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BIODIVERSITY CONSERVATION NETWORK

ANNUAL REPORT 1997



Getting Down To Business

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Cover photo: Pak Sunda, 33, lives in Periji, one of the villages that has trained weavers for the rattan production as part of the Forest Products in Indonesia (#8) Project (page 53).

Pak Sunda's life has changed from being a subsistence-level slash and burn farmer to becoming a group motivator and entrepreneur in weaving. Now he is the quality supervisor for all products that his village group produces. Photo by Yayasan Dian Tama.

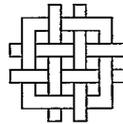
Acknowledgments: All of the Biodiversity Conservation Network — grantees and staff — are involved in the production of the Annual Report. Their timely and substantive involvement is very much appreciated. In addition, this year's report had important written contributions from BSP's Richard Margoluis and Ecotrack's John Parks, editorial assistance from Nancy Baron, and the layout expertise of Design Consultants, Inc.

The Biodiversity Support Program's

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The Biodiversity Conservation Network is administered by the Biodiversity Support Program (BSP), 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 (US-AEP) which is led by the United States Agency for International Development (USAID).

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

C

Overview

The Problem

Biodiversity represents the very foundation of human existence. Yet by our heedless actions we are eroding this biological capital at an alarming rate. Even today, despite the destruction that we have inflicted on the environment and its natural bounty, its resilience is taken for granted. But the more we learn of the workings of the natural world, the clearer it becomes that there is a limit to the disruption that the environment can endure.

Beside the profound ethical and aesthetic implications, it is clear that the loss of biodiversity has serious economic and social costs. The genes, species, ecosystems and human knowledge which are being lost represent a living library of options available for adapting to local and global change. Biodiversity is part of our daily lives and livelihood and constitutes the resources upon which families, communities, nations and future generations depend.

—1995 Global Biodiversity Assessment, UNEP

The BCN Program—1997

Conservation efforts that ignore the economic needs of local communities are unlikely to succeed. The Biodiversity Conservation Network (BCN), a component of the Biodiversity Support Program (BSP), is an innovative USAID-funded program working in the Asia/Pacific Region to provide grants for community-based enterprises that directly depend on biodiversity. BCN is testing the hypothesis that if local communities receive sufficient benefits from a biodiversity-linked enterprise, then they will act to conserve it.

The BCN granting process was carefully designed to provide the foundation for planning and implementing multifaceted projects. BCN-funded projects integrate enterprise development with community organization and policy efforts needed to achieve conservation. Key to the program's ultimate success is the collection of social, economic and biological data to measure the effectiveness of these enterprise-oriented, community-based approaches to conservation. In 1997, all of the projects were "getting down to business" with regard to developing enterprises, influencing natural resource policy, and empowering

communities. The enterprises are beginning to contribute to local economies and provide incentives for conserving local resources. The projects are also helping to influence national and local level policies that support better natural resource management. Most importantly, the projects and the businesses are increasing the ability of local communities and their partners to gauge the health of their natural surroundings and develop and implement strategies that conserve them. To date, BCN has spent \$13.8 million, much of this is the \$11.5 million obligated for grants. BCN funds are supplemented by grantee contributions of \$5.3 million, 32% of the total project funds.

Challenges in Promoting Enterprise-Based Conservation . . .

BCN's first goal is to promote enterprise-based approaches to conservation. In the United States which has a well developed infrastructure, a population that is experienced with a cash economy, and established markets, approximately one out of every seven newly formed businesses survives beyond five years. By contrast, BCN and its partners are sailing in uncharted waters, developing new businesses in remote areas with limited infrastructure and with people who are, in many cases, entering into a cash economy for the first time. These businesses must not only be financially self-sustainable, but ecologically and socially sustainable as well. These are serious challenges and we cannot expect that all projects will make it.

. . . and Successes in Evaluating This Approach

BCN's second goal is to evaluate the effectiveness of these enterprise-oriented approaches to conservation. Thus, despite the difficulties in implementing the projects, learning from the experiences of these projects along the way becomes BCN's measure of success. In the following pages, our community partners tell their own stories—their triumphs and challenges. It is clear from these stories that the BCN program is well in on its way to collecting the information needed to meet this second goal of determining under what conditions these enterprises can lead to conservation.

Message from the Director

This past year was an exciting one for the Biodiversity Conservation Network (BCN) in terms of the progress that was made both across the twenty individual project sites and by the program as a whole. In this report, we document this progress, focusing on the projects' successes and challenges and the analytical themes that are emerging regarding enterprise-based strategies to conservation.

Stories from the Field

Based on an overwhelmingly positive response to last year's Annual Report, which provided the grantees an opportunity to share their experiences in their own voice, we have expanded the *Stories from the Field* section. In keeping with the title of this year's report, you'll see in these stories that all of the projects are "getting down to business" with regard to developing enterprises, influencing natural resource policy, and empowering communities. The enterprises are beginning to contribute to local economies and provide incentives for conserving local resources. The projects are also helping to influence national and local level policies that support better natural resource management. Most importantly, the projects and the businesses are increasing the ability of local communities and their partners to gauge the health of their natural surroundings and develop and implement strategies that conserve them. Perhaps the best measure of these successes are the many times in the stories that project teams note how project ideas are spreading beyond the initial site. For example, the project teams write:

- A large number of projects from various parts of the country as well as from neighbouring countries are visiting Baghmara and Kumrose to gain first-hand information and to learn from the User Group Committee of Baghmara At the local as well as at the national level, government has appreciated the work and wants to extend the program. Now, all 36 Village Development Committees (VDC) on the edges of the park are forming User Group Committees to assess and implement their own opportunities. The Chitwan experience has been one of success breeding success through replication. [*Ecotourism in Nepal, #2*]



- The BCN project in the Gunung Palung buffer zone will likely be the first model of community-based forest management put forth by the Directorate General of Forest Utilization. It was highlighted as an approach to community based forest management at a workshop on the Consultative Group on Indonesia Forestry a policy roundtable of NGOs, international donor agencies and officials from the Ministry of Forestry. It is obvious that BCN has created a clear and direct link between community needs and high level policy. [*Community Logging in Indonesia, #7*]
- The third area of success is the learning and exchange going on with projects undertaking similar or related projects. There have been four other Indonesian projects who, it would seem, have thought highly enough of our project to visit it, and to do comparative studies. [*Ecotourism in Java, Indonesia, #6*]

Despite their successes, the projects have also continued to face daunting challenges. We have thus continued last year's tradition of candor in reporting not just the successes, but also the challenges inherent in doing this work.

Analytical Themes

This report also continues BCN's efforts to analyze the results of the twenty projects by identifying common themes emerging from the projects and laying out some general principles that we believe are critically important to advancing the conservation process. Although we cannot claim that any of these themes or principles is particularly novel, we do feel that our partners have provided powerful illustrations of how they are addressing some of

conservation's most vexing issues. In Section 2.1, we have thus tried to capture some of these lessons, focusing on a) how to define conservation success, b) principles for making use of catalysts and overcoming obstacles in the conservation process, and c) developing adaptive and learning institutions. And in Section 3, we focus on some of the specific business issues including the need to have resource control to secure long-term business investments, the prerequisite that resource monitoring commence at the start-up of the business to ascertain ecological impacts, and the requirement to accurately account for all costs without subsidies to assess business viability.

In developing these themes and principles from the stories, inevitably people ask us: "How can you make statements about the conservation process at these sites given the preliminary nature of the data from them?" In reply, we readily acknowledge that we can't make definitive statements about these projects' conservation impacts at this point in time.

But we also feel that we should not be constrained by an expectation of making only definitive statements before putting forth our most reasonable observations as to what matters in the conservation process. In many ways, the "journey is the destination"—the insights that we glean from the network of projects as they develop will help us all to advance our conservation agendas. Furthermore, given current rates of biodiversity loss, we can't afford to wait until all of the data are in. If we've learned something, let's act on this new knowledge, but maintain an attitude that learning, changing, and improving upon what we do are at the heart of addressing the ever evolving set of threats to worldwide biological diversity.

Looking Towards the Future

As a program, the BCN has attempted to follow its own advice by continually collecting information, learning what we can from it, and adapting to the new situation. With respect to BCN's future, we will do likewise. We anticipate that by March 1999, when the current cooperative agreement with USAID ends, our partners will have made significant strides in moving the process of conservation forwards at their sites and that as a Network, we will have gained many insights into the effectiveness of enterprise-based strategies.

We also know, however, that the work will not be finished. We view the upcoming transition period as a good opportunity to assess the past, consider the current conditions, and then design an appropriate new program which builds on the BCN franchise that's been established. Does

such a program currently exist or has there been money set aside for it? No. But we hope that over the next 16 months, BCN staff and grantees, our USAID colleagues, and others can begin to define this new phase of the BCN that builds on our knowledge and has a significantly broader conservation impact.

Finally, on a personal note, it is with mixed feelings that I want to tell you that I will be moving on to a new opportunity to do enterprise-based conservation, working to establish an eco-timber business in Papua New Guinea. (It's time that I tried to make this enterprise-based approach to conservation work myself!) I say mixed because on the one hand I'm sad not to remain working with all of the colleagues and friends I have developed, but on the other hand I'm immensely proud of the accomplishments to date of our project partners and BCN staff and am confident that they will be able to carry on our tradition of learning and adapting to change.

Starting December, 1997, BCN's management will be capably led by the senior management team of Ganesan 'Bala' Balachander, Nick Salafsky, Diane Russell, and Bernd Cordes. As the new BCN Director, Bala is one of our own. Bala started with the BCN as the Technical Director of the *Forest Products in India* (#5) project. His background of business and a Ph.D. in ecology make him ideally suited to the work that we do. Two years ago we convinced him to work at a broader level by becoming the BCN Regional Representative based in Manila. He has very capably led our regional program and I have the utmost confidence in his assuming the BCN Director position.

In closing, as in the past, I want to express my strong appreciation to all of those that are part of our network: BCN Grantees and staff, USAID personnel, and our BSP colleagues. It is obvious that our partners in the field are making some good advances under difficult circumstances. I thank everyone in the Network for their commitment and I look forward to future work together.

—Hank Cauley
November 1997, Washington, DC

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1. Overview of the Biodiversity Conservation Network

1.1 BCN Goals

The BCN program was established to fulfill two main programmatic goals:

1. Support enterprise-oriented approaches to biodiversity conservation at a number of sites across the Asia/Pacific region, and
2. Evaluate the effectiveness of these enterprise-oriented approaches to community-based conservation of biodiversity and provide lessons and results to BCN's clients. These clients include communities and groups implementing projects, USAID and US-AEP missions and offices, members of the Biodiversity Support Program (BSP) consortium (World Wildlife Fund, The Nature Conservancy, and World Resources Institute), and the broader conservation and development community.

1.2 BCN Core Hypothesis

The Biodiversity Conservation Network's core hypothesis is that, if enterprise-oriented approaches to community-based conservation are going to be effective, they must: 1) have a direct link to biodiversity, 2) generate benefits, and 3) involve a community of stakeholders.

More specifically, these three *elements* of the core hypothesis are:

1. **Linkage between the enterprises and biodiversity:** The enterprises must directly depend on the *in-situ* biological resources of the region. BCN thus seeks to develop enterprises whose financial viability is directly dependent on sustainable use of local biological resources.
2. **Generation of short and long-term benefits:** The enterprises 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. **Community/Stakeholder involvement:** The enterprises must involve members of the local community,

and often others, who are stakeholders in the enterprises and biodiversity of the area.

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

1.3 BCN Program Highlights—1997

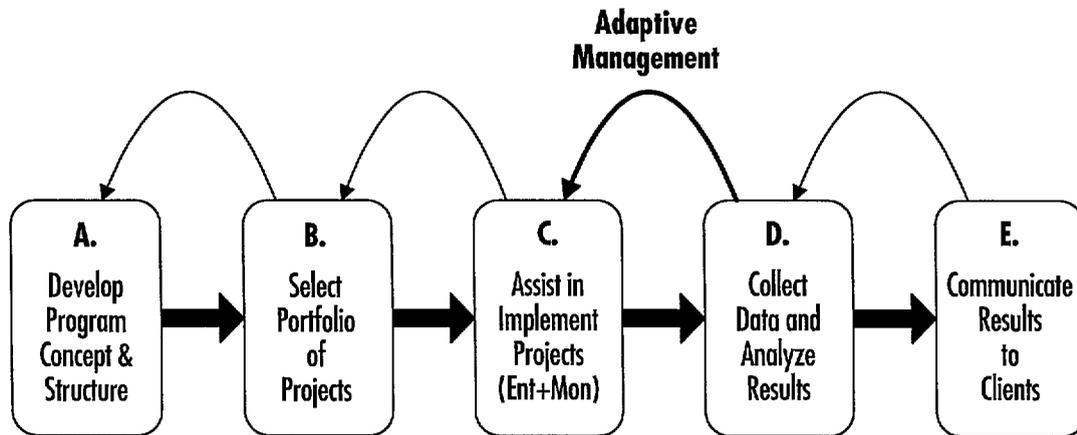
The BCN program consists of five components (Figure 1). In the past, we reviewed activities under each of these components. This year's highlights are only focused on the Analysis (D) and Communications components (E) and do not address components A through C.

D. Collect Data and Analyze Results

The fourth component of BCN activities involves analyzing the results in conjunction with both grantees and other groups involved in similar efforts. Highlights include:

- ***In-depth Enterprise Data Collected at most sites and for most businesses.*** All BCN-supported businesses have kept records of their revenues. However, many have not kept adequate accounts for their costs, especially those related to overhead and other fixed costs. Over the past year, staff have begun to systematically collect this information from projects. This issue of enterprises not adequately accounting for costs is discussed in greater detail in Chapter 3 of the report.
- ***Impact Indicators Developed with USAID Global Bureau.*** USAID and its implementing partners developed a series of indicators to track the impacts of its conservation investments. BCN Staff submitted final projections for 1997 during April, 1997. Preliminary analysis of the results for 1997 have been completed and BCN Projects have met or exceeded all targets. A full indicator report will be completed by December 15, 1997 that will contain actual results for 1997 and projected results for 1998. This report will be available upon request.

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.

The BCN Program has five distinct components as shown above. BCN is focusing on these components 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 component are highly interconnected. Thus, for example, in order to design the program concept and structure (in Component A) it is necessary to consider who the audiences are and to determine how results will be communicated to them (in Component E). Likewise, BCN's ability to conduct effective analysis (in Component D) will be influenced by the selection of projects (in Component B) and the type of information that is collected through monitoring efforts (in Component C).

Furthermore, although the general flow of the program will be sequentially from left to right in the diagram, there is also an iterative feedback process (represented by the curved arrows on top of the diagram) between the components. This iterative process enables BCN to respond to the concerns of its clients and make use of the lessons it has learned to improve the quality of the individual projects within the Network as well as the overall program. In particular, as represented by the heavy arrow between Components C and D, project-based monitoring efforts are an important tool to provide the adaptive management necessary to improve project quality.

- **Analytical Framework Finalized.** BCN staff have finalized the analytical framework. The analysis of the BCN projects will include various types of quantitative and qualitative analyses, case studies, and thematic studies. A variety of analytical approaches have been developed to suit various audiences. The analytical framework will be available during December, 1997.
- **Analysis of Field Stories Completed.** The first application of BCN's Analytical Framework was completed by applying it to the stories received for this Annual report. Please refer to Section 2.1.

E. Communicate Results to Clients

The fifth and final component of BCN activities involves communicating the results of the BCN program to various clients.¹ This information is being used to generate impacts that reach beyond local project sites and that are stimulating community and national awareness of the benefits of conserving biodiversity. BCN-funded projects

¹BCN uses the term "client" as opposed to "audience" to denote its commitments to: 1) find out what information these groups need, 2) provide this information to them in a proactive as opposed to passive manner, and 3) interact with them on a sustained basis to improve the utility of the information over time.

are stimulating wide-ranging transformations in conservation efforts and policies in both the Asia/Pacific Region and the United States. Highlights include:

- **Policy Impacts at All 20 Sites Documented.** The USAID Indicators include a strategic level indicator on policy impacts at the local, regional, and national levels. Over the past year staff have been able to document policy impacts at all sites. These range from decisions to curtail certain local fishing practices at the *Bioprospecting in Fiji* [#20] project to national export license policies for butterflies in Indonesia at the

Honey, Butterflies, and Rafting in Indonesia [#9] project. A summary of all of the policy impacts by BCN grantees will be available after December 15, 1997.

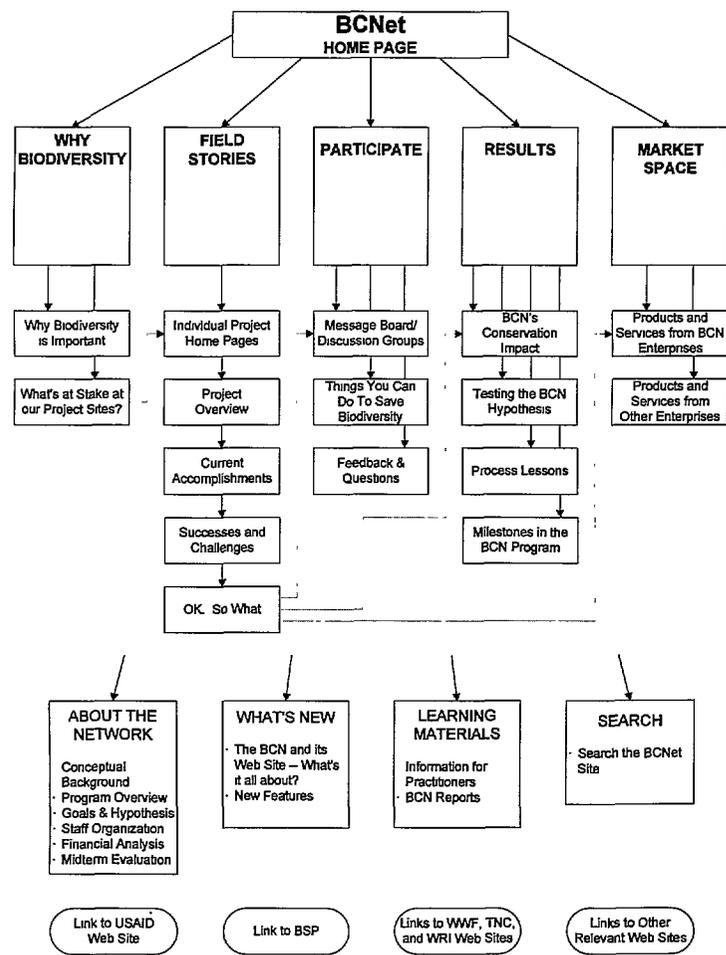
- **BCNet Web Site Launched.** On October 15, 1997 the BCN launched its own site on the World Wide Web at www.BCNet.org. The purposes of the web site are to get the word out on what we've have learned about enterprise-based approaches to conservation in a broad and cost-effective manner and to create a medium for dialogue on conservation issues related to business. Please see the box below for more information on the web site.

Putting the "N" in the BCN—www.BCNet.org

One of the major highlights of the year was BCN's entrance into cyberspace with the launching of the BCNet web site. You can reach the site by typing <www.BCNet.org> into any Internet Browser program. We view this web site as a key component of our strategy for enhancing the networking capacity of the program—putting the "N" in the BCN.

BCN had for several years considered using the Internet as a way of reaching several of our key clients including especially USAID bureau and mission staff, members of Congress, researchers and scholars, and US Taxpayers. We hesitated in devoting effort to developing a site because we feared that developing a web site might restrict our overseas partners from accessing the information owing to the technological requirements. Over time, however, we learned from these partners that the Web is actually the best way for residents of many developing countries to access timely and relevant information—that they prefer it to printed materials.

As outlined in the diagram of the site, the BCNet site is designed to help the user to understand why biodiversity is important and what is occurring at each of the BCN project sites. The user is then guided to participate in an interactive discussion group, review the BCN's results, or learn about the products and services offered by BCN's grantees. Our goal is to create a network of people interested in discussing issues of business, the environment, and local communities. Check it out!



- **“Measures of Success” Completed.** BCN is pleased to announce that the Biodiversity Support Program and Island Press will be publishing *Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects* in early 1998.

This publication was written by BCN’s Nick Salafsky and BSP Analytical Program Director Richard Margoluis. Please see the box below for more information about *Measures*.

Measures of Success

BCN is pleased to announce that the Biodiversity Support Program and Island Press will be publishing *Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects* in early 1998. The systematic approach presented in *Measures* is based in large part on work done with BCN grantees to develop and implement their projects and monitoring plans. It grew out of a series of monitoring workshops that BCN held with its partners in 1995 and subsequent field-testing with BCN grantees and other BSP projects.

The ultimate aim of *Measures* is to help field-based project managers measure the impacts of their conservation and development programs. To measure impacts, however, these managers must have a clear understanding of the conceptual foundations of project design and management. Using concepts gleaned from many different disciplines, *Measures* presents a simple, clear, logical, and yet comprehensive approach to identifying, collecting, analyzing, and using information relevant to project management and impact assessment.



The book integrates theoretical, conceptual, and practical issues of project design, management, and monitoring. *Measures* uses many examples and illustrations drawn from four scenarios that serve as teaching case studies throughout all the chapters. It attempts to tackle the often neglected issue of data analysis for impact assessment and monitoring. Finally, *Measures* combines experience from domestic (U.S.) and overseas conservation and development work and incorporates the experiences and feedback of many practitioners who have field tested the guide.

For updates on the publication date for *Measures of Success* and ordering information, contact Island Press (Tel: 1-800-828-1302, Fax: 707-983-6414, Web: www.IslandPress.org) or check the *Measures of Success* information website (www.BCNet.org/Measures/).

2. Stories From the Field

Table 2.1 Overview of the Themes Identified in this Section

A. Defining Conservation Success

1. An area of biodiversity is delineated and monitored
2. A group of stakeholders is identified and mobilized
3. An enterprise that is directly linked to the biodiversity and that has the potential to be self-supporting is developed
4. Evidence that the stakeholders are identifying and successfully reacting to threats to the biodiversity at the current time and that they are likely to do so in the future is developed

B. Principles for Achieving the Process of Conservation

1. ENTERPRISE DEVELOPMENT

- OBSTACLE**— Logistical problems that limit production
OBSTACLE— A lack of basic business knowledge that limits production
OBSTACLE— Difficulties in marketing products

2. GENERATION OF BENEFITS

- CATALYST**— Generating meaningful benefits for community members
OBSTACLE— Benefits below a certain threshold

3. COMMUNITY OF STAKEHOLDERS

- CATALYST**— Attaining resource governance and policing rights
CATALYST— Developing strong leadership in the community with a vision for conservation
CATALYST— Developing and maintaining relations with government officials
OBSTACLE— Government inaction
OBSTACLE— Individual self interests
OBSTACLE— Social disharmony and rivalries
OBSTACLE— Individual greed

4. OTHER FACTORS

- CATALYST**— Building confidence through small but early successes
OBSTACLE— Success itself can lead to failure
OBSTACLE— Natural disasters
OBSTACLE— Stakeholder constraints and willingness to participate
OBSTACLE— Project timeframes are too short

C. Developing an Adaptive and Learning Institution

1. Testing Assumptions
2. Adaptation
3. Learning

2.1 Themes Emerging From the Stories

In looking across the stories from the field presented in the following pages, a number of common themes begin to emerge. These themes point the way to some of the key lessons that BCN partners and staff are learning about how to develop and implement community-based enterprise-oriented approaches to conservation. For example, we see that planners need to address resource tenure issues early on. As projects mature, implementing teams and communities must develop strategies for dealing with social conflict and institutional crisis. Enterprise managers face ongoing issues of balancing quality and participation, and defining sustainability (with or without subsidies). And then there are the very practical problems that project teams have grappled with: complex logistical problems, distant markets, the short time given to make the enterprises work, staff turnover, and various natural disasters.

In this section, we place these themes in a broader systematic framework that allows us to draw general and yet non-trivial lessons about designing and using enterprise approaches to conservation. In this way, our collective experience can hopefully assist others in deciding when and how to use this approach.

Our initial attempts to develop these general lessons found us searching for a step-by-step “path to success.” Our goal was to define a model process for using enterprise-based approaches to conservation. The first model we developed was a linear sequence of boxes. This linear sequence evolved into a cycle, and then into an increasingly complex spiral with all sorts of arrows leading into and out of the boxes.

We have realized over time, however, that there are many paths leading to success—and even more leading away from success! The exact path that any group needs to follow depends on their starting point, their goals, the changing conditions at the site, and conditions in the broader social, political, and economic context in which they are operating. Instead of trying to define the “one

true path to success,” in the following sections we draw on the stories and other information about the projects to:

- A. Define what conservation success involves for enterprise-based conservation projects,
- B. Provide general and yet non-trivial principles concerning the process of enterprise-based conservation, and
- C. Emphasize the importance of developing institutions that can both adapt and learn.

Under each of these headings, we explore key themes in greater detail as outlined in Table 2.1. In developing these lessons from these stories, inevitably people ask us: “How can you make statements about the conservation process at these sites given the preliminary nature of the data from them?” In reply, we readily acknowledge that we can’t make definitive statements about these projects at this point in time.

But we also feel that we should not be constrained by an expectation of making only definitive statements before putting forth our most reasonable observations as to what matters in the conservation process. In many ways, the “journey is the destination”—the insights that we glean from the network of projects as they develop will help us all to advance our conservation agendas. Furthermore, given current rates of biodiversity loss, we can’t afford to wait until all of the data are in. If we’ve learned something, let’s act on this new knowledge, but maintain an attitude that learning, changing, and improving upon what we do are at the heart of addressing the ever evolving set of threats to worldwide biological diversity.

A. Defining Conservation Success

Defining and establishing a plan for measuring conservation success are essential first steps for a conservation project—in effect, developing an understanding of what the goals of enterprise-based conservation projects should be. While there are many potential methods for setting goals and measuring conservation, BCN has found that the following conditions must be met to say that conservation is occurring:

1. An area of biodiversity that has certain attributes (area, quality, ecosystem functions) is delineated and monitored over time,
2. A group of stakeholders in the area of biodiversity is identified and mobilized,
3. An enterprise that is directly linked to the biodiversity and that has the potential to be self-supporting is developed,

4. Evidence that the stakeholders are identifying and successfully reacting to threats to the biodiversity at the current time and that they are likely to do so in the future is developed.

In looking through the stories, there is abundant evidence that BCN partners are making progress towards meeting these conditions. However, no group has achieved all of them.



1. An area of biodiversity is delineated and monitored

The BCN is ultimately about promoting biodiversity conservation. Accordingly, the projects are being undertaken at sites of local, regional, and even global significance ranging from the alpine pastures of the Himalayas to the lowland rainforests of Borneo and Papua New Guinea to the coral reefs of the Solomon Islands and Fiji.

To achieve conservation success, it is essential to define a spatially limited site over which the project can realistically expect to have an impact. In addition, stakeholders must be able to monitor the attributes of the site to make sure that they are maintained over time. These attributes include the habitat area in the site, the habitat quality of the site, and (if possible) the ecosystem services provided by the site.

Most if not all of the projects are undertaking some level of biological monitoring. For example, at the *Ecotourism in Nepal* [#2] project, the team reports:

On-going monitoring of birds, rhinos, tiger, crocodile and ungulates shows a gradual increase in the number of different species as a result of the additional habitat provided by the community forest created under KMTNC/BCN program. All together, 170 different species of birds have been observed in these newly created habitats. Among

these are 37 species listed by the Bird Life Society as threatened species. The number of rhinos are 19 in Baghmara and 23 in Kumrose community forest.

At the Forest Fruits in the Philippines [#14] project site, the team reports:

Monitoring and analysis of the impact of the extractive activities for the forest fruits was completed. It appears that the greatest amount being extracted from any product is 10% which will have no negative impact on sustainability.

One of the most interesting aspects of the monitoring work has been the enthusiasm that local community members have shown for it. For example, at the Dive Tourism in Indonesia [#11] site, the team reports:

In the past year, Yayasan Hualoꦥu's biological monitoring team has held training workshops in Saba to convey basic information on coral reef ecology and monitoring methods. Trainees have been enthusiastic, particularly since they have learned that of all the project sites, Saba has the most intact reef and the largest numbers of butterfly fish, an indicator of rich biodiversity. They have learned how to estimate percentage of living coral cover and now regularly practice their snorkeling and observation skills.

More community members are being trained so that in the future they themselves can monitor the reefs that are the basis for both local fisheries and tourism. Recently, in Saba where all monitoring trainees have up to now been male, a group of six women decided that they too want to

start the learning process, while a second group of women have begun a study group on marine plant diversity and applications for family health, food and tourism.

Monitoring is perhaps most important in helping to determine what resources the enterprises have available. At the Forest Products in Indonesia [#8] site, the team writes:

There is a story about a blind man who owns and makes a living from his store. Because he is blind, whenever somebody comes to buy something, he doesn't know whether he has it or not, or how many he has, much less where it is, or what is the right price to ask for it. When first we started the BCN project, we felt like that blind man with his store. We have the 'store'—100,000 ha within the Participatory Forest Management Area with 17,000 people living in it—but we don't know what kind of specific 'things' are there, where and how much stock we have, or the potential for growth or annual yield. We don't know exactly what there is to harvest, nor at what levels it would be sustainable.

Using transect methods, the natural resources inventory has been completed. We know the species and the amount of each in the transect. But it still difficult to find out how many damar trees or rattan clumps there are, their growth rate, or how much can be harvested. We do not know what to base the calculations on to determine the potential yield of each non-timber forest product. Our dream—knowing what the sustainable harvest level is—is still far off, and maybe we won't know for another year or two.

Stakeholder Group	Project	Type of Group
Humla Conservation and Development Association	<i>Essential Oils in Nepal [#1]</i>	Enterprise
User Group of Baghmara Plantations	<i>Ecotourism in Nepal [#2]</i>	Resource management
Van Panchayats and Mahila Mangal Dals	<i>Silk and Honey in India [#3]</i>	Resource management
Khangchendzonga Conservation Committee	<i>Ecotourism in India [#4]</i>	Resource management
Managing Committee of Bilgiri Rangan Hills	<i>Forest Products in India [#5]</i>	Enterprise
Mbenti Butterfly Farmers	<i>Butterflies in Indonesia [#10]</i>	Enterprise
Church and savings groups in Biak/Padaido Islands	<i>Dive Tourism in Indonesia [#11]</i>	Benefit distribution
Tribal Council in Bendum	<i>Abaca and Rattan in the Philippines [#12]</i>	Resource management
SATRICA and CAMPAL (local associations)	<i>Rattan and Resin in the Philippines [#13]</i>	Resource management and Enterprise
Kalahan Educational Foundation	<i>Forest Fruits in the Philippines [#14]</i>	Resource management and Enterprise
Management Committee of WMA	<i>Ecotourism in Crater Mountain, PNG [#15]</i>	Resource management
Illi Ecoforestry Sawmill	<i>Eco-timber in PNG [#17]</i>	Enterprise
Arnavons Management Committee	<i>Fishing in the Solomon Islands [#18]</i>	Resource management
Community fund of Togori	<i>Nut Oil and Tourism in the Solomon Islands [#19]</i>	Benefit distribution
Tikina councils in Verata	<i>Bioprospecting in Fiji [#20]</i>	Resource management

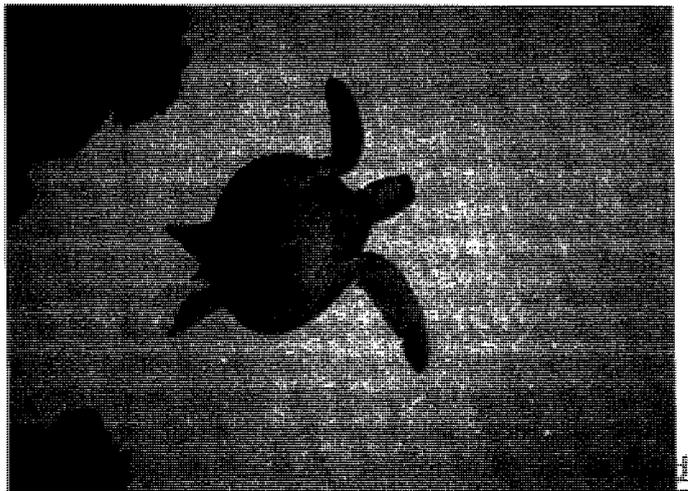
2. A group of stakeholders is identified and mobilized

A stakeholder can be defined as a person who has an actual or potential impact on the core biodiversity of the site. A stakeholder group is composed of stakeholders who share—at least to some degree—a common vision as to how to manage the core biodiversity. The stakeholder group does not necessarily have to include all of the potential stakeholders in the area of biodiversity. There are many different stakeholder groups at the BCN project sites as illustrated by the examples in the following table:

Some groups are newly formed (the Khangchendzonga Conservation Committee), some are revitalized versions of traditional decision-making bodies (the Tribal Council of Bendum), while others are long-standing groups whose functions are evolving to meet current conditions (the Van Panchayats of Garhwal).

In all cases, however, project staff have worked to identify the people who control, use and threaten the biodiversity, and have sought to incorporate their knowledge into the enterprise and other project activities. Indeed, in some cases, individuals who were “threats” were invited to join. In the words of the *Fishing in the Solomon Islands* [#18] project team:

One story that illustrates the importance of economic incentives as a tool in conservation involves the recruitment of one of the center managers. The community fishing committee called for names of potential candidates from within their communities. In one case, the list of potential applicants included one of the most outspoken critics of the Arnavon Community Managed Conservation Area who was eventually chosen for the position and is fast becoming an effective advocate for the project and its goals.



3. An enterprise that is directly linked to the biodiversity and that has the potential to be self-supporting is developed

The third condition for success is the presence at the site of one or more enterprises that depend on the biodiversity and that are turning a profit. Linkage to the biodiversity is important because without it, there is no long-term incentive for conservation. Profitability is crucial because it is what will make the conservation effort sustainable over the long-term. Enterprise-based approaches to conservation can work without profitable enterprises, but they require an outside subsidy to keep them going.

As outlined in more detail in Section 3 of this report, there are three stages in the development of a profitable enterprise. In the first stage, the enterprise covers its variable costs. In the second stage, the enterprise covers both variable and fixed costs and shows a true profit. And in the third and final stage, the enterprise develops the systems necessary to respond to changes in markets by adjusting its costs and pricing. As shown in the stories below, most of the BCN supported enterprises are generating some revenues and a few may be covering their fixed costs. For example:

- *The two wildlife observation houses at the Ecotourism in Nepal* [#2] project generated revenues of US \$7,800 and \$8,700.
- *The Butterflies in Indonesia* [#10] project generated revenues of over \$75,000.
- *The tourism enterprise at the Nut Oil and Tourism in the Solomon Islands* [#19] project brought in revenues of \$2,500.
- *The Ecotourism in Lakekamu Basin, PNG* [#16] project had revenues of \$390 at one lodge.
- *The Bioprospecting in Fiji* [#20] project had revenues of \$20,000.

