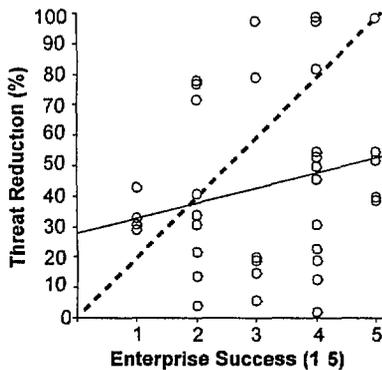
An Obvious Principle? This statement might seem trivial but in fact, as discussed at a workshop in Papua New Guinea, the majority of the projects had difficulty recruiting and then keeping people with the required bookkeeping and accounting skills. Qualified people were often lured away by higher salaries in the private sector.

Challenges in Collaboration But see p 36 for a discussion of the challenges inherent in collaborating with one or more other groups

Measuring Enterprise Success As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we measured enterprise success by having key informants (BCN program officers often in conjunction with project team members) rank their perceptions of the enterprise's viability three years into the future. Rankings used a five-point scale ranging from (1) very little chance that the enterprise will survive to (5) the enterprise will survive and would be a good investment barring any major unforeseen catastrophe.

Qualitative Analysis BCN's qualitative analysis concluded: "There appears to be no relationship between enterprise profitability and conservation outcome. However, profitability alone is too simple and crude a measure. We must devise a better definition of conservation success that looks to the future."

For the full text of the qualitative analysis see www.BCNet.org/qual.htm

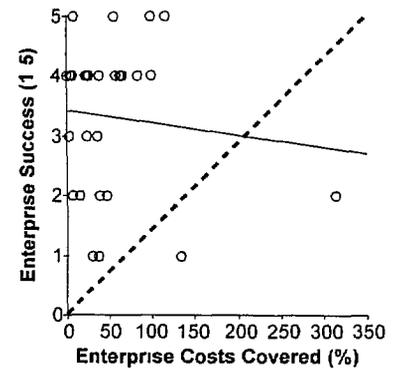
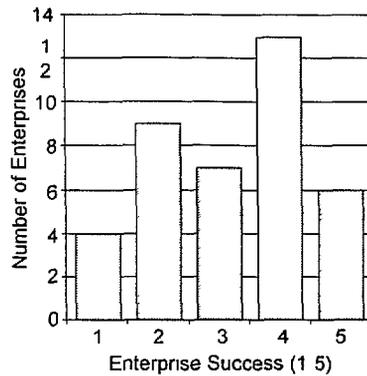


Qualitative Analysis BCN's qualitative analyses concluded: "Taking into account the fact that most of the projects in the two groups with the greatest conservation success were or will be financially successful, financial success is neither necessary nor sufficient, but it may have a weak association to conservation by catalyzing other more important factors."

For the full text of the qualitative analysis see www.BCNet.org/qual.htm

Enterprise Success

Since profitability turned out to be difficult to accurately assess, we also looked qualitatively at overall enterprise success. This future enterprise success ranking assessed the likelihood that an enterprise would be viable over the medium-term (defined as the next three years). As can be seen in the bar graph below, there was a wide range of potential successes with four enterprises seen as having very little chance and six being seen as very likely to succeed.



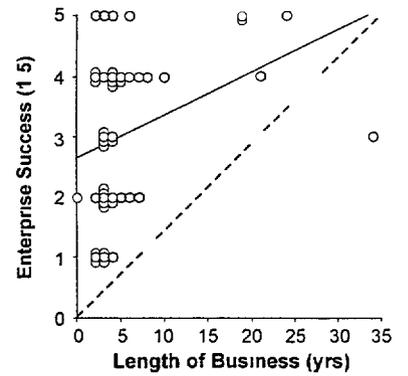
When we plot profitability (measured as the percentage of total enterprise costs covered for the 29 enterprises for which we have detailed data) against our enterprise success ranking, we expected a positive correlation as shown by the dashed line. We found, however, that there is no association between the two variables ($n = 29, \chi^2 = 1.09, p = 0.296$). As a result, we have to choose one of these variables to be our primary measure of enterprise success. We have selected the ranking because we have a measurement for all 48 enterprises in our sample and because despite its qualitative nature, we feel it more accurately captures the enterprise's prospects.

The BCN Core Hypothesis states that there must be a viable enterprise. And, as shown in the scatterplot in the sidebar, when we plot the Threat Reduction Index in relation to enterprise success, we find that there is general correlation between the two, which supports our prediction, as represented by the dashed line. There is a weakly significant positive association between the two variables ($n = 39, \chi^2 = 3.09, p = 0.079$). This result shows that, overall, projects that had more successful enterprises also had more conservation success.

Nonetheless, given the overall mixed success among the BCN enterprises, we might ask whether the three years of BCN funding is too short a time to assess viability since most enterprises need some start-up time. The graph in the sidebar on the next page plots enterprise profitability against the length of time the enterprise has existed, regardless of the period of BCN funding. When we divide the enterprises into those that have only existed a short time versus those that have existed a longer time, there is a significant association with regard to enterprise success ($n = 48, \chi^2 = 6.94, p = 0.008$). Given that most of the BCN businesses have only been around for three years or less, we may not want to read too much into these data. They do at least indicate,

however, that while it is certainly important to give businesses sufficient time to develop, some successful businesses can be developed in a short-term time frame

Another question is whether some types of businesses are more profitable than others. Broadly speaking, the enterprises in the BCN portfolio can be divided into product harvesting businesses (for example, harvesting rattan, cutting timber, or making handicrafts) and service oriented businesses (for example, ecotourism, or scientific research). The following table shows the average profitability for each type of business. It shows that at least based on our sample, the service businesses were more profitable, but also had much greater variation at least in terms of the percentage of costs met.



Enterprise Profitability and Success by Enterprise Type

	% Costs Met		Success Rank		Example
	avg + sd	n	avg + sd	n	
All Enterprises	50.5 ± 61.5	29	3.1 ± 1.3	48	-
Products	46.7 ± 34.7	19	2.9 ± 1.3	29	Rattan (#13)
Services	57.7 ± 96.4	10	3.3 ± 1.4	19	Ecotourism (#4)

For the Success Rank Mann-Whitney U = 235.50 p = 0.3991

Enterprise Success and Degree of Value Added

Enterprise Type	Low Success	High Success	Totals
Minimal value-added	3	4	7
Some value-added	8	4	12
Final product	15	14	29
Totals	26	22	48

Finally, small business theory also holds that it is important to move up the value-added chain – in effect, performing more of the steps in the enterprise chain. As shown in the next table, we divided our enterprises into those that do little value-added processing, those do some value-added, and those that market final products to the retailer or end-user. Although the small sample size precludes statistical analysis, we found that there appears to be no relationship between the amount of processing and enterprise success. These findings taken together lead to the principle

P - There is no one type of business (product or service) or level of the value added chain that will automatically be profitable. Instead you need to pick the business most appropriate to the conditions that you face.

Finally, as outlined in the sidebar, an important caveat to the BCN results is that we only gave grants and not loans. This leads to the hypothesis

H - BCN type enterprises will be more viable if they are set up with a mixture of grants and loans.

Grants versus Loans In looking at our overall sample of businesses we need to ask the question why BCN attracted so few entrepreneurs into our portfolio. In reality we were not testing the question: Can enterprises lead to conservation? so much as we were asking the question: Can non-profit organizations use an enterprise-based strategy for conservation?

One reason for the limited number of entrepreneurs may be that owing to constraints imposed by USAID BCN could only provide grant funds and not loans. Furthermore, these grants could only be given to registered non-profit groups. The generous grants may ironically have attracted groups who were not experienced in enterprises but could write good conservation proposals.

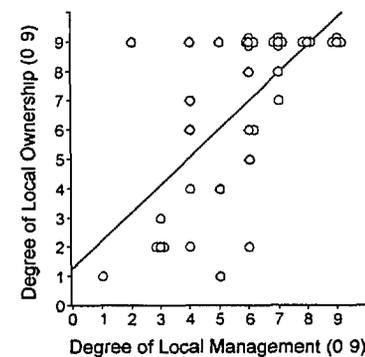
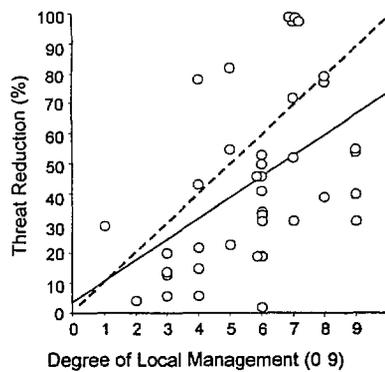
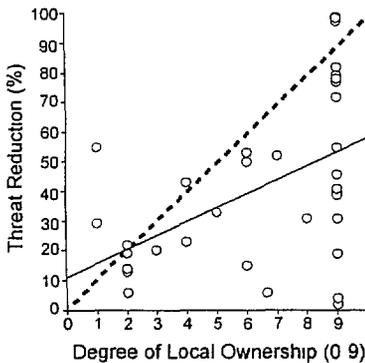
52

Measuring Enterprise Ownership and Management As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we defined owners as those individuals holding equity in the enterprise and having the right to vote for board members hire and fire management set major policies and sell their equity We defined managers as the people who make day-to-day decisions about how the enterprise operates In both cases we used a 10 point scale to assess the degree of local ownership and management of the enterprise ranging from (0) no local participation to (9) complete local participation In both cases we had to carefully define which section of the overall enterprise chain we considered to be the business

Enterprise Ownership and Management

In developing an enterprise, you also have to ask who should own the business? Should the enterprise be owned by all the members in the community? By only a few members in the community? By some outside holding company or NGO? A second key question is who should manage the day-to-day operations of the business? Should the community members be trained to manage it? Or should an outside manager be brought in?

The different types of ownership structures across the BCN portfolio are shown in the first table below There is no one structure that seems best in all situations Indeed, most projects had a combination of individual and joint ownership in a “hub and spoke” system in which individuals contributed their products or services to a central production or marketing unit The key was to find a structure within the context of cultural and economic constraints that provides incentives for people to do the work necessary to make the enterprise function In addition to ownership, we considered the degrees of community participation in enterprise management, as shown in the next table



Types of Ownership Structure for 48 BCN Enterprises

Category	# Ents	Example (Enterprise and Site)
Public corporation	-	
Private limited	12	Ecotimber EAST NEW BRITAIN PNG (#17)
Private partnership	12	Butterfly farming LORE LINDU INDONESIA (#9)
Sole proprietorship	6	Community ecotourism SIKKIM INDIA (#4)
Cooperative	6	Fruits & honey BILGIRI RANGAN HILLS INDIA (#5)
Communal	12	Scientific tourism CRATER MOUNTAIN PNG (#15)

Degree of Local Management of 48 BCN Enterprises

OM = Outside Manager Comm = Community

Ranking	# Ents	Example (Enterprise and Site)
0-1 OM only	2	Whitewater rafting LORE LINDU INDONESIA (#9)
2-3 OM consults Comm	6	Research station LAKEKAMU BASIN PNG (#16)
4-5 Comm works w/ OM	12	Essential oil production HUMLA NEPAL (#1)
6-7 Comm w/ OM s advice	19	NTFP harvesting PALAWAN PHILIPPINES (#13)
8-9 Comm only	9	Fishing PADAIDO ISLANDS INDONESIA (#11)

As shown by the dashed lines in the two top diagrams in the sidebar, our working sub-hypotheses were that an increase in both local ownership and management should result in an increase in conservation success And indeed, when we plotted both degree of local ownership and management against our Threat Reduction Index, we found a significant positive association for both ownership ($n = 38, \chi^2 = 6.76, p = 0.009$) and management ($n = 39, \chi^2 = 4.509, p = 0.034$) Since, as shown in the third graph, there is also a significant association between the degree of local ownership and the degree of local management

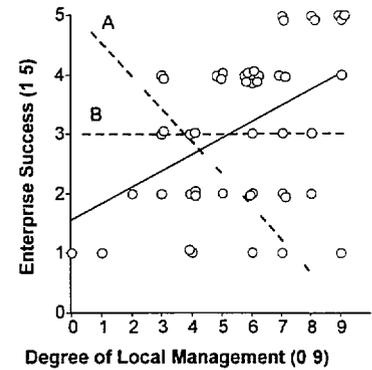
($n = 38, \chi^2 = 9.73, p = 0.002$), we should not treat these as separate results. Nonetheless, at a minimum, these results seem to argue for the principle

P – Promote local stakeholder involvement in the ownership and the management of the enterprise

We also predicted 1) that local management would lead to a less successful enterprise because local people might not have the necessary skills, and 2) more specifically, that for complex enterprises, an increase in local management would be associated with a decrease in enterprise success (Line A), whereas simple enterprises would show no effect (Line B). With regard to the first of these predictions, we found, contrary to what we expected, that there was a strong association between the degree of local management and enterprise success ($n = 48, \chi^2 = 5.38, p = 0.020$). With regard to the second prediction, we obtained no significant results, perhaps due to our small sample size.