Although these levels of revenue can be very significant in a local context, many of the BCN funded enterprises are not yet covering their fixed and variable costs, let alone generating true profits. Furthermore, the revenues being generated are far less than the total amount of money provided by BCN and other donor funds. It is thus clear that some form of outside subsidy will be required for some time to come especially for monitoring and some marketing costs. Continued reliance on subsidies does not mean that the enterprise revenues are unimportant—every dollar that the enterprises can provide is one less dollar that is required from the outside sources. A critical next step will be to determine which subsidies can be removed, when, and how.



4. Evidence that the stakeholders are identifying and successfully reacting to threats to the biodiversity at the current time and that they are likely to do so in the future is developed

The fourth condition for conservation success is the ability to demonstrate a reduction of threats to the biodiversity at the project site. The list of threats occurring at the sites is long and varied. And the stories illustrate some serious problems. For example, at the *Community Logging in Indonesia* [#7] project, the team writes:

Illegal logging continues to threaten the park, especially in the swampy areas accessible by river. The recent, nearby construction of small sawmills that process illegally harvested wood poses a serious threat to the old growth within the park. Loggers from outside the local communities have begun to enter the park as well. In addition to felling trees, these groups have been hunting park wildlife. Recently, a visitor to the park encountered a logging group that had killed and eaten rare and endangered hornbills. Eliminating all illegal activity from the western park area will be a daunting task.

Likewise, at the *Silk and Honey in India* [#3] project, the biological monitoring team members identified an all but invisible threat—that the seemingly healthy oak forests are not regenerating and thus will vanish in a generation. And at the *Ecotourism in Java, Indonesia* [#6] site, the team describes:

The biggest challenge of all, because there is so much money involved, [is] gold mining, both legal and illegal. So long as the price of gold remains high this pressure will not likely go away. Sadly, Gunung Halimun National Park is reasonably well endowed with this precious metal and prospecting is relentless.

Nonetheless, despite the difficulty posed by these threats, there is also encouraging evidence that the groups are moving forward to meet the threats. For example, in the *Fishing in the Solomon Islands* [#18] project, the team reports that the threat of local poaching has been reduced:

After two years of closure only three incidents of poaching have been reported by our Community Conservation Officers. Only one of these incidents involved the taking of endangered hawksbill turtles.

At the *Ecotourism in Nepal* [#2] site, the project team also reports that local poaching has been reduced:

Another main objective of the program is to decrease the pressure on the park for firewood and fodder. Recent data indicates that the number of people sneaking into the park to collect these has decreased by almost 30 . . . [and that] . . . perhaps the most important achievement of the project is the change in attitude of the local people. When poachers, attracted by the increasing numbers of wildlife attempted to kill rhinos by digging pits near Baghmara, the community members not only informed authorities, but also filled the pits so that no wildlife would be killed. Even when livestock were killed by a tiger in Kumrose, the people did not complain because they know that tourists come expressly to see tigers.

In perhaps the most unusual case, the *Dive Tourism in Indonesia* [#11] project team reports having to respond to the threat posed by well intentioned but misguided scientists using damaging monitoring methods:

A group of Saba villagers deserve awards for their courageous defense of their coral reef—but some scientists may not agree . . . in September of this year, the group was shocked to discover that some scientists had, without prior consultation, laid down a permanent monitoring transect on Saba reef. The transect markers, unfortunately, consisted of 68 heavy concrete blocks linked together by nylon line and balanced, in some cases precariously, along the very edge of the wave-exposed reef slope. Village observers noted that 54 of the blocks rested on top of living corals and a few had already started their destructive descent down the living reef slope. Recognizing the threat to the reef, and fearing what would happen once the windy season started, the villagers removed the blocks. They worked from a tiny perahu and used their bare hands and simple snorkeling equipment—a dangerous exercise!

And finally, at the *Bioprospecting in Fiji* [#20] project, the team reports that national level threats have been address by a change in government policy:

The Fisheries Department also called a meeting with the BCN project personnel to discuss the regulation of marine bioprospecting. The Department had previously allowed fairly unlimited collection of non-edible resources by researchers, not appreciating their potential worth. A policy of consultation has now been developed between the Department and USP to discuss any proposed marine collections.

B. Principles for Achieving the Process of Conservation

Although it is important to focus on the goals that the projects are trying to achieve, we cannot neglect the process of doing conservation. In particular, we need to pay attention to the many types of *catalysts* that help and *obstacles* that hinder a project in moving forward. Based on the stories from the field, it is clear that the BCN project teams are developing the knowledge and skills to recognize and make use of the catalysts and avoid or deal with the obstacles.

In this section, we draw on the experience of these projects to highlight the nature of some of the most common of these catalysts and obstacles and then develop some general principles for dealing with them. As shown in the overview in Table 2.1, our discussions of the various catalysts and obstacles are organized around the principal components of the BCN hypothesis. A more complete discussion will also be developed over time on the BCNet Web Site.

1. ENTERPRISE DEVELOPMENT

The first element of the BCN Hypothesis involves establishing an enterprise that is linked to the biodiversity of the project site. There are a number of obstacles to establishing these enterprises that are emerging from the project stories.

- **OBSTACLE—Logistical problems that limit production**

A common problem that many projects encounter is the difficulty of operating and expanding businesses, given the remote location of the sites and the lack of business skills among community members who are often entering a cash-economy for the first time. For example, at the *Forest Products in Indonesia* [#8] site, the project team writes about the handbags that they are producing:

This year's new designs are in demand by high end retail outlets and customs boutiques. The problem is, our production capacity limits our ability to meet orders on a

consistent and reliable basis, which is critical to establishing a stable business relationship. It's exciting to know that people are interested in our product, but frustrating to know that we still cannot reliably fulfill large orders.

Likewise, the project team in the *Fishing in the Solomon Islands* [#18] site writes:

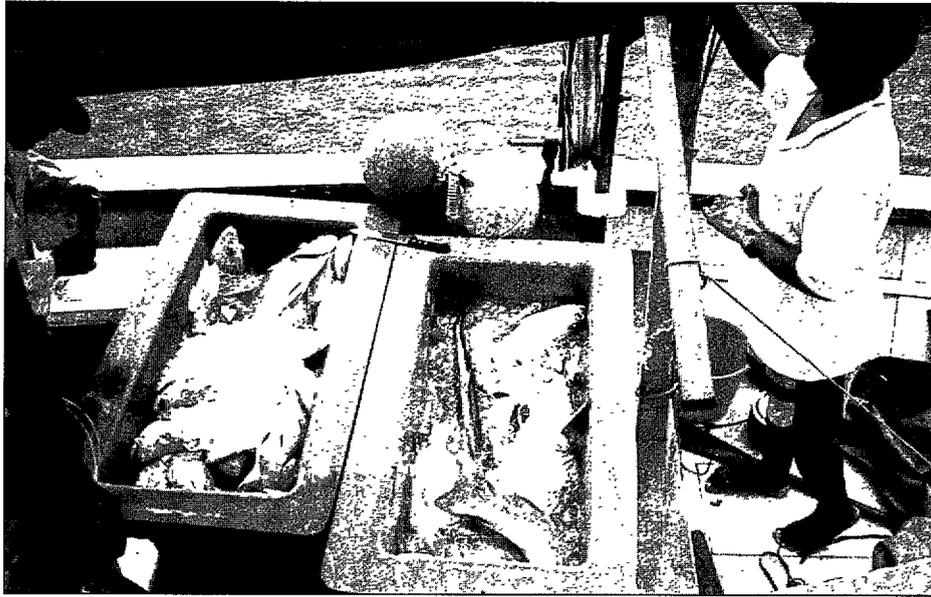
The challenge facing us is to make the alternative fisheries such as the deep-water finfish enterprise commercially viable and sustainable in the face of: deteriorating economic climate and infrastructure, uncertain prices and markets, weak human capacity, and high community expectations.

PRINCIPLE—*Be prepared for logistical difficulties in setting up and developing enterprises that will result in limited production during the early years.*

- **OBSTACLE—A lack of basic business knowledge that limits production**

A related obstacle that slows down many projects is the lack of basic business knowledge among community members who are often entering a cash economy for the first time. This theme shows up repeatedly in the stories including:

- *For people who traditionally live day-to-day and to whom a market is a physical place where fruit, vegetables, fish, meat and other goods are taken and exchanged for cash, the concept of a "world market" which is not a physical place, where payment is not immediate and a response to expected sales is wanted, is difficult to understand. [Butterflies in Indonesia, #10]*
- *These people are improving their quality of subsistence but it is naive to think of them as entrepreneurs. Cash is not primary, yet dealing effectively with external market forces is essential to them. Traditionally, these people barter and there is hard bargaining too, but today there is little bargaining of a familiar nature for these people, they just have to take what they can get. [Abaca and Rattan in the Philippines, #12]*
- *Throughout the Wildlife Management Area, landowners with an average education level of grade one and still largely engaged in a subsistence lifestyle, struggle to collect and digest information about everything from natural resource law, economic options and probabilities of businesses that they are only beginning to understand, and the unknown and little understood social impacts of the development options being presented to them. [Ecotourism in Crater Mountain, PNG, #15]*



Despite these limitations, progress is made because project teams have the patience to work with the community members to develop their skills. As the members of the *Silk and Honey in India* [#3] project state:

The daunting problem of finding technically qualified personnel willing to settle in Ukhimath was resolved by identifying local project staff who have shown promise and aptitude, shifting them to technical positions and providing them with intensive training and periodic technical support from outside.

PRINCIPLE—Be prepared to spend significant time developing local business management capacity.

- **OBSTACLE**—Difficulties in marketing products

A second problem that many projects encounter is the difficulty in finding and accessing markets for their products and services. Without access to markets, the project cannot sell its products and meet the growing expectations of community members. In some cases, marketing difficulties are due to logistical problems. For example, at the *Butterflies in Indonesia* [#10] project site, one difficulty was physically getting the specimens to their customers:

A major setback this year was a series of postal delays and losses. A number of clients received parcels with damaged or missing specimens. It took marketing staff a lot of time to explain to others the importance of correct packaging and specimen counts. Butterfly farming is a finicky business and badly damaged specimens are worthless. The time and effort needed to apologize, draw-up credit notes, and the resulting delays in payment, have

been frustrating. After feeling that great strides had been made in the previous eighteen months, this was a setback.

In a similar fashion, at the *Fishing in the Solomon Islands* [#18] site, the team writes:

Our most pressing challenges are to try to solve the market access problems which have besieged the project, due partly to the national cutback of coastal shipping services which has reduced service to an ad hoc basis unless charters are arranged. The centers need a weekly shipping service for them to work to capacity and to generate the throughput of fish needed to make them financially sustainable. There is no simple solution to this problem in sight—short of running our own shipping service which is an option under consideration.

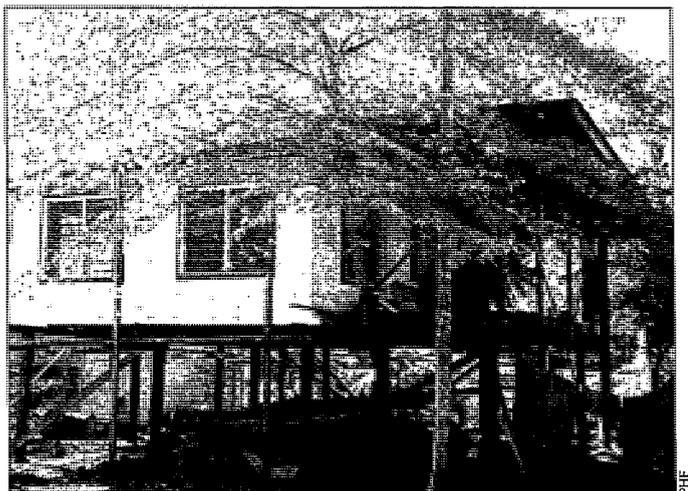
In some cases, however, marketing efforts are starting to pay off. For example, at the *Ecotourism in Crater Mountain, PNG* [#15] site, the team writes:

Research activity, originally concentrated at the Wara Sera Research Station near Haia, has now expanded to a variety of studies in many parts of the WMA. This is due to both word of mouth marketing of WMA facilities by satisfied scientists and improved WMA services and infrastructure including accommodation, availability of trained village assistants, standardized pay rates, and the presence of support services, such as computer and communication facilities.

And a number of projects have had some success in developing partnerships with like-minded outsiders who can serve as marketing partners. For example, the *Ecotourism in Lakekamu Basin, PNG* [#16] project team writes:

A mock tour was taken in July by FSP's Programs Director, Celine Beaulieu and a French student, Mr. Fabrice Desprats, who was contracted to do a preliminary assessment of the adventure tour products available in the Basin. The information gathered has been sent to the Lonely Planet Tour Guide to PNG to be published in their next edition. Mr. Desprats will market the area and its guesthouses in France as part of his contract while Marc Damen will do the same for the Research Facility.

PRINCIPLE—Plan marketing efforts early on—do not just assume that markets will exist—and find qualified, like-minded outsiders who can serve as marketing partners.



2. GENERATION OF BENEFITS

The second element of the BCN Hypothesis involves generating short and long-term benefits for the stakeholders at the project site. There are two major catalysts and obstacles related to benefits that are emerging from the project stories.

- **CATALYST**—Generating meaningful benefits for community members, especially in the short-term

It is clear that, as predicted by the BCN hypothesis, generating benefits can create some powerful incentives for conservation. Examples mentioned in the stories include:

- Community forest handover activities accelerated as communities became aware of the benefits—direct royalty payments on materials harvested from registered community forests . . . this process is ongoing now in eight Village Development Committees in Humla and will continue into the future. [Essential Oils in Nepal, #1]
- The average value of shipments was Rp 218,000 (around US \$78)with 20 shipments made over the

season. Average income per farmer was Rp 16,000 per shipment (in comparison, the wage for a field laborer is Rp 4,000—around US \$1.15—per day). [Honey, Butterflies, and Rafting in Indonesia, #9]

- The average cash income generated from butterfly farming is roughly an average of Rp 50,000 (\$20) per member family per annum. Although this does not sound like much, in aggregate, across the community, it represents a significant proportion of the cash income. [Butterflies in Indonesia, #10]
- The Highland communities continued their established system of sharing out the bulk of the money earned in the ecotour to individuals within the communities. Such distribution puts the responsibility for the use of the money in people's own hands. The total amount distributed to highland villages was SI\$6615 (approximately US\$1780). A small amount of SI\$600 (approximately US\$160) has been put aside from the latest tour for a community fund for Highland villages. The income from the June ecotour amounts to approximately 40% of the total cash generated in the Highland communities over the last year. [Nut Oil and Tourism in the Solomon Islands, #19]

In addition to direct cash benefits, the enterprises also produce indirect benefits. For example, at the Eco-timber in PNG [#17] project, the team writes:

Logging companies often tempt communities to sell their forests by offering to 'donate' vehicles. But in Illi, the profits of the eco-forestry sawmill enterprise financed the community's initial purchase of a Mitsubishi 4 x 4, 3.5 ton truck as well as the ongoing payments. The truck is a source of great pride among the local people. It is also a catalyst to other businesses and income generation. Traditional landowners from Illi, as well as people from remoter villages down the coast hire the truck to transport their copra to the urban market three hours away by rough road. Due to this new access to markets, some family groups have built new copra and cocoa dryers—using project timber. The dryers add value to the cash crops before selling them to the export market. Copra is the main income for families to pay for school fees, housing material, kerosene and food. Several new houses have been completed as people use money earned from copra, and food sales to buy local timber and building supplies.

The women also use the vehicle to sell extra garden produce. Each Friday at dawn, there is great excitement as women pile into the truck with surplus betelnut, root crops and bananas for sale at market one hour's drive away. Women say, "we are learning how to market"

often returning with K15 to K20 in hand—enough money to pay the annual school fees for one child in elementary school.

And in some cases, the enterprise produces non-cash benefits. For example, at the *Nut Oil and Tourism in the Solomon Islands* [#19] project, the team writes:

Tourism places a value on traditional activities and material culture, which was previously believed inferior to “modern” ways. It helps the community by allowing households to earn money without the men having to spend extended periods of time away from their families while seeking work on the coast. It also brings the outside world to them, and broadens their understanding of the world and people of different cultures.

An important finding is, however, that these benefits need to come as soon as possible after the start of the project to ensure that they create the proper incentives.

PRINCIPLE—Ensure that the enterprise generates meaningful benefits for community members as soon as possible.

- **OBSTACLE**—Benefits below a certain threshold

It is also clear, however, that in order to provide sufficient incentives for conservation, benefits need to reach a certain threshold level at each project site. If the benefits from the enterprise are not high enough relative to cash needs and alternative sources of income, then people will continue to engage in activities that threaten the biodiversity. This obstacle is perhaps best illustrated from the *Ecotourism in Lakekamu Basin, PNG* [#16] project story in which the team writes:

It was deduced from two instances that the community sees this project as an insufficient source of additional income. Some young men who assisted us in the setting up the research facility began panning for gold when they were laid off. In the second case, people who played a key role in setting up the Kakoro lodge were also seen panning for gold to earn some money to furnish the lodge as well to buy rations for the opening ceremony. Gold panning in the area is continuing and one of the creeks in the Basin and the surroundings is completely destroyed.

The team goes on to say:

*Trying to redirect peoples’ interest away from fast money making options such as mining, logging, hunting, and gardening is a big challenge. The people in the Basin have built these activities into their lives and it is really difficult for us to change their entrenched mind sets . . . one mining company, *Wau Alluvians*, has already moved into the area and has collaborators from the Basin, both in*

Tekadu and Kakoro. They have given cash handouts to the people. This challenge intensified when the minister responsible for mining issued a press release in which he encouraged small-scale gold mining as a way of promoting rural development and employment. This is the biggest challenge for the project because unlike them, we are unable to distribute huge amounts of cash.

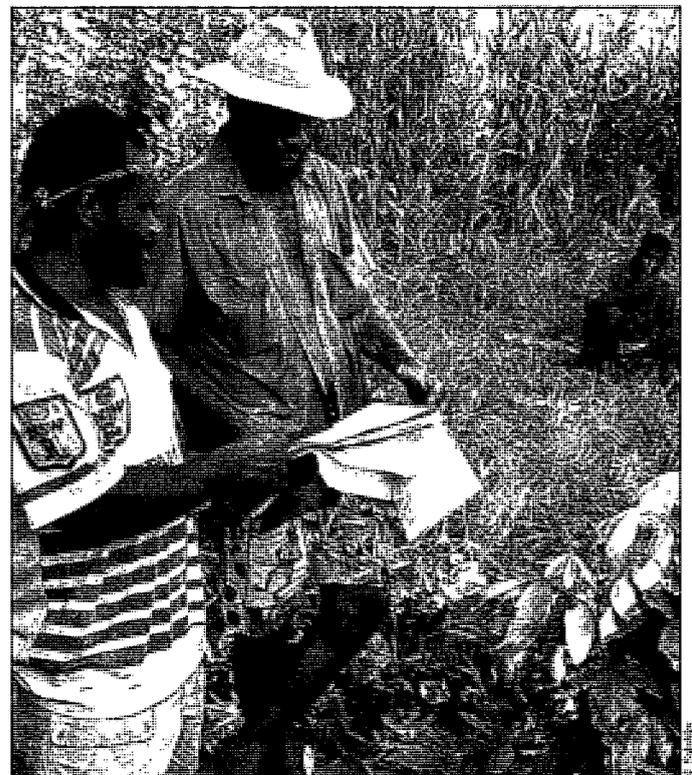
In a similar fashion, the *Abaca and Rattan in the Philippines* [#12] team writes:

Because of this year’s El Nino: a drought of even greater severity than in 1983 is anticipated and people are asking about food availability. People are hungry for two months of the year as it is—a further two months would warrant calamity by government definition. The people will suffer. There will be far greater potential for forest fires and forest resources will be all the more threatened for the limited cash they can provide. At this point, the initial abaca activities cannot adequately chip into the cash equation.

PRINCIPLE—Ensure that benefits will meet the minimum threshold needed to keep community members from destructive behaviors.

3. COMMUNITY OF STAKEHOLDERS

The third element of the BCN hypothesis involves developing a community of stakeholders who can act to counter the threats to the biodiversity of the project site. There are



a number of catalysts and obstacles related to the stakeholders that are emerging from the stories.

- **CATALYST—Attaining resource governance and policing rights**

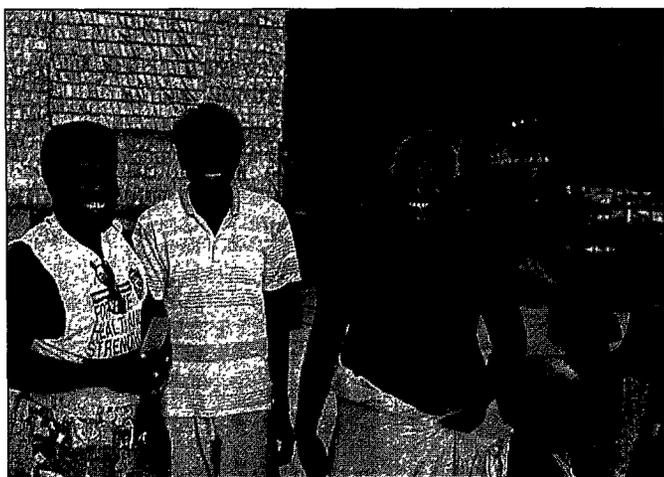
One of the most important steps in achieving conservation involves attaining resource governance rights. A number of the stories comment on the importance of these rights to the success of long-term conservation efforts. This theme is discussed in detail in Section 3 of this report. As one example, however, at the *Rattan and Resin in the Philippines* [#13] project, the team writes:

The success of community-based conservation and enterprise programs like the one on Palawan requires that the local communities first have control of their resources. Hence, we are working to obtain the most binding certification of ancestral land rights for the two pilot project sites—the Certificate of Ancestral Domain Claim (CADC) . . . a recent major accomplishment was the signing of the CADC for two of the project sites, Campung Ulay (7,000 ha) and Punta Baja (8,092 ha) These certificates will give the tribes of Pala'wan and Tagbanuas the tenurial security for which they have been longing.

PRINCIPLE—Focus early project efforts on obtaining or strengthening stakeholder resource governance and policing rights.

- **CATALYST—Developing strong leadership in the community with a vision for conservation**

Another important catalyst for conservation is having strong leadership in the community that can develop and implement a vision for conservation. Many of the stories comment on this both implicitly and explicitly. For example, the *Bioprospecting in Fiji* [#20] team writes:



H. Canley

Strong leadership is a powerful force for change. Through his participation in various project workshops, Tomujani Boginivalu, the administrative leader of one of the seven Verata villages, has developed a passionate commitment to monitoring and sustainable resource use. Tomujani recently presented his concerns about coral harvesting in an area near Verata to a Verata council meeting. The council endorsed these concerns, and presented a motion for a ban on coral harvesting to the Tailevu Provincial Council meeting, to which Verata belongs.

In other villages, however, the team finds:

Lack of leadership in some villages is also a challenge. Two of the seven villages have seemingly less effective leadership than the others, and it is difficult to work through them to include the participation of members of their villages in tikina-wide activities. We hope to address this constraint by making them the focus of some of the socioeconomic development activities.

In many cases, projects have focused extensively on developing leadership among the stakeholders. For example, the *Forest Products in Indonesia* [#8] team writes:

When the weaving training started, Pak Sunda became very interested in joining, even though most of the other weavers were women. He followed his feeling that weaving could make him a good income. Since then, he has become a leader of his village's weaving group and a trainer for weavers—not only in his own village, but he helps YDT train weavers in other villages as well.

Pak Sunda's life has changed from being a slash and burn farmer, to becoming a group motivator and entrepreneur in weaving. Now he is the quality supervisor for all products that his village group produces—a group which started with four members and now numbers 22. The members pay Pak Sunda because he helps them in many ways. He collects rattan for the group and is always finding new ways to teach them how to increase the quality. Under his leadership, the skills of the group members are slowly but surely improving and so is the quality of their products . . . Pak Sunda also understands the limitation of rattan resources in his area. He actively urges the weavers to plant rattan on their farms to provide for the future. Each family is collecting rattan seeds and has planted between 50 to 100 plants which is not much, but it is a start.

PRINCIPLE—Focus early project efforts on either coordinating efforts with existing leaders or providing incentives to motivated people in the community to become the leaders of tomorrow.

- **CATALYST**—Developing and maintaining relations with government officials

Yet another factor that enhances conservation involves interaction with local, provincial, and national government officials. The efforts that the project teams are making to develop and maintain relations with government officials are starting to pay off as the project teams and stakeholder groups are getting more recognition. For instance, a local resident working with the *Ecotourism in India* [#4] project is quoted as saying:

The best thing about the KNP workshop was that it was the first time that the government departments felt it relevant to discuss and talk with the community stakeholders on National Park conservation and management issues and come out with positive recommendations.

The *Ecotourism in Crater Mountain, PNG* [#15] team writes:

Officials from both provinces were impressed that local communities from 21 different clans and two language groups, with limited formal education in the remote regions of their provinces, could generate and manage income from enterprises based on conservation instead of the customary large-scale resource extraction model of development. Many said they did not know that national NGOs in PNG had the capacity to provide such a level of services or to conduct the sophisticated analysis of the process through the interdisciplinary monitoring activities being utilized in the Crater project.

And likewise, at the *Bioprospecting in Fiji* [#20] project, the team writes:

Malakai Tuiloa, the assistant director of the Fisheries Department in Fiji, was one of the 30 NGO and government representatives who participated in the workshop on the use of community-based participatory methods in resource management and monitoring. At the end of the meeting he declared, "In sixteen years of government service, I have never attended a workshop in which I worked like this with members of NGOs. I had previously viewed their intentions with suspicion but now realize they can be valuable partners in our conservation work."

PRINCIPLE—Develop and maintain relationships early on with key government officials at all levels who have the potential to affect project activities.

- **OBSTACLE**—Government inaction

The reverse of maintaining relations with government officials is that in many cases, these officials do not know



much about the project and its goals and as a result, the project is not helped or is even hindered by the government. For example, the *Ecotourism in Nepal* [#2] project team encountered difficulties in getting policy reforms accomplished given the constantly changing government officials at the national level:

Frequent changes of Government in Nepal has created problems getting the buffer zone by-laws passed by cabinet. Within the past two years, government was reshuffled three times. Each government started studying documents from the beginning and just when they were ready to approve it, a new government took over and started the whole process from the beginning. Consequently the by-laws were not passed until 1996. Even then, the exact mechanisms by which funds will be returned to UGC's has not been defined.

Likewise, the *Community Logging in Indonesia* [#7] project has been unable to start owing to a series of negotiations with government officials that were delayed by both bureaucratic inertia and outside events such as the El Niño linked fires:

In 1997 the project made the most progress not in the field—but in the offices of the Ministry of Forestry (MoF). After painfully slow progress working out cooperative arrangements for implementing the project with the Ministry in 1996, we are now almost there.

And at other sites, such as at the *Ecotourism in Crater Mountain, PNG* [#15] site, problems seem to arise because government officials are unfamiliar with what the project teams and community members are trying to do:

As a result of the expanse of the area and the relative newness of the establishment of functioning Wildlife Management Areas in PNG, some national, and most provincial and district government departments are not

familiar with, and are even suspicious of, the collective actions of communities and NGOs to implement conservation and eco-enterprise development initiatives in remote regions . . . over the last three years, despite the Crater Mountain landowner management group's conscientious effort to draft and enforce natural resource laws within the boundaries of the WMA, they have received limited assistance from government departments when prosecution of violations is requested.

PRINCIPLE—Keep relevant government officials in the loop about the project through frequent interaction.

• **OBSTACLE**—Agendas of Public Officials

Another common lesson emerging from the stories is that powerful people with interests in the biodiversity of the project site can slow down or even disrupt project activities. For example, the *Ecotourism in Java, Indonesia* [#6] project team writes:

The next challenge, and one of the most damaging and the most difficult to meet is that concessions are granted, it would seem, 'willy nilly' to anyone for anything. The latest is a concession given to the Nimala Agung Tea Company to clear 50 hectares of primary forest, right in the middle of the park. This land has now been slashed and burned. There are many stories of other concessions (of varying kinds), the validity of which is unclear at the moment. These bites out of the forest are adding up, until there may be little left.

In a similar fashion, the *Ecotourism in Lakekamu Basin, PNG* [#16] team writes:

. . . mining threats have intensified. A company called Wau Alluvial Pty. Ltd has stepped up its prospecting activities in the Basin. It has advocates in the Basin, both in Tekadu and Kakoro. In addition, the current Minister responsible for Mining activities in the country issued a press release in which he promotes small-scale mining activities to boost the economy as well as creating employment for the people of PNG. Our efforts could take second priority.

And the *Rattan and Resin in the Philippines* [#13] project team writes:

In July and August, 1997, the members of SATRICA, the local development association in Cayasan, apprehended armed almaciga resin gatherers and confiscated 51 sacks of almaciga resin. These were employees of concessionaires whose permits had expired last April. The locals coordinated their efforts with the forest rangers of nearby St. Paul's National Park. Unfortunately the illegal almaciga resin tappers were eventually released

without any legal actions against them. To make matters worse, the resin was released too. This happened because corrupt personnel from the local Department of Environment and Natural Resources interceded and claimed that there were technical deficiencies in the arrest and seizure. The indigenous members of Cayasan were disappointed when they learned that they could not prosecute the illegal gatherers of almaciga because they had no pictures . . . we wonder how long the indigenous people can sustain their police actions without being harassed and later on, subjected to 'extra legal military actions' by powerful concessionaires whose economic interests are going to be hurt by the militant actions of the indigenous people.

But despite these problems, some of the projects are overcoming them. For instance the *Forest Fruits in the Philippines* [#14] project team writes:

The battle against the construction of a highway through the sanctuaries continues. A few misguided political leaders are pushing for it but the congressman and mayor have been helping us to improve the sanctuary and promote the wildlife of the area. The momentum in favor of protection is building and will probably be enough to outweigh the pressures in favor of the highway.

PRINCIPLE—Identify other stakeholders in the biodiversity and be prepared to deal with them by building a large enough constituency to ensure the subservience of individual interest to group interest.

• **OBSTACLE**—Social disharmony and rivalries

Another common theme is that at almost all of the BCN sites, project teams have had extreme difficulties in trying to juggle the interests of different factions of the community that often have been rivals for years if not generations. Project teams need to walk a narrow line between, on one hand, being sensitive to these problems and not



showing favoritism to one group and, on the other, not getting bogged down in local politics. For example, the *Ecotourism in Java, Indonesia* [#6] team writes:

In the southern site we have a mixed community of traditional Kasepuhan and Sundanese (non-Kasepuhan). The Kasepuhan are steeped in strong traditions and beliefs, going back some six hundred years or more, and are of a more formal character. The non-Kasepuhan, on the other hand, have different traditions and beliefs and are of a less formal character. The enterprise members are a mix from the two groups who find it difficult to agree about even the simplest of tasks. As you can imagine, trying to maintain a little harmony is difficult to say the least. The challenge is easy to see but it is often difficult to conceive a solution, without one or the other being disappointed. A world wide, age old story!

Although found in almost all of the BCN projects, this obstacle seems particularly acute in the Pacific where local societies have long maintained delicate and complicated “truces” among different clans. For instance, all four projects from the island of New Guinea comment on this problem and the difficulties it makes in running modern profitable enterprises:

- *To retain the confidence and motivation (and prevent jealousies) YBLBC must purchase what is offered by the butterfly farmers, as long as it meets minimum quality standards. Because of this, it is impossible to maintain stock levels consistent with anticipated sales for each species. [Butterflies in Indonesia, #10]*
- *Can the young Management Committees within the WMA maintain consensus on such volatile environmental issues? Representatives from all 21 clans have agreed that no such large-scale exploitation of natural resources in the WMA will be permitted. Yet, the pressure on individuals and selected clans to pull out of the WMA consortium is intense . . . related clans outside of the WMA boundaries, within the same mineral exploration area, have applied intense pressure on their neighbors to submit to the requests for further exploration and possible exploitation of mineral deposits. At times over the last year, the tense negotiations between clans have led to tribal fights. Clans downstream from the exploration area in the WMA are also worried about their water quality if clans upstream elect for possibilities of mineral extraction. [Ecotourism in Crater Mountain, PNG, #15]*
- *Trying to convince four different ethnic groups, comprising of many individuals with varied interests and perceptions to adhere to our activities, is difficult.*

Their low level of understanding is a problem. Educating them is a requirement, but according to our resident scientist, this could be possible with the next generation, but not with the current one whose brains have already developed. [Ecotourism in Lakekamu Basin, PNG, #16]

- *Divisions within the multi-clan and multi-language community of Arabam have meant constraints to access to forest resources and heated discussions about who should receive benefits. The directors and project manager are attempting to settle the disputes but they have come to a stand-still in timber production. They express their worries about the long term consequences of logging on their land, yet would appreciate a road network into the forest reserves. This clan group still opposes the pressures of logging companies, but they are struggling to resolve the land disputes and to decide whether to resume the sawmill operation. [Eco-timber in PNG, #17]*

PRINCIPLE—*Take social rivalries into account in project planning—but also to try to avoid becoming entangled in them.*



• **OBSTACLE**—**Stakeholder Self-interest**

In addition to social conflict, project teams also need to be wary about individuals acting in their own self-interest at the expense of the broader community and project goals. For example, the *Essential Oils in Nepal* [#1] project team reports how one individual tried to cheat to improve his own welfare:

The greatest challenge faced by HCDA in this year was in dealing with a certain village group who, taking advantage of the close and open relation between Humla Oil and the supplying communities, tried to pass off large

quantities of low quality material to the factories . . . one community leader took his group astray and forced Humla Oil to buy material that they had purposely adulterated in order to increase the direct payment to the collectors from the factories . . . he misrepresented the provisions of the community forest to the community at large in order to personally profit from the arrangement.

And in perhaps the most appalling story, the Eco-timber in PNG [#17] team reports:

The normal method of attack by the loggers is to isolate a small group of so-called "leaders" and deal directly with them. This happened at Maranagi earlier in the year when an approach was made to build a road to Maranagi village. Under the Forestry Act, the road-builder is permitted to harvest the trees on the road line, and for 30 meters on each side. The leader agreed with the proposed route and accepted an unknown amount of cash as a reward.

From then on it was all downhill. The road clearing extended as much as 140 meters from the center line. There was no attempt to route the road over suitable terrain. No drains or culverts were constructed, and no gravel or stone was layered over the clay base. When the dry season finished and the rains came, the road became useless overnight. Soon, the degree of damage made repair impossible.

The loggers were happy—they got something like four times their legal harvest. The leaders were happy—they received some money. But the remainder of the village was sadly disillusioned although we are not certain how much. The loggers say the original route was a mistake and they now have a better one to construct a proper road.

Despite the problems caused by individual greed, there is also some hope for using individual motivations to provide incentives for conservation. As the Ecotourism in Nepal [#2] team writes:

In Nepalese society there is saying that "If you want to control stealing by any household member, then give him or her the keys to the treasury." Likewise, in the case of projects, in order to control problem creators, it is wise to include them and give them responsibilities in the project. This not only controls them, but also gradually changes their attitude. This has been an important lesson in this project.

PRINCIPLE—Be aware of individual self-interests and try to use them to the project's advantage.