When, however, we divide enterprises into complex ones and simple ones and look at the association with the degree of local management as shown in the table on the right, we find a significant inverse association, indicating that projects brought in outside managers for the more complex enterprises. Furthermore, when we look at the association between complexity and enterprise success as shown in the table on the left, we find a significant positive association, indicating that complex enterprises are less likely to be successful. These findings perhaps explain the contradiction observed above, since outsiders tended to manage complex enterprises, which overall had less success than simple ones managed by locals. Taken together, these results support the principle

P – Focus on simple enterprises that use skills local people already have instead of complex enterprises that require new skills



Measuring Complexity As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we defined enterprise complexity using a five point scale based on the type of technology being used and the number of steps in the production process. Rankings ranged from (1) simple enterprises with few value added steps, simple existing technology and few employees to (5) complex enterprises with many steps, sophisticated introduced technology and many employees. In general, simple enterprises made use of skills that local people already had. Examples of simple enterprises included harvesting timber at EAST NEW BRITAIN PNG (#17) or honey at LORE LINDU INDONESIA (#9). Examples of complex businesses included running a research station at LAKEKAMU BASIN PNG (#16) or dive tourism enterprise at PADAIDO ISLANDS INDONESIA (#11).

Enterprise Management	Enterprise Complexity		Totals
	Simple	Complex	
Outsiders	11	12	23
Community	21	4	25
Totals	32	16	48

$n = 48, \chi^2 = 6.226, p = 0.013$

Enterprise Success	Enterprise Complexity		Totals
	Simple	Complex	
Low	14	12	26
High	18	4	22
Totals	32	16	48

$n = 48, \chi^2 = 4.196, p = 0.041$

Finally, we can look at the relationship between complexity and the value-added chain discussed in the previous section. Interestingly, both simple and complex enterprises sold final products. These figures are, however, affected by the large number of tourism businesses that, by definition, sold their “product” directly to the consumer. Overall, these findings indicate that simple enterprises can still move up the value-added chain using appropriate technologies.

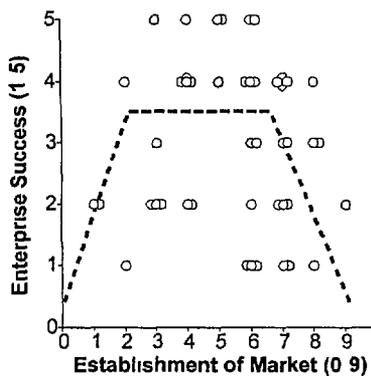
Enterprise Type	Enterprise Complexity		Totals
	Simple	Complex	
Minimal value-added	5	2	7
Some value-added	9	3	12
Final product	18	11	29
Totals	32	16	48

$n = 48, \chi^2 = 0.722, p = 0.697$

Measuring Market Demand and Logistics

As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we used a ten point scale to rank the degree to which there was existing market demand for the product or service ranging from (0) no market demand to (9) established competitive market

To look at the logistics involved in getting products to market we counted the number of days it took to get a shipment from the production site to the next point along the value chain. We also estimated the percentage of the final cost of the product or service that this transport entailed. Both these measures were hard to apply in a consistent and meaningful way. Finally we used a five-point scale to assess the perishability of the product or service and a five point scale to assess the potential green market



Is There a Market? Although this principle may seem trivial many projects seemed to ignore this point. Even if violating this principle does not cause the business to fail it can create false expectations among community members. A classic example can be found in the MAKIRA SOLOMON ISLANDS (#19) oil-nut enterprise in which the enterprise early on paid community members a high price per kg of raw nuts. After the managers realized they were pricing themselves out of the market they had to reduce the price they offered for nuts. This caused suspicion among community members who felt they were now being cheated (BCN 1999, p. 204)

Enterprise Marketing and Logistics

In establishing a new enterprise, one of the most important decisions the managers will have to make is to decide to which market they will sell their products. In particular, is it better to produce products for which there is an existing market and substantial competition? Or is it better to enter new markets for which there is little competition? The enterprise must also consider the logistics involved in reaching the market. Does it matter if the market is far away? If the product is perishable? Finally, the enterprise needs to consider whether it is worthy trying to reach an international market or to tap into the "green market"

Our first set of analyses looks at the relationship between enterprise success and the existence of the market. Our working sub-hypothesis is shown by the dashed line in the graph in the sidebar. We expected an inverted-U shaped curve in which enterprise success is reduced at low levels of market establishment, increases at moderate levels, and is then reduced again as the market becomes more competitive. Although it is difficult to statistically test an inverted-U shaped curve, based on these data and our qualitative analysis, the following principle emerges

P – It is better to develop enterprises in markets that are established but not too competitive

Project teams often made a number of assumptions about marketing that proved to be problematic. One of these assumptions was that marketing was of less importance than getting the basic enterprise production systems in place. The problems with this "If we build it, they will come" belief are perhaps best illustrated by the LAKEKAMU BASIN, PNG (#16) research tourism business in which substantial money was invested in building research facilities only to see no one show up. Similarly, the MAKIRA, SOLOMON ISLANDS (#19) project spent considerable effort trying to develop ngali nut oil production processes without first determining whether there was a market for the oil. This leads us to the principle

P – Do not start a business without first being certain there will be sufficient demand for your product or service

Another common assumption had to do with overlooking the difficulties in physically transporting products from the project site to the market or, in the case of tourism, tourists to the project site. We found no association between the distance to market and the success of the enterprise ($n = 48, \chi^2 = 0.109, p = 0.7409$). This may be due to the fact we had a very difficult time in quantifying this measurement. Certainly, talking to enterprise managers revealed that transport from remote project sites was often problematic and, in some cases, a major limitation on the enterprise.

Another logistical concern is the perishability of the product. Overall, the degree of perishability had no significant association with enterprise success ($n = 48, \chi^2 = 0.099, p = 0.753$). However, if we split the enterprises into products and services we see that only one product with a perishability ranking of greater than three was successful. This exception was the PADAIDO ISLANDS, INDONESIA (#11) fisheries enterprise that was located only a short distance from its market. By contrast, the ARNAVON, SOLOMON ISLANDS (#18) fisheries enterprise was a much more typical example, where profitability suffered as a result of having problems getting fish to market before they spoiled. These and other examples lead to the principle

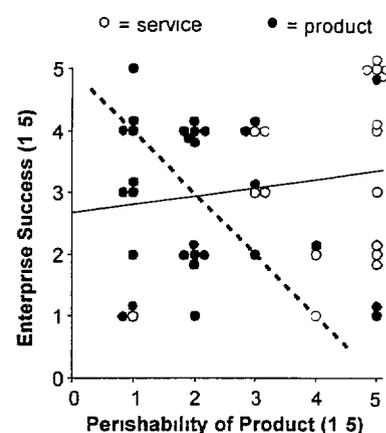
P – Enterprises are better off selling non-perishable commodities unless they have access to nearby markets and/or excellent transportation infrastructure and good logistical development

Another common assumption is that enterprises can easily reach a sophisticated global market. In reality, this proved quite difficult to do. The five projects whose enterprises were able to reach a global market (Projects #2, #8, #11, #15, and #20) are instructive in that, except for #8, they are selling a world-class product available in few other places. For example, two birdwing butterfly species being sold by ARFAK MOUNTAINS, INDONESIA (#10) are available nowhere else. By contrast, the rattan from PALAWAN, PHILIPPINES (#13) must compete with rattan from everywhere else in Asia. Similarly, thousands of tourists come to ROYAL CHITWAN NATIONAL PARK, NEPAL (#2), which is perhaps the only place in the world where they can ride elephants across the savannah and see endangered rhinos and tigers with an 8,000 meter mountain in the background. These findings lead to the principle

P – Enterprises should only target international markets if they have a world-class resource in demand and available in few other places

Although our data did not show a significant correlation between enterprise success and local versus international markets, we believe that most enterprises without a unique, world-class product should focus on domestic markets, at least in the first few years. Similarly, there has been a great deal of hype about “green markets” enabling enterprises to charge a “price premium” for eco-friendly products and services. If, however, we plot our ranking of green market potential against enterprise success, we see no association, which is confirmed by our statistical test ($n = 48, \chi^2 = 0.715, p = 0.3978$). Although it needs further testing, these findings suggest a hypothesis

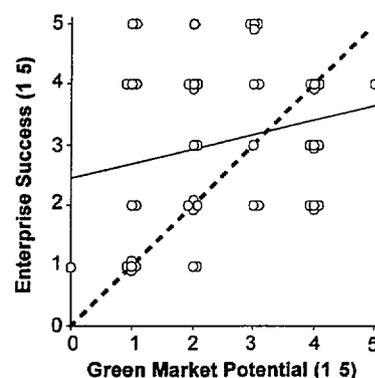
H – There are few if any cases in which there is a price-premium available for green-marketed goods or services. At best a green label will enable you to gain market share at a competitive price. Furthermore, trying to tap an international green market adds another level of complexity to enterprises.



Keep It Light Although we did not explicitly test it, in general it makes more sense to market light-weight, high value products like butterflies as opposed to heavier commodities like resin.

Demands of the International Market SANGGAU, INDONESIA (#8) is an exception to this trend because of its good business skills. Their story in BCN 1999 provides an interesting example of the difficulties in meeting international market quality standards. Among other things they describe Japanese wholesalers rubbing wool cloths on the enterprise's rattan handbags to see if the weave was uneven.

Targeting a Local Market In a few other cases, successful enterprises developed national market share through creative marketing. KALAHAN, PHILIPPINES (#14) sold its jams and jellies in Manila as an organic product. Sales were enhanced with the development of a professional-looking label. Likewise GARHWAL, INDIA (#3) was able to market its honey to religious pilgrims by emphasizing its source from the holy headwaters of the Ganges River.



Measuring Cash Benefits As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) there are four variables that relate to cash benefits



Distribution of Cash Benefits – Percentage of total stakeholder households receiving benefits In the diagram 33% of the stakeholders are receiving benefits We estimated the specific percentage of stakeholder households receiving a threshold level of cash benefits for each site each year

Absolute Amount of Cash Benefits – Amount of money received by average household In the diagram the 33% of stakeholders receiving benefits receive an average of \$135 each This average thus does not include the 67% of stakeholders receiving no benefits We estimated this average for each household receiving benefits each year

Relative Amount of Cash Benefits – It is difficult to compare the absolute level of cash benefits across projects over time since this would require correcting for changes in the value of money over time (discount rates) fluctuating currencies (FX rates), and relative purchasing power (PPP Indices) To avoid these conversions we transformed absolute cash benefit values into relative values by expressing cash benefits as a percentage of household income

Variability of Cash Benefits – Variance in the amount of benefits received by average household In the diagram the standard deviation in the average benefit is \$53 We initially tried to calculate standard deviations for each site but ended up having to use a qualitative ranking (calculating this factor requires specific household data whereas calculating the average benefit does not)

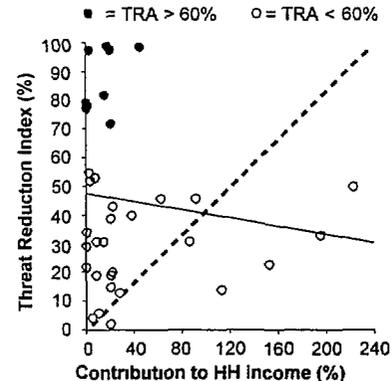
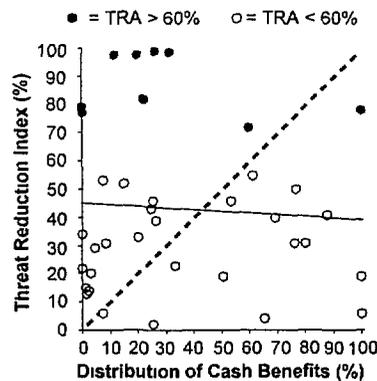
3 3 Benefit Factors

The second condition of the BCN Core Hypothesis states that the enterprise must generate benefits for the stakeholders in the biodiversity

Cash Benefits

Once your enterprise begins paying some wages and generating some profits, as a manager you are faced with the question of how to distribute this money To make conservation happen, should you try to ensure that everyone in the village gets an equal but small share of these funds? Or should you give larger shares to a few key individuals? Or should you not intervene so that wages and profits only go to the business's employees and owners? Or, should you encourage the village to pool their earnings in a trust fund, or to build a new school and health clinic?

Our first set of analyses looks at the percentage of stakeholders receiving benefits Our working sub-hypothesis was that the greater the percentage of stakeholders receiving benefits, the greater the likelihood conservation will occur, as shown by the dashed line in the graph on the left However, our data show no association between the two variables ($n = 37, \chi^2 = 0.01, p = 0.942$) Furthermore, most of the projects with high levels of conservation (colored circles) are clustered in the area of low cash benefit contribution



A related sub-hypothesis was that there should be a direct correlation between the relative cash contribution the average household receives and conservation success, as shown by the dashed line in the graph on the right Here again, the two variables show no association ($n = 35, \chi^2 = 0.35, p = 0.557$) And in this case, all projects with high levels of conservation are clustered in the area of a low percentage of household income Both these results directly refute at least part of the BCN Core Hypothesis, leading to the unexpected principle

P – Cash benefits (amount per household and distribution among household) are not necessary for conservation success

An alternative explanation of cases with high conservation and low cash benefits might be that local stakeholders are making current conservation decisions based on expectations of future cash benefits. When we consider these cases, however, we find that most communities are focused on the present. One example is VERATA VILLAGES, FIJI (#20) where stakeholders could potentially benefit from large payments if a successful pharmaceutical compound is developed from their marine resources. However, even here, it seems local people were making decisions based on the short-term cash and non-cash benefits they were receiving, and not the long-term possibilities.

Another factor that could influence conservation success is the variability in cash benefits received by each household. This factor proved to be very difficult to measure and based on our ranking data. We found no association between the variables ($n = 38$, $\chi^2 = 0.00$, $p > 0.999$). However, we can also analyze this factor by looking at the types of benefit distribution systems, as shown in the table in the sidebar.

Most of our projects (16 out of 20) distributed benefits directly to the people participating in the enterprise. A major advantage of this distribution system was that it provided an incentive to individuals to do the work that the enterprise requires. Under the other distribution system there were incentives for individuals to “free-ride” and not do as much work. A potential flaw in distributing cash benefits directly to those participating in the enterprise is that these individuals are not necessarily the ones either causing internal threats to biodiversity or with the ability to stop external threats to biodiversity. The former case is more likely to happen when the enterprise is dominated by local elites and the internal threats come from marginalized people within the community. Although our data are not conclusive enough to generate a principle, a working hypothesis that requires more testing is:

H – In some sites it may be unrealistic and counterproductive to distribute cash benefits equally among all stakeholders. Instead it may be more important to get cash in the hands of key decision-makers who have influence over the biodiversity.

Finally, another consideration in using cash benefits as incentives for conservation is the “magnet effect.” Over time, high levels of cash benefits from an enterprise will probably attract outsiders to the project site, thus lowering the amount of benefits per person and perhaps even putting more pressure on natural resources. Although at this point we do not have the data to test this idea, conservation projects using enterprise strategies may have to limit participation in their enterprises to guard against this problem.

Qualitative Analysis Results BCN’s qualitative analysis concludes: “The scale and distribution of cash benefits alone do not appear to have an impact on conservation. In fact, there is little evidence to suggest that individual cash benefits are a good predictor of conservation outcome.”

For the full text of the qualitative analysis, see www.BCNet.org/qual.htm

Frequency of Benefit Distribution Types

Distribution Type	# of Projects	Examples
Equal to all stakeholders	1	P #2
To enterprise participants	16	P #9
To enterprise owners	0	
To traditional leaders	1	P #15
Establish communal fund	2	P #20

Communal Benefits Although attractive in theory, in practice it can be difficult to distribute benefits communally without causing jealousy or animosity between different factions of the community. At the BCN Melanesia workshop, the EAST NEW BRITAIN PNG (#17) team told a story in which sawmill revenues were given to the community to build a church. The only problem was that half the community wanted to put the money into the Catholic Church while the other half wanted it for the Seventh Day Adventist Church.

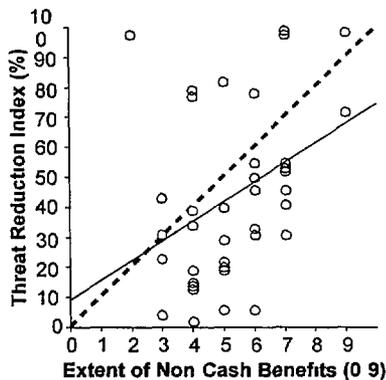
Getting Benefits to Key Decision-Makers In many of the Melanesian projects, land use decisions are made by clan elders, who may not necessarily be involved in the enterprise. Project managers must decide between the modern system of distributing benefits to enterprise participants versus the traditional system of allowing the elders to do it. This choice may depend on the degree to which resource use decisions made by the elders are respected by the community.

Measuring Non-Cash Benefits

Quantifying non cash benefits is more difficult than quantifying cash benefits. As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we identified four types of non cash benefits:

- 1 *Community Projects* funded by the enterprise such as health care centers, church buildings, or roads (this category potentially overlaps with cash-benefits)
- 2 *Social Benefits* such as better social organization or higher self esteem
- 3 *Environmental Benefits* such as erosion control or watershed protection
- 4 *Aesthetic Benefits* such as preservation of spiritually important places and species or recreation

We then ranked the level of non-cash benefits being provided at each project site on a 10 point scale ranging from (0) no non cash benefits to (9) extensive non-cash benefits.



Examples of Non-Cash Benefits A chart of the non cash benefits for each project can be found in BCN's formal qualitative analysis which is available at www.BCNet.org/qual.htm

One example is PADAILO ISLANDS INDONESIA (#11) where local people took great pride in the fact that they developed their own businesses, mapped and monitored their own resources, and enforced their own local policies to stop threats to the coral reefs.

Non-Cash Benefits

In addition to cash benefits directly paid to individuals, enterprises can generate non-cash benefits. For example, cash from an enterprise could be pooled by the community to build a health care center or a road. Furthermore, other benefits might be an increased sense of empowerment among local people or improved environmental conditions. To what degree are these important? Are they more important than cash benefits?

As shown by the dashed line in the diagram in the sidebar, our working hypothesis was that we would find a positive association between the amount of non-cash benefits and conservation. Here, unlike for cash benefits, we found the expected significant positive association ($n = 39$, $\chi^2 = 11.30$, $p = 0.001$) indicating a strong link between non-cash benefits and conservation success.

BCN's formal qualitative analysis found similar results, concluding:

- a All of the sites with high conservation success also had substantial non-cash benefits.
- b Several of the least successful projects (in terms of conservation) provided non-cash benefits to the community, but *none* did so as comprehensively as the most successful projects.
- c Non-cash benefits are a necessary but not sufficient condition for optimal conservation.
- d Enterprise financial success is not necessary for conservation or to produce non-cash benefits for communities. In other words, subsidized enterprise development accompanied by community development may fulfill this necessary condition of providing non-cash benefits, and enterprise financial success is one of several methods that may be utilized to attain non-cash benefits to communities.

Both quantitative and qualitative findings seem to clearly support the principle:

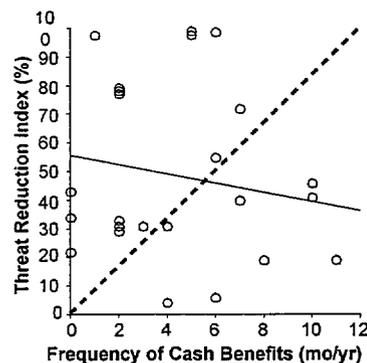
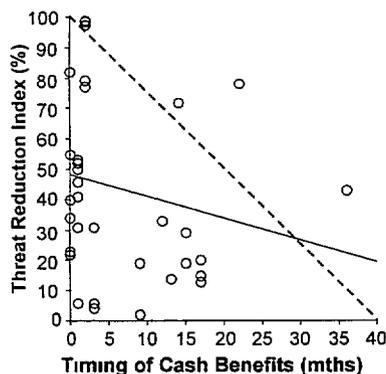
P Non-cash benefits are an important and perhaps even necessary condition for conservation.

Some of the most common non-cash benefits across BCN's project sites were a feeling of connectedness to the "outside" world and a sense of empowerment, pride and self-worth. The enterprises and projects enabled remote villages to psychologically become part of the global community on their own terms. This was a very powerful incentive for participation in both the enterprises and the broader conservation projects. Non-cash benefits also had the advantage of being relatively easy to generate within the relatively short three-year time frame.

Timing and Frequency of Benefits

Another factor that might influence the choice of strategy you use is the timing of benefits. Will stakeholders be willing to wait for long-term payoffs? Or do people need to see benefits up front? Also, do they want to receive small amounts of cash benefits on a regular basis? Or larger sums on a more infrequent basis?

One of our working hypotheses was that conservation would increase with a decrease in the interval people have to wait until they receive their first benefit. Another hypothesis is that there would be an increase in conservation with an increase in the frequency of benefits. When we looked at the timing and frequency of both cash and non-cash benefits across our project sites, however, we found that they are very difficult to measure systematically. This difficulty is largely due to the fact that so much depends on how you define things. For example, what constitutes an initial benefit? Should you measure the time until the first stakeholder is paid? Or until the average stakeholder is paid? Perhaps owing to these methodological difficulties, our data do not show any meaningful patterns. As presented in the graphs below. There is no association for either the timing ($n = 38$, $\chi^2 = 0.96$, $p = 0.328$) or for the frequency ($n = 39$, $\chi^2 = 0.02$, $p = 0.882$).



Nonetheless, as illustrated in the sidebar, almost every project team reported that local community members get impatient unless they see benefits in the short term. Given this, even though our quantitative data are not conclusive, we feel comfortable stating the principle

P – To meet expectations and ensure community support projects need to produce some tangible benefits within the first years

Other anecdotal evidence indicates that people may value large (and thus more infrequent) payments over smaller ones because it seems like “real money.” Here, however, there may be gender differences where men prefer large but infrequent payments of cash, whereas women prefer smaller more frequent payments, as indicated by the story in the sidebar

Measuring the Timing of Benefits As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) timing of cash and non-cash benefits

Timing of Benefits – Number of months from the start of the enterprise until the first benefits are received (excluding benefits paid directly by the project and not the enterprise such as wages paid to build an initial guesthouse). Note that in the future it might be more accurate to measure this as number of months until half the total benefits are paid.

Frequency of Benefits – Number of months per year in which stakeholders receive benefits.

Getting Benefits Up Front – For community members to participate in conservation efforts they need to see cash and non-cash benefits fairly quickly. For example, legal and illegal loggers at GUNUNG PALUNG, INDONESIA (#7) often said to projects staff that they would support the project only when they see tangible cash and non-cash benefits. Until that time they were adamant that they would continue to harvest timber in the project area and national park (BCN 1999b). Likewise, the staff at GARHWAL, INDIA (#3) report that when villagers harvested their first ever tasar silkworm crop from oak leaves it was like seeing is believing (BCN 1996 p. 13).

Cash Payments and Gender

Differences The CRATER MOUNTAIN PNG (#15) team members found that households of one village were getting a greater amount of money per year from making handicrafts than from growing coffee. Nonetheless, the men they talked to valued the money from the coffee more because it came in one lump sum when they sold their harvest, whereas the handicraft money trickled in over the year. Women, however, liked the smaller more frequent payments.

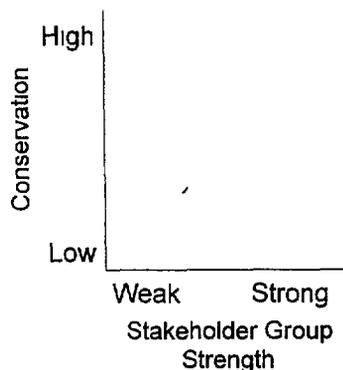
Measuring Stakeholder Organization

As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) stakeholder resource management groups can be categorized as

- *Individuals Acting Without Organization* – There is no formal group managing resources
- *Traditional Groups* – There is an existing group based on traditional cultural practices
- *Modern Groups* – There is a new group organized around an enterprise or other modern organizational structure
- *Neo-Traditional Groups* – There is a new group that has formed but it is modeled on traditional resource practices or uses a mix of traditional and modern systems

We used a ten-point scale to rank the existence and effectiveness of the stakeholder group ranging from (0) no stakeholder group exists to (9) group meets regularly and has a history of taking effective action. However, these rankings were difficult to apply consistently across projects.

We also tried to look at how representative the stakeholder group was of the stakeholder population as a whole. But this proved to be impossible to quantify in any effective manner. We were able, however, to assess stakeholder population homogeneity on a five-point scale from (1) many ethnic groups to (5) only one ethnic group.



BCN Stakeholder Study The full text of the BCN Stakeholder Study can be found in Mahonti et al. (In Preparation)

3.4 Stakeholder Factors

The third and last condition of the BCN Core Hypothesis states that there must be a community of stakeholders who have the capacity to counter the internal and external threats to the biodiversity.

Stakeholder Group Organization

One of the key assumptions of the BCN Core Hypothesis is that the stakeholders must be organized to take action. When setting up a new project, the question becomes, should you as a project manager work with existing community resource management groups that follow traditional decision making practices? Or should you try to start new modern groups that might be free of old conflicts and issues?

The different types of stakeholder groups are shown in the following table. The biodiversity at most of the sites in our sample was managed by either traditional groups or a mixture of traditional systems and modern management structures. The only sites with no formal group were in Indonesia, where the resources are by law owned and managed by the government. Indonesia also had the only sites where fully modern groups formed to manage resources owned by the state.