4. OTHER FACTORS

In addition to the catalysts and obstacles related to the three conditions of the BCN hypothesis, there are some others that stem from other factors affecting project success and from the more process-oriented lessons that the BCN projects are learning.

- **CATALYST**—Building confidence through small but early successes

One important observation is that small intermediate successes can build up the confidence of community and project team members and enable them to take on larger issues. For example, the *Nut Oil and Tourism in the Solomon Islands* [#19] team describes how a local community member's participation in an international conference stirred up much pride:

John Hingia, the nut press manager based in the remote village of Warohito, attended and made a presentation at the first Pacific region-wide conference on indigenous nuts. John's attendance obviously raised the community's sense of accomplishment in the project. In particular, the team took great pride in the fact that the traditional way of cracking nuts is still better than mechanical or electrical machines that crush (rather than crack) the nuts.

And the *Ecotourism in Java, Indonesia* [#6] team reports on the confidence that success gives:

Our first area of success is the fact that guests are returning—not just once, but some three or four times. Many have phoned the consortium office to say how much they enjoyed their stay and that they plan to visit to the other sites. It's a real thrill to be on the receiving end of such a phone call. These complimentary, encouraging words from the guests have put nice big smiles on the field managers' faces. The enterprise members may not have

smiled openly, when they were given the compliments, but I'm sure the inside smile was just as big, if not bigger than the field managers'.

In many ways, these successes actually give the community members the confidence that their actions can make a difference. For example, in the *Ecotourism in India* [#4] story, a local engineer comments:

The project has empowered local people to a great extent to take part in community initiatives and has set a trend to take actions instead of only talking. Examples are the Kathok Lake clean-up, road to Norbugang and Forest Guest House clean-up, getting benches for Norbugang, Dubdi Monastery, Kathok Lake and the Trekkers's Huts.

PRINCIPLE—Build stakeholder confidence by achieving simple, quick, and yet meaningful successful results.

- **OBSTACLE**—Success itself can lead to failure

On the other hand, success itself can bring new problems to the project as outsiders get attracted to the project and want to move in. For example, the *Ecotourism in Nepal* [#2] team reports:

The earnings from the micro-enterprise activities and programs carried out by the communities have attracted local politicians who now want to have their member take credit for work done by the UGC formed under the BCN program. They often try to create misunderstandings among the community members so that they can create factions in the Users Group and take advantage of the situation.

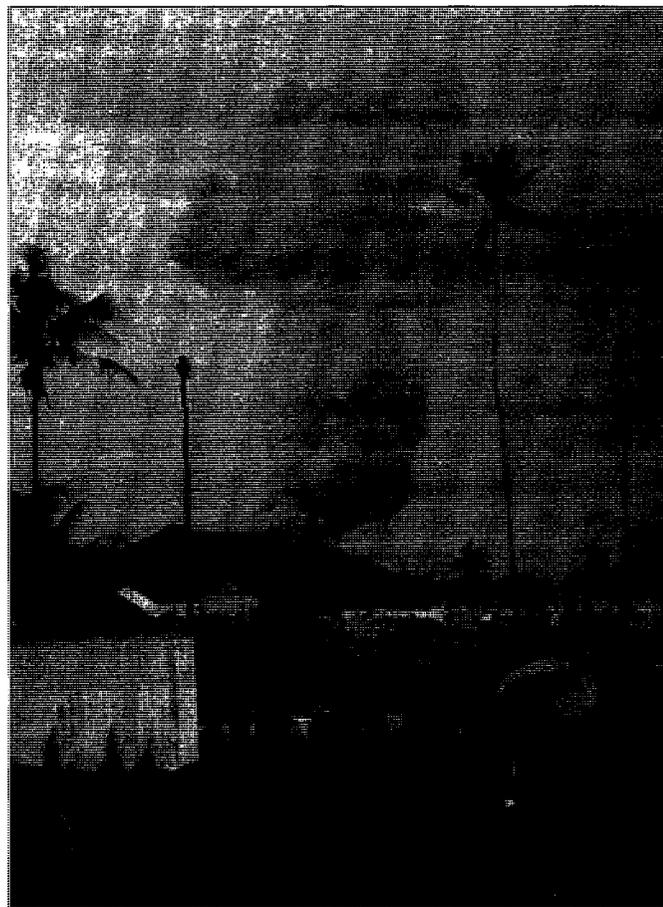
And the *Nut Oil and Tourism in the Solomon Islands* [#19] team reports on:

... the problems that success itself can cause. An example is that ecotourism successes have raised the profile of the area so that bird watching enthusiasts and scientists have tried to gain access to the Makira communities with no reference to the program. The local community politely refused to allow these people to stay as they had set clear rules that only the tourists coming as part of the ecotour enterprise would be permitted.

PRINCIPLE—Be aware of outsiders who are attracted to successful projects.

- **OBSTACLE**—Natural disasters

As outlined in last year's report, one of the lessons that BCN learned early on was "Don't underestimate the impact of 'mother-nature.'" This lesson was learned again over the past year. In some places, the problem was too much rain. For example, the *Ecotourism in India* [#4] team writes:



H. Cauley

On a more practical level, an unusually long monsoon highlighted the difficult conditions that participants operate under, in fragile mountain environments. Due to numerous landslides, on several occasions, staff were cut off from sites and the capital of Gangtok. These conditions have hampered project activities, affecting staff visits to the field, as well as communications. To some extent we have overcome the communication delays by using laptop computers in the field and recently acquired e-mail capabilities. Landslides on the other hand continue to test everyone's ability to manage complex logistical arrangements and maintain sense of humor under difficult circumstances.

In many other places, however, the problem was not enough rain. In many of these stories which were written in August and September of 1997 we can hear the initial rumblings of the worst El Niño event in history:

- *Difficulties in breeding and maintaining breeding stock, have been partly due to bad weather conditions—Sulawesi is experiencing a severe drought which has affected both butterfly numbers and availability of their foodplants. [Honey, Butterflies, and Rafting in Indonesia, #9]*

- *Our activities this year have been greatly affected by the national election campaigns and the dry spells caused by the El Niño. [Ecotourism in Lakekamu Basin, PNG, #16]*

Since the time that these stories were written, the intense drought and fires have only increased throughout the region, burning forest, disrupting communications, and causing famines to break out. Needless to say, it can be difficult to implement projects under these conditions.

PRINCIPLE—*Don't underestimate the impact of 'mother-nature.'*



- **OBSTACLE**—*Stakeholder constraints and willingness to participate*

Another theme emerging from the stories is that local stakeholders are often constrained from participating in projects by the other demands placed upon them. Project teams thus need to develop creative solutions to solve this problem. As an example, the *Ecotourism in Nepal* [#2] project team writes:

According to the management policy of community forests, the work plan and all other programs have to be approved at the User Groups general meeting. However, it is not easy to gather all UG members in one place because people are busy trying to survive. . . In some cases people struggle to get enough to eat each day and they cannot afford a day in meetings. This problem was solved by going to the people—visiting each household, explaining the program, acknowledging their additional suggestions, and getting their approval.

Likewise, the *Bioprospecting in Fiji* [#20] team writes:

The level of activity needed to accomplish the project goals is often difficult to accomplish if we seek to respect

the communities' many other demands on their time. Community members have busy schedules made even busier by often unexpected traditional obligations. We have sought to meet this challenge by having project meetings dovetail with scheduled village meetings, but these meeting times often change at short notice.

In other cases, local stakeholder participation is limited because people who have been let down or taken advantage of by outsiders can be wary about trusting new conservation ideas. It is thus important to build trust over time and correct misunderstandings. For example, the *Ecotourism in Nepal* [#2] project team writes:

In many of the community forestry programs, initial opposition from people was due to the threat that they still felt from nationalization of the forest. When their fears were calmed and the benefits were made clear to them, they started supporting the projects."

Likewise, the *Forest Products in Indonesia* [#8] team states that the local community:

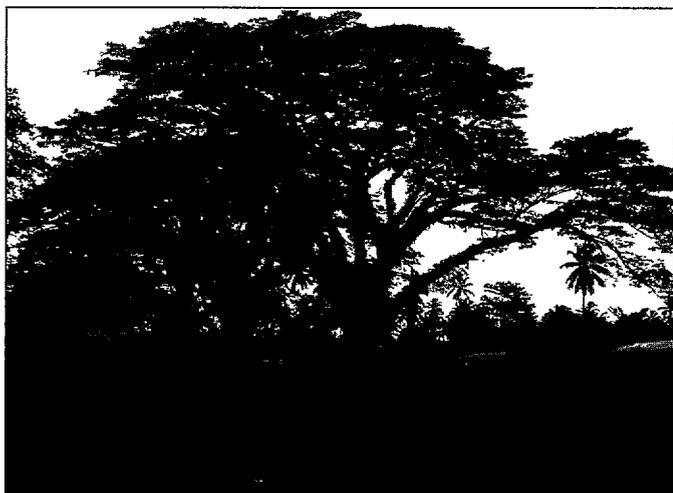
. . . had had bad experiences where information that they gave out in interviews, was used against them. So at first they viewed our questions with suspicion because they were afraid that the data they gave us would be used to levy taxes on them. But after we explained why the data is needed and how it would benefit them, they became very cooperative about providing the information.

PRINCIPLE—*Make sure that project timing fits local schedules and that time is allocated to earn local stakeholders' trust.*

- **OBSTACLE**—*Project timeframes are too short*

A major theme echoed throughout the stories is that the three years of the BCN implementation grant is not enough time to fulfill project activities. Examples include:

- *The biggest challenge is to work with reality and not be confined by the prism of project accomplishments which have a short lifetime. It is essential to reckon with the broader socio-environmental process that has to buffer a sustained biological diversity—the vital life of our forest—against unpredictable markets and trade winds . . . [we] must recognize that people cannot wear an entrepreneurial hat in three years. [Abaca and Rattan in the Philippines, #12]*
- *We feel now that many more years of stewarded discussion and concrete examples of resource value, in addition to visitor feedback, will be necessary to illustrate to the communities the linkage of the unique nature and value of their natural resources to the present success of their eco-enterprise activities. [Ecotourism in Crater Mountain, PNG, #15]*



H. Cauley

- *We have learned a great deal over the last two years about assisting communities who are interested in conserving their traditional heritage, but we will need more time with our partners to determine the key factors which enhance conservation practices in Melanesia. [Eco-timber in PNG, #17]*
- *The most difficult phase of the project will be maintaining the commitment and resources needed to build the management capacity and procedures vital to the long term commercial sustainability of the project. The real success can only be measured over the long term. [Fishing in the Solomon Islands, #18]*
- *The project start-up was delayed due to protracted negotiations first with the pharmaceutical giant SmithKline Beecham, which eventually dropped out of the project, and then with SIDR. Hence the project implementation period is only two years. The BCN project needs to complete many activities in a relatively short time. [Bioprospecting in Fiji [#20], #20]*

A key lesson is thus that projects will have to attract support from other donors once the initial BCN funding has been completed. In the words of the *Ecotourism in Java, Indonesia* [#6] project team:

The project has generated interest from NGOs and donor agencies who have pledged additional support contingent upon initial field implementation. Thus, the BCN grant has provided the necessary initial investment for a project beyond the BCN's original scope and time limitations. However in the past year, it has become apparent that this project must be extended beyond the initial three year funding period in order to ensure legal, economic and biological sustainability.

PRINCIPLE—Complex enterprise-based conservation projects developed in remote areas take time—plan accordingly.

C. Developing an Adaptive and Learning Institution

In addition to paying attention to the goals and process of conservation, it is also important to consider the actors and institutions involved. Ultimately, conservation problems are larger than any one person and need to be addressed through the development of institutions. The key here is to develop institutions that can adapt over time and learn from experience.

A powerful tool that teams can use in the learning process is *adaptive management*, a process originally developed to manage natural resources in large-scale ecosystems by deliberate experimentation and systematic monitoring of the results. Adaptive management provides a compass that project teams can use to develop a map in unknown lands. At its core, adaptive management involves three components: testing assumptions, adapting, and learning. This section briefly describes these components. For a more detailed discussion of these components, refer to the forthcoming publications "Measures of Success" (see page 4) and the joint BSP/TNC publication "*Adaptive Management: A Primer on its Application and Use for Conservation and Development Projects.*"

1. TESTING ASSUMPTIONS

Testing assumptions is about systematically trying different interventions to achieve a desired outcome. It is not, however, a random trial-and-error process. Instead, it involves first thinking about the situation at the project site and then developing an explicit prediction about what causes specific conservation threats and what actions can alleviate threats. The project team can then implement the action and monitor the results to see if the outcome matches the predicted results. The key here is to develop an understanding of not only which actions work and which do not, but also why. As the *Ecotourism in Nepal* [#2] team writes:

As any farmer knows, before a new type of seed is planted you must know whether the soil and climatic conditions will allow it to grow. Similarly, before implementing any new project the existing conditions have to be studied so that the program can adapt to the local situation. The problems of the area, the socio-economic situations of the people, local politics and needs of the people have to be clearly understood by those implementing the project. And ultimately, the size of the project (solution) has to fit the size of the problem.

Testing assumptions is, of course, at the core of what the BCN is doing as an overall program. This work is summed up by the *Forest Products in India* [#5] team which writes:

One of the assumptions underlying the project is that economic gains from local biodiversity will provide incentives to extractors to harvest products on a sustainable basis. However, we still do not know the level of sustainable harvest. Even if an arbitrary limit on harvest were to be placed, it is debatable whether the harvester would respect this limit in the absence of direct economic benefits from marketing and processing. Although extractors have strong traditional interests in conservation, success in meeting this challenge may depend upon the extent to which benefits accrue to the harvesters at both the individual and community levels, and the degree to which harvesters and the community can be made aware of the connection between economic gains and conservation.

BCN's partners are also, however, testing assumptions about other strategies for doing community-based conservation. For instance, the *Fishing in the Solomon Islands* [#18] team is testing a strategy for marine conservation:

The initial three year closure opened up a unique opportunity for us to investigate the utility of marine conservation areas as a fisheries management tool, by scientifically testing the assumption that closure of an area will enhance the rehabilitation of depleted stocks and the recruitment of new stocks to areas outside the closed area. With the support and involvement of the International Center for Living Aquatic Resources Management (ICLARM) and the Great Barrier Reef Marine Park Authority we have been able to establish a scientifically robust monitoring program which will test these assumptions for the first time in a tropical Pacific island environment.

And another strategy that a number of project teams comment on is the importance of creating awareness of environmental issues. For example, the *Forest Fruits in the Philippines* [#14] team writes:

We have found that food web seminars are an excellent way to facilitate community understanding of how their local ecosystems function. In each community, the food web seminar comes up with a unique observation. In one, they observed the need to protect the rat snakes in order to reduce the rats which have become horrible pests in the food production fields. Our pastor was hiking with some young people shortly after one seminar where this observation was made and they saw a rat snake crossing the trail. Because of their fear of green vipers, the villagers previously had a habit of killing any and all snakes that they saw. This time his companions made no move to kill the snake.



2. ADAPTATION

Adaptation is about systematically using the results of the monitoring to improve the project. If the action did not achieve the expected results, it is because either the assumptions were wrong, the actions were poorly executed, the conditions at the project site have changed, the monitoring was faulty—or some combination of these problems. Adaptation involves changing assumptions and actions to respond to the new information obtained through monitoring efforts.

The BCN projects are constantly adapting to new information. For example, the *Ecotourism in Nepal* [#2] team writes:

It is important to try to think ahead to the unexpected ramifications of projects. For example, when the buffer zone was declared—which was a great thing—the Khorsar forest was suddenly without protection. The District Forest Office shifted their attention away from the Khorsar forest because it now fell under National Park jurisdiction. But due to manpower limitations, the National Park could not patrol or protect the new buffer zone area. Taking advantage of the situation, some hoteliers and elephant owners started taking their elephants to Khorsar forest for safaris which effected the revenue of the park as well as Baghmara and Kumrose community forests. This problem was solved by calling a meeting with representatives from the District Forest Office, the National Park, hotel/elephant owners, Users Group committee members and officers from NCRTC. Subsequently the District Forest Office resumed their responsibility to stop the illegal entrance of elephants into the Khorsar forest.

In a similar fashion, in the *Essential Oils in Nepal* [#1] project, the team was forced to rethink their implicit policy of



assuming that all materials supplied by the communities would be of good quality:

Humla Oil had always assumed that the communities supplying the raw material would provide an acceptable quality to the factories along the lines of what had been supplied over the past two years and in line with the specification set out by the management and communities in consultation before the collection season begins. However, one community leader took his group astray and forced Humla Oil to buy material that they had purposely adulterated in order to increase the direct payment to the collectors from the factories . . . the challenge here was for HCDA and Humla Oil to deal with this group in such a manner that they would not become alienated from the project and company, while clearly stating that this type of dealing was unacceptable in the future . . . Humla Oil was faced for the first time with having to make cold, hard business decisions regarding the supply of material.

3. LEARNING

Finally, learning is about systematically documenting the process that the project has gone through and the results that were achieved. The key here is to ensure that the lessons learned are captured by individuals, the institutions involved, and the global conservation and development community. Where before there were strict dichotomies made between “indigenous” and “scientific” learning and knowledge, we are now finding that learning based on observation and measurement is common to all knowledge systems.

There are numerous example of individual learning. For example, a government official working with the *Ecotourism in India* [#4] project states:

Through the project I have been able to enhance my own capacity and learn techniques of data collection. After attending trainings I have learned many things and in dealing with the community I have earned more respect from them.

The most important learning that has gone on, however has been in the development of institutions. If there has been anything that we have learned, it is that institutional development is extremely difficult. Although it is not always mentioned in their stories, over half of the BCN funded project consortia went through institutional crises over the past year. For example, the *Forest Products in India* [#5] team writes:

A major challenge emerged midway during the third year when seemingly irreconcilable differences emerged among partner organizations with respect to management of the project and transfer of the enterprises to the Soliga community organization. The differences were resolved when one of the organizations accepted full responsibility for the transfer and appropriate community outreach activities necessary for the successful implementation of the project. Given differences in the background and long-term perspectives of the partner organizations, divergence of opinion in how best to implement the project is not surprising. The general lesson is that such differences are likely to occur, but can be minimized with clarification of goals and objectives of partners, mutual respect for different

2.1 Themes Emerging From The Stories

agendas of partner organizations, and effective communication among partners.

And the *Rattan and Resin in the Philippines* [#13] team writes:

Two years into the implementation phase, internal organization problems and partnership conflicts threatened the future of the project. However with a new Board of Directors at NATRIPAL, and renewed commitment from the project staff working closely with the local associations, progress is being made.

Despite these problems, the development of learning institutions is the promise of the BCN program. Ultimately, the program is about developing these institutions and giving people the confidence that they need to tackle difficult conservation issues. And it is happening. For example, the *Ecotourism in Crater Mountain, PNG* [#15] team writes:

Given their success, Crater Mountain landowners gained confidence to talk directly with national and provincial authorities about the resolutions from the Crater Mountain Annual WMA Meeting later in August 1997. Committees reviewed and ratified their natural resource laws and sent copies to the Department of Environment and Conservation for gazettal. They also attached letters which expressed their concerns about some government departments involved in granting of logging and mining permits in parts of the WMA without assuring full participation of the WMA management structure in the process.

Likewise, the *Forest Products in India* [#5] project team writes:

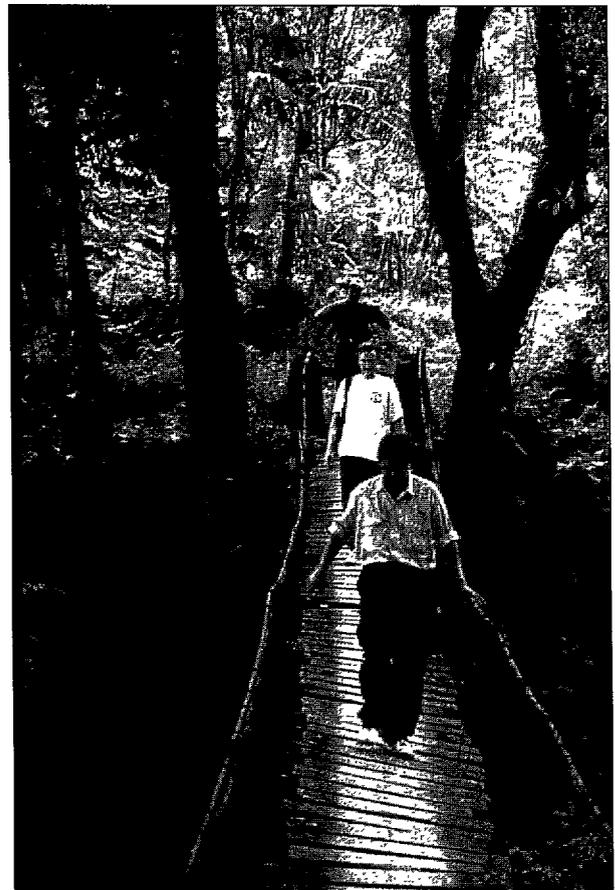
Soligas were encouraged by the partners to form another community organization to take over the honey processing and food processing plant, to initiate other enterprises and to eventually participate with VGKK, in participatory resource monitoring and other community outreach activities associated with enterprises, conservation, and environmental education. The organization would obtain income tax exempt status and VGKK will transfer the assets and provide working capital to the new organization, and maintain a close working relationship with it. The organization is broad-based, and its membership is composed of harvesters and other community members from all three regions of the sanctuary.

And perhaps the *Ecotourism in India* [#4] team sums the challenge up best when they write:

A major success this year, the emergence of a community based non-government organization the Khanchendzonga Conservation Committee (KCC) also presents a significant challenge to the project—how to support this organization in its efforts to play a positive role in conservation and development? This question highlights a key issue in the project—how to institutionalize activities and processes introduced by the project so that they are sustainable in the long-term? Local organizations and institutions present a promising avenue, but require initial investment in capacity building to manage themselves and their activities.

“How to institutionalize activities and process introduced by the project so they are sustainable in the long-term?”

This is indeed the question that the BCN and its partners are now attempting to answer.



B. Conde

1. Essential Oils from the Alpine Areas of Humla

Location: Chuwa and Humla
Karnali Watersheds
Humla District, Nepal



Partners: Appropriate Technology International (ATI)

Asian Network for Small Scale
Agricultural Bioresources (ANSAB)

The Humla Conservation and
Development Association (HCDA)

BCN Funding: \$549,995

Partner

Contribution: \$143,252

Grant Period: January 15, 1995–January 31, 1999

What's at Stake?

The mountainous region of Humla lies between the Western and Eastern Himalayas, straddling two distinct botanical regions and making it extraordinarily rich in plants—many of which contain aromatic essential oils or are valued for their medicinal properties. Humla's natural bounty make it susceptible to over-harvesting of plants used by perfume and cosmetic manufacturers, as well as the usual Nepalese problems such as serious overgrazing and wood and fodder collection.

With the creation of a legal community forest in Humla, one community was able to directly receive royalty payments for the raw materials that are collected from their lands.

two essential oil distillation factories. Locals harvest roots from nearby alpine meadows, process it into oil and operate and maintain the processing equipment.

The intent of this project is to alleviate the need to harvest increasing amounts of raw product by adding value to a smaller sustainable harvest. By selling a processed product, the community participants can make more money and keep the revenues in the local communities. Project partners and local people collaborated to establish

The project also works with villagers to help them gain more control over the resources that they collect from government-owned lands. The goal is to broaden the Humla District Forest Office's acceptance of community-based management of local natural resources and currently this process appears well under way. The project places a strong emphasis on women's groups and establishing mechanisms to allow communities to keep larger portions of the taxes levied on non-timber forest products.

1997 Update

On the whole, 1997 has been a time solidifying the gains made in previous years and fine-tuning the operation of both the factories and the community forest handover process.

The major activities that occurred during this period were as follows:

Humla Oil Pvt. Ltd. continued production of essential oils from jatamansi, juniper, and sagunawaal at both factories, Kurilla and Rodikot, until the end of the summer season. After that, production shut down and efforts switched to maintenance of the facilities until the fall season recom-



A. Willet

menced at the end of September. Humla Oil also continued to provide technical support on processing and marketing to the new distillation plant in Jumla.

Community forest handover activities accelerated as communities became aware of the benefits—direct royalty payments on materials harvested from registered community forests. The Humla Conservation and Development Association added another forester to their team in Humla to assist in the handover process. This process is ongoing now in eight Village Development Committees in Humla and will continue into the future.

Biological monitoring teams completed their inventory and regeneration activities in the Humla project area during the summer of 1997. This included mapping of resources in conjunction with local community members and continued work on the regeneration aspects of the commercially utilized plant species found.

Although accessing Indian buyers was initially problematic because Humla was unknown to them, additional market investigations were conducted in India. The majority of the jatamansi oil continues to move into the Indian market with smaller quantities going to Europe and the distributor in North America.

In October 1996, local project manager Tsewang Lama participated in the United States Natural Products Expo where Humla Oils products were presented. He also took part in a presentation to the Expo regarding the issues of sourcing natural materials from community groups. This was a learning as well as marketing experience for the Humla Oil Company and Tsewang developed several leads that are being followed up on. Plans are being made to attend the 1997 Expo.

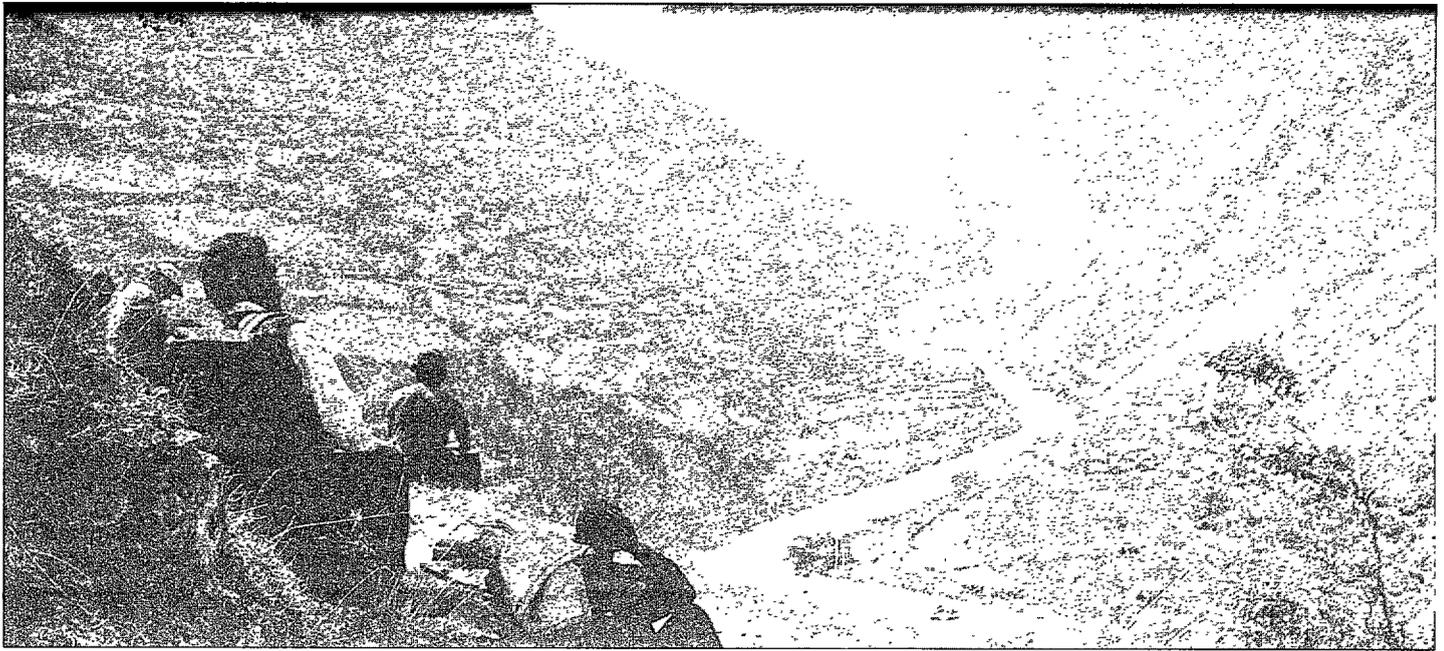
Basic literacy classes were completed in the project area and the post literacy conservation material was finalized and sent for printing. Distribution in Humla will occur later this year.



Success Stories

With the creation of a legal community forest in Humla, one community was able to directly receive royalty payments for the raw materials that are collected from their lands. In the past, and in communities without community forests, the royalty payment is collected by the district forest office and this revenue goes to the central government, with no provision to return any money to the community of origin.

The challenge here was for HCDA and Humla Oil to deal with this group in such a manner that they would not become alienated from the project and company, while clearly stating that this type of dealing was unacceptable in the future.



As a motivational tool for helping communities realize the benefits of community forests, no number of workshops or other activities could compare with the direct economic benefit of having a registered community forest with a management plan that allows for the collection of royalties.

Once this happened and word got around to other communities that Thali Village had made almost \$3,000 just for having a community forest in place, HCDA was inundated with requests from villages to help them set up community forests as well. This showed clearly to the communities in Humla that there is a direct and immediate benefit from initiating a community forest and helped raise HCDA's profile in Humla as an organization truly working for the development of local villages. As a motivational tool for helping communities realize the benefits of community forests, no number of workshops or other

Once the Humla Conservation and Development Association assisted the Thali community through the community forest handover process to get their community property back under local jurisdiction, they were able to directly charge a royalty on materials coming from their forest and pasture lands. This allowed them to receive a large (for the local context) new source of revenue for the village that previously went to the central government.

activities could compare with the direct economic benefit of having a registered community forest with a management plan that allows for the collection of royalties.

Challenges

The greatest challenge faced by HCDA in this year was in dealing with a certain village group who, taking advantage of the close and open relation between Humla Oil and the supplying communities, tried to pass off large quantities of low quality material to the factories. Humla Oil had always assumed that the communities supplying the raw material would provide an acceptable quality to the factories along the lines of what had been supplied over the past two years and in line with the specification set out by the management and communities in consultation before the collection season begins. However, one community leader took his group astray and forced Humla Oil to buy material that they had purposely adulterated in order to increase the direct payment to the collectors from the factories. This community also encroached upon a neighboring communities forest area to collect material.

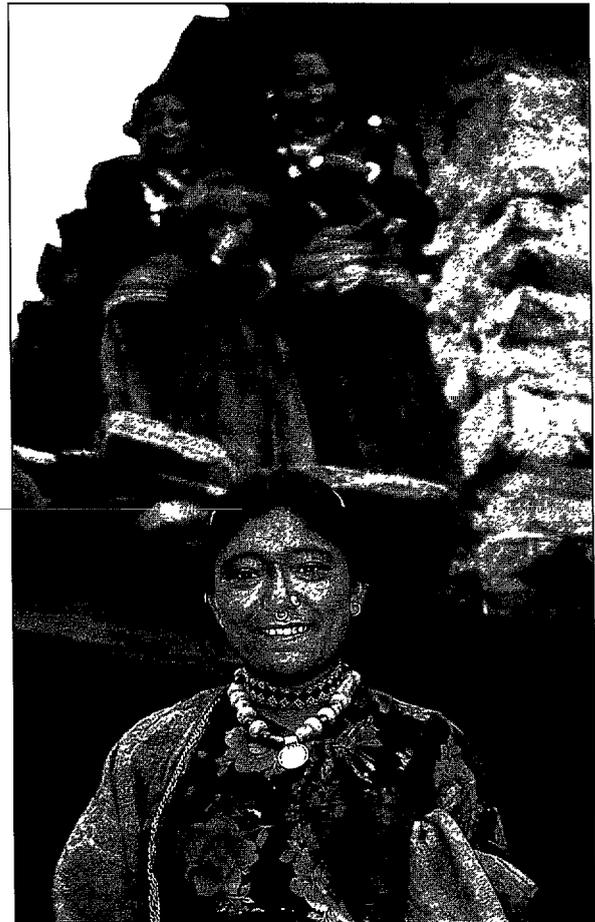
The challenge here was for HCDA and Humla Oil to deal with this group in such a manner that they would not become alienated from the project and company, while clearly stating that this type of dealing was unacceptable in the future. It turned out the chairmen of the community forest had misrepresented the provisions of the com-

1. Essential Oils from the Alpine Areas of Humla

munity forest to the community at large in order to personally profit from the arrangement. HCDA has since clearly explained the provisions of community forests to the general community members of this area and explained that in the future Humla Oil will not deal with this community unless they get their practices in order.

Humla Oil was faced for the first time with having to make cold, hard business decisions regarding the supply of material. Humla Oil decided to explain, once again, the quality of the material that they would buy from Collectors and stick by this criteria even if it meant excluding certain collectors/communities. This is the only way they can survive as a viable business into the future. This problem only came up in one village area, and this season will give a clear indication of how well they communicated their concerns to the community in question, and how interested that community is in continuing their relation with HCDA and Humla Oil.

Author: Jeff Dickinson is a member of the ATI and ANSAB staffs. Jeff has been working in Nepal on an intermittent basis for 8 years. Jeff and Tsewang Lama, current project manager, identified the opportunity in Humla during 1992 while Tsewang was a member of the Nepali parliament.



A. Willett



H. Canby

2. Ecotourism in Forests/ Grasslands of Royal Chitwan National Park

Location: Royal Chitwan
National Park, Terai
area, Nepal



Partners: King Mahendra Trust for Nature
Conservation (KMTNC)
World Wildlife Fund (WWF-US)

BCN Funding: \$636,607

**Partner
Contribution:** \$220,000

Grant Period: March 1, 1994–February 28, 1998

What's at Stake?

Chitwan is in danger of being loved (and used) to death. Although Royal Chitwan National Park is one of Nepal's major tourist destinations, the increasing demands on the park by tourists, as well those who live on the edge of the park, jeopardize the park's environmental integrity.

A large part of the problem is that in the past, communities living in the park's buffer zone did not directly benefit from the park. In fact they felt they suffered because of it. The park's valuable resources are out of bounds, sometimes the park wildlife eat or trample their crops, few locals find employment in the park and the surrounding communities receive none of the tourism revenues.

King Mahendra Trust for Nature (KMTNC) with BCN support, led an effort to draft and pass legislation to share 30 to 50% of revenues earned on tourism taxes with local communities. Village user groups will decide how the money can be used to the communities' greatest benefits. In addition, the project involves the creation of woodlots in the park's buffer zone to reduce wood collection within the park and to provide more habitat for fauna, including rhinos.

By benefiting from the park revenues, and having their needs for fuelwood met, hopefully local communities will realize the advantages of conserving the park's diverse biological resources and will participate in conservation.

Today, the work of KMTNC/BCN program is cited as an example of successful community based conservation by both the local and national governments.





1997 Update

Although huge strides have been made, the project has had to overcome major obstacles. Today, the work of KMTNC/BCN program is cited as an example of successful community based conservation by both the local and national governments. Tourism started in Baghmara in October of 1996 and now they are successfully generating cash locally. The Baghmara User Group Committee (UGC) has generated NRs. 427,255 (\$7,800 US) in this year and totaled its income to NRs. 1,709,176.24 (\$32,000 US). Similarly Kumrose, where the Baghmara model is replicated, has generated NRs. 478,564 (\$8,700 US) within a year and totaled its revenue to NRs. 848,478 (\$15,400). A machan (wildlife viewing tower) has been constructed in the regeneration area of Kumrose community forest to increase tourism revenue.