One interesting point here is that in some projects with multiple sites there were different types of stakeholder groups. For example, at GUNUNG HALIMUN, INDONESIA (#6), the two sites located within the park were more modern, whereas the third site located outside the park was neo-traditional, in that decisions were made by a mix of indigenous leaders and elected officials.

Types of Stakeholder Groups for 39 BCN Project Sites

Type	S Asia	SE Asia	Pacific	Total	Example
Individuals		3		3	G PALUNG INDO (#7)
Traditional	3	1	11	15	GARHWAL INDIA (#3)
Modern	-	4		4	SANGGAU INDO (#8)
Neo-Trad	4	9	4	17	HUMLA NEPAL (#1)
Total	7	17	15	39	

As shown by the dashed line in the graph, our working sub-hypothesis was that conservation would increase with an increase in the strength of the stakeholder group. We also postulated a similar relationship between conservation and the representativeness of the group. In both these cases, we had trouble applying our rankings in a consistent fashion and no meaningful results emerged. BCN staff also, however, conducted a more specific analysis of stakeholders focusing on four projects. In this analysis, we found that there is a rich variety of different types of stakeholder groups across the BCN portfolio of projects, including variation within sites. Project teams thus need to be aware of the dynamics of these groups.

Stakeholder Group Leadership

One of the most important factors that can influence the success of an organization is its leadership. But leadership can take many different forms. In setting up a project, is it better to work with a stakeholder group led by traditional leaders or by leaders who emerge from outside the traditional cultural structure? Is it better to have one strong person who can be the leader? Or a group of people leading collectively? And how can your group transfer leadership over time without damaging the organization?

The different types of leadership are shown in the following table. The leaders at most sites in our sample were either traditional leaders or people originally from the site who, because of their acquired skills and education, are becoming recognized as leaders.

Types of Stakeholder Group Leadership for 39 BCN Project Sites

Type	S Asia	SE Asia	Pacific	Total	Example
Complt Out		1		1	LORE LINDU INDO (#9)
Inside Out		2	1	3	KALAHAN PHIL (#14)
Outside In	2	9	2	13	NEW BRIT PNG (#17)
Complt In	5	5	12	22	VERATA FIJI (#20)
Total	7	17	15	39	

As shown by the dashed line in the scatterplot, our working sub-hypothesis was that an increase in leadership strength would lead to an increase in conservation. We found that there is, indeed, a significant association between these two variables ($n = 39$, $\chi^2 = 9.39$, $p = 0.002$), which leads to the principle:

P Strong stakeholder group leadership is an important and perhaps necessary condition for conservation.

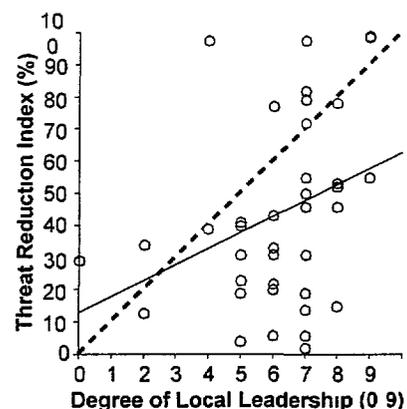
This principle might seem obvious, but implementing it raises at least two interesting issues for practitioners. The first is whether the resource management group, the enterprise, and the project should all be led by the same individuals. Anecdotal evidence indicates that resource management groups benefit from having collective leadership (often by traditional leaders), whereas the enterprises and projects seem to be most effective when led by one strong individual (often an outside-insider who might have more technical skills).

The second issue is how to transfer leadership over time. Many projects, enterprises and stakeholder groups encountered problems when a strong leader needed to be replaced. Anecdotal evidence indicates that where possible, project teams can help communities prepare for transitions by finding individuals with natural leadership talent and over time helping them develop complementary skills. In doing so, however, projects need to be aware of potential political ramifications.

Measuring Leadership As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) leadership can be categorized as

- *Complete Outsider* – Leader has recently come from outside. A good example is the leader of the group harvesting butterflies at LORE LINDU INDONESIA (#9) who recently migrated to Palolo Valley from Bali.
- *Inside Outsider* – An outsider who over time has become an insider. A good example is the leader of the KALAHAN PHILIPPINES (#14) community, an American missionary who moved to the site in the 1960s.
- *Outside Insider* – An inside leader who has gained his or her position through contact with the outside world. A good example is the leader of the enterprise at the Mu site at the EAST NEW BRITAIN PNG (#17) project who went to trade school and is now becoming a big man in the community through the enterprise.
- *Complete Insider* – A traditional leader. Good examples are the leaders of VERATA VILLAGES FIJI (#20) who are from the traditional chiefly family.

In addition to categorizing the type of leadership, we used a ten-point scale to rank leadership strength ranging from (0) no leader to (9) very strong leader. In cases it was difficult to separate out the stakeholder group from the project, which may have confused the rankings.



Measuring Resource Control and Policing

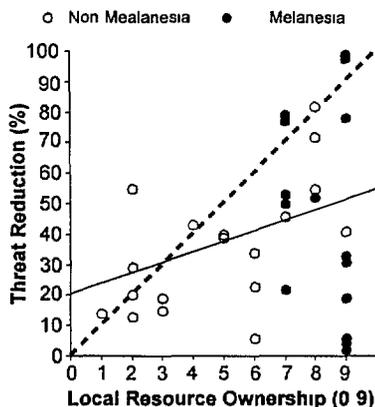
As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) there are four types of resource control

- 1 *Open Access* – No formal ownership – access is open to anyone
- 2 *Public* – Ownership held by the state
- 3 *Communal* – Ownership held jointly by members of the stakeholder group
- 4 *Private* – Ownership held by individuals along clearly delineated boundaries

Within these broad categories ownership can be legal or *de facto* (meaning in reality people manage and use resources without legal title) Furthermore in some cases different resources can be owned in different ways For example in PNG communities own land and surface resources while sub-surface resources are the property of the state

We used a ten point scale to rank the degree of local stakeholder access to resources ranging from (0) no access to (9) complete access We also assessed the legality of the communities claim to resources on a separate five point scale ranging from (1) illegal to (5) constitutionally guaranteed

We looked at the communities ability to police resource use rights on a ten-point scale ranging from (0) group takes no action against violations of resource use rules to (9) group takes strong action against all violations We also measured the source of the threats dividing them into those that were primarily from internal stakeholders and those that were from external sources



Resource Control and Policing

A key question in any resource management system is who has the right to access resources There is a large body of literature arguing that people are far more likely to conserve resources that they own and that, if ownership is not specified, then a “tragedy of the commons” occurs But does ownership necessarily lead to more conservation? And even if a project works with people who technically own the resources, is this ownership meaningful if they cannot enforce their rights?

The different types of resource ownership are shown in the table below Legal ownership is consistent within regions In Melanesia there is only communal ownership In Nepal, ownership is communal since the state transferred resource rights to local communities In India, however, these rights are still technically held by the state, although under joint forest management local people are gaining more rights In Indonesia, all resources are legally owned by the state, though in several cases communities have *de facto* control and in other cases it seems to be more open access Finally, in the Philippines, the government is in the process of transferring resource rights to indigenous communities, although in some sites this has led to open access conditions in the short term

Types of Resource Ownership for 39 BCN Project Sites

Where two numbers are shown the first is legal and the second *de facto*

Type	S Asia	SE Asia	Pacific	Total	Example
Open Access		- / 4		4	G PALUNG INDO (#7)
Public	3	11 / 5		14 / 8	SIKKIM INDIA (#4)
Communal	4	6 / 8	15	25 / 28	MAKIRA SI (#19)
Private	-	1 -		- / -	-
Total	7	17	15	39	

As shown by the dashed line in the graph in the sidebar, our sub-hypothesis was that an increase in local resource ownership would lead to an increase in conservation success When we looked at this relationship, we found no significant association ($n = 39, \chi^2 = 0.63, p = 0.429$) The lack of any significant association between degree of local resource ownership and conservation seems to counter the conventional wisdom Indeed, if we look at the countries in South and Southeast Asia (the white dots in the graph in the sidebar), the broader conservation community is trying to help local and indigenous communities obtain resource tenure rights as a means of promoting conservation These efforts include Joint Forest Management in India and Nepal, Certificates of Ancestral Domain Claim in the Philippines, and community forestry in Indonesia If, however, we look at the situation in Melanesia (the black dots), we find that many local groups have constitutionally guaranteed tenure rights Despite their strong tenure rights, there is a real range in conservation success Coupled with the results of our qualitative analysis described in the sidebar on the next page, these results support the principle

P – Local tenure rights are important but they are not a sufficient condition for conservation success

Given this principle in cases where obtaining tenure is a difficult, long-term process, it may make sense for projects to focus on helping communities obtain intermediate levels of access to resources. For example, at LORE LINDU INDONESIA (#9) the project was able to help community members get exclusive permits to harvest wild honey from within the Park. These incremental steps toward greater resource access were some of the most important non-cash benefits the projects generated.

Our second sub-hypothesis was that an increase in local policing ability would lead to an increase in conservation success. Here, we found a significant association ($n = 39, \chi^2 = 11.35, p = 0.001$). This finding may be an artifact of the way in which we measured conservation success in terms of reducing threats. Nonetheless, it indicates that while local people might not need full legal title to resources, they do need to be able to protect the resources they are using, leading to the principle:

P – Communities need to have the power to defend resource rights whether they are legally held by themselves or by the state

As discussed on page 15, we can divide threats into *internal threats* caused by local stakeholders themselves, and *external threats* caused by outsiders. A given stakeholder group might be good at stopping internal threats but not external ones, or vice versa. The two graphs show the relationship between our Threat Reduction Index and our rankings of the groups' ability to counter external and internal threats, respectively. For both types of threats, we found significant positive associations (external $n = 38, \chi^2 = 10.56, p = 0.001$, internal $n = 39, \chi^2 = 4.36, p = 0.036$).

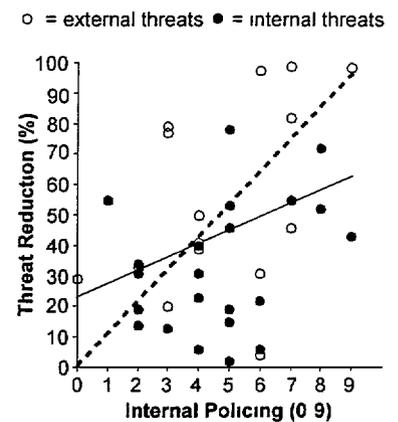
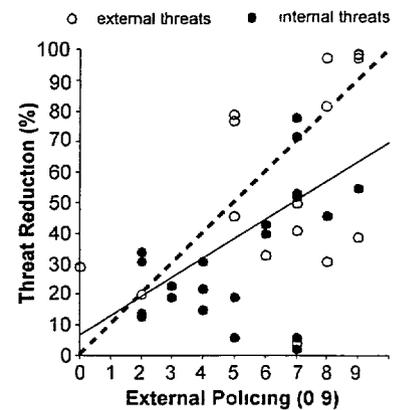
With internal threats, the challenge is to get your neighbors to adhere to rules that have been collectively established. Enforcement of these rules thus often gets tangled up in complex community and family relationships. With external threats, the challenge is to have sufficient authority to stop outsiders from violating the rules. The communities must either have the authority themselves, or be able to collaborate with government entities that do. Initially, community members might be intimidated by influential outsiders trying to access their resources. Ultimately, however, once their authority has been established, it seems generally easier for communities to unite against external threats. This observation is reflected in the fact that projects facing primarily external threats had a significantly higher TRA ranking than projects facing primarily internal threats (see page 15). These findings lead to the principle:

P – If communities have sufficient authority, then it is easier to come together to stop external as opposed to internal threats

Qualitative Analysis Results BCN's qualitative analysis concludes: All of the successful projects had clear ownership of their resources at the start of the project but two projects which had full control scored in the lowest group with regard to conservation success. On the other hand all of the projects with moderately good conservation lacked ownership of their resources.

This suggests that strong control over the resource is neither necessary nor sufficient for optimal conservation outcome but may be a weak catalyst.

For the full text of the qualitative analysis see www.BCNet.org/qual.htm

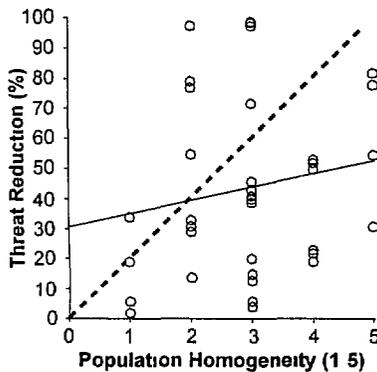


Difficulties in Internal Policing The CRATER MOUNTAIN PNG (#15) project team writes: It becomes hard for community members to take a stand in a decision ruling against a relative because then his clan members will not stand by him in times when he is in trouble. (BCN 1999 p 148)

Measuring Stakeholder Homogeneity

As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we initially focused on how well the stakeholder group represented the broader population of stakeholders at the site. Categories that we considered included gender, ethnicity, age, religion, caste, and economic status.