Perhaps the most important achievement of the project is the change in attitude of the local people. When poachers, attracted by the increasing numbers of wildlife attempted to kill rhinos by digging pits near Baghmara, the community members not only informed authorities, but also filled the pits so that no wildlife would be killed.

A large number of projects from various parts of the country as well as from neighboring countries are visiting Baghmara and Kumrose to gain first-hand information and to learn from the UGC of Baghmara. Baghmara has also been the focus of the media. Numerous news and articles have been published and also several documentary films made by national and international television companies.

At the local as well as at the national level, government has appreciated the work and wants to extend the program. Now, all 36 Village Development Committees (VDC) on the edges of the park are forming User Group Committees to assess and implement their own opportunities. The Chitwan experience has been one of success breeding success through replication.

Success Stories

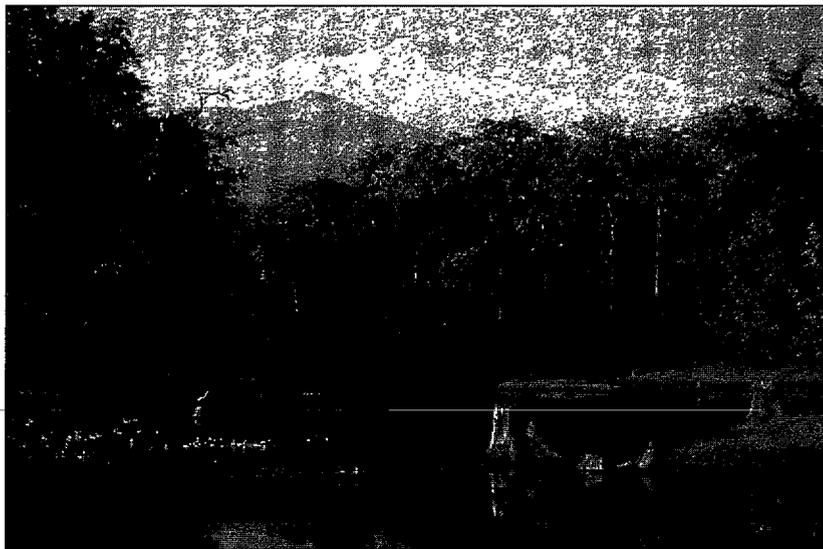
On-going monitoring of birds, rhinos, tigers, crocodiles and ungulates shows a gradual increase in the number of different species as a result of the additional habitat provided by the community forest created under the KMTNC/BCN program. All together, 170 different species of birds have been observed in these newly created habitats. Among these are 37 species listed by the Bird Life Society as threatened species. The number of rhinos are 19 in Baghmara and 23 in Kumrose community forest. Perhaps the most important achievement of the project is

the change in attitude of the local people. When poachers, attracted by the increasing numbers of wildlife attempted to kill rhinos by digging pits near Baghmara, the community members not only informed authorities, but also filled the pits so that no wildlife would be killed. Even when livestock were killed by a tiger in Kumrose, the people did not complain because they know that tourists come expressly to see tigers. Now that locals are receiving direct benefits from tourism they can afford to be more tolerant. In fact, in many instances now, the community forest decreases the loss of property due to wildlife. In a KMTNC survey, 79% of people mentioned that the community forest is helping to buffer crop land and also mentioned that crop depredation has been decreased after establishment of the community forest in Baghmara.

Another main objective of the program is to decrease the pressure on the park for firewood and fodder. Recent data indicates that the number of people sneaking into the park to collect these has decreased by almost 30%.

Initially the women's participation in the conservation programs was poor and there was friction among members of the women's environmental group of Kumrose. After benefiting from the KMTNC/BCN buffer zone program with firewood and fodder, they also realized it saved them time. Now the women's participation is more than 65% of the total participation. Two more vegetable co-operatives have been formed in Kumrose which has helped locals increase their earnings by more than 600%.

Because of the widely acknowledged results from this project, the Department of National Parks and Wildlife Conservation (DNPWC) invited KMTNC to join the task force to develop a master plan for the management of the Tikauli forest which is an important corridor to link the Siwalik hill forest and the Mahabharat hill forests and is also an important migratory route for wildlife. This forest includes a very important wet land of the South Asian region.



Challenges

Frequent changes of Government in Nepal have created problems getting the buffer zone by-laws passed by the cabinet. Within the past two years, government was reshuffled three times. Each government started studying documents from the beginning and just when they were ready to approve it, a new government took over and started the whole process from the beginning. Consequently, the by-laws were not passed until 1996. Even then, the exact mechanisms by which funds will be returned to UGC's has not been defined.

The earnings from the micro-enterprise activities and programs carried out by the communities has attracted local politicians who now want to have their members take credit for work done by the UGC formed under the BCN program. They often try to create misunderstandings among the community members so that they can create factions in the User Group and take advantage of the situation. Transparency and open dialogue among Users Group members and stakeholders has helped tackle such problems.

In many instances, misunderstanding is the root cause of problems. For example, in many of the community forestry programs, initial opposition from people was due to the threat that they still felt from nationalization of the forest.

When their fears were calmed and the benefits were made clear to them, they started supporting the projects.

According to the management policy of community forests, the work plan and all other programs have to be approved at the User Group's general meeting. However, it is not easy to gather all UG members in one place because people are busy trying to survive. In some cases people struggle to get enough to eat each day and

they cannot afford a day in meetings. This problem was solved by going to the people—visiting each household, explaining the program, acknowledging their additional suggestions, and getting their approval.



T Kelly

It is important to try to think ahead to the unexpected ramifications of projects. For example, when the buffer zone was declared—which was a great thing—the Khorsar forest was suddenly without protection. The District Forest Office shifted their attention away from the Khorsar forest because it now fell under National Park jurisdiction. But due to manpower limitations, the National Park could not patrol or protect the new buffer zone area. Taking advantage of the situation, some hoteliers and elephant owners started taking their elephants to Khorsar forest for safaris

which effected the revenue of the park as well as Baghmara and Kumrose community forests. This problem was solved by calling a meeting with representatives from the District Forest Office, the National Park, hotel/elephant owners, User Group committee members and officers from NCRTC. Subsequently, the District Forest Office resumed their responsibility to stop the illegal entrance of elephants into the Khorsar forest.

In Nepalese society there is saying that “If you want to control stealing by any household member, then give him or her the keys to the treasury.” Likewise, in the case of projects, in order to control problem creators, it is wise to include them and give them responsibilities in the project.

As any farmer knows, before a new type of seed is planted you must know whether the soil and climatic conditions will allow it to grow. Similarly, before implementing any new project, the existing conditions have to be studied so that the program can adapt to the local situation. The problems of the area, the socio-economic situations of the people, local politics and needs of the people have to be clearly understood by those implementing the project. And ultimately, the size of the project (solution) has to fit the size of the problem.

In Nepalese society there is saying that “If you want to control stealing by any household member, then give him or her the keys to the treasury.” Likewise, in the case of projects, in order to control problem creators, it is wise to include them and give them responsibilities in the project. This not only controls them, but also gradually changes their attitude. This has been an important lesson in this project.

Author: Arun Rijal is the Senior Botanist with the King Mahendra Trust for Nature Conservation (KMTNC) project in Royal Chitwan National Park. Arun has Masters Degrees in Botany and Natural Resource Management. He has more than 10 years of experience in biodiversity conservation and community development programs and has also published several papers on these subjects. He joined KMTNC in 1989. Arun has been honored by His Majesty King Birendra Bir Bikram Shah with the “Silver Jubilee Medal” for outstanding contributions in conservation.

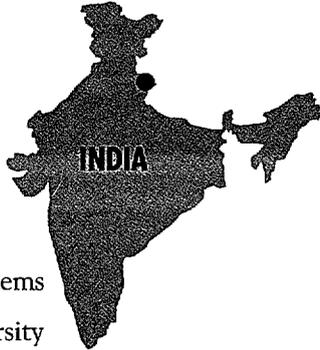


N Sahastry

3. Tasar Silk and Honey in the Mountains of Garhwal

Location: Garhwal, Uttar Pradesh, India

Partners: Appropriate Technology International (ATI)
EDA Rural Systems
Kumaun University
Community Enterprises



BCN Funding: \$571,201

Partner Contributions: \$803,397

Grant Period: September 1, 1995–August 31, 1998

What's at Stake?

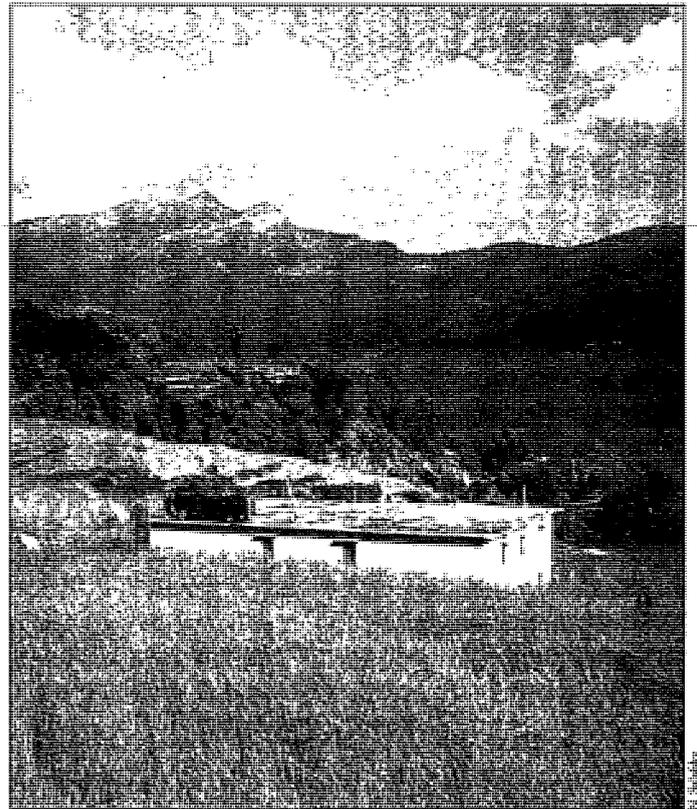
The rugged mountains of the Garhwal district are home to the endangered snow leopard, black bear, bharal deer and musk deer. However, the rich biodiversity of the region is threatened by over-grazing and excessive harvesting of non-timber forest products as well as unsustainable fuel and fodder collection. To counter these problems, project partners are working to establish community-based oak tasar silk and honey production enterprises in three watersheds in Garhwal to help strengthen local community forest resource management and provide sustainable sources of revenues for the villagers.

The daunting problem of finding technically qualified personnel willing to settle in Ukhimath was resolved by identifying local project staff who have shown promise and aptitude

Tasar silkworms (*Antheraea proylei*) use oak leaves from village and state owned forests as their food source. Last year, when villagers in Akash Kamani Valley harvested their first ever tasar crop from oak leaves, it was like "seeing was believing." Villagers, particularly women, began to see value added to their efforts which often go undervalued.

We hope that by involving the whole family in the tasar enterprises that families will understand their vested interest in ensuring that the harvest is indeed sustainable. The silk enterprise is divided into a centrally run grainage that produces silkworm seed eggs for sale to community members, household run rearing enterprises that will use oak leaves to feed the silkworms and a centrally operated silk reeling and marketing enterprise to process silk thread that will be sold to cloth manufacturers.

The honey enterprise will involve placing bee hives near houses. The bees forage for nectar in natural forests, alpine meadows and agricultural lands.



1997 Update

This year the project expanded beyond the well established activities in the Akash Kamani Valley to several new villages in the Mansuma Valley. And great strides were made in establishing the tasar activities. The daunting problem of finding technically qualified personnel willing to settle in Ukhimath was resolved by identifying



local project staff who have shown promise and aptitude, shifting them to technical positions and providing them with intensive training and periodic technical support

from outside. The government has also made a substantial commitment, agreeing to assign a highly qualified technician to work with project technical staff for two years.

Despite the setbacks of 1996 caused by torrential rains and viral diseases of the silkworms, the silkworm business has bounced back.

Two companies have been registered: Chamoli Tasar and Devbhoomi Madhu Private Limited. A skilled General Manager has been

hired to oversee the day to day operations of both enterprises. Meanwhile, efforts are underway to promote greater producer ownership of the enterprises.

Project staff have surveyed sites for the micro-hydro installation to develop in-house facilities including a cocoon preservation center, grainage for eggs and a honey processing plant. The United Nations Development Program/Global Environment Facility Hilly Hydro has offered very favorable financial terms for its installation.



On the conservation front, senior botanist Dr. S. P. Singh and his team, which included local villagers, worked to complete the initial baseline survey of the ecosystems in the project area. Among the major findings, is that the semicarpifolia variety of oak is not regenerating, for reasons not yet clear. By contrast, the Himalayan variety which can also be used is increasing. Dr. Singh and staff have started discussions with villagers about how best to design a conservation awareness program and to integrate it with other program components. The socio-economic baseline survey which was also completed this year under the guidance of EDA Rural systems will provide useful information to further integrate all of the project activities.

Success Stories

Despite the setbacks of 1996 caused by torrential rains and viral diseases of the silkworms, the silkworm business has bounced back. And this year, there has been a marked increase in confidence on the part of both village and staff tasar silkworm rearers.

Having started at ground zero, the local skill base has increased dramatically due to the abilities of the keen and committed technical staff. As they learn they impart their new knowledge and skills to the village rearers and as a result the level of productivity has mushroomed—a 500% increase in output of cocoons was accomplished with an 11% decrease in rearing time. The quality of the product—the percentage of cocoons suitable for seed purposes—also increased by 33%. These achievements resulted in income increases of 16.5% benefiting the rearers. Quality, as well as improved quantity, was demonstrated when sample cocoons sent to Bihar for reeling produced grade A thread.

The importance of these achievements on the technical and production fronts are being transferred to the social and biological fronts as the villagers actually begin to see for themselves that the oak forests do have an economic value to them far beyond traditional subsistence uses and

*But the major
problem remains
one of tenure.*



N. Salafsky

that caring and conserving such resources are important to the well-being of the entire community.

Challenges

We are still facing difficulties in securing adequate technical assistance in bee-keeping and honey processing, which has resulted in these activities lagging behind the tasar silk production.

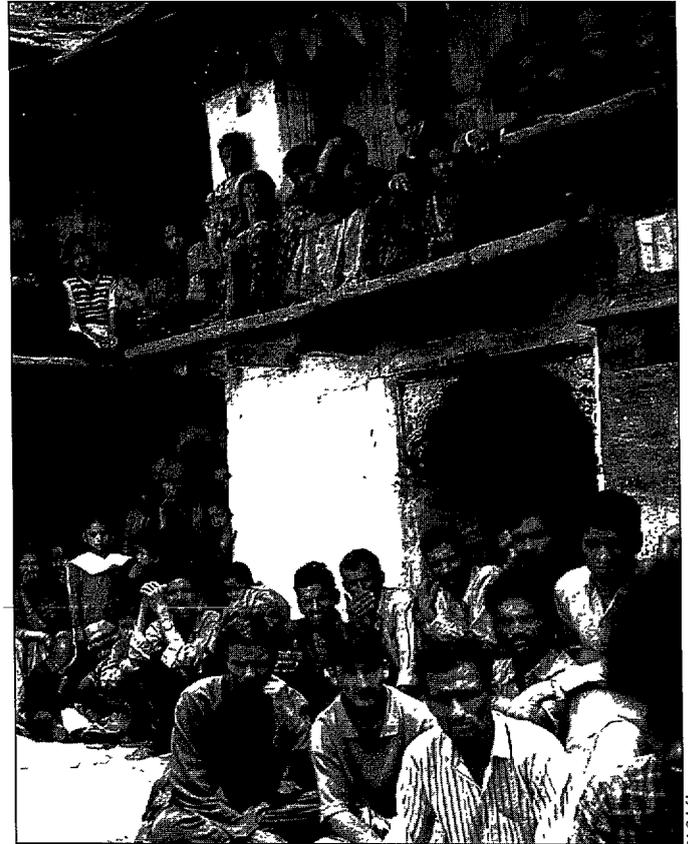
But the major problem remains one of tenure. The ultimate control of the forests and forest resources still largely rests in the hands of the government and not in the hands of the people who are directly involved and affected. We are coming to learn that even those institutions that purport to promote local control of resources are dealing with severe restrictions. For example, the Van Panchyats (village forest governing bodies) theoretically have control over the use and management of village forests, but their financial resources are controlled by the Revenue Department. This means that the funds generated by sale of wood, grazing rights to outsiders, fines and other fees are not at the disposal of the Van Panchyat, but rather are under the control of the Revenue Department, which takes most of the funds for its own purposes. This arrangement is a serious disincentive for the villagers who feel that they don't really have control over their resources

3. Tasar Silk and Honey in the Mountains of Garhwal

even where institutional arrangements would seem to imply that they do. So the policy issues loom large.

Author: Jack Croucher is an Institutional Advisor who initiated this particular project in 1993. Jack was a Peace Corps volunteer in the Garhwal area in the mid-1960's and has maintained strong ties and commitments to the people of Garhwal since his Peace Corps days.

We are coming to learn that even those institutions that purport to promote local control of resources are dealing with severe restrictions.



4. Ecotourism in the Mountains of Sikkim

Location: West Sikkim, India

Partners: The Mountain Institute (TMI)

G. B. Pant Institute of Himalayan Environment and Development (GBPIHED)

Travel Agents Association of Sikkim (TAAS)

The Green Circle



BCN Funding: \$449,465

Partner

Contribution: \$291,498

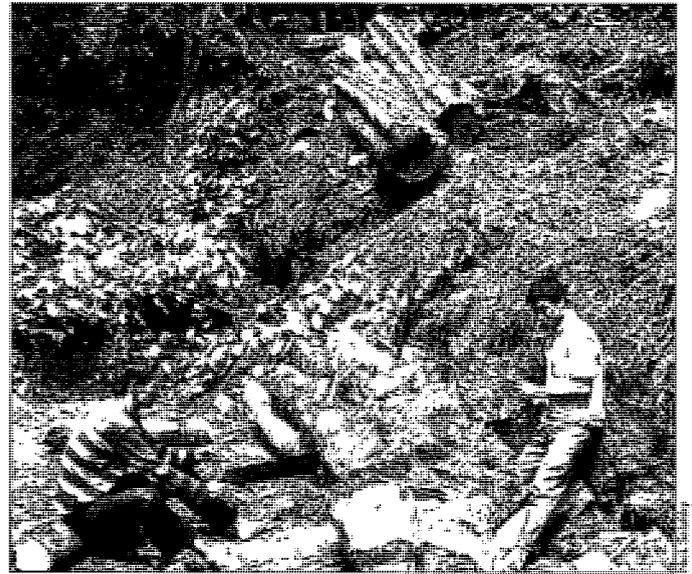
Grant Period: September 1, 1995–August 31, 1998

What's at Stake?

The Himalayan state of Sikkim, which was only recently opened to tourism, is one of the two most biodiverse areas in India. It contains the world's third highest mountain peak (Khangchendzonga: 8,545 meters) which is revered as the protective deity of Sikkim and renowned for its rhododendrons, diverse flowering plants, birds and numerous other wildlife.

Threats to Sikkim's biodiversity include agricultural land conversion, road construction, over-collection of forest products and fuel wood collection. A partially constructed hydroelectric project is also present near a key project site.

To counter these threats and to build on the opportunity to provide benefits to local communities, the project team is working with a local association of trekking businesses (TAAS) and local communities to strengthen community-based ecotourism opportunities at three sites around Khangchendzonga National Park. These sites include Yuksam, the trekking trail to Dzongri and Goechhactare La, settlements around



Kecheopalri Lake, and Pelling near Pemayangtse Monastery. This project is particularly timely as the state government is eager to promote tourism through the development of policies that minimize the problems that neighboring states have experienced as a result of the rapid development of the tourism sector.

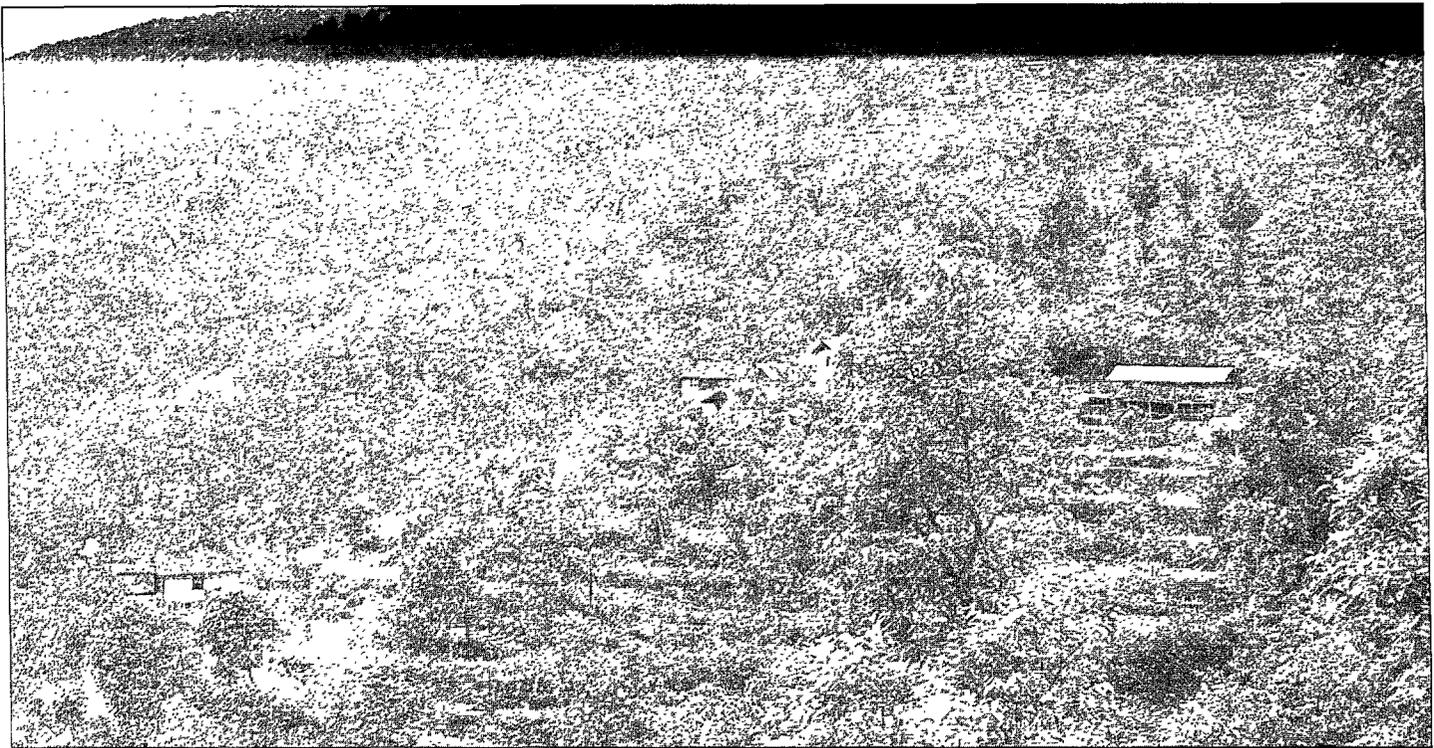
1997 Update

In our second year, we have made major strides in training for income generation, capacity building for conservation, biological monitoring and promoting policy dialogue in conservation and ecotourism development.

Project staff and collaborators conducted training for over 200 lodge operators, naturalist and trekking guides, trek cooks, vegetable growers and porters. Lodge operators have recorded increased revenue and are actively using alternative heating and cooking devices that are also more energy efficient than firewood.

Using an innovative participatory planning and action methodology that focuses on community assets, over 200 people in four communities at the project sites have developed and are implementing local ecotourism plans that include activities which are co-financed by community members. Under these plans local people have improved garbage management, carried out tree plantations in local settlements, prepared and

The best thing about the KNP workshop was the involvement of the people from different sectors and backgrounds taking part in the biodiversity and management issues.



distributed visitor education and promotional materials, and conducted trail repairs.

Two highly successful study/exchange tours were undertaken by villagers and travel agents to neighboring Nepal. Sikkimese villagers worked with local residents in a Mountain Institute ecotourism project in the Helambu region to learn about tourism development and conservation. All made commitments to share the learning and to carry out conservation activities. Most of these have already been fulfilled. Members of the Travel Agents Association of Sikkim had a workshop with the Trekking Agents Association of Nepal and among other results signed a Memorandum of Understanding to cooperate in

marketing, conservation and ecotourism training.

This question highlights a key issue in the project—how to institutionalize activities and processes introduced by the project so that they are sustainable in the long-term?

As part of the applied research and monitoring component of the project, GBPIHED began intensive field monitoring of potential project impacts. Additionally, community ecotourism plans using participatory methods are providing participants with useful information on the

status and management of natural resources, as well as on project activities that required modification, e.g. design of study tours in order to maximize the benefits for all community members.

This year, efforts to promote constructive policy dialogue between government, the private sector and local communities gathered momentum. The Government of Sikkim (GoS) adopted the project model of participatory workshops to discuss major tourism development proposals, and participated in a project-sponsored gathering of stockholders to discuss conservation and ecotourism management issues in and around Khanchendzonga National Park (KNP)—the site of the major trekking route in Sikkim. The resulting action plan will be evaluated by participants in 1998.

Success Stories

In an extremely busy and rewarding year for staff, collaborators and participants, picking out one or two success stories does not fully capture the excitement, pride and ownership that participants have shown in the project. Instead we asked participants to record their assessment and impressions. Some of these are given below, and we hope that they convey the positive changes seen.

"Through the project I have been able to enhance my own capacity and learn techniques of data collection. After attending trainings, I have learned many things and in dealing with the community I have earned more respect from them."

—Kingzong Bhutia, Sikkim Biodiversity and Ecotourism (SBE) Community Assistant.

"One of the greatest successes of the SBE project I feel, is that it has involved local people from the grass-roots level and given importance to their participation which has made people take pride and they will cherish the fruits of this in the future."

—Pema Gyaltzin, School Teacher, Yuksam.

"The project has empowered local people to a great extent to take part in community initiatives and has set a trend to take actions instead of only talking. Examples are the Kathok Lake clean-up, road to Norbugang and Forest Guest House clean-up, getting benches for Norbugang, Dubdi Monastery, Kathok Lake and the Trekkers' Huts."

—Chewang Bhutia, Engineer.

"Another significant change in Yuksam is the operation of the lodge operators. They have become much better in their service and entire operations after trainings."

—Sherab Bhutia, Social Worker.

"The best thing about the KNP workshop was the involvement of the people from different sectors and backgrounds taking part in the biodiversity and management issues of KNP, and the methodology of the facilitators to get input and participation from all the participants."

—K. N. Bhutia, Additional Secretary, Department of Tourism (GoS).

"The best thing about the KNP workshop was that it was the first time that the government departments felt it relevant to discuss and talk with the community stakeholders on National Park conservation and management issues and come out with positive recommendations."

—Pema Bhutia General Secretary, Khanchendzonga Conservation Committee, Yuksam.

"In future all concerned planning for conservation in KNP should come out through one platform with active participation from different stakeholders."

—Gut Lepcha, Field Director, Khangchendzonga National Park.

Challenges

A major success this year, the emergence of a community based non-government organization, the Khanchendzonga Conservation Committee (KCC), also presents a signifi-

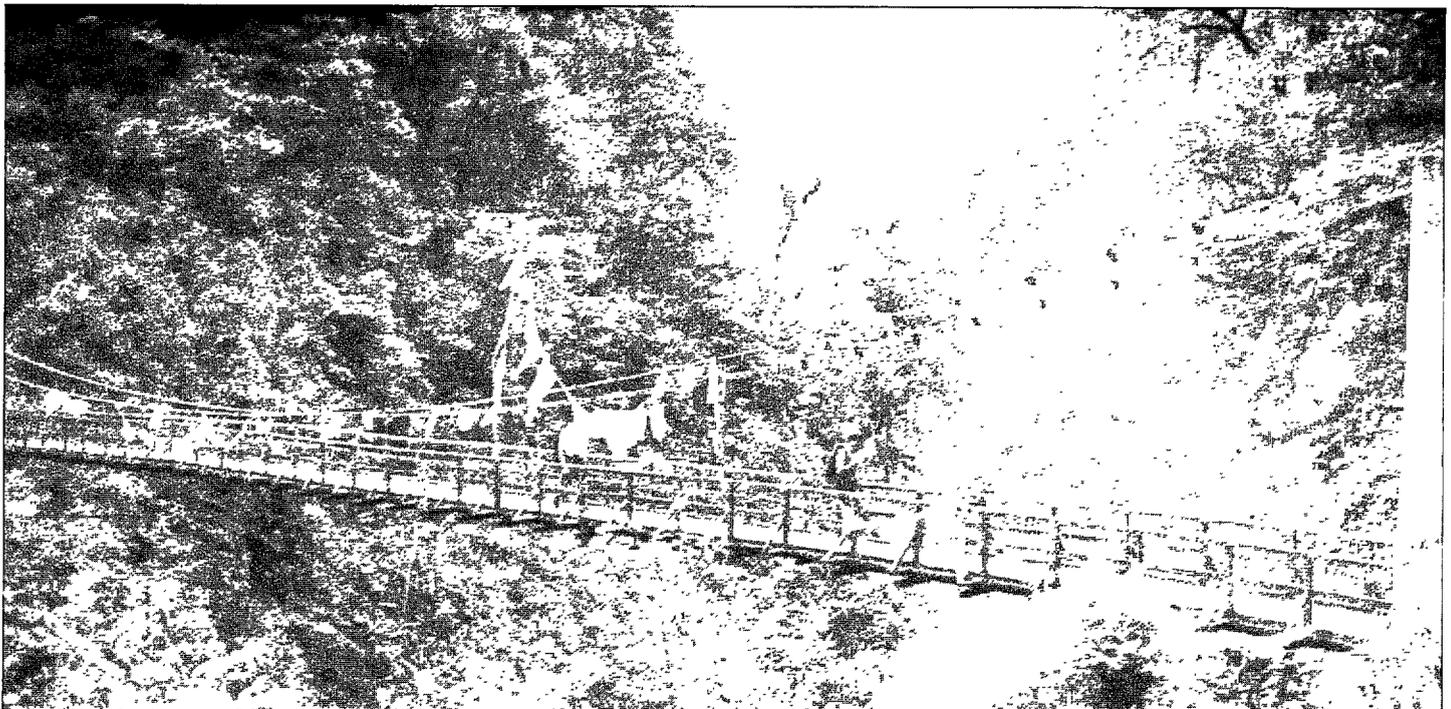




Photo: S. Saha

cant challenge to the project—how to support this organization in its efforts to play a positive role in conservation and development? This question highlights a key issue in the project—how to institutionalize activities and processes introduced by the project so that they are sustainable in the long-term? Local organizations and institutions present a promising avenue, but require initial investment in capacity building to manage themselves and their activities.

As the project enters its third year, we face a challenge and an opportunity to hand over activities to local groups who will be in a position to continue and modify them as necessary in the future. KCC has already conducted training for porters and raised a small amount of funds for garbage

Landslides on the other hand continue to test everyone's ability to manage complex logistical arrangements and maintain a sense of humor under difficult circumstances.

management in Yuksam.

On a more practical level, an unusually long monsoon highlighted the difficult conditions that participants operate under, in fragile mountain environments. Due to numerous landslides, on several occasions, staff were cut off from sites and the capital of Gangtok. These conditions have hampered project activities, affecting staff visits to the field, as well as communications. To some extent we have overcome the communication delays by using laptop computers in the field and recently acquired e-mail capabilities. Landslides on the other hand continue to test everyone's ability to manage complex logistical arrangements and maintain a sense of humor under difficult circumstances.

Authors: Nandita Jain, Program Manager with the Mountain Institute and SBE Project Manager. Comments from the field were collected by Renzino Lepcha, Project Officer, and from evaluations completed by participants in the workshop.

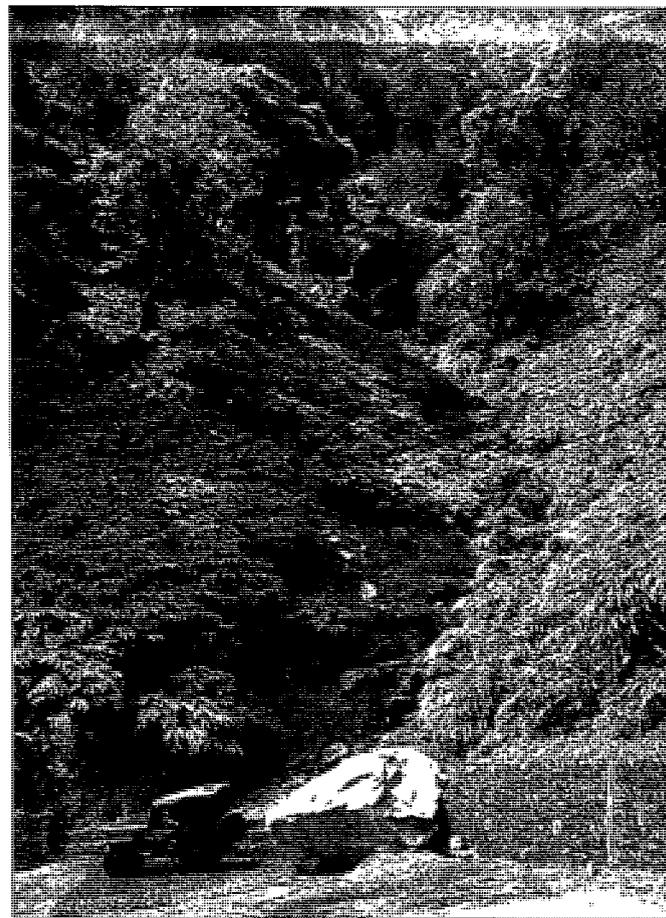


Photo: G. Balachandrar

5. Forest Products from the Western Ghats

Location: Biligiri Rangan Temple Sanctuary, Karnataka, India

Partners: University of Massachusetts/Boston (UMB)

Vivekananda Girijana Kalyana Kendra (VGKK)

Tata Energy Research Institute (TERI)

BCN Funding: \$610,404

Partner

Contribution: \$75,652

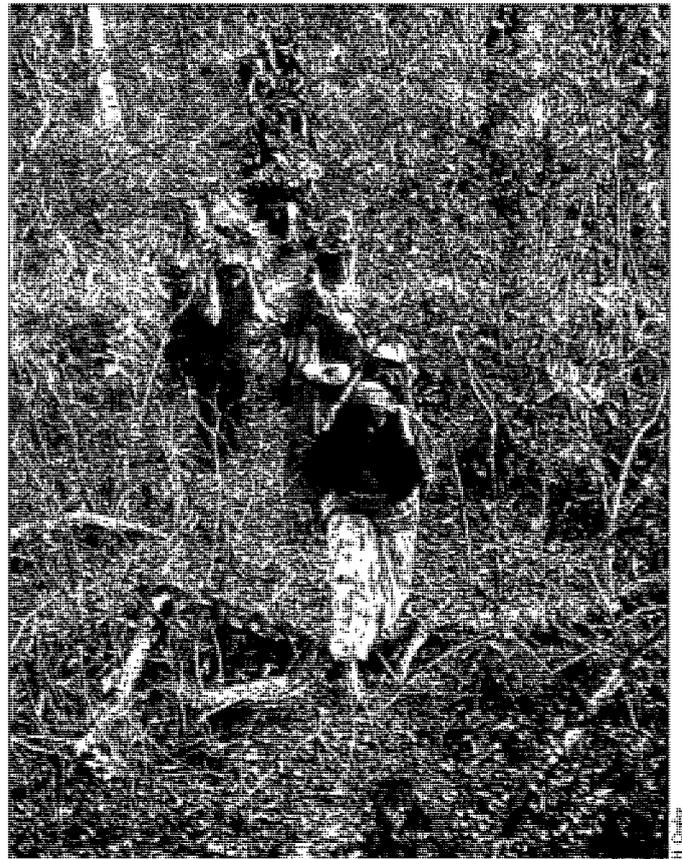
Grant Period: December 15, 1994–December 31, 1997



What's at Stake?