This measurement proved to be almost impossible to quantify. Considering only ethnicity, religion, and caste, we were however able to use a five-point scale to rank the degree of local stakeholder homogeneity ranging from (1) many different sub-groups to (5) no sub-groups.



Problems with Ethnic Heterogeneity

The GUNUNG PALUNG, INDONESIA (#7) project team is convinced that one obstacle to starting the timber harvesting business was the communities' ethnic heterogeneity. The site is composed of relatively recent ethnic Malay, Balinese, Javanese, and Chinese migrants, each with different patterns of resource use (BCN 1999b).

Stakeholder Homogeneity

Although local communities are often viewed as homogeneous entities, in reality they are typically composed of many different factions. In using an enterprise strategy for conservation, is it better to try to bring different factions together to work on a single enterprise, or is it better to set up separate businesses for each of the factions?

Divisions among stakeholder groups vary from site to site and across cultures. For example, in South Asia, most of our sites had members from different castes, each of which used resources in different ways. In Southeast Asia, there were divisions between wealthy and poor village members as well as between indigenous peoples and migrants. Finally, in the Pacific, communities were split into different sub-clans, clans, and language groups.

As shown by the dashed line in the graph, our working sub-hypothesis was that conservation would increase with an increase in stakeholder homogeneity. We found no significant association between these two factors ($n = 39$, $\chi^2 = 0.82$, $p = 0.365$). Nonetheless, we heard stories from almost all of the projects about conflicts between competing stakeholder sub-groups.

In particular, it seemed difficult for project teams to set up enterprises that required different community sub-groups to cooperate with one another. These artificial enterprise arrangements papered over deep social fissures that inevitably emerged to the detriment of the business. For some types of enterprises, such as ecotourism or capital-intensive product processing, it may be logistically and economically impossible to set up multiple, parallel businesses at one site. However, for many product-harvesting businesses, it may be possible to structure the enterprise so that each community sub-group manages its own component. These findings lead to the principle:

P – It is generally better to use an enterprise strategy with a homogeneous group of stakeholders. If it is logistically and economically feasible, you should set up separate enterprises for separate factions within a community.

Interestingly, however, there is some anecdotal evidence that, in cases of extreme levels of conflict between stakeholder groups, while it is impossible to use an enterprise-based strategy, the conflict itself may actually be good for conservation. For example, in the LAKEKAMU BASIN, PNG (#16) site, the historical animosity between the members of the four different language groups living there made it impossible to set up a successful enterprise. Nonetheless, this conflict actually kept the community members from being able to sign resource use agreements with outside developers who wanted to clear forest for an oil palm plantation.

3.5 External and Process Factors

In addition to conditions that are directly related to the BCN Core Hypothesis, the projects were also affected by external factors beyond the control of the project teams, and by factors related to the process of implementing the projects

Chaos

Perhaps the most influential external factors were unexpected natural and man-made disasters. How should your conservation project respond to inevitable emergency situations?

As outlined in the graph in the sidebar, few projects were spared from some sort of catastrophe or another. Natural disasters ranged from the earthquake that destroyed the KALAHAN, PHILIPPINES (#14) site to the volcano that shut down the entire economy of EAST NEW BRITAIN, PNG (#17) to the viral diseases that plagued honey production at GARHWAL, INDIA (#3) and LORE LINDU, INDONESIA (#9). Almost all the Southeast Asian and PNG sites were severely affected by the El Niño linked droughts and fires that swept through the region in 1998. The Indonesian sites were also dramatically affected by the country's political turmoil. And a majority of the projects were severely impacted by the Asian economic crisis that dramatically disrupted business conditions.

Each of these disasters, at a minimum, made conditions for the enterprises more difficult. In the worst cases, they set progress back a year or more while the project focused on basic relief efforts and tried to repair the damage done. Perhaps the only redeeming feature was that in some cases where the project team temporarily set-aside their conservation work, the disaster relief work helped strengthen long-term relationships between the community and the project team. This leads to the principle:

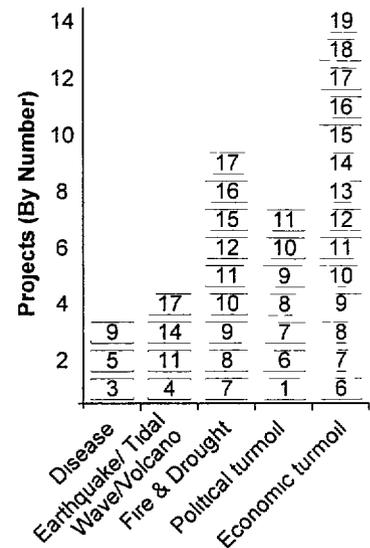
P – In times of chaos a flexible approach to implementing your workplan even if it means suspending direct conservation work can lead to long-term conservation gains

Policy Environment

Other influential external factors are the policy and institutional environments in which the projects operate. To what degree should a project team worry about trying to influence policies?

Policies are made at the local, provincial, national, and international levels. Overall, BCN projects influenced many different policies, ranging from local regulations on cyanide and bomb fishing in PADAIDO ISLANDS, INDONESIA (#11) to national legislation governing the use of ecotourism revenues in Nepal proposed by the CHITWAN, NEPAL (#2) project team. It is difficult to draw any general analytical conclusions from this work beyond the obvious point that it is important for projects to pay attention to the policy environment including in particular, those policies that potentially affect project activities.

Numbers in boxes refer to individual projects using the standard BCN coding



A Silver Lining In January 1996 a large earthquake struck off 60km from the PADAIDO ISLANDS, INDONESIA (#11). The resulting tidal wave devastated island villages. Project staff decided to delay BCN funded conservation work in favor of relief efforts to assist the thousands of people affected. This relief work helped the team develop the trust and respect of the community members and ultimately facilitated project implementation.

Policy Impact The VERATA VILLAGES, FIJI (#20) project team helped to pass national legislation regarding biodiversity prospecting that was the first of its kind in the Pacific (BCN 1997 p 101).

Measuring Stakeholder Buy-In As presented in the BCN Analytical Framework (www.BCNet.org/learning/analytical/appendC.htm) we measured stakeholder buy-in by asking key informants to rank the community's degree of acceptance of the project

The informant was given 10 beans each of which represented 10% of the community and asked to place each bean in one of 5 boxes ranging from (1) community strongly dislikes project to (5) community is neutral to (10) community strongly likes project. The exercise was then repeated using one bean for each major leader in the community. The number of beans in each box was multiplied by the rank of each box to get the total buy-in value for the community as a whole and for the leadership.

Unfortunately we only developed this ranking technique late in our analytical process and so we could not get data for all project sites.

Analyzing Institutional Arrangements

The findings presented here are drawn from a more thorough analysis of the institutional arrangements in each of the projects funded by BCN that was conducted by BSP staff (Hochman et al 1999).

Too Much Buy-In?

The CRATER MOUNTAIN PNG (#15) project tells the story how one community passed a law that the project representative in their site could not leave their village because he was so important to them. Clearly the project has achieved buy-in. This buy-in can become problematic however if the community starts expecting the NGO to provide services that the government should normally provide like dispute resolution, provision of drinking water, or building schools. A conservation group has to be careful not to stray too far from its core mission.

Project Effectiveness and Stakeholder Buy-In

To test an enterprise strategy for conservation, BCN tried as much as possible to separate the enterprise from the surrounding project. Nonetheless, project effectiveness undoubtedly had a great impact on bottom-line conservation success. In developing an enterprise approach, a key question that emerged was should the project be implemented by one organization, or several organizations working together? A second question is how can a project get the stakeholders to buy into project activities?

In order to address project effectiveness, we first looked at the institutional arrangements within each project and how they affected project implementation and, ultimately, conservation impact. Our working sub-hypothesis was that, due to the complexity of an enterprise strategy, organizations that collaborate and pool complementary skills with other organizations would be more effective. We found this statement to be generally true. But, in contrast to the current emphasis within the conservation community on the need for partnerships and consortia, we found that the least complex institutional arrangements were the most effective. We also found that one of the most important ingredients for success was having the roles of each institution clearly defined. To this end, those organizations that essentially worked alone but entered into contractual arrangements for specific project tasks achieved greater conservation impact than formal consortia and were able to spend more time on conservation and less on internal disruptions.

Second, we looked qualitatively at how funding levels affect conservation success. Our working sub-hypothesis was that more money would lead to more conservation. We found that, if anything, there was an inverse association, with smaller grants leading to higher conservation. In fact, the six projects that received the least amount of money were also some of the best projects in terms of conservation impact. They also had fewer institutional disruptions. Together, these findings lead to the principle:

P – Avoid large consortia of institutions and make sure that roles are clearly spelled out from the start.

Ultimately, a conservation project is about trying to convince stakeholders to accept or “buy-in” to project goals, objectives, and activities. As outlined in the sidebar, we only developed our measurement of buy-in late in our analyses making quantitative analysis impossible. Anecdotal evidence indicates, however, that community enterprises were effective in convincing local stakeholders and relevant government officials that the organizations implementing the projects were not just there “preaching conservation” but were also interested in the welfare of the local people. This leads to the hypothesis:

H – Developing enterprises can help a conservation NGO gain the trust of local community members and government officials.

4 And the Answers Are

At the start of this report, we said that BCN was set up as a large-scale experiment to look at three key questions

- Can an enterprise strategy lead to conservation?
- Can an enterprise strategy pay for conservation?
- How can we implement more effective projects and learn from our experiences?

Now that we have discussed the BCN Analytical Framework and presented some of our basic results, we are in a position to try to answer these three questions

4.1 Can an Enterprise Strategy Lead to Conservation?

This question is the basic test of the BCN Core Hypothesis. We found that, yes, an enterprise strategy can lead to conservation, but only under limited conditions – and never on its own.

Yes, But Only Under Limited Conditions

The BCN Core Hypothesis states that if an enterprise approach to community-based conservation is going to be effective, then the enterprises must 1a) be viable, 1b) have a direct link to biodiversity, 2) generate benefits, and 3) involve a community of stakeholders that has the capacity to take action to counter threats to the biodiversity. In effect, we are saying that there are a series of “hurdles” that a project must cross to make an enterprise-based strategy lead to conservation success. Each of these hurdles can be thought of as a “necessary but not sufficient condition” under which an enterprise strategy will work.

Viable Enterprises

The first and, perhaps, toughest condition of the BCN Core Hypothesis states that there must be a viable enterprise. And as we discussed in Section 3, the BCN businesses suffered from many logistical challenges. We found that they had problems developing good management systems, maintaining good bookkeeping or accounting systems, training their employees, and getting them to show up for work on a regular basis. They had problems figuring out how to efficiently produce their products and maintain quality control. They had problems finding markets for their products and services, getting their products to markets, and collecting money from their customers. And they had problems dealing with government regulations and bureaucracies.

Despite these myriad challenges, we found that some of the BCN enterprises were able to make progress towards long-term viability. Key factors that influenced enterprise success included having good bookkeeping skills, working in markets that are established but not too competitive, doing good market research, and focusing on simple enterprises that used skills local community members already possess.

Overall, we found a weak association between future enterprise success and conservation success. Perhaps most interestingly, although we predicted the opposite, we found a strong association between future

Summary Qualitative Results BCN’s qualitative analysis concludes: The enterprise lessons to be drawn from this analysis define good business sense – that successful enterprises require good markets. Competition in a market requires a strong business plan. The projects that attained optimal conservation successes tended to market domestically, accessed their markets well, and enjoyed little competition. Green markets may best be understood as niches that provide opportunities along with many others. National markets are a safer bet since they are simpler and require fewer managerial skills to access, but the payoffs from international markets may be much higher. The most important lesson here is the necessity of a good business plan.

For the full text of the qualitative analysis, see www.BCNet.org/qual.htm

enterprise success and the degree of local community involvement in the ownership and management of the enterprise. We also found a strong association between local involvement in the enterprise and conservation success. These findings indicate that getting people involved in the enterprise is an important step in getting them engaged in the larger conservation process.

Taken together, these results imply that, although it is difficult, communities can set up viable enterprises under the conditions captured in our principles. In particular, these businesses are likely to be viable only if they are based on a well thought-out business plan, and if they have people with the necessary management and bookkeeping skills.

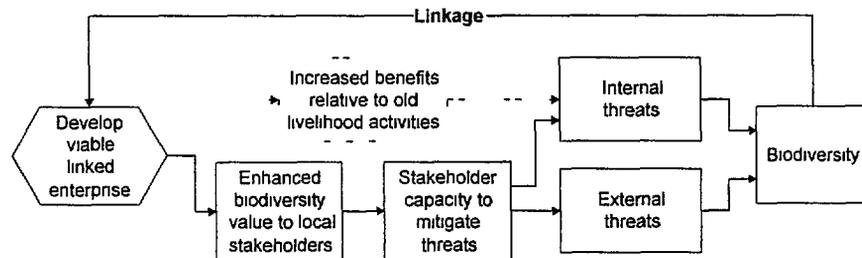
Linked Enterprises

The second part of the first condition of the BCN Core Hypothesis is that the enterprise must be linked to the biodiversity of the project site. In this case, despite the initial emphasis BCN placed on funding only projects with high linkage, we found that many of the businesses ended up not being highly linked. In particular, it was difficult to develop product-harvesting businesses that were dependent on the biodiversity of the site.