The Western Ghats are one of the most biologically diverse areas in South Asia. The Biligiri Rangan Hills contain elephants, gaurs, sambars, wild pigs, sloth bears, barking deer and over 900 species of flowering plants. This richness led to the area being declared a Wildlife Sanctuary in 1974. The biodiversity of the sanctuary is threatened however, by human pressures, which possibly include over harvesting of forest products by both local Soliga communities and outsiders.

VGKK, a local NGO that has been working with the Soliga communities since 1981, is trying to meet these threats by establishing several new enterprises. Our project is centered around extraction of non-timber forest products (NTFPs) by Soliga tribes. These people have inhabited the Biligiri Rangan (BR) Hills region in South India for millennia. Approximately 4,500 Soligas live in 25 podus, or settlements, scattered throughout and on the fringes of the sanctuary. Traditionally, they engaged in shifting agriculture and hunting, and also collected a wide range of NTFPs. Shifting agriculture has been discouraged since the late 19th century, and was completely banned, along with hunting, with the declaration of much of the area as the Biligiri Ranganswamy Temple (BRT) Wildlife Sanctuary in 1974.



Settled agriculture is practiced by Soligas on the lands allotted to the households, but extraction of non-timber forest products is the major source of income. The Soligas harvest NTFPs and sell these to a cooperative marketing society, the Large-scale Adivasi (tribal) Multi-purpose Societies (LAMPS), which hold the harvesting rights on lease from the Forest Department. The LAMPS were created as vehicles for tribal development, particularly to ensure full return on the collection of NTFPs to which the tribals were given sole rights. Traditionally, NTFPs purchased from the Soliga communities were auctioned by the LAMPS to the highest bidder for processing and subsequent marketing.

Our preliminary studies indicate that more than 50% of the Soligas' total income is derived from NTFPs, yet they derive inadequate returns from the NTFPs due to a lack of value additions at the point of harvest. Furthermore, the Soligas have little control over harvest with respect to amount, location, and timing of the collection.

The BCN project is designed to increase the economic stake of the Soligas in conservation of their biotic resources and to increase their capacity to ensure the ecological sustainability of these resources and the larger



S. Bharti

ecosystem by strengthening Soliga organizations. We are accomplishing this by creating a Soliga-operated enterprise to process several of the extracted products at the collection site and marketing them directly, in order to capture a greater share of the final value. Sustainability will be achieved, on the one hand, by establishing a community-based biological monitoring and feedback system that would regulate NTFP extraction and ecosystem health and, by assisting the local community to gain better access to and control over biotic resources.

Thus, the enterprise will ultimately include not only the processing-cum-marketing unit but also a) a biological unit to ensure sustainable utilization of the biotic resources, and b) a community outreach unit to ensure broad-based participation of the local communities and an equitable flow of benefits to the community. Specifically, the processing-cum-marketing unit will purchase at least four NTFPs in raw form from the LAMPS: honey, nelli, soapnut, and shikekai; it will then process and market the products so as to capture the highest possible fraction of the final consumer prices. The project was formulated in collaboration with Vivekananda Girijana Kalyana Kendra (VGKK), an NGO in the BR Hills region devoted to Soliga welfare.

Success Stories

We made good progress meeting the project goals in 1997 and reached important milestones in biological monitoring, enterprise management, and formation of another community organization. Below we highlight these accomplishments.

Our preliminary studies indicate that more than 50% of the Soliga's total income is derived from NTFPs, yet they derive inadequate returns from the NTFPs due to a lack of value additions at the point of harvest.

Although some Soligas have been participating in biological monitoring for some time, the participatory resource monitoring began in earnest earlier this year, beginning with nelli and honey. The concept of participatory resource monitoring was first explained to the Soligas during pre-harvest meetings held in the majority of the settlements. These meetings were followed by monitoring of production and extraction levels by the Soligas, assisted by researchers. The success of participatory resource monitoring was evaluated in post harvest meetings. Participatory resource monitoring, which will be continued, was generally successful as indicated by the level of participation and response of the Soligas to questionnaires used to judge the effectiveness

of monitoring. The success was primarily due to Soligas' traditional conservation of biological resources. We have

Although extractors have strong traditional interests in conservation, success in meeting this challenge may depend upon the extent to which benefits accrue to the harvesters at both the individual and community levels, and the degree to which harvesters and the community can be made aware of the connection between economic gains and conservation.

also prepared simple manuals for participatory resource monitoring.

Soligas were encouraged by the partners to form another community organization to take over the honey processing and food processing plant, to initiate other enterprises and to eventually participate with VGKK, in participatory resource monitoring and other community outreach activities associated with enterprises, conservation, and environmental education. The organization would obtain income tax

exempt status and VGKK will transfer the assets and provide working capital to the new organization, and maintain a close working relationship with it. The organization is broad-based, and its membership is composed of harvesters and other community members from all three regions of the sanctuary.

The honey processing unit and the food processing unit started to function smoothly in 1997. Both units began to generate profits, and the products from both units are being marketed successfully through retail outlets in two principal cities in the area, Mysore and Bangalore. We have established a small shop to directly sell honey, pickles, jams, and squashes in the village itself. Apart from generating revenue, the shop provides employment for an additional household of the Soliga community.

There is good demand for the products, particularly honey. Production of honey is not limited by sales, but by quantities available in the Sanctuary. Soligas have been trained to operate and manage the two units, and they have completely taken them over. The manager regularly reports to a managing committee, which consists of Soliga community representatives.

Challenges

A major challenge emerged midway during the third year when seemingly irreconcilable differences emerged among partner organizations with respect to management of the project and transfer of the enterprises to the Soliga community organization. The differences were resolved when one of the organizations accepted full responsibility for the



S. Bertha/Munier



H. Caudley

We have made little headway in linking sustainable harvest with conservation. One of the assumptions underlying the project is that economic gains from local biodiversity will provide incentives to extractors to harvest products on a sustainable basis. However, we still do not know the level of sustainable harvest. Even if an arbitrary limit on harvest were to be placed, it is debatable whether the harvester would respect this limit in the absence of direct economic benefits from marketing and processing. Although extractors have strong traditional interests in conservation, success in meeting this challenge may depend upon the extent to which benefits accrue to the harvesters at both the individual and community levels, and the degree to which harvesters and the community can be made aware of the connection between economic gains and conservation.

Third, the herbal medicinal plant unit has continued to suffer losses due to inadequate management and marketing of the products. A new management board has been established. Moreover, efforts are now being made to recruit an experienced manager and develop a marketing strategy.

Author: Kamaljit S. Bawa, Professor of Biology at the University of Massachusetts, Boston. Dr. Bawa first developed an interest in the Biligiri Hills while he was on sabbatical as a Guggenheim Fellow in Bangalore. Some of the initial ground work for the current program was initiated by Dr. Bawa during 1991 with funding from the MacArthur Foundation.

transfer and appropriate community outreach activities necessary for the successful implementation of the project. Given differences in the background and long-term perspectives of the partner organizations, divergence of opinion in how best to implement the project is not surprising. The general lesson is that such differences are likely to occur, but can be minimized with clarification of goals and objectives of partners, mutual respect for different agendas of partner organizations, and effective communication among partners.

A major challenge emerged midway during the third year when seemingly irreconcilable differences emerged among partner organizations with respect to management of the project and transfer of the enterprises to the Soliga community organization.

6. Ecotourism in the Rain Forest of Western Java

Location:

Gunung Halimun National Park,
West Java, Indonesia



Partners:

Biological Science Club (BScC)
Gunung Halimun National Park (PHPA)
McDonald's Indonesia Family Restaurants
Wildlife Preservation Trust International
Center for Biodiversity and Conservation Studies
University of Indonesia

BCN Funding: \$448,430

Partner

Contribution: \$35,250

Grant Period: December 1, 1995–November 30, 1998

What's at Stake?

The emerald forests of Gunung Halimun National Park (GHNP) are one of the last stretches of lowland and montane forests on the densely populated island of Java. Established as a National Park just five years ago, GHNP is home to 23 mammal species, including the endemic Javan gibbon and grizzled langur. The park supports over 200 birds species, 500 plant species and a spectacular diversity of butterflies. For visitors, the park is a wonderful respite from the pollution and energy of Jakarta.

In Indonesia, park status does not necessarily mean protection. The indigenous Kasepuhan and Sudanese communities who live in and around the park depend heavily on its resources. They value their traditions and their way of life. Terraces of verdant rice paddies scale the mountains and developments nibble away at the park's natural environment. Unsustainable fuel wood collection and harvesting of non-timber forest products continually erode the forests and prospectors comb the rivers and hills in search of gold. The challenge is to find a way that these communities can survive in balance with nature, to safeguard the watershed



GHNP Team

which is of major importance to the island, and to protect what's left of Java's biodiversity.

The Gunung Halimun Consortium, with the Biological Science Club as its lead organization, is working with local communities to develop an ecotourism enterprise and conservation awareness program geared to attracting domestic and international visitors from Jakarta, which lies only a few hours away by car. The project also offers the opportunity to work with the Directorate General of Forest Protection and Nature Conservation (PHPA) on allowable access and use of resources in protected areas.

1997 Update

This year we are pleased to report that all three guest houses were completed in the three project areas within the park. These ecotour facilities provide guests with comfortable traditional style lodgings in beautiful natural settings. We started receiving guests in March of this year, and were officially opened in September. The guest house in the south at Sirnarasa was a little slow at first. Most guests first choose the guest house in the east at Citalahab, while the northern site at Leuwijamang is a close second. We believe this is due to the notion, gained from maps, that the north and eastern sites are closer to Jakarta. A concerted effort has been made to explain to the guests, that these two sites may be closer in kilometers; however, in travel time they are actually about the same due to road conditions.

Our challenge now is to attract clientele and develop a steady stream of guests. Our promotional efforts include the following:

- i. There are now three posters (in English) and three leaflets (one in Indonesian and two in English) in circulation. The English leaflets have just been translated into German and will soon be in circulation.
- ii. There have been a number of presentations to private companies, embassies and clubs in the Jakarta area since we think these people are our domestic target market.
- iii. A few articles have been written for Indonesian newspapers and magazines. Articles in English are in the pipeline and will hopefully be published in the near future.

Each of the three project areas has a field manager whose responsibility it is to run the operation and train local community members (enterprise members) in various aspects of running the business.

Success Stories

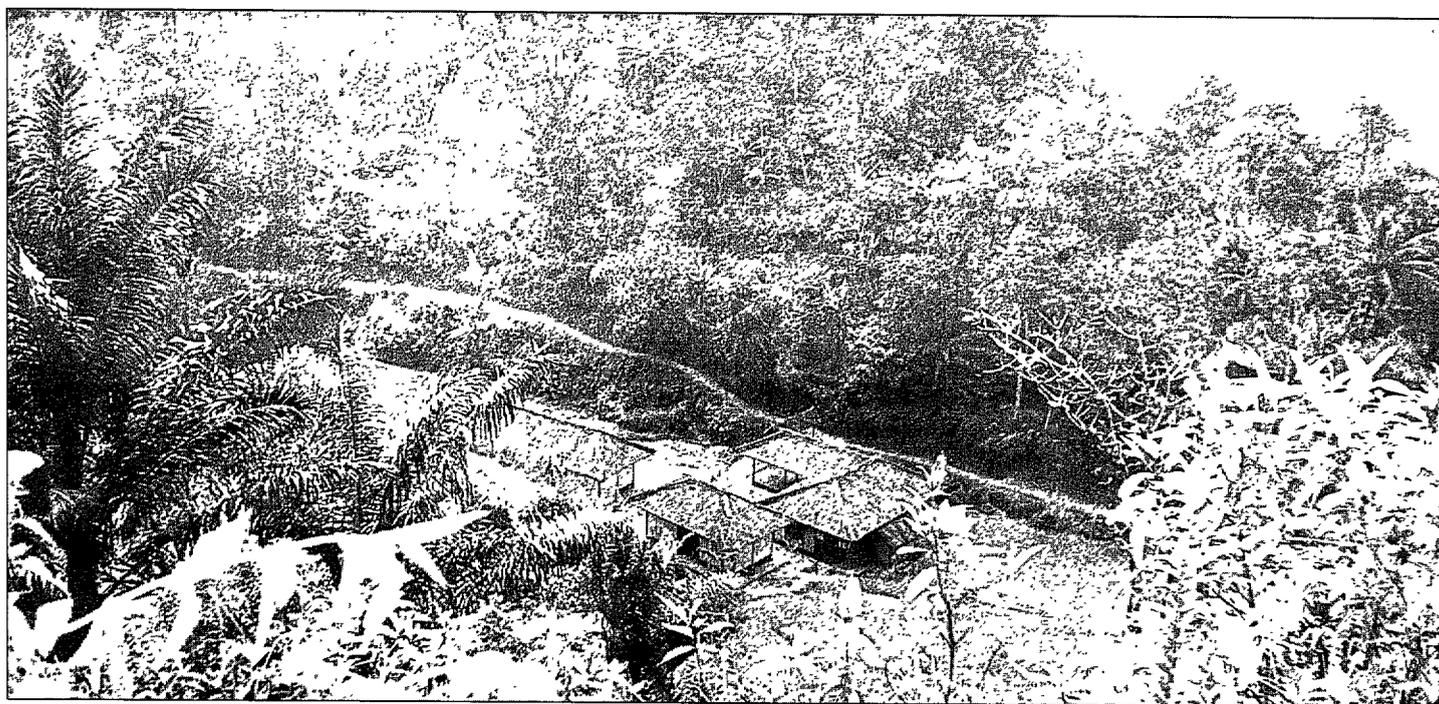
When first putting 'pen to paper' we found it difficult to think of success stories, but all too easy to think of the challenges—a little depressing at first. Looking closely at

this problem we realized that our small success stories are important elements to the success of the project as a whole. Here are three examples:

Our first area of success is the fact that guests are returning—not just once, but some three or four times. Many have phoned the consortium office to say how much they enjoyed their stay and that they plan to visit the other sites. It's a real thrill to be on the receiving end of such a phone call. These complimentary, encouraging words from the guests have put nice big smiles on the field managers' faces. The enterprise members may not have smiled openly, when they were given the compliments, but I'm sure the inside smile was just as big, if not bigger than the field managers'.

Yes, we are particularly pleased to be able to tell you that each enterprise member, from all three sites, has received a financial benefit from the enterprise activities.

For any ecotourism venture, word of mouth is the most effective form of advertising. The lodges provide people who live in the high stress environment of Jakarta an opportunity to get away and relax near a beautiful rainforest. The park is the ideal weekend getaway for some green therapy after the pressures of Jakarta. While the somewhat





difficult and slippery walk-in access will deter some potential visitors, for others, it's all part of the fun and a chance to get a little exercise before relaxing. The potential to build a strong weekend visitorship of Javanese and expatriates living in Jakarta is very good.

The second area of success is the financial benefits being received by the enterprise members—community members who are involved. Yes, we are particularly pleased to be able to tell you that each enterprise member, from all three sites, has received a financial benefit from the enterprise activities. This has helped to encourage them all, especially as in the beginning the guests were a little slow in coming.

The third area of success is the learning and exchange going on with projects undertaking similar or related projects. There have been four other Indonesian projects who, it would seem, have thought highly enough of our project to visit it, and to do comparative studies. They are:

- i. Siberut Project, West Sumatra.
- ii. WWF Project, Ujung Kulon, West Java.
- iii. YES (Sumatra Ecotourism Foundation) Project, North Sumatra.
- iv. Pact Indonesia Project, North Sumatra.

Challenges

Like similar projects, the challenges we face are many. We have chosen four to share with you. The first is discussed here with the hope that others may learn from it.

In the southern site we have a mixed community of traditional Kasepuhan and Sundanese (non-Kasepuhan). The Kasepuhan are steeped in strong traditions and beliefs, going back some six hundred years or more, and are of a more formal character. The non-Kasepuhan, on the other hand, have different traditions and beliefs and are of a less formal character. The enterprise members are a mix from the two groups who find it difficult to agree about even the simplest of tasks. As you can imagine, trying to maintain a little harmony is difficult, to say the least. The challenge is easy to see but it is often difficult to conceive a solution, without one or the other being disappointed. A world-wide, age-old story!

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The latter challenge deals directly with the enterprise

in the southern site. The following challenges are far more damaging both directly to the project and to the conservation of Gunung Halimun National Park as a whole.

For many years it has been impossible to obtain any up-to-date maps of GHNP or to receive a permit to undertake any form of mapping. In 1992 the latest maps that could

be found were produced in the 1960's. That's because the military wanted to keep it this way because they have historically carried out military activities and training in the Park. As this project got underway all military activities in the Park had supposedly, officially stopped. Unfortunately this has not been the case. On a number of occasions a large number of military personnel have been seen in the Park!

The next challenge, and one of the most damaging and the most difficult to

meet is that concessions are granted, it would seem, 'willy-nilly' to anyone for anything. The latest is a concession given to the Nirmala Agung Tea Company to clear 50 hectares of primary forest, right in the middle of the park. This land has now been slashed and burned. There are many stories of other concessions (of varying kinds),

When first putting 'pen to paper' we found it difficult to think of success stories, but all too easy to think of the challenges—a little depressing at first. Looking closely at this problem we realized that our small success stories are important elements to the success of the project as a whole.



B. Condit

the validity of which is unclear at the moment. These bites out of the forest are adding up, until there may be little left.

Equally damaging and perhaps the biggest challenge of all because there is so much money involved, will be gold mining, both legal and illegal. So long as the price of gold remains high this pressure will not likely go away. Sadly, Gunung Halimun National Park is reasonably well endowed with this precious metal and prospecting is relentless.

Author: GHNP consortium



B. Condit

7. Community Logging in the Buffer Zone of Gunung Palung National Park in West Kalimantan

Location:
Gunung Palung
National Park
(GPNP) West
Kalimantan, Indonesia



Partners: Harvard University
Laboratory of Tropical Forest Ecology
(LTFE)
Government of Indonesia
Ministry of Forestry (MoF)
Local Community Groups

BCN Funding: \$547,560

**Partner
Contribution:** \$76,604

Grant Period: November 15, 1995–November 30, 1998

What's at Stake?

From coastal mangroves, through swamp and lowland forests up to the epiphyte rich montane and cloud forests of Mt. Palung, Gunung Palung National Park contains a complete gradient of tropical rain forest habitats. The 90,000 hectare park is home to a vast diversity of plants and animals including endemic proboscis monkeys and the largest remaining population of orangutans.

The greatest threats to this park come from villagers in search of high value timber which can be marketed, albeit illegally, to nearby sawmills. The recent completion of an asphalt highway along the coast improves village access to outside markets and allows outsiders easier entry into previously remote areas. Poor villagers, often recent immigrants to the area, also clear park border areas for wet rice cultivation. Increasingly the park is an island constantly nibbled at the edges.



To counter these threats, the Harvard Laboratory of Tropical Forest Ecology (LTFE) will establish a small community-managed and owned enterprise in a 5,000 hectare buffer zone adjacent to the park in an area that was formerly a timber concession. Rather than being driven by their economic needs to log illegally inside the park, the local villagers will now have alternative employment opportunities outside. The type of logging will demonstrate important technical modifications that reduce damage to the residual forest, and encourage forest recovery and logging efficiency. A small sawmill will add value to primary processing and the proceeds will remain in the local villages instead of being exported with the raw timber.

This project will serve as a pilot project for community-based forestry activities, and may well be replicated in the future. In light of these policy implications, the due prudence given the project seems appropriate.

In addition to timber extraction, the enterprise will include patrolling the park border and rehabilitating previously disturbed lands. This project, the first of its kind in Indonesia, has important potential to affect policies regarding community resource management and forestry practices throughout the country.

1997 Update

In 1997 the project made the most progress not in the field—but in the offices of the Ministry of Forestry (MoF). After painfully slow progress working out cooperative arrangements for implementing the project with the Ministry in 1996, we are now almost there. We approach

The main concerns include responding to outside threats to the park and surrounding area, and the development of internal consistency among cooperating parties.

the final approval slowly, not from a lack of government support, but as a result of the meticulous attention given the project by the Directorate General of Forest Utilization within the MoF. This project will serve as a pilot project for community-based forestry activities, and may well be replicated in the future. In light of these policy impli-

cations, the due prudence given the project seems appropriate.

Local governments remain supportive of the project, and now they are increasingly anxious to begin field activities. Recent elections and political shuffling have brought in a new cadre of officials, but so far their commitment seems as genuine as that of their predecessors. Community members remain ready to begin as soon as possible, and have expressed concern at current illegal activities, particularly encroachment by outside parties.

Success Stories

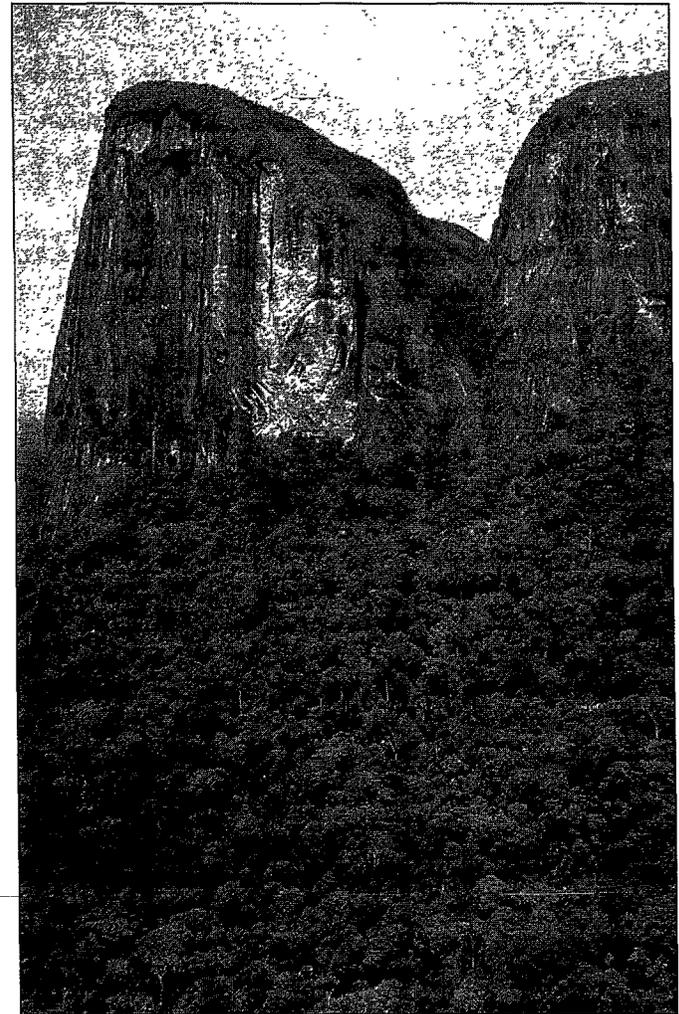
The BCN project in the Gunung Palung buffer zone will likely be the first model of community-based forest management put forth by the Directorate General of Forest Utilization. It was highlighted as an approach to community-based forest management at a workshop on the Consultative Group on Indonesia Forestry a policy roundtable of NGOs, international donor agencies and officials from the Ministry of Forestry. It is obvious that BCN has created a clear and direct link between community needs and high-level policy making.

The project has generated interest from NGOs and donor agencies who have pledged additional support contingent upon initial field implementation. Thus, the BCN grant has provided the necessary initial investment for a project beyond the BCN's original scope and time limitations. However in the past year, it has become apparent that this project must be extended beyond the initial three-year

funding period in order to ensure legal, economic and biological sustainability.

Harvard (LTFE) has been developing links with Bina Swadaya, an Indonesian NGO, to assist in the community organization and enterprise development components of the project. Bina Swadaya would fill a special role in bringing together the necessary stakeholders at the district and village level. This is exciting as it helps develop technical capacity within Indonesia, and perhaps lays the groundwork for project continuity once BCN is no longer present. We look forward to further solidifying this cooperative effort.

Community members previously affiliated with the LTFE have helped lay the groundwork for BCN monitoring. This includes conducting regeneration studies and



K. Satriawan

background biological monitoring that will complement monitoring in the proposed project site. They have been the key resource for designing the education and training programs necessary for successful project implementation.

Challenges

It seems that the necessary political hurdles have been crossed and now the project will finally enjoy the challenges of field implementation. The main concerns include responding to outside threats to the park and surrounding area, and the development of internal consistency among cooperating parties.

Illegal logging continues to threaten the park, especially in the swampy areas accessible by river. The recent, nearby construction of small sawmills that process illegally harvested wood poses a serious threat to the old growth within the park. Loggers from outside the local communities have begun to enter the park as well. In addition to felling trees, these groups have been hunting park wildlife. Recently, a visitor to the park encountered a logging group that had killed and eaten rare and endangered hornbills. Eliminating all illegal activity from the western park area will be a daunting task.

This project will bring together a wide range of stakeholders who have claims, real or imagined, to the park and

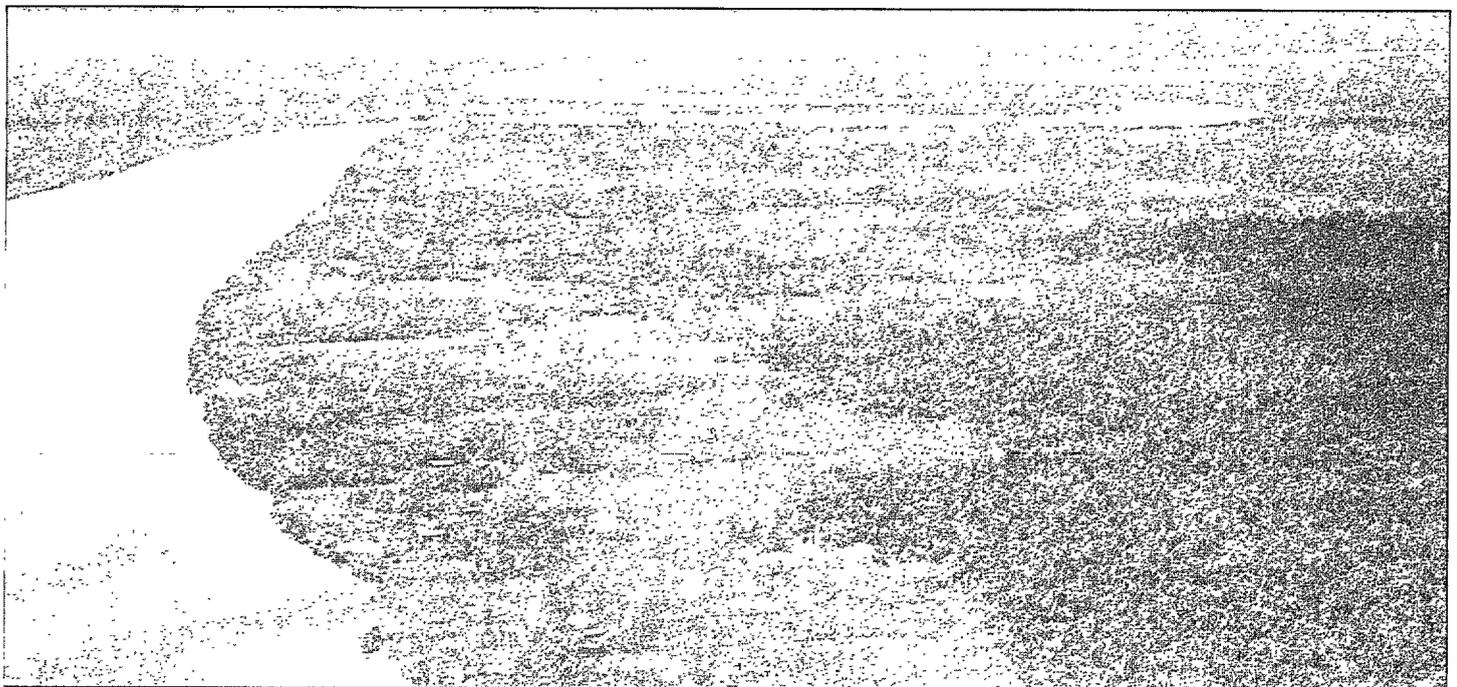
buffer zone. Working relationships among these parties are crucial for park security. Such relationships are possible, but developing the appropriate forum will require the cooperation and commitment of parties who have not previously worked together. The coming year should be an exciting time.

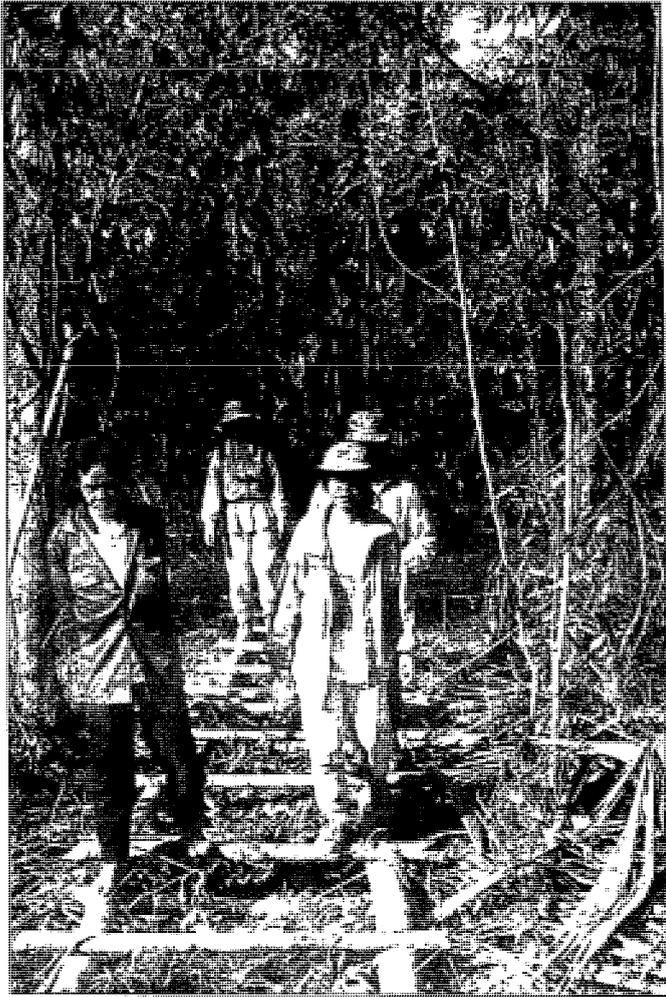
Authors:

Mark Leighton, Director of the Laboratory of Tropical Forest Ecology and Lecturer in Anthropology at Harvard University, has been conducting ecological research within GPNP and surrounding villages for 13 years with his many students and colleagues. His experiences launched this project as a long-term solution for conserving the magnificent rainforest habitats of GPNP.

Ronnie Cherry, the Project Field Manager has a major field responsibility for the project from his base in Pontianak and Gunung Palung. Ronnie is a specialist in community-based forestry and undertook his Master's degrees in the Schools of Forestry and Management at Yale University.

Hikma Lisa, a graduate of Pontianak's Tanjungpura University in Forestry Socio-economics, has managed socioeconomic and community aspects of the project since the planning stage. Her commitment stems from a desire to preserve the forests and improve the welfare of people in her home province.





8. Forest Products in the Rain Forest of West Kalimantan

Location:

West Kalimantan,
Indonesia

Partners:

Yayasan
Dian Tama (YDT)

P. D. Dian Niaga

Appropriate Technology International
(ATI)

Social Forestry Development Project
(SFDP-GTZ)

BCN Funding: \$466,249

Partner

Contribution: \$177,044

Grant Period: January 1, 1996–December 31, 1998

What's at Stake?

The forests of West Kalimantan are home to some of the rarest of the rare: flying lemurs, tarsiers, hornbills and orangutans. These animals and others are still hunted because the people who live near and in these forests are also struggling to subsist. Unsustainable hunting and use of forest resources threaten both the region's biological diversity and the future of local communities too.

As a solution, we are attempting to develop a variety of small-scale enterprises that rely on non-timber forest products (NTFPs). The Participatory Forest Management Area (PFMA) where Yayasan Dian Tama (YDT) covers a broad range of natural and human habitats including swamps, lowland forests, riverine forests and agroforestry systems. YDT and its collaborators work within the framework of the Social Forest Development Project (SFDP), a unique community-based forest concession that began in 1990. This 10 year program intends to develop national and local policies to support sustainable extraction and commercialization of non-timber (and, perhaps timber) forest products in West Kalimantan.

A critical aspect of this project is to clearly establish resource rights and to identify alternative income sources. The BCN funded enterprises which are part of the larger overall strategy focus on the harvest, processing and sale of

specific NTFPs. YDT and its partners will establish market linkages to process damar, a resin used in paints and other industrial products, and to sell semi-processed rattan and bamboo to a Java-based manufacturer and marketer of handbags. Over 200 families are participating as owners of the enterprises.

YDT and Dian Niaga will work with individual harvesters to develop their enterprise skills and capacity, as well as act as the marketing bridge for the unprocessed and semi-processed products.

When the weaving training started, Pak Sunda became very interested in joining, even though most of the other weavers were women. He followed his feeling that weaving could make him a good income.

1997 Update

While last year's activities focused on developing people's skills, 1997 is the year of production and marketing. Although we still need to increase overall production, capacity at the village level is making good headway, thanks to strong leadership. Also, the manufacturers have





become remarkably skilled at producing stylish high quality rattan handbags, brief cases, and business accessories. We attended some exhibitions in Indonesia and abroad to gain a better understanding of the market's need and found that our products were enthusiastically received. This year's new designs are in demand by high end retail outlets and customs boutiques. The problem is, our production capacity limits our ability to meet orders on a consistent and reliable basis, which is critical to establishing a stable business relationship. It's exciting to know that people are interested in our product, but frustrating to know that we still cannot reliably fulfill large orders.

This year, three more villages were trained in weaving rattan baskets. The peoples' weaving skills already existed, but we increased their knowledge about selecting the raw materials and using molds to make uniformly sized baskets. We also taught simple management skills and environmental awareness related to sustainable harvesting. The villages are enthusiastic about increasing the quality of the products and as well as protecting the environment.

Out of the 11 villages that have now been trained, we

Our dream—knowing what the sustainable harvest level is—is still far off, and maybe we won't know for another year or two.

selected six for socio-economic monitoring. The most difficult part was explaining the program to the villagers who are not directly involved in the project. In the past they had had bad experiences where information that they gave out in interviews was used against them. So at first they viewed our questions with suspicion because they were afraid that the data they gave us would be used to levy taxes on them. But after we explained why the data is needed and how it would benefit them, they became very cooperative about providing the information.

In August, the inventory of natural resources was completed. Villagers that were trained last year to do the inventory are now doing a good job. The data analysis will be ready in October. We are currently preparing the growth and yield study for bamboo, rattan and damar based on the inventory data.

After waiting from August 1996 until September 1997, we were finally granted the collecting permit for damar. This is a great relief. It means this is not the end, but rather the starting point for our future enterprise.

Success Stories

Pak Sunda, 33, lives in Periji, one of the villages that has trained weavers for the rattan production. Originally a slash and burn farmer, Pak Sunda struggled to make a living. Although he worked in the field for eight to nine months, his farm yielded only enough food for four to five



months of the year. So in order to meet his basic needs, he also worked as a rubber tapper in his neighbor's field. By 1994 he had two children to feed as well and he was having a very hard time making ends meet. When the weaving training started, Pak Sunda became very interested in joining, even though most of the other weavers were women. He followed his feeling that weaving could make him a good income. Since then, he has become a leader of his village's weaving group and a trainer for weavers—not only in his own village, but he helps YDT train weavers in other villages as well.

Pak Sunda's life has changed from being a slash and burn farmer to becoming a group motivator and entrepreneur in weaving. Now he is the quality supervisor for all products that his village group produces—a group which started with four members and now numbers 22. The members pay Pak Sunda because he helps them in many ways. He collects rattan for the group and is always finding new ways to teach them how to increase the quality. Under his leadership, the skills of the group members are slowly but surely improving and so is the quality of their products.

Pak Sunda also understands the limitation of rattan resources in his area. He actively urges the weavers to plant rattan on their farms to provide for the future. Each family is collecting rattan seeds and has planted between 50 to 100 plants which is not much, but it is a start.

After three years, Pak Sunda smiles at the progress that has taken place. Under new kerosene pressure lamps, people are happily weaving and chatting. And as the produc-

tion increases, their income also increases. Recently Pak Sunda returned from a month in Jakarta where he worked at a major exhibition demonstrating Kalimantan weaving techniques to people in the big city. He was very proud to be chosen as the representative. Hard work gets its reward.

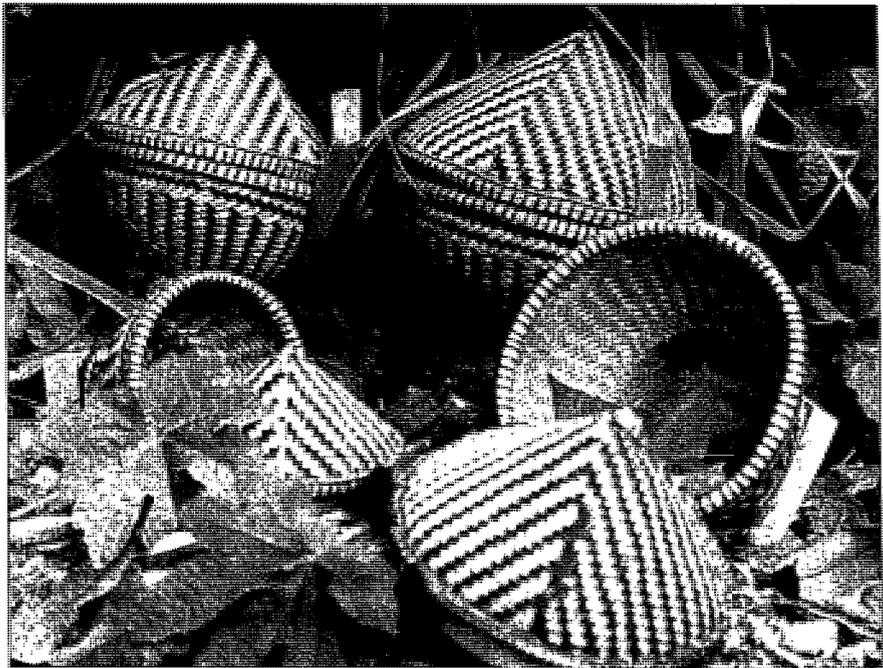
Challenges

There is a story about a blind man who owns and makes a living from his store. Because he is blind, whenever somebody comes to buy something, he doesn't know whether he has it or not, or how many he has, much less where it is, or what is the right price to ask for it.

When first we started the BCN project, we felt like that blind man with his store. We have the 'store'—100,000 hectare within the Participatory Forest Management Area with 17,000 people living in it—but we don't know what kind of specific 'things' are there, where and how much stock we have, or the potential for growth or annual yield. We don't know what exactly what there is to harvest, nor at what levels it would be sustainable.

Using transect methods, the natural resources inventory has been completed. We know the species and the amount of each in the transect. But it still difficult to find-out how





many damar trees or rattan clumps there are, their growth rate, or how much can be harvested. We do not know what to base the calculations on to determine the potential yield of each non-timber forest product. Our dream—knowing what the sustainable harvest level is—is still far off, and maybe we won't know for another year or two.

Even though the transects are established within the forest management area, and there are local villagers that know how to do the monitoring, the information we need from the biological-ecological monitoring will take longer than the time we have left in the time of life of the project which ends in 1998. So how will we be able to continue?

Authors: Alty and Rudy Utama. Alty is the head of the BCN-funded project and her husband Rudy is the Director of Yayasan Dian Tama, which is also involved in a 'green' charcoal making and marketing venture, as well as an agricultural demonstration site/farm. They have lived in West Kalimantan with their two children for ten years.

There is a story about a blind man who owns and makes a living from his store. Because he is blind, whenever somebody comes to buy something, he doesn't know whether he has it or not, or how many he has, much less where it is, or what is the right price to ask for it. When first we started the BCN project, we felt like that blind man with his store.

9. Rafting, Honey, and Butterflies in the Rain Forest of Sulawesi

Location:
Lore Lindu
National Park,
(PHPA)



Partners: The Nature Conservancy
CARE-Indonesia
University of Guelph

BCN Funding: \$584,892

**Partner
Contribution:** \$714,767

Grant Period: August 1, 1995–July 31, 1998

What's at Stake?

Lore Lindu National Park (LLNP) in Central Sulawesi is a UNESCO Man and the Biosphere Reserve. The area contains some of the largest unbroken tracts of forest within Sulawesi and is home to 73% of the island's 328 bird species. The wildlife of Sulawesi is one of the most distinctive in all Indonesia, particularly its mammals, and its rare and spectacular butterflies.

As in many places in Indonesia, Lore Lindu Park not only supports wildlife, it provides natural resources to help meet the basic needs of a growing human population living near the park. The park is threatened by over-utilization, encroachment, illegal harvesting of rattan and other forest resources and by infrastructure development.

To try to counter these threats, TNC is focusing on four elements: 1) Developing microenterprises such as butterfly ranching, honey production, and rafting ecotourism, 2) Park Management and Stewardship including drafting a 25-year resource management plan with the Directorate General of Forest Protection and Nature Conservation (PHPA), 3) Working with Communities to increase conservation awareness and respect for the park through sustainable development projects with CARE/Indonesia and a school level conservation program and 4) Ascertaining the impact of the above activities from the social, biological and economic perspectives. TNC's monitoring pro-



gram also assesses the impact of the ongoing, widespread rattan collection in LLNP. In addition to developing ecologically sound enterprises and introducing conservation awareness programs, TNC also works with the Government of Indonesia on policy issues. This project will allow TNC to work closely with PHPA on community access to and use of protected areas.

1997 Update

Fourteen farmers from the Kamarora area have been participating in the **Butterfly Enterprise**, and pupae have been exported to the UK since March. A valuable connection has catalyzed the sales. Export has been under the auspices of an agreement with PT Ikas, an existing dead-stock trading company whose director has very close ties with Indonesia's first live butterfly exhibit at Tabunan in Bali. This relationship has been fruitful in two ways: firstly, export permits have been issued in PT Ikas' name for pupae produced from Kamarora, and secondly, the Bali Butterfly Park has been purchasing butterflies directly themselves. We hope to build on this relationship in the coming year so that PT Ikas themselves export pupae, and purchase a portion of their domestic and export requirements from Kamarora. The farming group has been issued

a trading permit (SIUP) in the name of *Kelompok Penangkar Sinar Kupu-kupu* (Gleaming Butterflies Farming Group), and a full farming permit has been requested from PHPA.

Already the project has impacted national policy. On 8 October 1996, PHPA formally decided to allow the export of live pupae from Indonesia (under the understanding that these would not be re-exported to countries with the potential for maintaining breeding populations). This allows the growth of a new cottage industry in Indonesia, with potential for increasing income at the rural level and increasing conservation awareness at many levels of the population.

Already the project has impacted national policy. On 8 October 1996, PHPA formally decided to allow the export of live pupae from Indonesia.

Four species have been reared for export. Difficulties in breeding and maintaining breeding stock have been partly due to bad weather conditions—Sulawesi is experiencing a severe drought which has affected both butterfly numbers and availability of their foodplants.

The average value of shipments was Rp 218,000 (around US\$78) with 20 shipments made over the season. Average income per farmer was Rp 16,000 per shipment

[in comparison, the wage for a field laborer is Rp 4,000 per day]. Several farmers have applied to be new members, and one farmer has started breeding in Pertigaan Lindu with promising results. With development of the Bali market, additional species are being reared.

One major problem which detracted from this success was poor butterfly emergence once they arrived in England. We traced the problem to the packaging: we had been using a Tupperware type box to send the pupae—it was light, strong, comfortably held 300 pupae, and seemed ideal for the purpose. Unfortunately, we discovered that after four days in such a box, pupae mortality was around 50%, so shipments were made in cardboard boxes with far better results.

From May to July, a series of training meetings were held by staff of the **Honey Enterprise** for bee-keepers, and potential bee-keepers, in Rahmat, Kamarora, and Tongoa. But even though there has been some production of honey, it has been difficult to find enough in marketable quantity—most honey either being eaten on the spot or sold within the village. To assist with this, harvesting of comb honey has been promoted, and the Rahmat group have started collecting and boxing comb honey. More promising perhaps is pollen: project staff have designed and distributed pollen traps, and worked with a local honey trader to market honey-pollen as a nutrition supplement to promote 'vitality'. Demand is so far exceeding supply.



R. Mangelius



D. Heckman

In the Napu Valley, the honey hunting seasons have not been very productive, perhaps because of unusual climatic conditions. Following meetings with the honey hunters' group at Watutau (30 members) in January, the major problem to developing a village enterprise was identified as being the need to immediately exchange honey for cash—this meant that honey hunters couldn't collect honey and wait for better prices. To overcome this, an agreement was signed between TNC and the honey hunters whereby TNC provided capital funds to buy honey in the village, with the aim of reselling it in Palu at better prices. Through this simple but effective action, the value of honey to the hunters has risen from Rp 2,000 per bottle to Rp 3,750. So far 180 bottles have been bought and resold at Rp 5,000 per bottle, the profit accruing to the agency to repay the loan.

It is planned to build on this success by operating a similar fund with the Winowanga hunters' group, and to negotiate an agreement between the villagers and the National Park Authority (KSDA) regulating the honey harvest.

Rafting Enterprise development continues slowly. Unfortunately the main local partner is *PT Lariang Lindu Wisitatirta*, who holds operating licenses from the provincial government, went bankrupt so we are seeking another partner. Because of these problems, the rafting operation is

still being run as an expedition from Tana Toraja by *PT Toranggo Buya*. The first training trip was held between 20–25 May 1997, and was very successful. Four rafting trainees from Bada participated, together with experienced trip leaders and guides from *Toranggo Buya*, two staff from TNC, one member of Sub Balai KSDA, and a camera team from Bali, almost filling the two rafts required for the trip. Any remaining room was taken up by four tourists who joined the trip by chance in the Bada Valley.

The arrival of two boats full of hungry rafters—14 souls—caused a minor shortage of chickens in the village of Au. Not that the villagers complained, at 25% above market prices they were more than happy to see the visitors eat their way through 6 chickens and mounds of vegetables. The trip itself was an exhilarating, sometimes frightening, blend of fast rapids and peaceful floats through virgin forest. The film and photographs obtained are already being used to promote the next Lariang Expeditions.

Success Stories

Butterfly Enterprise

After a slow start, butterfly farmers improved their skills, and even the poorer producers were earning the equivalent of two days labor each week. The most outstanding farmer, Pak Putujiwa, saw his market share decreasing as the season progressed, and he often had left-over pupae. One positive effect of this was that he realized the importance of group development so that other farmers concentrated on the less valuable *polytes*, allowing him to focus

his efforts on more valuable species like *ascalaphus*, *sataspes*, and the new *fuscus*. With money earned from butterfly farming, Putujiwa refurbished his house, built a terrace incorporating a rearing enclosure, and concreted the floor throughout. He now gets two or three visits a month from tourists and local government parties, so felt that home improvements were in order.

The main problem facing the Rafting Enterprise is still the physical isolation of the Bada Valley.

Honey Enterprise

In the Napu Valley the wild honey bee *Apis dorsata* is not producing like it used to. Perhaps the El Niño effect is reaching the bees of Lore Lindu. Nevertheless, honey hunters are still fairly active and are happy to see the value of honey increase. When the next good season arrives they will be even happier. Watutau is a village of born entrepreneurs—the dormant fund of cash has been used

several times for short-term loans, and returned at 5% interest per month! Although not yet a problem, we hope to overcome this by introducing a separate credit union scheme, run by CARE Indonesia.

New Initiative

A lot of interest has been shown in the traditional Bada barkcloth, and TNC has attempted to support an enterprise based on this. A company in Bali ordered 50 sheets of plain cloth per month in March, but after the first shipment this arrangement failed, leaving us with a box full of cloth. More promising is sale of painted barkcloth squares, or *sigā*, painted and autographed by a Bada artist, Antonius Taula. We are trying to get *sigā* into a major mail order catalog by next spring. Discussions have started with local community leaders about planting the *bea* bushes which provide the raw material for the best quality of cloth—this will probably become part of the TNC village development/agroforestry program.

Challenges

One of the major challenges faced by the **Butterfly Enterprise** is to ensure that a local marketing capacity is in place during the next butterfly export season. It's difficult to see this capacity arising in the village itself, particularly if we are looking to export directly from Central Sulawesi; the level of education just isn't high enough. There are several options: to involve a local business and train them as butterfly exporters, to persuade an existing butterfly business to open a branch in Palu, or to organize shipping to an existing business for them to export. This latter seems the best course, especially as the company we are currently working with has its own butterfly farm which can receive excess stock. Shipping within the country

is easy, cheap, and involves a minimum of bureaucracy—the latter would be a major problem for villagers to overcome. There must be a hard-core of innovative farmers who actively look for new species to farm. This was lacking in Kamarora, but the involvement of a new farmer from Rahmat looks to be a step in the right direction.

TNC provided capital funds to buy honey in the village, with the aim of reselling it in Palu at better prices. Through this simple but effective action, the value of honey to the hunters has risen from Rp 2,000 per bottle to Rp 3,750.

The main problem facing the Rafting Enterprise is still the physical isolation of the Bada Valley—a rafting trip involves a major expedition from the current base in Rantepao, Toraja, which is not attractive to passing tourists. However, good promotional material now exists, and is being put into several magazines and travel exhibitions. One attractive market is in Singapore, where many people already travel to Bali and Toraja as adventure tourists.

Author: Duncan Neville has worked in Indonesia for the last seven years, firstly with WWF in the Arfak Mountains of Irian Jaya and now with TNC based in Palu, Central Sulawesi. Prior to this he worked in the largest butterfly farm in the U.K., a tourist and educational attraction which, like many others now in existence, brings the entomological wonders of the tropical forest into the modern city.



R. Mangalana

10. Butterflies in the Rainforest of Irian Jaya

Location:

Arfak Mountain
Nature Reserve, Irian
Jaya, Indonesia



Partners:

World Wide Fund for
Nature—Indonesia Program (WWF-IP)

Yayasan Bina Lestari Bumi Cenderawasih
(YBLBC)

BCN Funding: \$179,632

Partner

Contribution: \$115,760

Grant Period: April 1, 1995–March 30, 1998

What's at Stake?

Irian Jaya's Arfak Mountain Reserve is a last enclave of lowland rainforests and ethereal montane moss forests. In these forests live an extraordinary diversity of rare and endemic creatures such as tree kangaroos, bandicoots, birds of paradise, bowerbirds and birdwing butterflies. The Hatam people who live in and around the reserve eke out a subsistence existence through agriculture, the collection of wood for fuel and construction, and historically—by poaching.

Working with the Hatam and other Irianese living in the vicinity of the reserve, WWF-IP and YBLBC have developed a butterfly enterprise. Six spectacular species of endangered birdwing butterfly (*Ornithoptera and Troides* spp.) are farmed on the perimeter of the Arfak Mountains Nature Reserve. Iridescently colored and about the size of teacups, birdwing butterflies are highly prized by collectors as "objets d'art". Before the farms were established, birdwing butterflies were poached and sold through the black market, with little economic gain to the local people and no regard for the species' survival. Through butterfly farming, villagers have become guardians of their wild "live-stock", policing for poachers and marrying traditional ecological knowledge to scientific studies. The farmers also recognize that their livelihood depends on thriving wild populations of butterflies which increases their support for the survival of the larger reserve.



1997 Update

In the past year, the local NGO—Yayasan Bina Lestari Bumi Cenderawasih (YBLBC) has become a stronger force working with and for the Arfak communities. While we now realize that the butterfly farms alone cannot and never will be capable of totally sustaining the Arfak population of about 15,000, the organization of the butterfly farms has served as a catalyst for other income opportunities and techniques that support farmers earning cash without encroaching further upon the forests. The average cash income generated from butterfly farming is roughly an average of Rp 50,000 (\$20US) per member family per annum. Although this does not sound like much in aggregate, across the community it represents a significant proportion of the cash income. The butterfly farming enterprise will have approximate sales in 1997 of \$75,000

US. So the butterfly farming is a piece of a larger movement towards biodiversity conservation.

Monthly meetings of group leaders to discuss problems and other income generating activities are held regularly and are well attended. Improved and cooperative vegetable farming is bringing higher economic returns without encroaching on more land. As the vegetable farming enterprise has grown (taking on the organization developed for butterfly farming) women are more obviously in evidence and come to the Manokwari office regularly. While non-butterfly farming activities are strictly outside of the BCN-funded project it is important to the sustainability of the foundation and its conservation aims, that all activities protect the primary forest and the Arfak Nature Reserve. Furthermore, it has encouraged women to come to the office, thus increasing their contact and their awareness of conservation aims.

As is becoming clearer from our monitoring, participation in butterfly farming varies considerably from group to group and most groups have a core of 5 to 6 members who usually have pupa to sell. Only twelve of the eighty-nine

While we now realize that the butterfly farms alone cannot and never will be capable of totally sustaining the Arfak population of about 15,000, the organization of the butterfly farms has served as a catalyst for other income opportunities and techniques that support farmers earning cash without encroaching further upon the forests.

groups currently on the register are very active and another fifteen are moderately active in butterfly farming.

Enterprise monitoring has made it more apparent that the butterfly agency is very production driven. While we cannot say that farmers own the enterprise in the strict legal sense they do have a type of ownership in that they own and control the production. To retain the confidence and motivation (and prevent jealousies) YBLBC must purchase what is offered by the butterfly farmers, as long as it meets minimum quality standards. Because of this, it is impossible to maintain stock levels consistent with anticipated sales for each species. Further compounding our attempts to broaden our species product line to reduce both the economic and biological risk is the permitting process. We have not yet received permits for the collection or farming of further species.

For people who traditionally live day-to-day and to whom a market is a physical place where fruit, vegetables, fish, meat and other goods are taken and exchanged for cash, the concept of a "world market" which is not a physical place, where payment is not immediate and a response to expected sales is wanted, is difficult to understand. It is



J. Parks

extremely important to take things step-by-step working from accepted traditions of working and cash income requirements.

Domestic sales of display cases have risen substantially over the past year and a new style of frame is currently in production. Numerous local groups (government departments, school groups, etc.) have visited YBLBC in the past year. Some have come simply for recreational interest and others for more specific instruction in the project and its conservation aims.

Success Stories

A major challenge for the project has been to implement a coordinated biological monitoring plan. Without a clear coordinator, the monitoring surveys which have taken place have been piecemeal and failed to build upon previous surveys. It became clear that the earlier monitoring plans were overly complicated with too many diverse activities and that a very simple plan was required if it was to be carried out.

This August, BCN sent John Parks of Ecotrack Consulting, Honolulu, Hawaii, to facilitate a biological monitoring workshop and to help in collection of the baseline data and Steve Montgomery (National Wildlife Federation, Honolulu, Hawaii) an expert on anthropoids, to assess the biodiversity of the area and to make recommendations of suitable monitoring techniques.

Plans for the field trips were plagued by our inability to reach Arfak by airplane, which required re-planning trips and loss of days as the teams had to go up and down the mountain by foot. Cloudy weather then prevented completion of butterfly counts. Between field excursions, John led a workshop on biological monitoring for Arfak butterfly farmers from six villages around the Arfak Nature Reserve.

Despite a tight schedule and all the setbacks, the workshop was a great success. The objectives set out by John and Steve for the exercise were accessible and meaningful to the community. They clarified that the biological monitoring should be community monitoring and that the primary purpose was that the results were useful to the community. This was very important for some project staff who had a real fear of reporting results that could easily be attacked as "non-scientific" by the research community.

Monitoring methods and techniques which could be understood and put into effect by the community were

As is becoming clearer from our monitoring, participation in butterfly farming varies considerably from group to group and most groups have a core of 5 to 6 members who usually have pupa to sell.

established. While scientific methodology should be adhered to as far as possible within the constraints, research for the scientific community was not the main aim of the monitoring. A key requirement of project staff is to assist in the interpretation of the results so that meaningful feedback is returned to the community from which it came, so the community can put the results to use.

For example, by taking a close look at the food plant and making a note of its health and vigor, farmers become more aware of the condition of their vines. Noting whether vines

were in fruit served as a reminder that the fruits would need to be planted to ensure future larvae food plants. One larvae was rescued from a completely eaten vine and replaced on a thriving one.

John's drawings and diagrams were a hit with workshop participants. In fact, participants requested the materials with all the pictures to help train other community members. A further requirement is the need for time for clarification and discussion in the Hatam language, which most of the workshop participants speak. Proficiency in Indonesian varies, and it is clear that new concepts and ideas require discussion in the native language.

A week after the field study course had been completed, Agus Wonggor, group leader of Mbenti Butterfly Farmers arrived in the office and presented us with a completed butterfly count—the final result of the survey which had had to be abandoned due to bad weather. Furthermore, the group had sent a question "when are we having a meeting so we can agree on responsibilities for the monitoring, sort out who can help which group and coordinate between areas?" The answer—Wednesday, 8 October 1997.





J. Parks

Challenges

One of the goals of the project is the sustainability of the enterprise. Almost a year ago YBLBC staff expressed confidence in their abilities to undertake management of their own budget and workplans. Following discussions with BCN and WWF-IP this was agreed in principle, but implementation took far longer than expected and presented a major challenge.

Although the local staff are aware of the problems they have to face separating the accounts of the butterfly trading from the community development work, being in control of the budget and ensuring that plans are fulfilled has given project staff a lift, as well as a series of new challenges.

An agreement on a new contract was finally reached at the end of August whereby YBLBC would contract directly with BCN. Although the local staff are aware of the problems they have to face separating the accounts of the butterfly trading from the community development work, being in control of the budget and ensuring that plans are fulfilled has given project staff a lift, as well as a series of new challenges.

A major setback this year was a series of postal delays and losses. A number of clients received parcels with damaged or missing specimens. It took marketing staff a lot of time to explain to others the importance of correct packaging and specimen counts. Butterfly farming is a finicky business and badly damaged specimens are worthless. The time and effort needed to apologize, draw-up credit notes, and the resulting delays in payment, have been frustrating. After feeling that great

strides had been made in the previous eighteen months, this was a setback.

Further disappointment was suffered after we did not get the much-requested permits for collection and farming of non-protected butterflies and other insects. In June, our hopes were raised by a visit from the Head of KANWIL, the Department of Forestry for Irian Jaya Province. He stated that YBLBC would receive the licenses shortly but, as in the past, nothing—just another trip from Jayapura.

Monitoring methods and techniques which could be understood and put into effect by the community were established.

Author: Jenny Foster-Smith is a British Volunteer Service Overseas (VSO) member and has been working with YBLBC for three years. Prior to coming to Indonesia, Jenny worked for Fixpoint Ltd in London, England. Her primary area of expertise is as an economist with expertise in financial analysis, policy assessment, and econometric modeling.



J. Parks

11. Dive Tourism off the Reefs of the Padaido Islands, Irian Jaya

Location:
Padaido Islands,
Irian Jaya, Indonesia



Partners: Rumsram Foundation
Hualopu Foundation
IDRC
Canadian University Service
Organization (CUSO)

BCN Funding: \$295,843

**Partner
Contribution:** \$97,769

Grant Period: July 1, 1996–December 31, 1998

What's at Stake?

The Padaido Islands, Irian Jaya are the site of some of the world's most intact and biologically diverse coral reef systems. The reefs harbor 95 coral species, 155 fish species, and other marine resources which provide both food and income to the people who live there. Destructive fishing practices employ explosives and cyanide to make it easier to scoop up dwindling fish stocks. These unsustainable activities are crumbling the reef ecosystems and threatening the future of coastal communities.

Yayasan Rumsram (based in Biak, Irian Jaya) and Yayasan Hualopu (based in Ambon, Maluku) are addressing these threats by working with local communities to establish a community-based marine ecosystem venture that will attract benefits from tourists who want to see the wonders of healthy coral reefs. Rumsram has built one homestay on the Padaido Islands and has, with assistance from UNDP, established a functioning community based credit union. Currently most of the tourism in the area is mega-scale institutional style and excludes the participation of local communities. By contrast, the project is creating a community owned and operated dive tourism



agency that will offer shares to the local community members. The travel agency will initially be owned by Rumsram and the cooperatives in the three target villages. The stakeholders will be represented by a Board of Directors and we hope that the benefits from the dive tourism packages, combined with necessary training in business management and alternative harvesting techniques, will create local incentives for long-term resource management and sustainable use.

A small number of tourists have already been attracted to the area and they also have been a valuable source of information and feedback concerning community efforts. For all concerned, it is a rewarding learning experience.

1997 Update

Over the past year Rumsram has continued to foster a savings ethic among community members, socialize the idea of community-controlled ecotourism and develop basic skills and infrastructure. Weekly information sessions are held in church on Sunday. Village

11. Dive Tourism off the Reefs of the Padaido Islands, Irian Jaya

cooperatives started by Rumsram in collaboration with the church are putting savings in the bank which will be available as loans to local entrepreneurs.

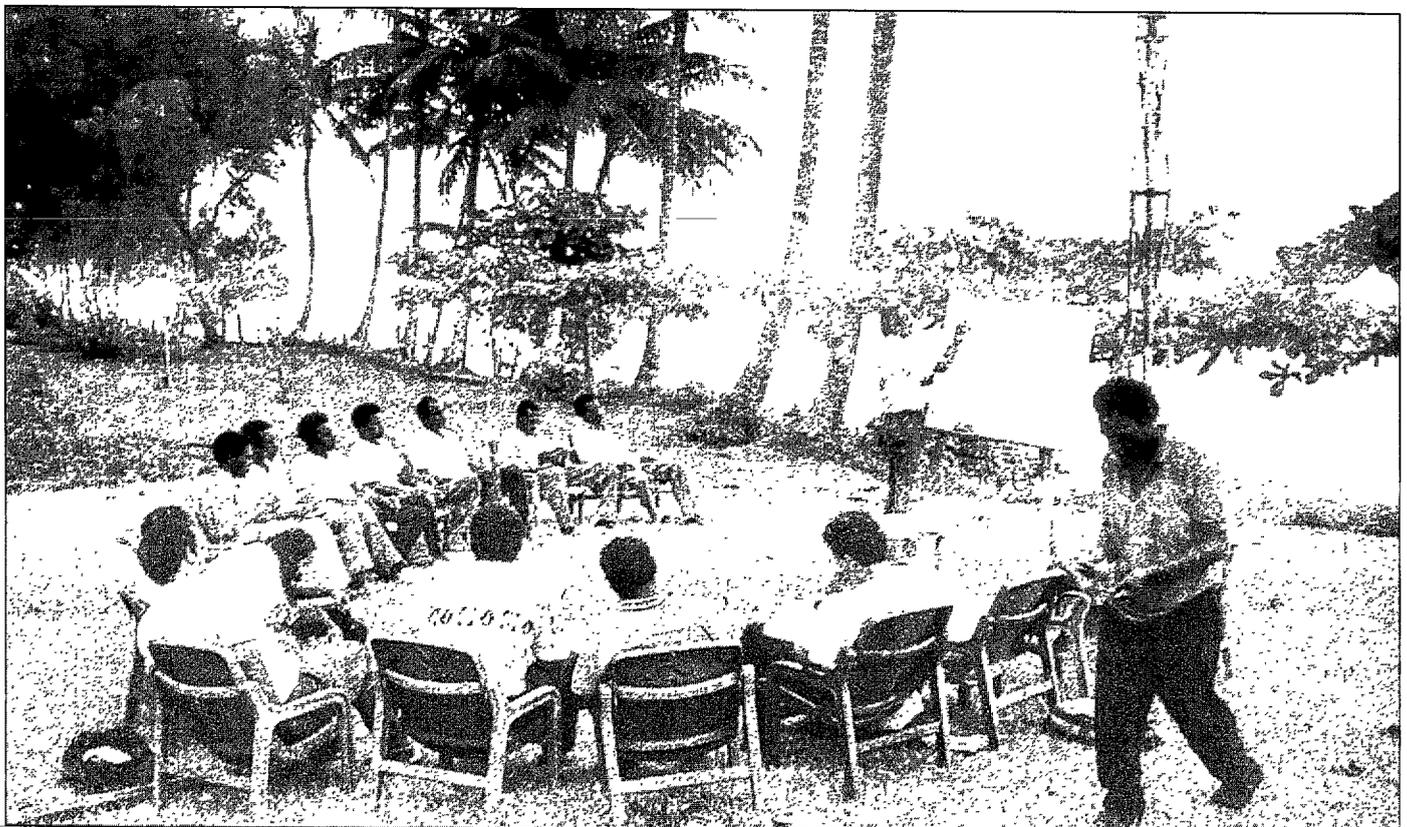
Several craftspersons have already availed themselves of small loans. By September of 1997 the project could boast new toilet blocks in Wundi, Saba and Dawi, an additional cottage on Dawi island, perahus (small boats) in Saba and Dawi that tourists can use, permanent anchorage buoys in place on Saba and Dawi reefs and FAD's (Fish Aggregating Devices) in Wundi and Dawi. English classes have begun in Saba, and significant progress has been made in planning for management of tourism activities, particularly in Saba and Dawi. The efforts of Rumsram and the communities to conserve their reefs and develop eco-tourism is strongly supported by local village and district governments.

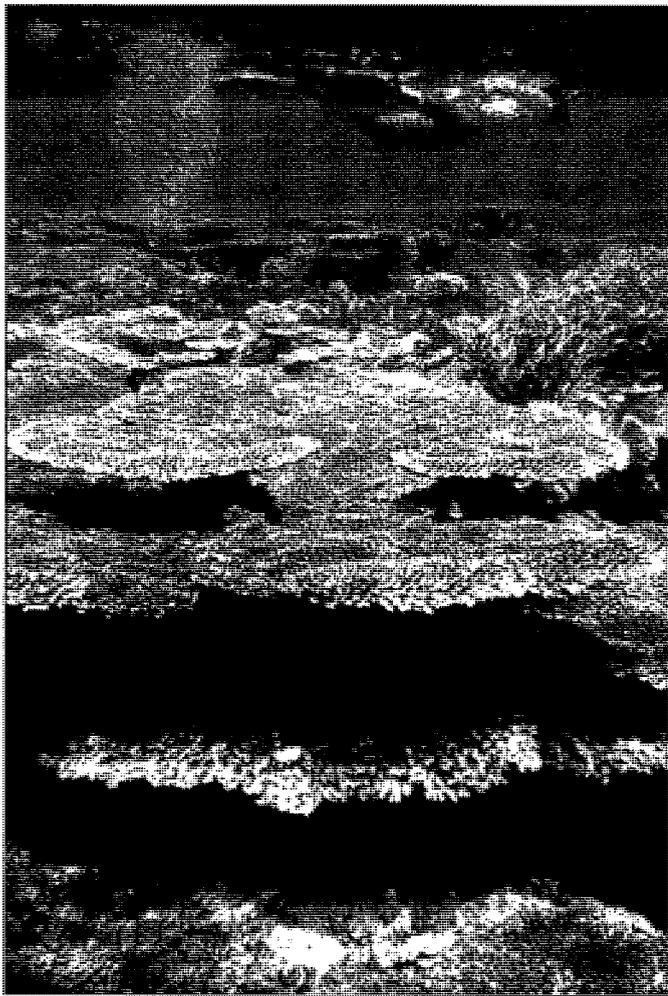
A small number of tourists have already been attracted to the area and they also have been a valuable source of information and feedback concerning community efforts. For all concerned, it is a rewarding learning experience.

Monitoring of socio-economic and biological impacts of the project has begun, with baseline data collected in early 1997. Monitoring of coral reef health and biodiversity has been conducted twice. The data show that all reefs being surveyed are in just as good or slightly better condition than they were at the beginning of the project. Improve-



ments can be seen in areas that were damaged in the past by blast fishing or by the earthquake and tsunami of 1996. Recovery is particularly rapid off Runi island, the site of





R. Mangrove/BSF

extensive earthquake damage. Monitoring shows that blast fishing is at an all-time low—in fact virtually non-existent—at all project sites because of increased awareness.

More community members are being trained so that in the future they themselves can monitor the reefs that are the basis for both local fisheries and tourism. Recently, in Saba where all monitoring trainees have up to now been male, a group of six women decided that they too want to start the learning process, while a second group of women have begun a study group on marine plant diversity and applications for family health, food and tourism. A group of fishers who use both natural reefs and the FAD's (Fish Aggregating Devices) is recording catch data so that the degree of shift from reef to pelagic species can be evaluated. A new program under which women can chart and analyze their shellfish catches has just been instituted. Village volunteers are also collecting information on sea temperature and transparency so that they will be better able to distinguish changes caused by local activities from changes related to, for instance, climate change.

Success Stories

A group of Saba villagers deserve awards for their courageous defense of their coral reef—but some scientists may not agree. In the past year, Yayasan Hualopu's biological monitoring team has held training workshops in Saba to convey basic information on coral reef ecology and monitoring methods. Trainees have been enthusiastic, particularly since they have learned that of all the project sites, Saba has the most intact reef and the largest numbers of butterfly fish, an indicator of rich biodiversity. They have learned how to estimate percentage of living coral cover and now regularly practice their snorkeling and observation skills.