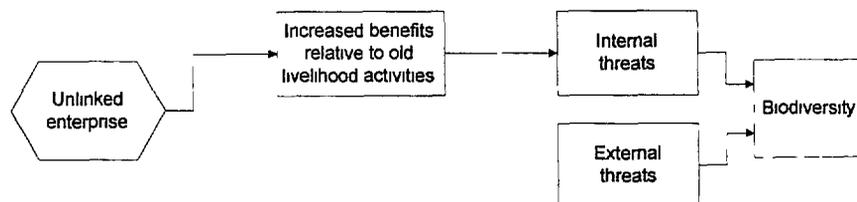
Summary Qualitative Results BCN's qualitative analysis concludes that enterprises that appear to have a good perceived linkage in the minds of the community tended to score higher IRAs than the ones that were less linked. For the full text of the qualitative analysis see www.BCN.net.org/qual.htm

Surprisingly, conservation happened regardless of whether or not the enterprise was linked. This result implies that linkage is not necessary for conservation, at least in the short-term. Over the long-term, however, if there is no linkage between the enterprise and biodiversity, then by definition, a linked enterprise strategy will not work. In effect, as shown in the model below, without linkage, the enterprise approach becomes simply an economic substitution strategy that does not address external threats. We also found that the communities' perception of linkage might actually be more important than actual linkage.

With Linkage – Enterprise Strategy for Conservation



Without Linkage – Economic Substitution Strategy for Conservation



Stakeholder Benefits

The second condition of the BCN Core Hypothesis is that the enterprise must generate benefits for the stakeholders in the biodiversity. In this case, we found that conservation occurred regardless of the percentage of stakeholder households receiving cash benefits or the average amount of benefits each household received.

On the other hand, we found that conservation was associated with high levels of non-cash benefits. Furthermore, our anecdotal evidence indicates that it is important to get benefits to the stakeholders as soon as possible after project activities commence. Finally, although we do not have the data to say for sure, our experiences indicate that instead of trying to distribute benefits widely, it may be more important to ensure that they go to key resource use decision-makers.

These results imply that, while cash benefits are not important in influencing stakeholders' willingness to counter threats, stakeholders do need some incentives to take action. In particular, non-cash benefits seem to be effective in promoting trust and cooperation between stakeholders and project staff.

Stakeholder Capacity to Take Action

The third and final condition of the BCN Core Hypothesis is that there must be a community of stakeholders who have the capacity to counter internal and external threats to the biodiversity.

Regarding the existence and strength of the stakeholder group, although our data were not definitive, we believe that it is better for conservation to work with an established group. It is clear, however, that the group needs strong, though balanced, leadership.

With regard to tenure, we found that for conservation to occur, some level of access to the resources was more important than having full legal control. It was also particularly important for communities to have the ability to enforce these rights against both internal and external sources of threats. We believe that an enterprise strategy is more effective in countering external threats. Countering internal threats seems to be more difficult when the stakeholder group is heterogeneous and/or there is a high degree of conflict between factions of the community.

Other Conditions

In addition to the conditions directly related to the BCN Core Hypothesis, the projects were affected by other conditions. Of particular importance were the disasters that struck almost all project sites.

Summary Qualitative Analysis BCN's qualitative analysis concludes: BCN's Core Hypothesis states that enterprises must generate benefits to be successful. Implicit in this statement is the assumption of cash and non-cash benefits. This analysis validates one piece of the Core Hypothesis but suggests that cash benefits may not be as important as non-cash benefits. Essentially, this is a lesson that enterprises must be supported by complementary development work. Specifically, environmental education and conservation awareness promotion may be related to conservation success.

For the full text of the qualitative analysis, see www.BCN.net.org/qual.htm

Summary Qualitative Analysis BCN's qualitative analysis concludes: Projects may have a better chance of success if there are few or no internal threats, although this neither a necessary nor sufficient condition for conservation success.

An efficient system to distribute penalties is needed both as a deterrent and to promote confidence in community ability to enforce policy.

For the full text of the qualitative analysis, see www.BCN.net.org/qual.htm

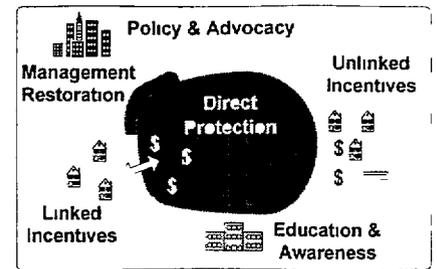
And Never on Its Own

In the previous section, we compared the conditions in the BCN Core Hypothesis to a series of hurdles that a project needs to cross to make an enterprise strategy work. If we look at the summary table below, however, we find that in some cases, conservation occurred (the project crossed the last hurdle) without meeting all of the conditions (the previous hurdles). For example, none of the most successful projects at the bottom of the table below has a highly linked enterprise. Several of them have not had successful enterprises. And most of them have not had high cash benefits. How can we explain this apparent contradiction?

Summary Categorization of 39 BCN Sites Across Key Factors

Site	Linkage	Enterprise Success	Cash Benefits	Non Cash Benefits	Policing Ability	TRA	Threat Type
15 1	med	high	low	med	med	2%	internal
16 1	high	low	med	low	high	4%	external
8 1	med	med	low	med	med	6%	internal
15 2	high	low	high	med	high	6%	internal
6 2	med	high	low	med	low	13%	internal
9 2	high	low	low	med	low	14%	internal
6 3	med	med	low	med	med	15%	internal
9 1	med	med	high	med	low	19%	internal
15 3	med	high	med	med	med	19%	internal
6 1	high	med	low	med	low	20%	external
11 2	low	low	low	med	med	22%	internal
5 1	med	high	low	low	med	23%	internal
9 3	med	low	low	med	low	29%	external
16 2	med	low	low	low	high	31%	external
19 1	low	low	high	high	med	31%	internal
19 2	high	high	high	med	low	31%	internal
18 1	low	low	low	med	med	33%	external
7 1	high	low	low	med	low	34%	internal
4 2	high	high	low	med	high	39%	external
4 1	high	high	high	med	med	40%	internal
13 1	med	low	high	high	med	41%	external
3 1	med	low	low	low	high	43%	internal
13 2	med	high	low	high	med	46%	external
13 3	med	high	med	med	high	46%	internal
10 1	high	high	high	med	med	50%	internal
11 1	high	high	low	high	high	52%	internal
11 3	high	high	low	high	med	53%	internal
1 1	med	high	med	high	high	55%	internal
2 1	med	high	(no data)	med	med	55%	internal
2 2	high	high	(no data)	med	med	55%	internal
12 1	med	low	med	high	high	72%	internal
17 5	med	low	low	med	med	77%	external
20 1	med	low	high	med	med	78%	internal
17 6	med	med	low	med	med	79%	external
14 1	low	high	low	med	high	82%	external
17 1	med	high	low	high	high	98%	external
17 2	med	med	low	low	high	98%	external
17 3	med	high	low	high	high	99%	external
17 4	med	high	low	high	high	99%	external

One way to explain this contradiction is to realize that the enterprise strategy expressed by the BCN Core Hypothesis does not happen in a vacuum in which a project team uses only this strategy and no other. Instead, a project generally uses a variety of conservation strategies such as direct protection, management and restoration, policy and advocacy, unlinked incentives, and education and awareness as shown in the diagram in the sidebar and also in the diagram on page 14.

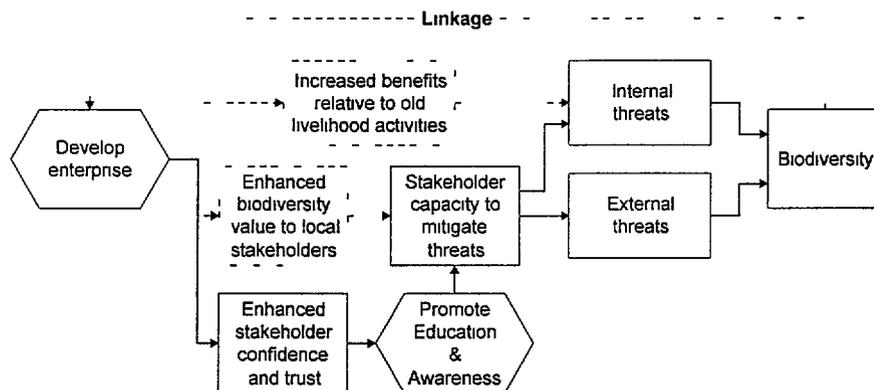


If we look more closely at our results, we find an interesting pattern begins to emerge that indicates that education and awareness might be particularly important. Key points include that a) community participation in the enterprise was significantly associated with conservation, b) non-cash benefits, such as enhanced community confidence, were also significantly associated with conservation, and c) as shown by anecdotal evidence, communities took action in support of conservation in sites where they had good working relationships with project staff members.

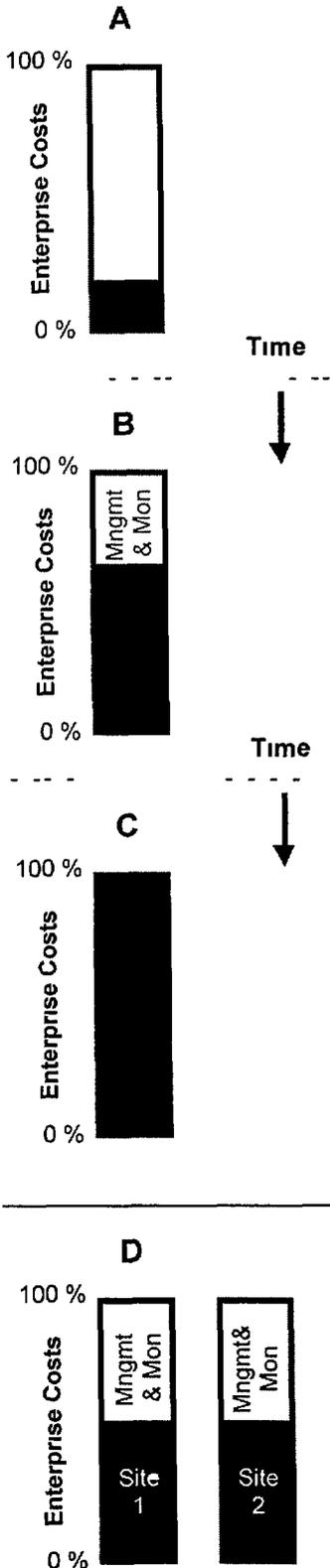
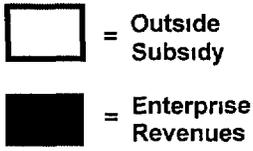
Taken together, these observations suggest that there might be an alternate pathway by which an enterprise strategy can lead to conservation. As shown in the following diagram, this pathway involves a conservation NGO coming in and establishing an enterprise. The enterprise gives the NGO staff members entry into the community. Community members participate in the enterprise and develop enhanced confidence in themselves. They also come to know and trust the project team and become more receptive to the conservation ideas that the team members bring. If the NGO promotes education and awareness, then the stakeholders may be more willing to listen and take actions to counter both internal and especially external threats. In this model, the enterprise does not have to be linked to the biodiversity. However, if the enterprise is linked, then the other path can work as well.

Providing Government Services Trap of NGOs having to provide government services. To try to be all things to all people.

A Revised Model of an Enterprise Strategy for Conservation



The real “take-home” point here is that we can’t expect any one conservation strategy to save the rainforests and the reefs by itself. Instead, any given project needs to have the appropriate mixture of strategies tailored to meet local conditions.



4.2 Can an Enterprise Strategy Pay for Conservation?

One of the main ideas behind BCN was to see if enterprises could not only achieve conservation, but also help pay for the costs of doing it. The premise is that if an enterprise is leading to conservation and the enterprise is self-sufficient, then the conservation is being paid for without the need for outside subsidies.

Subsidies are Required, Especially for Management

As shown in Diagram A, initially a conservation business will only be able to cover a small fraction of its costs and thus requires a substantial outside subsidy. Over time, however, an enterprise should be able to cover more of its variable and fixed costs and thus reduce the subsidy required as shown in Diagram B. The ideal goal becomes to get the enterprise to cover all its costs as shown in Diagram C.