In September of this year, the group was shocked to discover that some scientists had, without prior consultation, laid down a permanent monitoring transect on Saba reef. The transect markers, unfortunately, consisted of 68 heavy concrete blocks linked together by nylon line and balanced, in some cases precariously, along the very edge of the wave-exposed reef slope. Village observers noted that 54 of the blocks rested on top of living corals and a few had already started their destructive descent down the living reef slope. Recognizing the threat to the reef, and fearing what would happen once the windy season started, the villagers removed the blocks. They worked from a tiny perahu and used their bare hands and simple snorkeling equipment—a dangerous exercise!

One challenge is how to deal with scientists who, in their own attempts to conserve biodiversity, employ methods that are unacceptable to local communities.



by Corbin



B. Condit

Challenges

Compared to last year, when the project was literally swept away by an earthquake and tsunami, this year has been very calm. However, there are always new challenges.

One, ironically enough, is how to deal with scientists who, in their own attempts to conserve biodiversity, employ methods that are unacceptable to local communities.

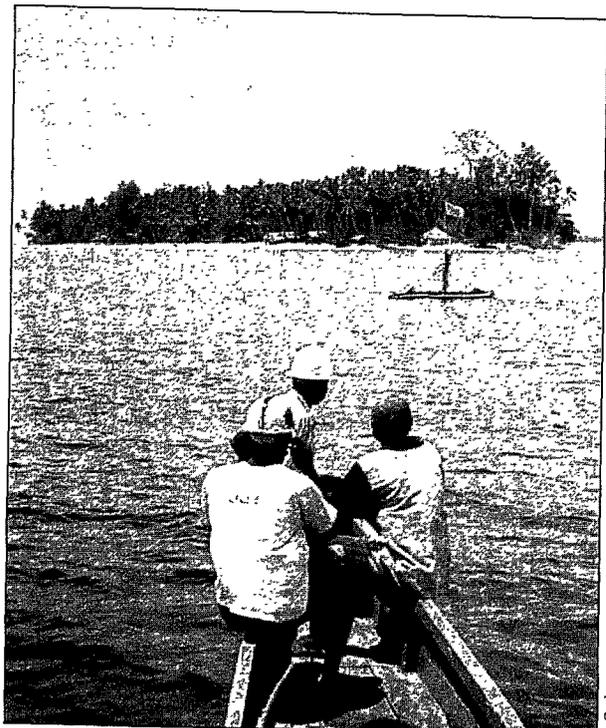
The second serious challenge is also being dealt with in Saba, where a new luxury hotel in the neighborhood wants to appropriate Saba reef as the site for a marina. Saba village is actively resisting this move.

The third area of general concern is the designation of the Padaidos as a site for a national tourism park. What does this mean for local community-controlled tourism developments? Will they be swamped by luxury resorts? What will it mean for the traditional access and withdrawal rights of small-scale fishers? Will the tourism developers who will be attracted to the area respect the communities' traditional tenure of small, unpopulated islands such as Dawi and Nukori? So far, there has been too little information forthcoming to be

Saba has the most intact reef and the largest numbers of butterfly fish, an indicator of rich biodiversity.

able to assess whether this will be a benefit or a disaster from the perspective of the project.

Author: Dr. Irene Novaczek works for CUSO and is the head of the biological monitoring team for the Rumsram and Hualopu project. Dr. Novaczek has been a technical advisor to Hualopu (another Indonesian NGO based in Ambon) since May 1996.



B. Condit

12. Abaca Fiber and Rattan from the Forests of Mindanao

Location: Bendum, Pantaron Forest, Bukidnon, Mindanao, Philippines

Partners: Institute of Environmental Science for Social Change (ESSC) formerly Environmental Research Division, Manila Observatory (ERD)



BCN Funding: \$426,798

Partner

Contribution: \$340,408

Grant Period: May 1, 1995–April 30, 1998

What's at Stake?

Mindanao's Pantaron Range is one of the Philippine's most critically important watersheds, giving rise to several major rivers, including the nation's second largest river—the Pulangi. It is one of the few remaining refuges for the highly endangered Philippine Eagle and the Bleeding Heart Pigeon. Yet the area's forests are threatened by conversion and over-harvesting.

The Institute of Environmental Science for Social Change (ESSC), formerly known as the Environmental Research Division (ERD), is working with a community of indigenous people, the Bukidnon, to try to improve their quality of life by marketing non-timber forest products including abaca fiber. (Abaca comes from banana plants valued for their vascular fiber rather than fruit.) They are also making preparations to market rattan in two to three years time including obtaining a rattan cutting license for the community, promoting sustainable rattan harvest practices and developing the financial management skills of community members.

This forest management project is attempting to formalize community-controlled rattan concessions, which is an important step toward the sustainable use of this and other forest products. As part and parcel of this, ESSC is laying

the necessary groundwork for the indigenous people of the area to obtain a certificate of ancestral domain claim (CADC) from the Philippine government. This is considered the most binding form of government recognition.

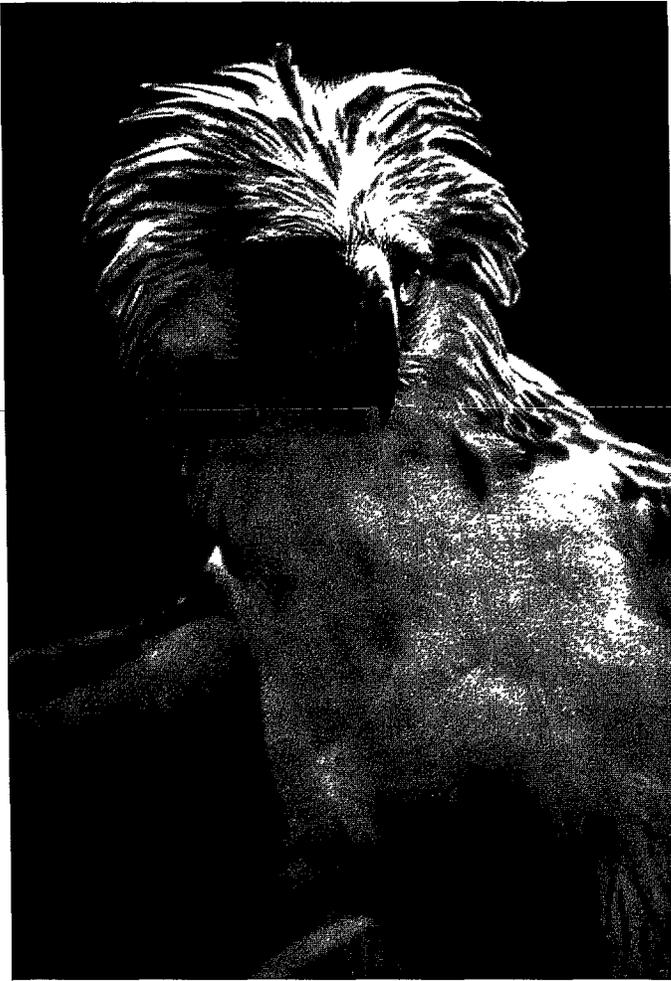
The major BCN-funded activities at Bendum have included; 1) planting and monitoring six community trials of abaca for eventual production and weaving of high quality fiber, 2) skills training and production of prototype handicrafts, 3) developing marketing links and identifying potential traders in the neighboring village of St. Peter, 4) selecting local forest guards and translating training materials, 5) biological monitoring (training of community members as team leaders, community mapping of rattan resources), and 6) socioeconomic monitoring including looking at resource ownership, land use, classifications, oral histories and kinship mapping which support Ancestral Domain claims, (non-BCN funding used), ongoing monitoring of family groups' status and community dynamics, and development of cultural economic indicators.

1997 Update

Abaca production from old pre-project stocks increased during the period as more of the community gained confidence in the activities. There has been an overwhelming response in part due to the prices several people have received for their wild abaca fibers. In support of broader livelihood activities initiated by the women, the livelihood committee started community mapping to identify abundance levels of resources used in making handicrafts. Greater emphasis was placed on facilitating local marketing activities, both with the abaca and handicrafts.

Some community members went to Agusan Province to interact with traders and now have an understanding of the abaca fiber grading and marketing dynamics. During the Kaamulan (annual cultural celebration), the women organized a products display in the community as a venue to barter or sell goods. Afterwards, the activity was evaluated and it turned out that the community preferred barter transactions rather than cash. The women perceived this activity as a valuable learning experience because they were able to practice their new skills in a context that was familiar to them.

The Water and Forest Committees responsible for formulating policies that directly affect conservation efforts finalized many of the policies on resource use. Their understanding of policies and the importance of the resources had deepened due to the series of seminars held. Even though the meetings were fewer due to peace and



WWF/R. Kennedy/Free Ltd

order difficulties, a recapping process was achieved to address some of the issues and problems.

Several meetings with local and national government representatives were held to discuss concerns regarding issues on ancestral domain claim, rattan licensing, mining, and peace. Women played an important role in the discussions as they are seen as capable of diffusing the situation while presenting the community's concerns.

Success Stories and Challenges

Bendum, a mountainside community, lies just below the cloud line, and when seen from a distance, appears as unoccupied and idyllic forest lands. Nobody from the lowland towns knows the people in the mountains or sees them as being of any importance. It is the land beyond the Pulangi River at best ignored by the lowlanders. Yet they have undeclared expectations of it providing sustained

water supply, illegal lumber, and contributing to the broader weather balance of the central Bukidnon plateau. In the dry season, the land below the forest burns. This was most dramatic during the El Niño of 1983.

The area has been disturbed by militarized activities for several decades. For the Bendum community, the last few years have been a test of endurance and of relations—relations between the traditional communities and their environment as well as relations with lowland migratory communities. Relations too have been difficult with the growth in development programs that destabilize the margins and feed the political center from which they come. More than ever before, the people's ability to protect their forests is jeopardized by the political and economic pressures of the present time.

Last year the cultural community grew strong in its internal leadership and responsibility. The people were tested by illegal logging activities from neighboring communities yet managed to hold out. December last year was critical in maintaining a balance of peace in the midst of larger forces. The community struck an understanding with all elements concerned—they wanted peace and an improvement in the quality of life as they were now again beginning to experience it. Of nine other villages in the area, Bendum was the only village not evacuated during the troubles. The development of leadership through their own self-evaluation has grown beyond the project and community and has enabled them to face broader movements of society. This year when prospective miners appeared, they had a more direct response to approaching concerns and making a decision they could stand by as a community.

What has all these got to do with biodiversity conservation? For conservation to be lasting, the web of relations of people, land, water and life demands a deep understanding, and these people have acknowledged this in holding tightly to their love of the land, even through such uncertain times. The project has played a small but significant

This forest management project is attempting to formalize community-controlled rattan concessions, which is an important step toward the sustainable use of this and other forest products. As part and parcel of this, ESSC is laying the necessary groundwork for the indigenous people of the area to obtain a certificate of ancestral domain claim (CADC) from the Philippine government.

role in this, allowing people to revitalize their cultural expression, their clan relationships, and the broader daily discussion of their values, their needs and their relations. They value the forest and all its life, they need the forest for their way of living, but under changing times, it has been hard to clarify the viable relations—social and environmental.

A return to a practice of abaca growing (banana plants valued for their vascular fiber rather than fruit) has given them proximity to the forest edge that protects it. It helps take the strain from over-extraction of remaining resources and from an over dependence on short term returns

gained from increasing pressure to clear more land for intensive agriculture. This practice has created a buffer in time as well as in land use. For this to be sustainable, much more has to come out of the diversity of relations with the environment. Conservation requires the development not only of policies, programs and projects, but also an empowering of the social mechanisms by which communities become the managers.

Meanwhile, on a more personal note, there has been the simple enjoyment experienced when local community forestry survey teams return telling stories of the previous days' camping in the forest. The teams reveal that there are still the full range of woodpeckers, hornbills, and doves in the area. They report that, though few in number, the bleeding heart pigeon still survives. Such fauna are recognized by the community as their source of protein, but increasingly as having a role in seed distribution and forest regeneration, a natural relationship that must be allowed to continue. Recently during planning, the Forest Committee formulated a policy that prohibits hunting of dove species because of their cultural values. This excitement is the basic sensitivity to life in the forest, and has been picked up in the development of alternative education programs for the community, which have become part of so many other aspects of daily living for all in the community.

What of the challenges? There are many! Let's be honest—none of these threats are in the hands of the community. Because of this year's El Niño: a drought of

There has been the simple enjoyment experienced when local community forestry survey teams return telling stories of the previous days' camping in the forest.



even greater severity than in 1983 is anticipated and people are asking about food availability. People are hungry for two months of the year as it is—a further two months would warrant calamity by government definition. The people will suffer. There will be far greater potential for forest fires and forest resources will be all the more threatened for the limited cash they can provide. At this point, the initial abaca activities cannot adequately chip into the cash equation. However linkages with local government are already identifying the community as one potentially in need, and efforts are being made to better understand appropriate action in the face of drought.

In the Provinces of the Region, political developments of a complex nature are leading to massive land claims by tribal groups sometimes extending up to 60,000 hectares. One such claim threatens the stability of this area, although the community has expressed its interest in an independent smaller claim. Still the government process dithers. Will the national program of granting Certificate of Ancestral Domain Claims (CADC) empower the people in the forest, or those closer to the urban centers? The people

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There will be far greater potential for forest fires and forest resources will be all the more threatened for the limited cash they can provide. At this point, the initial abaca activities cannot adequately chip into the cash equation.

have been clear in the presentation of their case and have gained attention, yet rights are not yet theirs.

These people are improving their quality of subsistence but it is naive to think of them as entrepreneurs. Cash is not primary, yet dealing effectively with external market forces is essential to them. Traditionally, these people barter and there is hard bargaining too, but today there is little bargaining of a familiar nature for these people, they just have to take what they can get. Other support must be sought over time, like broader abaca growing that will form a significant portion of the local market so much so as to influence it, along with the identification of interested parties to invest in the resource development. The biggest challenge is to work with reality and not be confined by the prism of project accomplishments which have a short lifetime. It is essential to reckon with the broader socio-environmental process that has to buffer a sustained biological diversity—the vital life of our forest—against unpredictable markets and trade winds.

Cultural values and relations have been reawakened in an effort to protect the forest life and this has gone hand-in-hand with empowerment. It is most important that the right relations with all elements of broader society are established, so that this effort is confirmed by slowly increasing lowland environmental concerns, rather than by the latter's aggressive demands and disregard for its origins and responsibilities.

The truth is coming through, that any effort to sustain biodiversity has to build on what people are already doing. It cannot be sustained if we fracture the social process with unreliable interventions. BCN's focus is "to collect information and to systematically use this to make better natural resource decisions—a process called adaptive management." Meanwhile, adaptive management in the forest coming from the people involves them adapting to the regenerative capacity of the forest and surviving the socio-political pressures while meeting at least their basic needs.

Any resource decisions coming from above must have adequate flexibility to allow the people to adapt them to their circumstances rather than become a further burden upon the community. Adaptive management as it occurs from below and above can be part of the one and the

The truth is coming through, that any effort to sustain biodiversity has to build on what people are already doing. It cannot be sustained if we fracture the social process with unreliable interventions.

same social process as long as there is this flexibility. Already there are adaptations seen in biodiversity conservation: that of recognizing that people cannot wear an entrepreneurial hat in three years; that biodiversity is not a taxonomic list but a cultural relationship that mutually sustains life together; and that pilot areas will remain unique and irreplaceable unless the NETWORK—ESSC humbly faces its responsibilities in opening up the necessary flexibility in the political and economic related spheres of a broader dialogue within the countries where it operates. In this closer alignment with the broader spectrum of related activities, effects will move beyond the sites chosen.

The biggest challenge is to work with reality and not be confined by the prism of project accomplishments which have a short lifetime. It is essential to reckon with the broader socio-environmental process that has to buffer a sustained biological diversity—the vital life of our forest—against unpredictable markets and trade winds.

Authors: The ESSC team. ESSC is a research institute that aims to develop an Asian science that assists in actual social changes affecting the environment. ESSC investigates different relationships in the environment—bio-physical as well as social. The Jesuit orientation of ESSC further directs the work towards a search for social justice in the changes happening within and between the environment and society. For this particular project, Karen Lawrence facilitates the interdisciplinary team in Mindanao. Pedro Walpole provides overall coordination.



G. Balachander

13. Rattan and Resin from the Tropical Forests of Palawan

Location: Palawan Island, Philippines

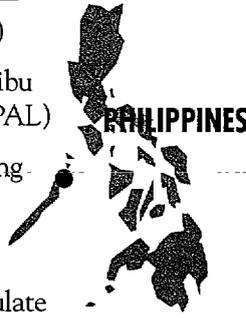
Partners: World Wildlife Fund—Philippines (WWF-P)

Nagkakaisang mga Tribu ng Palawan (NATRIPAL)

Tanggapang Panligal ng

Katutubong Pilipino (PANLIPI)

Tribal Filipino Apostulate



BCN funding: \$627,698

Partner

Contribution: \$92,034

Grant Period: January 15, 1995–January 14, 1998

What's at Stake?

The island of Palawan is often described as the last natural frontier in the Philippines, as it contains some of the country's largest remaining areas of primary rain forest and some of its more intact and diverse coral reef systems. Palawan has an abundance of unique flora and fauna and accounts for a significant portion of the biological resources of the Philippines. Palawan is also home to a complex mosaic of indigenous peoples whose territories, natural resources, and cultures face growing threats from legal and illegal destructive logging and fishing practices, mining activities, and the rapid encroachment of immigrants from neighboring islands.

To counter these threats, the project team is developing new non-timber product (NTFP) enterprises and alternatives to the traditional marketing system. The project's short-term focus will be on rattan, almaciga resin and honey, but over time it will also explore the potential for marketing other NTFPs.

The success of community-based conservation and enterprise programs like the one on Palawan requires that the local communities first have control of their resources.

Hence, we are working to obtain the most binding certification of ancestral land rights for the two pilot project sites—the Certificate of Ancestral Domain Claim (CADC). This is a critical starting point to establish the credibility of local resource management in general.

1997 Update

BCN's enterprise approach to biodiversity conservation was originally in four project sites in Palawan. Two sites in the northern part of Palawan—Cabayugan and Cayasan, are inhabited by tribes of Tagbanua and Batak, while two sites in the southern part of Palawan—Campung Ulay and Punta Baja, are inhabited by tribes of Palawan and Tagbanua.

Two years into the implementation phase, internal organization problems and partnership conflicts threatened the future of the project. However with a new Board of Directors at NATRIPAL, and renewed commitment from the project staff working closely with the local associations, progress is being made.

A recent major accomplishment was the signing of the Certificate of Ancestral Domain Claims (CADC) for two of the project sites, Campung Ulay (7,000 ha) and Punta Baja (8,092 ha). These certificates will give the tribes of Palawan and Tagbanuas the tenurial security for which they have been longing.

The project hired foresters and a team of ten community members to inventory the non-timber forest products (NTFPs) such as rattan, almaciga, honey and medicinal plants, felled logs, pandan and wild fruits found within the ancestral domains of Cayasan and Campung Ulay. The indigenous members of these biological teams will become the forest rangers and paralegals of their communities officially recognized and empowered by the local Department of Environment and Natural Resources. In the succeeding months, with some technical advice, they will complete the data analysis and share the results with the local indigenous communities for use in the management of their ancestral domains. This will enable the communities to manage the resources more sustainably.

All three project sites have already started trading in honey, rattan and almaciga. The business centers of the project sites have been effectively serving as a center for communications, community activities and trading.

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At present, there are 30 participants in each project site, mostly officials of the local associations and leaders in the community who are being trained.

Success Stories

Firstly, the three remaining projects have been redesigned with a number of the staff on-site. There are four area-based staff staying at each project, giving their full attention to the direction and implementation of the program. The community development officer (COD) develops and supervises the officers of the local associations. The forester (in close coordination with Panlipi) handles the Para-forester and Paralegal Committee of the community. The paralegals ensure that the indigenous tribes know their rights and that these rights are respected and enjoyed. Aside from leading their communities in thwarting external and internal threats to their ancestral domains, they will ensure that the community will follow their traditional indigenous extraction and conservation practices, following the provisions spelled out in their ancestral domain management plans (ADMPs). The enterprise officer takes care of the Enterprise Committee that will handle the enterprise component of the project. And lastly, the socio-economic and monitoring staff, aside

from evaluating and monitoring the impact of the project on the beneficiaries, also develops the paramedics/para-teacher committee. These four committees will complement each other to ensure that the extraction of non-timber forest products (NTFPs) is done sustainably. Through these committees we believe that we will be able to turn over the project to the communities and that by June, 1998, they will be equipped with the necessary training and skills to continue and implement the project.

After seven months of being tested in the project sites, this scheme of implementation has proven effective. At present, the members of these local



committees (who have been chosen by the indigenous members of the communities) have shown their capacities to learn, to develop their skills and to become serious community leaders. These committee members are beginning to be able to make decisions based on factual information and data. Through them, the whole community can be empowered to improve their lives and take their destinies into their hands.

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The second success story demonstrates the political will of the indigenous members of the Cayasan community to defend their rainforests and ancestral domain against illegal almaciga resin gatherers. (Almaciga is a resin that is used as a paintbase.) In July and August, 1997, the members of SATRICA, the local development association in Cayasan, apprehended armed almaciga resin gatherers and confiscated 51 sacks of almaciga resin. These were employees of concessionaires whose permits had expired last April. The locals coordinated their efforts with the forest rangers of nearby St. Paul's National Park. Unfortunately the illegal almaciga resin tappers were eventually released without

The third success story is the capability of the indigenous people to undertake the biological inventory of the biodiversity and resources found within their ancestral domains—proof that successful transfer of technology from the experts to local people with a low level of education and little scientific training can be done. Key factors in this transfer of technology are the use of user-friendly forms, use of local language for instructions and the close supervision and guidance of a forester.



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any legal actions against them. To make matters worse, the resin was released too. This happened because corrupt personnel from the local Department of Environment and Natural Resources interceded and claimed that there were technical deficiencies in the arrest and seizure. The indigenous members of Cayasan were disappointed when they learned that they could not prosecute the illegal gatherers of almaciga because they had no pictures. Currently the Panlipi lawyers are helping the local people pursue concrete actions to stop these illegal practices inside their ancestral domain. The local communities are not giving up defending their biodiversity against internal and external threats.

The third success story is the capability of the indigenous people to undertake the biological inventory of the biodiversity and resources found within their ancestral domains—proof that successful transfer of technology from the experts to local people with a low level of education and little scientific training can be done. Key factors in this transfer of technology are the use of user-friendly forms, use of local language for instructions and the close supervision and guidance of a forester. An added success with these biological inventories is that the team leaders are Tagbanua lady foresters proving that indigenous women can rise to the challenges of leadership.

These biological inventory teams endured daunting hardships. They braved storms, continuous heavy rains inside the dark forests, swollen rivers, snakes and poisonous insects, as well as overcoming their fears of the spirits inhabiting the rainforests. All of them contracted malaria and pulmonary/respiratory related illnesses. But they persisted and were able to finish the inventories within a period of three months. Their commitment and endurance are admirable.

Today, the members of these biological inventory teams are knowledgeable of the boundaries and extent of their ancestral domains, and the richness of the resources inside these rainforests especially the non-timber forest products (NTFPs). But at the same time, they are beginning to question the reality of their poverty in the midst of these riches. This knowledge of the value of their resources was the guiding force that pushed the members of SATRICA to defend their ancestral domain against illegal gatherers.



Challenges

The Philippine Coconut Authority (PCA), a government agency dealing with the upgrading and improvement of the coconut industry in the Philippines, is trying to set up a 600 hectare coconut seedling plantation within the ancestral domain claim of the Palawans and Tagbanuas in Campung Ulay.

PCA has already fenced off a four hectare nursery garden and evicted five families who have been tilling these lands for over 20 years. According to the victims, they have not received any compensation for their displacement. They were evicted because they signed a document with the understanding that a school house would be built for their children's benefit. Because of their ignorance and illiteracy, they were manipulated and deceived. But in spite of the continuous pressure from the PCA, the project staff and the affected families with the support of the different non-government organizations in Palawan have persisted in opposing this government project.

The indigenous communities need to be equipped with the necessary legal knowledge to be able to thwart internal and external threats in their ancestral domains. Related to this, we wonder how long the indigenous people can sustain their police actions without being harassed and later on, subjected to 'extra-legal military actions' by powerful concessionaires whose economic interests are going to be hurt by the militant actions of the indigenous people.

And lastly, can indigenous people implement the delicate balance between enterprise and conservation? Will enough knowledge and sufficient training equip them to give major consideration to conservation while their economic needs are pushing them to extract and use up their resources to alleviate their poverty? Will they be able to do this after the staff leave the project sites by June, 1998?

In the succeeding phases of the project, these two major challenges must be addressed.

Author: Agnes Costales Rio de Mesa has a B.S. in Agriculture from the University of the Philippines, Los Baños. Prior to joining the BCN-funded Palawan project as the Project Manager in December 1996, Agnes was the Regional Director of the Task Force Detainees of the Philippines (advocacy work, institutional promotion, social marketing). She was also the National Treasurer of FIND (National Council of the Families of Victims of Involuntary Disappearance)—October 1994 to November 1995. During the period 1978 to 1992, she was involved in peasant organizing, and education work in Cagayan Valley, Bicol, and Central Luzon.

14. Forest Fruits from Central Luzon

Location: Kalahan Reserve, Nueva Vizcaya, Philippines

Partners: Kalahan Education Foundation (KEF)
Nueva Vizcaya State Institute of Technology (NVSIT)

University of the Philippines, Los Banos
Upland NGO Assistance Community

BCN Funding: \$321,190

Partner Contribution: \$94,936

Grant Period: March 1, 1994 to February 28, 1998



What's at Stake?

The primary and secondary forests in the Kalahan Reserve in Nueva Vizcaya, support diverse plant and animal species as well as 550 Ikalahan families who live within the reserve. The resources of the reserve, which include nearly 15,000 hectares of ancestral land, are managed by the indigenous people under an agreement with the



Philippine Government. Compared to other localities these resources are well managed. Nevertheless, there are still threats from road building and over-harvesting of certain non-timber forest products (NTFPs).

To address these threats, the Kalahan Education Foundation (KEF), a local people's organization formed by the Ikalahan Tribe, is implementing an integrated program of Community Forest Management and non-timber forest product extraction. Enterprise activities include the production of jams and jellies from forest fruits, cultivation of orchids and mushrooms and the manufacture of furniture. In addition, the local communities are undertaking Timber Stand Improvement in the secondary forests. KEF is thus diversifying the community's economic base by adding value to the resources and developing alternative markets for their products.

The project site is formally recognized by the Government of the Philippines and the project played an important part in developing government policies for local management of such resources.

The KEF and the Ikalahan people are developing systems for monitoring and evaluating the status of the resources within the reserve and ways to assess the impact of the economic activities on their resources over time.



H. Cauley

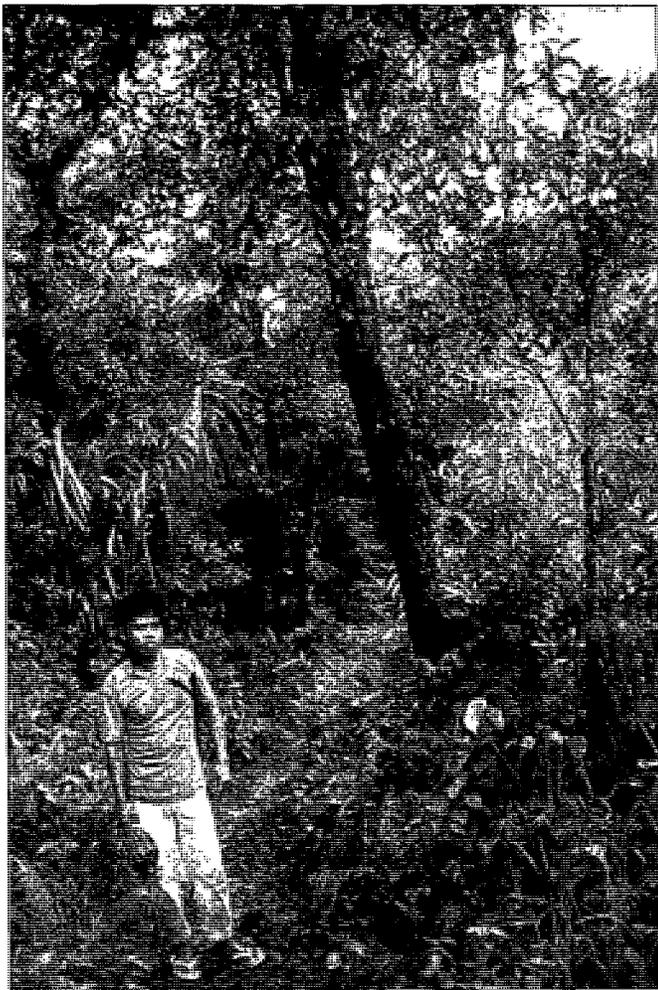
1997 Accomplishments

Newspaper stories and some television news coverage has continued to improve sales of the Mountain Fresh products. A new pineapple jam made from local fruit was initiated, but production was low so KEF did not market it. A new recipe for "Pink Lemonade" should be ready to market in the last quarter of 1997 and a series of low sugar products are in production as well.

The communities have integrated harvesting of wild fruits into their social systems by developing informal consolidators and delivery systems. The number of families involved continues to increase but monitoring the number is difficult because the presence of the consolidator limits the direct contact of the Processing Center with the harvesters.

Some changes in personnel have increased productivity. The staff working on the mushroom project changed, resulting in great improvement in the output. The oyster mushrooms are produced regularly. Shitaki production, which is based on alder wood culled from the secondary forests has begun, although the mushrooms are not yet ready for harvest.

The personnel in the Floriculture Project (e.g. raising orchids) also changed and the work was divided between the laboratory and the field. We brought in Ebit, a woman



G. Balachandrar



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who has many years of experience in the food processing center which exercises strict sterility and quality control, to take charge of the laboratory, with very good results. The community awareness of the danger of harvesting wild orchids and the importance of sustaining the resource has also greatly increased.

Monitoring and analysis of the impact of the extractive activities for the forest fruits was completed. It appears that the greatest amount being extracted from any product is 10% which will have no negative impact on sustainability.

The inventory of standing wood in the secondary forests has also been completed. The staff is now working out systems to improve the forests and quantify the amount of lumber which can be utilized without damage to any part of the environment.

The communities have also become more aware of the value of the sanctuaries in maintaining a healthy environment including natural pest management. The food web seminar, a participatory approach to teaching ecology, is becoming an ever more popular and effective tool in improving awareness of the value of biodiversity.

Success Stories

We have found that food web seminars are an excellent way to facilitate community understanding of how their local ecosystems function. In each community, the food web seminar comes up with a unique observation. In one, they observed the need to protect the rat snakes in order to reduce the rats which have become horrible pests in the food production fields. Our pastor was hiking with some young people shortly after one seminar where this observation was made and they saw a rat snake crossing the trail. Because of their fear of green vipers, the villagers previously had a habit of killing any and all snakes that they saw. This time his companions made no move to kill the snake.

When the Kalahan Reserve was established 22 years ago, the elders set aside 800 hectares to protect the watersheds. A short time later they agreed that the watersheds would also be sanctuaries for indigenous wildlife. During the biodiversity analysis in the Kalahan Reserve sponsored by the BCN, KEF staff discovered at least 30 species of birds and ten species of other animals, mostly bats and reptiles, that are either on the CITES or the IUCN list of endangered species. Through the food web seminars the people have seen that many of those species are important to pest management in the area. They also discovered that several of the bats were responsible for seed distribution and germination of the trees which are important to the watersheds so they voluntarily enlarged the sanctuary to 2,000 hectares and are working to improve the nesting sites and food supplies for the important dispersal species.

Challenges

The study of indigenous fauna in the area is far from finished and every new analysis reveals more interesting discoveries. The KEF staff has discovered a small stand of *Pistacia chinensis*, a very valuable tree which is seriously endangered. They are now analyzing how they can improve the regeneration of it and several other trees and orchids within the Reserve.

The battle against the construction of a highway through the sanctuaries continues. A few misguided political leaders are pushing for it but the congressman and mayor have been helping us to improve the sanctuary and promote the wildlife of the area. The momentum in favor of protection is building and will probably be enough to outweigh the pressures in favor of the highway.



Another KEF project, an aviary, is being constructed on the campus of the Kalahan Academy. Upon completion, the government officials in charge will implement the law strictly against the commerce in wild birds. The birds which they rescue or confiscate will be turned over to the aviary which will serve as rehabilitation center. Many of them will be re-released into the forests. The aviary will also serve as a training center for mountain people and others. A few species may be propagated within the aviary for commercial use to support the program. The aviary is not being supported by the BCN program but the motive behind it came out of the BCN inventory and extension work.

A very recent challenge has come from a vegetable processing company which has entered the area and promises to supply seeds, chemicals and technologies to the local farmers to produce vegetables; these they guarantee to purchase. They are requesting the farmers use chemical fertilizers and pesticides which could cause damage to the environment. The economic pressures are extremely strong on the farmers to join the program. This challenge is so recent, the KEF has not yet decided how to confront it.

One of the biggest challenges is to encourage the community and staff to continue the Timber Stand Improvement program within the secondary forests so that the culled timber from that program will provide an additional steady income for the population. The lead time for this program

is much greater than the other programs, but the expected benefits are also much greater.

Author: Pastor Rice is the Executive Officer of the Kalahan Educational Foundation, Inc. He has been working in the Philippines since 1956 and has lived in the mountain village of Imugan since 1965. He was born in Corvallis, Oregon, USA. He is a member of the Board of Directors of Association of Foundations (AF), Upland NGO Assistance Committee (UNAC), Philippine Association for Intercultural Development (PAFID), Upland Development Ventures (UDV) and Consultant in the Philippine Council for Sustainable Development (PCSD). He is married to Esther Bernham and he has 5 children, 15 wards, 10 grandchildren.

15. Ecotourism in the Rain Forests of Crater Mountain

Location: Crater Mountain
Wildlife
Management
Area, Papua New
Guinea



Partners: Research and Conservation Foundation
of PNG (RCF)
Wildlife Conservation Society (WCS)

BCN Funding: \$498,107

**Partner
Contribution:** \$76,950

Grant Period: August 1, 1995–July 31, 1998

What's at Stake?

The Crater Mountain Wildlife Management Area (WMA) covers 2600 square kilometers, an area about the size of the U.S. state of Rhode Island. Spanning three provinces which range from the Eastern Highlands at the peak, Simbu province in the mid-elevation region and Gulf province in the lowlands, it contains a full range of biodiversity, much of which is unique to Papua New Guinea (PNG). Primary forest blankets the lower elevations, while alpine scrub and grasslands occur higher up. The area is home to 220 bird species of which 49 are endemic and 84 mammal species, of which 15 are endemic. Although the WMA currently has a low population density, a number of threats are looming in the near future including industrial logging, mining and oil drilling.