If the BCN experience is any guide, it will at best take a number of years for most community-based enterprises to become self-sufficient. And in many cases, it may be hard to get the enterprise to cover all its costs. In particular, it may be necessary to pay for good quality management and for monitoring activities. Thus, Diagram B, in which an outside subsidy is perpetually required to pay for these true costs of the enterprise, may be the most common scenario. The challenge is to avoid situations where the enterprise is not covering its variable costs and is thus losing money.

but a Partial Subsidy Means There Is Also a Partial Return

Although BCN's initial goal was to develop enterprises that could cover 100% of their costs within a three-year time period, we have come to realize that this goal was not only unrealistic, but also unnecessary. There is nothing inherently magical about the idea of an enterprise covering 100% of its costs – especially if it provides environmental or social benefits.¹ As shown in Diagram D, suppose there is an enterprise that leads to conservation at a given project site, but only covers 50% of its costs. Since the glass is “half-empty,” the remaining 50% of the enterprise costs must come from grants or in-kind subsidies for managerial salaries. If, however, we view the glass as being “half-full,” then the 50% of the costs that the enterprise is able to cover can be seen as a “return” that helps to pay for conservation. In effect, this money can be taken and used to fund another business at a second site, thus doubling the amount of conservation that occurs for a given level of investment.

The key number here is thus not 100% percent self-sufficiency, but rather the ratio between the amount of money required to be invested in the enterprise and the amount of conservation that you get in return. If the enterprise generates more than a dollar's worth of conservation for every dollar invested, (the ratio is > 1) it is worthwhile. If, however, the enterprise generates less than a dollar's worth of conservation (the ratio is < 1), it is not. The trick is to be able to value the amount of conservation that occurs – this can best be done by thinking about the investment (aka subsidy) required by the best alternative non-enterprise based strategy.

¹ This idea originally came from a conversation with Frances Seymour of WRI

4.3 How Can We Implement More Effective Projects and Learn From Our Experiences?

If one thing is clear at this point, it is that ultimately the ability to implement effective projects depends on practitioners having the information that they need to make management decisions. In order to be able to decide which conservation strategies to use or to evaluate the relative costs and benefits of each strategy, knowledge is at a premium. Practitioners need the ability to understand the specific local conditions at their project site, both at the start of their project and as they change over time. To do so, they need to be able to collect the right information, analyze it, and use it. One process for dealing with information is adaptive management. BCN explored adaptive management at a project level and at a programmatic level.

Project Level Adaptive Management

In developing the BCN monitoring program and analytical framework, we initially tried to develop program wide indicators. Over time, however, we realized that each project site would need its own monitoring plan tailored to the specific conditions at that site. We also learned that monitoring can only be effectively conducted in the context of good project design and management. We thus developed a process for doing monitoring in the context of the project cycle as shown on the next page. Steps in the overall process include:

- *Start: Clarify Group's Mission* – A Mission Statement provides a vision for the future of your group – your long-term desired outcome and the strategy for getting there. Before setting out to design a new project, you must have a clear understanding of your group's mission. If you plan to work with other groups on the new project, it is also important to understand their missions and how yours relates to theirs.
- *A: Design a Conceptual Model Based on Local Site Conditions* – A Conceptual Model is the foundation of all project design, management, and monitoring activities. It is a diagram of a set of relationships between certain factors that are believed to impact or lead to your target condition. The model is first built to present a picture of the project area prior to the start of the project. It is next adapted to reflect local site conditions and then used to identify and rank the key threats to biodiversity that your project will address.
- *B: Develop Management Plan: Goals, Objectives and Activities* – A Management Plan describes the explicit goals, objectives, and activities designed to address threats identified in the Conceptual Model. Goals are broad statements of the desired state toward which the project is directed. Objectives are more specific statements of the desired outcomes or accomplishments of the project. Activities are specific actions undertaken by project participants designed to reach each of the project's objectives, which in turn, should lead to realization of your project's goal. All activities need to be linked to specific objectives that target critical threat factors identified in your Conceptual Model.

Adaptive Management Margoluis and Salafsky (1998) define Adaptive Management as integrating project design, management, and monitoring to provide a framework for:

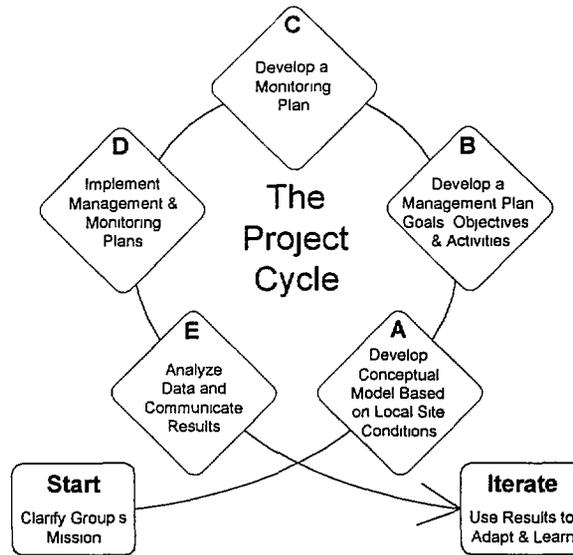
- 1 *Experimentally Testing Assumptions* – Systematically trying different interventions to achieve a desired outcome.
- 2 *Adaptation* – Using the results of this monitoring to improve your project.
- 3 *Learning* – Sharing what you have learned with team members and other practitioners.

Steps in Project Level Adaptive Management The steps outlined here are described in detail in Margoluis and Salafsky (1998).

Go or No Go? If we had had the BCN projects develop conceptual models prior to starting project implementation, at least a few of the projects would have probably either tried different enterprises or even not used an enterprise strategy for conservation. This underscores the importance of this step.

Steps in the Project Cycle

Source Margoluis and Salafsky (1998)



Safe-Fail Traditionally monitoring has been seen as a judgmental evaluation being carried out by an outsider. As a result, there is pressure to hide negative results. We found, however, that monitoring is most effective as a self-evaluation that is used to improve management. Under this framework, failure, while not desired, are seen as part of the natural learning processes – it becomes safe to fail. A true failure only occurs when mistakes are made and we fail to learn from them.

- **C Develop Monitoring Plan** – A Monitoring Plan describes how you will assess the success of your project interventions. The plan starts by outlining who your audiences are, what their information needs are, what monitoring strategies you will employ to get the data needed to meet each of these needs, and the specific indicators you will measure. The remainder of the plan lists how, when, by whom, and where data for these indicators will be collected.
- **D Implement Management and Monitoring Plans** – The Project Conceptual Model, Management Plan, and Monitoring Plan taken together comprise a complete Project Plan. This step involves implementing this Project Plan.
- **E Analyze Data and Communicate Results** – Once data have been collected, they need to be analyzed and the results need to be communicated to your internal and external audiences.
- **Iteration Use Results to Adapt and Learn** – Iteration is the key step in Adaptive Management. It is where the work invested in monitoring can pay off by helping you incorporate the information that you have obtained to improve your project and move forward. In this chapter, we discuss how to complete the process of testing assumptions and adapt your Project Plan based on your monitoring results. We also discuss why you should document and share the knowledge you have gained with others so that they can improve their conservation efforts.

Overall, this approach to monitoring takes a substantial investment of work, time, and money. But we also have come to believe that this investment is essential to get projects that can be effective, adapt to changing conditions, and learn.

Program Level Adaptive Management

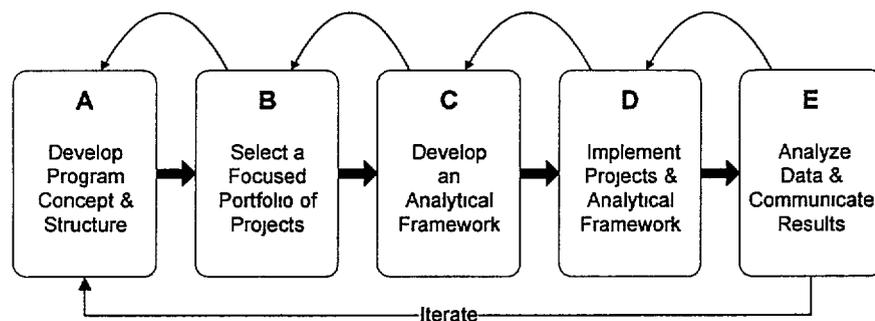
Although projects are the basic unit at which conservation happens, adaptive management also applies at a programmatic level. And this is where we feel that BCN may actually make its greatest impact. BCN was one of the first “Learning Programs” that tried to test a specific hypothesis about how to do conservation while doing it. Based on our experiences, we highly recommend this process be used to test other conservation strategies.

The steps involved in setting up a learning program are outlined below. These steps are similar, but in some cases slightly different from the steps in the project cycle. These steps are also related to those that the BCN program followed, but are modified based on our experiences.

- *Step A: Develop Program Concept and Structure* – The first step in developing a learning program is to determine what problem or question you want to address with your program, what your specific hypothesis is, how you will structure your program, and how you will monitor it over time. BCN tested an enterprise strategy for conservation. Other strategies need to be tested as well.
- *Step B: Select a Focused Portfolio of Projects* – The second step is to establish and implement the specific process that you will use for reviewing and selecting the projects in your program.
- *Step C: Develop an Analytical Framework* – The third step is to figure out how you and your partners will collect the data necessary to test your hypothesis. Your analytical framework is best developed as early as possible in the overall program. It should be developed by the project team members who will be directly responsible for collecting and analyzing the data.
- *Step D: Implement Projects & Analytical Framework* – The fourth step is to implement your plan. You need to ensure that all roles are covered and to facilitate participation.
- *Step E: Analyze Data & Communicate Results* – The final step in developing a learning program is to analyze your data and communicate the results to your key audiences.

Steps in a Learning Program

Source: Salafsky and Margoluis (1999a)



Learning Programs The steps described on this page are described in detail in Salafsky and Margoluis (1999a).

Costs and Benefits of Learning Program

Costs of a learning program include that they require

- *More Staff* – A much greater investment in skilled interdisciplinary program staff.
- *More Money* – More money to pay for the staff and required meetings.
- *A Willingness to Value Failure* – That program managers take a “safe-fail” approach in which an honest appraisal of problems is valued above bottom line results.
- *A Willingness to Experiment* – Groups that are willing to deal with uncertainty.
- *A Necessarily Narrow Focus* – A restricted focus so that you can test your hypothesis. For example, with regard to BCN’s first goal of making conservation happen, we learned that a given project should employ a wide range of strategies that are appropriate to the specific conditions at the project site. This selection of strategies may or may not include enterprise-based approaches. With regard to our second goal of testing our hypothesis, however, we had to restrict our focus to only enterprise strategies. This led to some serious contradictions and tough choices.

Benefits of Learning Programs include

- *Improved Knowledge* – The knowledge and learning that comes from the collective research being done.
- *Cross-Project Learning* – The networking and capacity building from bringing groups together.
- *Improved Partnerships* – Breaks down the traditional hierarchy that separates donor or program management and project staff.

5 When Should You Use an Enterprise Strategy?

Early on in this report, we said that our purpose in testing the BCN Core Hypothesis was that we “would like to be able to inform conservation practitioners and managers about the specific conditions under which it might make sense to adopt an enterprise strategy – and just as importantly, the specific conditions under which it might not” As you might have guessed by now, we cannot give you a definitive answer that is guaranteed to work at your specific site We can, however, offer you a process that will enable you to answer this question on your own as outlined in the flow chart on the next page

As in any conservation project, the flow chart begins with developing an Initial Conceptual Model of the situation at your project site Once you have developed a good understanding of the situation at your site, you can use the *BCN Enterprise Strategy Guide* shown in the table below to decide if you should use this approach To use this guide, compare the conditions at your site with the factors listed in the far left-hand column If you get even one entry in the “Forget It !” column, then as the flow chart indicates, you might want to think about another strategy If most of your criteria are in the “Think Hard” or “Maybe If ” columns, then you should think about the comments in the far right column If you can resolve the problems, then it might make sense to use an enterprise strategy Finally, if most of your criteria are in the “Go For It !” column, you are home free, assuming all your assumptions are true

If your enterprise passes this initial test, you then have to determine if the enterprise strategy will be cost effective relative to other approaches If it is, you can now develop management and monitoring plans for your project, and implement them Once you collect and analyze data, you will be able to see if your assumptions held true Most likely, you will have to modify your plan over time If things do not work out, you may have to try another strategy or even consider moving to another more tractable site Finally, no matter what your outcome is, you will have no doubt learned a great deal about the conditions under which an enterprise strategy does and does not work By sharing your experiences with others, you will be contributing to our collective understanding about the conditions under which it is possible to use an enterprise strategy to achieve conservation

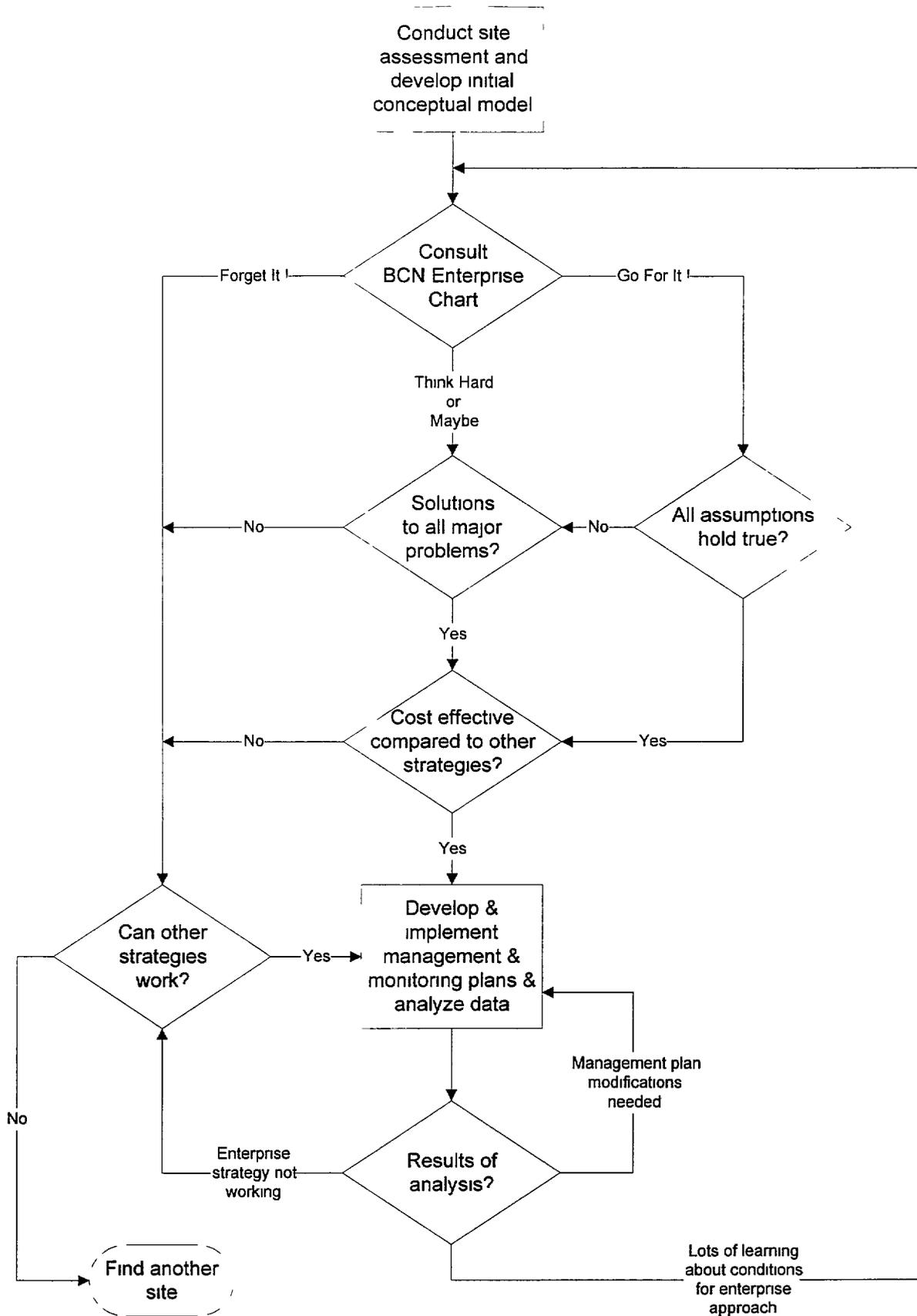
The BCN Enterprise Strategy Guide

See Analyses and Principles in Section 3 for an explanation of the conditions

FACTOR	CONDITIONS AT YOUR SITE				Comment on “Maybe If ” Column
Enterprise					
Potential profitability	< var costs	< fix costs	> fix costs	Costs+profit	if have management subsidy
Market demand	None	Low	High	Medium	if overharvesting can be controlled
Infrastructure	Poor	Marginal	Okay	Good	if low weight high value product
Local enterprise skills	None	Few	Some	Lots	if people can be hired and trained
Complexity	Extreme	High	Medium	Low	if sufficient support is available
Linkage	None	Low	Medium	High	if community perceives linkage
Benefits					
Cash benefits	None	Few	High	Moderate	if they do not cause conflict
Non cash benefits	None	Few	Some	High	if they are meaningful to community
Timing	Long wait	Unknown	Short	Immediate	if at least some initial quick benefits
Distribution	Very wide	Elites only	Limited	Targeted	if to resource use decision-makers
Stakeholder					
Stakeholder group	Not present	Very new	Present	Established	if groups shows interest
Leadership	None	Weak	Strong	Balanced	if leader is respected by people
Resource access	None	Ill-defined	Some	Full	if not clear how important
Enforceability	None	Limited	Some	Strong	if community can defend their rights
Stakeholder homog	Low	Minimal	Moderate	Complete	if can compartmentalize businesses
Conflict	Constant	Frequent	Occasional	Rare	if enterprise/project not involved
Threat source	All internal	Most internl	Most extern	All external	if external threat pays cash
Other					
Chaos	Constant	Frequent	Some	Unlikely	if you roll with it
Project alliance	Unwieldy	None	Strategic	Experienced	if alliance has complementary skills
IMPLICATION	Forget It !	Think Hard	Maybe If	Go For It !	

The BCN Enterprise Strategy Decision Chart

See text for details



6 Next Steps Along the Path

The analyses and conclusions in this report mark the end of a long journey. But like most ends, they can also be viewed as the beginnings of new journeys. Although the BCN program ends in September 1999, most of the projects in the Network have found new sources of funding and will continue with their work. Similarly, all of the individuals who have been involved with this program will continue on – many of us with the same projects, others of us with new projects or other endeavors. We've all made our share of mistakes, learned important lessons, and developed our skills. As a result, we will all hopefully be able to improve our work in the future.

Despite our successes, we should not be too optimistic. While we have been working with mixed results at just twenty local project sites across Asia and the Pacific, huge forces have been reshaping the landscapes of the world. Over the past seven years, vast areas of forest have been cut down, burned, or degraded. Large numbers of coral reefs have been overfished, poisoned, or bombed. Meanwhile, human populations and their demands upon the environment, fueled by ever increasing consumerism, are increasing. We cannot forget that our work with a few thousand stakeholders in remote corners of the world is dwarfed by the collective impact of the billions of people living in cities and rural areas who are going on with their daily lives. We have in effect, been puffing out our cheeks and blowing in the face of a hurricane.

Thinking about our work in this context, it's easy to despair. And yet, at the same time, it's hard not to have hope. Our experiences have convinced us that if we are collectively going to solve the problems facing us, that we are starting to find the right path. In particular, we have become convinced that conservation will only succeed if we can help practitioners:

- 1 Define conservation and objectively measure their success in moving toward it,
- 2 Discover and refine guiding principles for using enterprise-based and other strategies for conservation,
- 3 Use adaptive management to make their own maps of the landscape and capture the knowledge they have gained in learning institutions.

Our next steps will involve continuing to develop each of these ideas, building on the work that BCN has done to date. As our journey continues, we hope we will meet you again along the way.

Selected BCN Publications

The following list includes key BCN-related publications and documents, many of which are available from the Biodiversity Support Program. Many of these items are also available on-line at www.BCNet.org

- Baron, Nancy (1998) *Keeping Watch: Experiences from the Field in Community-Based Monitoring. Lessons from the Field* Issue 1 Biodiversity Support Program, Washington, D C , USA
- BCN (1994) *Annual Report January 1 1994 - December 31 1994* Biodiversity Support Program, Washington, D C USA
- BCN (1995) *Annual Report* Biodiversity Support Program, Washington D C USA
- BCN (1996) *Annual Report Stories from the Field and Lessons Learned* Biodiversity Support Program, Washington D C USA
- BCN (1997) *Annual Report Getting Down to Business* Biodiversity Support Program, Washington D C , USA
- BCN (1998) *Analytical Framework & Communications Strategy* Biodiversity Support Program, Washington D C , USA
- BCN (1999a) *Evaluating Linkages Between Business the Environment and Local Communities Final Stories from the Field* Biodiversity Support Program Washington, D C , USA
- BCN (1999b) *Patterns in Conservation Evaluating Linkages between Business Communities and the Environment* Biodiversity Support Program, Washington D C , USA
- Cordes, Bernd (1999) *Doing Business in Borneo Lessons from the Field* Issue BCN-2 Biodiversity Support Program Washington D C , USA
- Hochman, Cheryl Richard Margoluis, Katrina Brandon, and Nick Salafsky (1999) *Institutional Arrangements for Conservation The Role of NGOs* Biodiversity Support Program, Washington, D C , USA
- Johnson Arlyne (1999) *Measuring Our Success One Team's Experience in Monitoring the Crater Mountain Wildlife Management Area Project in Papua New Guinea Lessons from the Field* Issue BCN-3 Biodiversity Support Program, Washington, D C , USA
- Mahonti, Sengo et al (1999) *What's at Stake? A Study of Stakeholder Organizations in Conservation and Development Projects* Biodiversity Support Program, Washington, D C , USA
- Margoluis, Richard and Nick Salafsky (1998) *Measures of Success Designing Managing and Monitoring Conservation and Development Projects* Island Press, Washington, D C USA
- Peters, Charles M (1994) *Sustainable Harvest of Non-Timber Plant Resources in Tropical Moist Forest An Ecological Primer* Biodiversity Support Program, Washington, D C , USA
- Salafsky, Nick (1997) *Eleven Steps for Setting Up Community-Based Timber Harvesting Enterprises An Overview of the IRECDP Experience in the Islands Region Papua New Guinea* European Union – Islands Region Environmental & Community Development Programme, Kimbe, West New Britain, Papua New Guinea
- Salafsky, Nick (1998a) *Community-Based Approaches for Combining Conservation and Development* Pages 132-135 in Linda Koebner and Jane Sokolow (eds) *Scientists on Biodiversity* American Museum of Natural History, New York, N Y , USA
- Salafsky, Nick (1998b) *If I Only Knew Then What I Know Now An Honest Conversation about a Difficult Conservation and Development Project Lessons from the Field*, Issue No 1, BCN-1 Biodiversity Support Program, Washington, D C , USA
- Salafsky, Nick, Bernd Cordes, Mark Leighton, Max Henderson, Wesley Watt, and Ronald Cherry (1997) *Chainsaws as a Tool for Conservation? A Comparison of Community-Based Timber Production Enterprises in Papua New Guinea and Indonesia Rural Development Forestry Network Paper 22b*

- Salafsky Nick and Lini Wollenberg (In Press) Linking Livelihoods and Conservation A Conceptual Framework for Assessing the Integration of Human Needs and Biodiversity *World Development*
- Salafsky Nick and Richard Margoluis (1999a) Greater Than the Sum of Their Parts Designing Conservation Programs to Maximize Impact and Learning Biodiversity Support Program, Washington, D C USA
- Salafsky Nick and Richard Margoluis (1999b) *Overview of a Systematic Approach to Designing Managing and Monitoring Conservation and Development Projects* In Saterson et al pp 7-15
- Salafsky Nick and Richard Margoluis (1999c) Threat Reduction Assessment A Practical and Cost-Effective Approach to Evaluating Conservation and Development Projects *Conservation Biology* 13 830-841
- Saterson Kathy Richard Margoluis and Nick Salafsky, eds (1999) *Measuring Conservation Impact An Interdisciplinary Approach to Project Monitoring and Evaluation* Biodiversity Support Program Washington, D C USA
- Wollenberg, Eva and Andrew Ingles eds (1998) *Incomes from the Forest Methods for the Development and Conservation of Forest Products for Local Communities* Center for International Forestry Research Jakarta, Indonesia (See especially chapters 1, 3, & 6)
- Wagner John, Victor Kohala and Francis Tarihao (1996) *The Collection of Size Class Structure and Recruitment Data of *Canarium indicum* by Local Communities in the Makira Conservation in Development Project Area Solomon Islands A Report on the Field Implementation of a Biological Survey* Biodiversity Conservation Network, Washington, D C , USA

About the Biodiversity Support Program (BSP)

The Biodiversity Support Program (BSP) is a consortium of World Wildlife Fund, The Nature Conservancy, and World Resources Institute. BSP is funded by the United States Agency for International Development.

BSP's mission is to promote conservation of the world's biological diversity and to maximize the impact of the United States government's resources directed toward international biodiversity conservation. We believe that a healthy and secure living resource base is essential to meet the needs and aspirations of present and future generations.

About the Biodiversity Conservation Network (BCN)

The Biodiversity Conservation Network (BCN) is a part of BSP. BCN was designed to address a commonly held idea that, if local people can benefit from using their forests and reefs, then they will take action to conserve and sustainably use them. This enterprise-based conservation strategy sounded good in theory, but would it actually work in practice?

BCN tested this enterprise strategy by doing it. Local communities and partner NGOs set up businesses – like ecotourism or forest product harvesting – that directly depend on the biodiversity of specific sites. These communities and NGOs then tracked the businesses' financial viability as well as their environmental and socioeconomic impacts. By funding and working with twenty such projects across Asia and the Pacific, BCN tried to learn under what conditions this strategy works – and under what conditions it does not.