To counter these threats, the project team is establishing locally-owned and operated research and ecotourism enterprises in the WMA. These enterprises provide lodging and guide services for visiting scientists, as well as for domestic and international visitors. The team is working with landowners to develop a land-use management plan which provides for biodiversity conservation and enterprise sustainability. We hope to demonstrate to government officials and other

land-owners in PNG, that community managed lands can generate profits in a sustainable fashion.

1997 Update

In the Crater Mountain Wildlife Management Area (WMA), project staff continue to provide technical assistance and training to three communities as they develop a suite of eco-enterprises.

Over the last year, increasing numbers of scientists and eco-tourists have visited a wider range of WMA facilities. Research activity, originally concentrated at the Wara Sera Research Station near Haia, has now expanded to a variety of studies in many parts of the WMA. This is due to both word of mouth marketing of WMA facilities by satisfied scientists and improved WMA services and infrastructure including accommodation, availability of trained village assistants, standardized pay rates, and the presence of support services, such as computer and communication facilities. The research includes both biologists and anthropologists who are generating baseline surveys and providing a greater understanding of human use of the natural resources.

Likewise, eco-tourists are now visiting all communities in the WMA. In each, there is a guest facility made of simple bush materials and a package of day and overnight guided tours operated by community members from which visitors can choose. National tour operators want to link a visit to the Crater Mountain area as a rustic adventure add-on to their existing soft tourism operations in the Highlands region of PNG.

There are now four handicraft stores in the WMA, one in each community. The businesses are run by a local committee with proceeds going to over 100 artisans in each village. They also fill out mail order sales and send community representatives and handicrafts out to sell at national handicraft shows.

To assess change over time, ten economic indicators are being monitored by the project and community representatives. They include sales and profits of all businesses, customer satisfaction, community spending and local capacity of individuals participating in each village enterprise. All businesses have received a variety of training from project staff

and have realized increased profits over the last year while spending in all communities has risen. To assess the

We feel now that many more years of stewarded discussion and concrete examples of resource value, in addition to visitor feedback, will be necessary to illustrate to the communities the linkage of the unique nature and value of their natural resources to the present success of their eco-enterprise activities.



N. Saitinsky

hypothesized linkage between eco-enterprise success and conservation of biodiversity, project staff and community representatives monitor seven natural resource indicators including changes in sensitive biological indicator species and in natural resource use. While economic indicators are rising, preliminary results do not indicate a proportional change in the biological or natural resource use indicators. While it may be that biological indicators may take much longer to show response to any changes in management practices, lack of change in resource use may suggest that the realization by WMA communities of the linkage of their natural resources to the continued success of the eco-enterprises is still in a very early stage of development.

We feel now that many more years of stewarded discussion and concrete examples of resource value, in addition to visitor feedback, will be necessary to illustrate to the communities the linkage of the unique nature and value of their natural resources to the present success of their eco-enterprise activities.

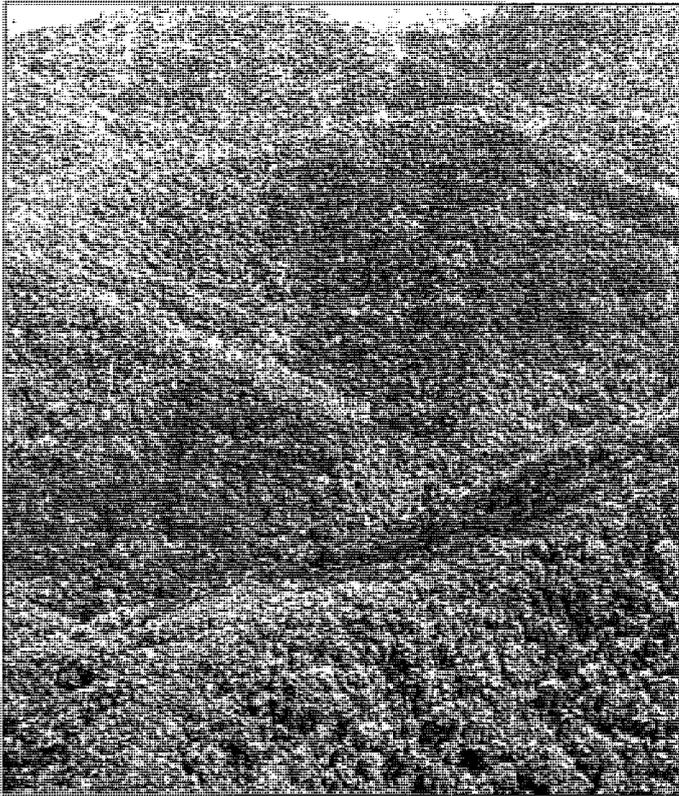
Success Stories

As a result of the expanse of the area and the relative newness of the establishment of functioning Wildlife Management Areas in PNG, some national, and most provincial and district government departments are not familiar with, and are even suspicious of, the collective actions of communities and NGOs to implement conservation and eco-enterprise development initiatives in remote regions.

Officials from both provinces were impressed that local communities from 21 different clans and two language groups, with limited formal education in the remote regions of their provinces, could generate and manage income from enterprises based on conservation instead of the customary large-scale resource extraction model of development.

Under the national legislation, land-owning clans in the WMA are to identify clan representatives to form Management Committees who will create natural resource law (within the parameters of the national law) and act in an official capacity to enforce them. Yet over the last three years, despite the Crater Mountain landowner management group's conscientious effort to draft and enforce natural resource laws within the boundaries of the WMA, they have received limited assistance from government departments when prosecution of violations is requested.

To try to improve matters, in May 1997, the project staff and landowner committee



representatives from four WMA communities staged the first provincial briefing for public officials from Eastern Highlands and Simbu provinces. This included presentations to government departments by national project staff and landowner Management Committee representatives about the eco-enterprises, management institutions, natural resource laws and enforcement procedures operating in the WMA.

Officials from both provinces were impressed that local communities from 21 different clans and two language groups, with limited formal education in the remote regions of their provinces, could generate and manage income from enterprises based on conservation instead of the customary large-scale resource extraction model of development. Many said they did not know that national NGOs in PNG had the capacity to provide such a level of services or to conduct the sophisticated analysis of the process through the interdisciplinary monitoring activities being utilized in the Crater project.

Given their success, Crater Mountain landowners gained confidence to talk directly with national and provincial authorities about the resolutions from the Crater

Mountain Annual WMA Meeting later in August 1997. Committees reviewed and ratified their natural resource laws and sent copies to the Department of Environment and Conservation for gazettal. They also attached letters which expressed their concerns about some government departments involved in granting of logging and mining permits in parts of the WMA without assuring full participation of the WMA management structure in the process.

We hope that the success of the briefings will serve to foster greater support and collaboration from the district and provincial level government of PNG in the protection of the Crater Mountain WMA in the months ahead. That support will be critical as communities work to strengthen and maintain their natural resource laws to withstand the pressures of large mining and logging operations now on the WMA borders. Our experience illustrates that, despite our busy and demanding schedules, it is truly essential to keep all stakeholders informed and involved in the conservation process to increase the chances for success.

Challenges

Significant threats loom on the boundaries of the WMA. In the lowlands, over the south border, large-scale logging activities in a national Forest Management Area are testing the management capacity of clan communities inside the WMA. Is there enough financial income, value and satisfaction derived from the existing eco-enterprises and conservation procedures now operating in the WMA, to prevent community factions from abandoning enterprises with conservation linkages for non-sustainable short-term profits?

Likewise on the northern boundary of the WMA, industrial and government requests to explore for gold and copper deposits have divided clans of the same language group. Those within the WMA have cautiously examined the options, requesting more information and guidance from NGOs on how proposed activities will effect their current eco-enterprise and conservation activities.

Related clans outside of the WMA boundaries, within the same mineral exploration area, have applied intense pressure on their neighbors to submit to the requests for further exploration and possible exploitation of mineral deposits. At times over the last year, the tense negotiations between clans have led to tribal fights. Clans downstream from the exploration area in the WMA are also worried about their

*At times over the last year,
the tense negotiations
between clans have led
to tribal fights.*

water quality if clans upstream elect for possibilities of mineral extraction.

Can the young Management Committees within the WMA maintain consensus on such volatile environmental issues? Representatives from all 21 clans have agreed that no such large-scale exploitation of natural resources in the WMA will be permitted. Yet, the pressure on individuals and selected clans to pull out of the WMA consortium is intense. Will the national, provincial and district level government support or disarm the fledgling conservation initiatives in the WMA? Based on the successful briefings from May, we are hopeful that they will lend support to the tremendous first steps that landowners have achieved in one of the first operational Wildlife Management Areas in the country. Yet, are they sufficiently convinced of the economic and environmental value of the WMA's biodiversity to the region to objectively review the other development options which may be presented?

Landowners with an average education level of grade one and still largely engaged in a subsistence lifestyle, struggle to collect and digest information about everything from natural resource law, economic options and probabilities of businesses that they are only beginning to understand, and the unknown and little understand social impacts of the development options being presented to them.

Throughout the WMA, landowners with an average education level of grade one and still largely engaged in a subsistence lifestyle, struggle to collect and digest information about everything from natural resource law, economic options and probabilities of businesses that they are only beginning to understand, and the unknown and little understood social impacts of the development options being presented to them. Project staff, in turn, are challenged to collect and deliver the needed information for decision-making to the communities in a clear and uncomplicated format while still addressing the complexities of the options and their implications. We come back to the need for strong partnerships from collaborative communities, NGOs and government departments to work with the Crater Mountain WMA, in what may be it's biggest challenge yet.

Authors:

Arlyne Johnson is employed by the Wildlife Conservation Society and serves as a technical adviser to the Crater Mountain Integrated Conservation and Development Project in PNG.

John Ericho is the national Project Manager and has worked in the Crater Mountain Wildlife Management Area with the Research and Conservation Foundation since 1994.



16. Ecotourism in the Forests of the Lakekamu Basin

Location: Lakekamu-Kunimaipa Basin, Papua New Guinea



Partners: Conservation International (CI)
Foundation of the Peoples of the South Pacific (FSP)
Wau Ecology Institute (WEI)

BCN Funding: \$355,487

Partner

Contribution: \$152,575

Grant Period: August 1, 1995–July 31, 1998

What's at Stake?

The Lakekamu-Kunimaipa Basin is a vast, 2,500 square kilometer area that contains the largest expanse of unbroken humid forest in the southern watershed of peninsular Papua New Guinea (PNG). The PNG Conservation Needs Assessment deems the area high priority because it contains healthy populations of wildlife and plants that have been severely depleted in other areas of their range. Although the Basin currently has a low human population, numerous threats are looming: industrial logging, mining and the replacement of natural forest by monoculture plantations of oil palm.

To counter these threats, Foundation of the Peoples of the South Pacific of Papua New Guinea (FSP), Conservation International (CI), and local communities are working to establish community-owned and operated scientific field research and adventure tourism enterprises in the Basin. The idea is to provide a substantial incentive for conservation of the area's biological diversity and to demonstrate to policy makers at the national level that community management of ecotourism is an alternative to logging and mining.

The tropical forest field research station will eventually include a central lodge, a mapped trail system, and a series of blinds for observing wildlife. The community members will provide food, portage and guide services to researchers. The adventure tourism enterprises being

planned will establish and provide support for a walking trek that will include a rustic lodge near the airstrip and a series of seven overnight rest camps along the historic Bulldog Trail. (This was the path followed by allied troops during the Second World War). Community members will be naturalist guides and offer support services. In both enterprises, community members will receive user fees paid by the visitors. FSP and CI will monitor the biological and socio-economic impacts of these project enterprises.

1997 Update

Our activities this year have been greatly affected by the national election campaigns and the dry spells caused by the El Niño.

Research/Science Tourism

The biggest scientific initiative to occur in the Basin since the project inception, was the Rapid Assessment Program (RAP). About 18 scientists were involved in this survey. This was followed by a RAP training session conducted for twenty University of Papua New Guinea students who





also collected data for the RAP survey. When the baseline data is compiled between November and December 1997 it will form the basis of future research and monitoring and will result in more researchers coming to the Basin as well and thereby providing a clientele for the field station.

Although construction of the tropical field station came to a halt when our chainsaw man left, and the chainsaw began having mechanical problems, we managed to hire another chainsaw operator. Enough timber has now been cut to get the walls up and the flooring completed. The carpenter who is on a break after completing the field station office renovation is due back in the field at the end of September, 1997. We are highly optimistic that the building will be completed before the end of this year. Kurt Merg, our resident scientist, has also constructed a green house.

Apart from the RAP, we had other two scientists working at the field station including Mr. Marc Damen, from the Netherlands who did work on Crowned Pigeons and, Todd Capson an ethnobotanist from the University of Utah. Todd has worked closely with the University of PNG, PNG Department of Environment and Conservation, the Medical Faculty and other research non-government organizations. The people in the Basin are very interested in his work and he will continue it in 1998.

Since October 1996, the research facility has recorded a gross income of K 1370 K (\$1028 US) from researchers, of which K387.30 (\$302 US) was paid to the landowners.

Adventure Tourism

The idea of guesthouses and lodges has generated a good deal of attention within the Basin communities. The Kakoro lodge was officially opened in May 1997, and another one built by the Kamea people at Tekadu is nearly finished. The Kovio people are now considering another lodge at Okavai. The Kakoro lodge registered an income of about K500 (\$390 US) since its opening this spring.

Due to staff shortages, no progress has been made developing the Bulldog trail circuit. A mock tour was taken in July by FSP's Programs Director, Celine Beaulieu and a French student, Mr. Fabrice Desprats, who was contracted to do a preliminary assessment of the adventure tour products available in the Basin. The information gathered has been sent to the *Lonely Planet Tour Guide to PNG* to be published in their next edition. Mr. Desprats will market the area and its guesthouses in France as part of his contract while Marc Damen will do the same for the Research Facility.

Butterfly Farming

Apart from the initial work last year which saw the harvesting of fourteen birdwing butterflies, worth K50 each (\$39 US each), nothing much could be done this year due to the current dry spell. (Butterflies and insects favor wet conditions to breed). However the Insect Ranch of Wau Ecology Institute conducted a two week informal

workshop in March 1997. Practical demonstration and hands-on training will resume when the wet season returns.

Meanwhile, Mike Hudson and Vickson of the Insect Ranch are off to France for an insect exhibition, which will likely increase the market demand for this natural resource and could help conserve the pristine lowland rainforest of the Basin.

Training and Capacity Building

Cosmos Makamet, the community outreach officer, attended a Ethnobotanical Training of Trainers workshop in Madang while FSP Project Coordinator, Thomas Paka went to a workshop in Rabaul which discussed steps involved in establishing Wildlife Management Areas. Both these workshops were very helpful in that Mr. Makamet is now able to train the locals on techniques of collecting and preserving plant samples while Mr. Paka has a fair idea of the processes involved in declaring a WMA.

On the other hand, the ecotourism workshop scheduled for April did not materialize and it is now rescheduled for the end of October. One literacy workshop was conducted at Kakoro and another is being planned later this year. A similar workshop will be conducted in October for the Tekadu area. The casual meetings with



community members conducted by local project staff members Cosmas and Sengo are a continuous event to keep the conservation spirit alive.

It was deduced from two instances that the community sees this project as an insufficient source of additional income. Some young men who assisted us in the setting up the research facility began panning for gold when they were laid off. In the second case, people who played a key role in setting up the Kakoro lodge were also seen panning for gold to earn some money to furnish the lodge as well to buy rations for the opening ceremony.

Political Support and Threats

The Deputy Governor for the Gulf Province, Paul Apio, is very supportive of the conservation initiative in the Basin. He says he will do anything he can to support conservation and we are in close dialogue with his office and the bureaucrats of the province. While this is good, the proposed national highway from Port Moresby to Lae via Malalaua in the Gulf Province is a major threat that could trigger logging companies to move in. Work on the road has begun on both ends.

Hunting and gardening practices continue, while mining threats have intensified. A company called Wau Alluvial Pty. Ltd. has stepped up its prospecting activities in the Basin. It has advocates in the Basin, both in Tekadu and Kakoro. In addition, the current Minister responsible for Mining activities in the country issued a press release in which he promotes small-scale mining activities to boost the economy as well as creating employment for the people of PNG. Our efforts could take second priority.

Monitoring

The RAP survey, which will be published by year's end, will form the basis of our monitoring and future research activities. Also work being undertaken by Kurt Merg, our resident scientist is ongoing as is the research done by Marc Damen on Crowned Pigeons. His interviews, as well as patrols made by the project staff show that there is increased hunting and fishing among the Kovoio people despite awareness being carried out. There has not been much change in these activities among the other groups within the Basin.

On another note, it was deduced from two instances that the community sees this project as an insufficient source of additional income. Some young men who assisted us in the setting up the research facility began panning for gold when they were laid off. In the second case, people who played a key role in setting up the Kakoro lodge were also seen panning for gold to earn some money to furnish the lodge as well as to buy rations for the opening ceremony. Gold panning in the area is continuing and one of the

creeks in the Basin and the surroundings is completely destroyed.

Success Stories

In a community having a high level of illiteracy, the communication of the conservation message and general participation of the people in the Basin initiative has been very poor. The completion and opening of the Kakaro lodge has, however, sent the message home that there is an opportunity here, which has resulted in another lodge being constructed at Tekadu and another under consideration at Okavai. This is a good sign and it is catalyzing other activities.

As a result of this single event, three women groups have been formed, two at Kakoro and one at Tekadu. The women have shown great interest in the cooking demonstrations conducted by the Peace Corps volunteers. The volunteers are in the process of building solar ovens and they will teach the community how to use them.

Adding to this success was the literacy workshop conducted at Kakoro. When the workshop was over, the women did not want the trainers to leave—they felt they were just getting started. The women in Tekadu (over 70 individuals), were really angry that the trainers did not conduct the workshop for them. They complained and demanded that FSP staff member Cosmas Makamet have the trainers back as soon as possible. The women are really eager to learn and if this continues, the common assumption that education leads to conservation could become a reality. More training has been identified in our strategic plan.

In addition, two Biarua clans, the Kingara No. 1 & 2, met in June, and resolved that there should be no hunting or gold panning on the lands they hold. Any person breaching this will be dealt with in the court of law.

Challenges

Trying to redirect peoples' interest away from fast money making options such as mining, logging, hunting, and gardening is a big challenge. The people in the Basin have built these activities into their lives and it is really difficult for us to change their entrenched mind sets.

Trying to convince four different ethnic groups, comprising of many individuals with varied interests and perceptions to adhere to our activities, is difficult. Their low

The completion and opening of the Kakaro lodge has, however, sent the message home that there is an opportunity here, which has resulted in another lodge being constructed at Tekadu and another under consideration at Okavai.

level of understanding is a problem.

Educating them is a requirement, but according to our resident scientist, this could be possible with the next generation, but not with the current one whose brains have already developed.

One mining company, Wau Alluviaus, has already moved into the area and has collaborators from the Basin, both in Tekadu and Kakoro. They have given cash handouts to the people. This challenge intensified when the minister responsible for mining issued a press release in which he encouraged small-scale gold mining as a way of promoting rural

develop and employment. This is the biggest challenge for the project because unlike them, we are unable to distribute huge amounts of cash.

One other challenge that is beginning to unfold in the field is the different needs and requirements that we have to meet both at the community level where the resource owners are, and the political level where decisions are being made. We, the project proponents and implementers are being sandwiched. Despite all these challenges, we will continue to fight to the last.

Authors:

Chuck Burg coordinates Conservation International's programs in the Melanesian countries of the Pacific.

Thomas Paka coordinates the Lakekamu Integrated Conservation and Development Project for FSP.



N. Scharfky

17. Eco-timber from the Forests of New Britain

Location: East New Britain and Other Sites, Papua New Guinea



Partners: Pacific Heritage Foundation (PHF)
East New Britain Sospel Eksen Committee
Individual and Community Rights Advocacy Forum (ICRAF)
Forest Research Institute

BCN Funding: \$451,738

Partner

Contribution: \$559,825

Grant Period: October 1, 1995–September 30, 1998

What's at Stake?

The forests of the islands in Eastern Papua New Guinea (PNG) including New Britain are home to outstanding plant and animal life—many of them rare and endemic. But similar to so many of these last great wildernesses, the islands' natural wealth is being aggressively pursued by developers. And even though the rights of landholders to

make decisions about their resource use is respected by legislation and customary rules in Papua New Guinea, large foreign logging companies have been able to persuade local landowners to sell the rights to their timber for a fraction of its true market value. The landholders are currently facing some of the most intense commercial logging operations in the region, if not the world. PNG is at a critical juncture regarding its national forestry policy, as this year the World Bank and the new national government discuss policy directions.

Meanwhile, factions within the forestry department seek to remove the existing environmental controls regarding the forestry sector. To counter these threats, the Pacific Heritage Foundation (PHF) and its partners are offering alternatives to communities in New Britain, New Ireland, East Sepik and Eastern Highlands provinces of Papua New Guinea. The aim is to demonstrate the sustainability of small scale timber operations. The project's primary objectives are to: 1) reduce the decline of forest resources by supporting community-owned saw milling enterprises, 2) establish a central processing and marketing unit to generate high returns to communities, and 3) increase capacities for extension, technical, social and legal services. PHF will also support social and biological monitoring.

1997 Update

Pacific Heritage Foundation (PHF) is an active partner with community-based eco-forestry projects in the Bainings and Wide Bay areas, with existing projects at Riet, Arabam, Illi, Mu and Murunga and a new project





N. Sainky

initiated in Merai. Merai is the gateway to the Cape Bogan Forest. For the present, the encroachment of large scale logging from the east has been halted by the landowners

We are hopefully well on the way to achieving one of our major goals—protecting 60,000 hectare of coastal area from export loggers. (The Wide Bay area is listed in the new National Forest Plan for commercial logging in 1998.) Despite submissions from foreign logging companies to sign a Forestry Management Agreement for Wide Bay, the Provincial Forestry Board recently met to discuss policy for forestry industry activities in the province. At present these companies are still locked out. The community-based eco-forestry projects in Mu, Marunga, Illi and Merai, are working with the East New Britain Sosen Eksen Komiti to support a conservation area near Sampun. These communities are managing some of the last remaining contiguous areas of primary forest in East New Britain.

Most of the eco-forestry projects are doing well and are at the stage of consolidating their operations. Project managers have trained new employees in maintenance, record keeping and financial accounting.

In Illi, the profits of the eco-forestry sawmill enterprise financed the community's initial purchase of a Mitsubishi 4x4, 3.5 ton truck as well as the ongoing payments. The truck is a source of great pride among the local people. It is also a catalyst to other businesses and income generation.

PHF is consistently monitoring the operation and maintenance of the sawmill and other small scale business ventures, as well as the systematic socioeconomic and biological monitoring of changes that affect households, clans and communities.

Local people are raising questions about tree felling techniques, the impacts on their current gardening needs and practices, cash crop development and other business ventures which compete for forest reserves. Given a rapid population growth rate, expansion of cash crops and the potential use of timber and non timber forest products, Pacific Heritage Foundation needs to do even more education in land use management.

Success Stories

Logging companies often tempt communities to sell their forests by offering to 'donate' vehicles. But in Illi, the profits of the eco-forestry sawmill enterprise financed the community's initial purchase of a Mitsubishi 4x4, 3.5 ton truck as well as the ongoing payments. The truck is a source of



N. Slatkey

great pride among the local people. It is also a catalyst to other businesses and income generation. Traditional landowners from Illi, as well as people from remoter villages down the coast hire the truck to transport their copra to the urban market three hours away by rough road. Due to this new access to markets, some family groups have built new copra and cocoa dryers—using project timber. The dryers add value to the cash crops before selling them to the export market. Copra is the main income for families to pay for school fees, housing material, kerosene and food. Several new houses have been completed as people use money earned from copra, and food sales to buy local timber and building supplies.

The women also use the vehicle to sell extra garden produce. Each Friday at dawn, there is great excitement as women pile into the truck with surplus betelnut, root crops and bananas for sale at market one hour's drive away. Women say, "we are learning how to market" often returning with K15 to K20 in hand—enough money to pay the annual school fees for one child in elementary school.

Many people in East New Britain are watching the developments in Illi with keen interest.

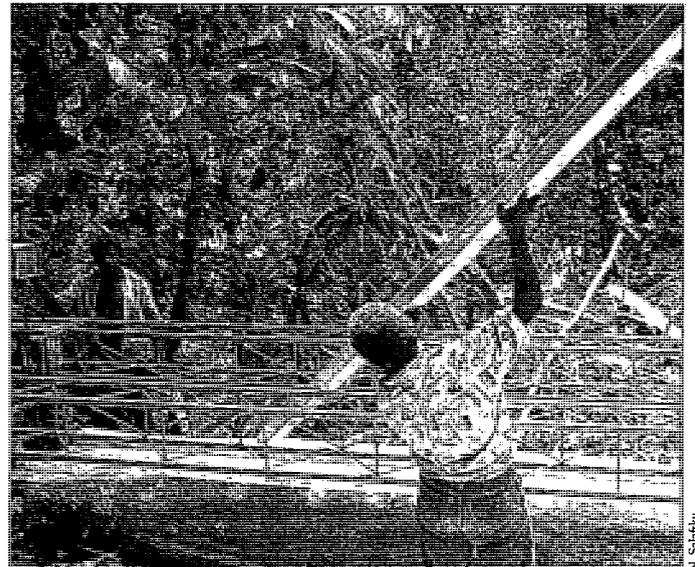
Challenges

The first community-based eco-forestry projects supported by PHF were at Riet and Arabam. The abundant easy money from land sales and the 'donation' of trucks by logging companies have been difficult for people in these communities to turn down, but they have succeeded so far.

Arabam had steady production from their portable sawmill until the end of 1996. Divisions within the multi-clan and multi-language community of Arabam have meant constraints to access to forest resources and heated discussions about who should receive benefits. The directors and project manager are attempting to settle the disputes but they have come to a stand-still in timber production. They express their worries about the long term consequences of logging on their land, yet would appreciate a road network into the forest reserves. This clan group still opposes the pressures of logging companies, but they are struggling to resolve the land disputes and to decide whether to resume the sawmill operation.

In initiating new eco-forestry projects, more discussion is needed about the socio-political groups in the community. PHF has learned that the clan and sub-clan leaders are the key decision makers and both men and women's traditional land rights are respected. However, it is difficult to predict the conflicts and constraints that will arise until people are actually managing the enterprise.

We have learned a great deal over the last two years about assisting communities who are interested in conserving their traditional heritage, but we will need more time with our partners to determine the key factors which enhance conservation practices in Melanesia.



N. Slatkey

Over the last five years people have become more aware of the value of their forest resources, the massive destruction caused by large scale logging on their land and their capabilities to negotiate and manage alternative eco-forestry businesses.

But everything takes time. There was a lengthy period of village meetings, discussions in the office, then more meetings, before legal action was taken by the majority of the Kairak clan to serve a court injunction to stop the Senbaum Timber Rights Permit by Bismarck Logging.

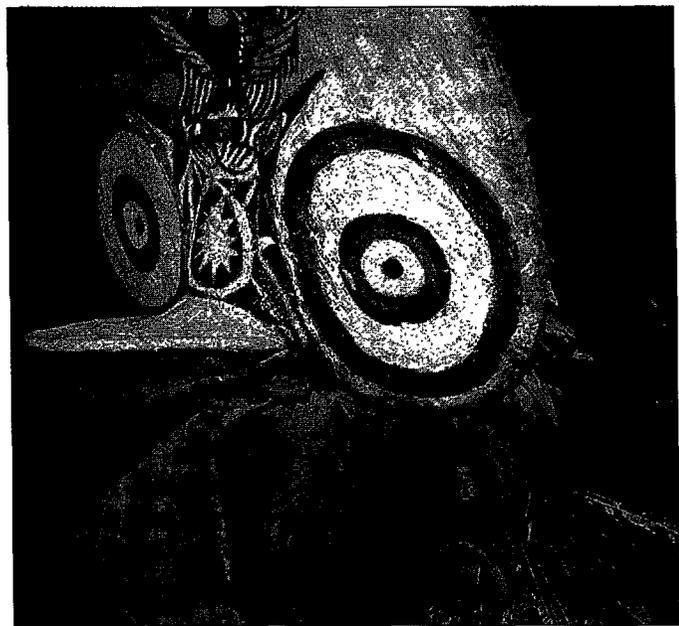
We have learned a great deal over the last two years about assisting communities who are interested in conserving their traditional heritage, but we will need more time with our partners to determine the key factors which enhance conservation practices in Melanesia.

Case Story: A Local Disaster

The normal method of attack by the loggers is to isolate a small group of so-called "leaders" and deal directly with them. This happened at Maranagi earlier in the year when an approach was made to build a road to Maranagi village. Under the Forestry Act, the road-builder is permitted to harvest the trees on the road line, and for 30 meters on each side. The leader agreed with the proposed route and accepted an unknown amount of cash as a reward.

From then on it was all downhill. The road clearing extended as much as 140 meters from the center line. There was no attempt to route the road over suitable terrain. No drains or culverts were constructed, and no gravel or stone was layered over the clay base. When the dry season finished and the rains came, the road became useless overnight. Soon, the degree of damage made repair impossible.

The loggers were happy—they got something like four times their legal harvest. The leaders were happy—they received some money. But the remainder of the village was sadly disillusioned although we are not certain how much. The loggers say the original route was a mistake and they now have a better one to construct a proper road.



H. Cauley

Authors:

Max Henderson is the Executive Director of PHF. A naturalized Papua New Guinean citizen, he is founder and visionary of Pacific Heritage Foundation since 1993.

Marie Tyler is Programme Coordinator of PHF in 1997. As home economist and rural extension specialist, she is interested in resource management and environmental education in communities in transition.



N. Salsbery

18. Fish from the Arnavon Islands

Location: Arnavon Islands
Resource
Management Area,
— Solomon Islands



Partners: The Nature Conservancy (TNC)
Ministry of Forests and Environmental
Conservation (MFEC)
— Arnavon Islands Management
Committee
International Center for Living Aquatic
Resources Management (ICLARM)
Great Barrier Reef Marine Park
Authority

BCN Funding: \$545,372

Partner

Contribution: \$281,610

Grant Period: October 1, 1995–September 30, 1998

What's at Stake?

The Arnavon Islands lie midway between Santa Isabel and Choiseul of the Solomon Islands. Amidst a paradisaical setting of white beaches, lagoons and coral reefs lives an extraordinary diversity of marine animals.

The Arnavon Islands are one of the most important rookeries in the western Pacific for the endangered hawksbill turtle. They also support commercially prized animals such as beche-de-mer (sea cucumbers), trochus, black and gold lip pearl oysters, and giant clams.

The area's cash economy has traditionally relied on harvesting these organisms. Three villages, Kia, Posarae and Waghena, use the Arnavons' resources. Harvesting activities were traditionally carried out on an "open access" basis, but in the 1980's when prices for shellfish went way up, so did the temptation to overharvest them. In classic boom and bust style the stocks were depleted, one by one.

In order to stop this, and to try to allow shellfish populations to recover, the project established the Arnavon Islands Community Marine Conservation Area (CMCA)—a legal 'no take' zone. The project involves implementing a management plan for the area and a sustainable deep-water finfish enterprise to provide the communities with food and income while taking the pressure off the marine invertebrates. Six community conservation officers (CCO's)—two from each village—monitor the project.

This conservation area marks the first time that a community of the Solomon Islands has created a marine sanctuary, as well as the country's first cooperatively managed marine conservation area. If successful, it will demonstrate the economic and ecological benefits of a community-based approach to resource conservation—both to other communities of the Solomon Islands and to the national government.

The initial three year closure opened up a unique opportunity for us to investigate the utility of marine conservation areas as a fisheries management tool, by scientifically testing the assumption that closure of an area will enhance the rehabilitation of depleted stocks and the recruitment of new stocks to areas outside the closed area. With the support and involvement of the International Center for Living Aquatic Resources Management (ICLARM) and the Great Barrier Reef Marine Park Authority we have been able to establish a scientifically robust monitoring program which will test these assumptions for the first time in a tropical Pacific island environment.

1997 Update

The construction of the fish purchasing cooperative centers at Sire and Wagina for the operation of the deep-water finfish fisheries project was completed by December 1996. At the Sire Center, an existing structure was modified to provide extra space required for storage and handling of fish and a new generator shed was built.

In Wagina, the 60 x 32 foot center was built from scratch. The structure is reinforced block and cement with a corrugated galvanized roof. Two new staff houses were built adjacent to the center. They are timber framed and clad. The original intention was to build semi—

permanent, leaf walling dwellings for staff, but the community requested that the houses be built with timber walling. As with Sire, all timber required was

The most difficult phase of the project will be maintaining the commitment and resources needed to build the management capacity and procedures vital to the long term commercial sustainability of the project.



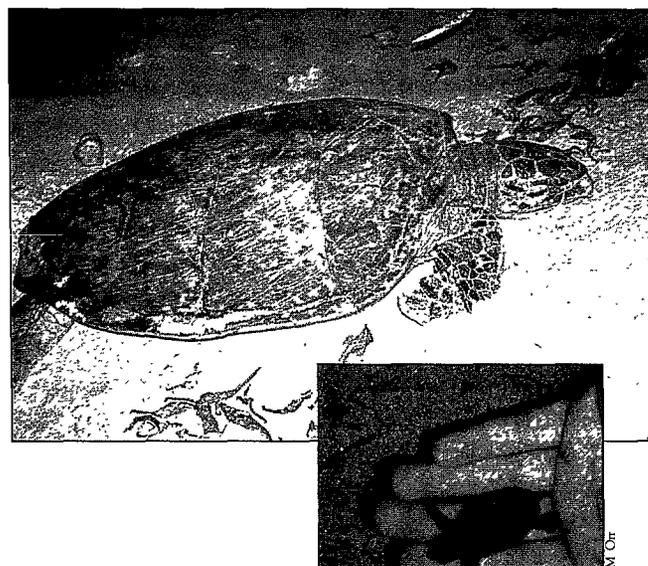
bought locally by contracted small milling operators and construction was carried out by the Wagina communities.

Commencement of construction of the new center was delayed by several weeks owing to a request by several members of the community for an increase in the agreed upon contract price, a problem which often arises when projects get under way in Melanesia. This was eventually resolved through the intervention of the ALMCA Management Committee members.

A job description for the two Center Managers was advertised locally in Posarae and Wagina. The community fishing committees which were established in the early phase of the project undertook interviews and filled both posts by January 1997. The two Center Managers are learning simple book-keeping with intensive "one on one" training.

In November, a master fisherman was retained by the Enterprise Project to train 24 fishermen in deep water snapper fishing techniques at the Sire Center. The first fish produced by the project arrived in Honiara during the last week of November. Arrangements have been made with the Honiara based fish broker Island Seafood's Ltd. to purchase the project's fish. Fish purchase prices were negotiated with Island Seafood's Ltd. on a similar basis to those received by other fisheries centers in the Solomons.

Intensive training of 30 fishermen from Wagina took place in early March. Training consisted of practical training in the building and overhauling of gear, navigation techniques, safety, fish handling to ensure export quality and basic outboard maintenance and small boat handling.



The completion of the construction phase, establishment of the center management structure and the training of fishermen and their successful initial fishing represents a very significant achievement in this remote, relatively unserved area of the Solomons. It is however, in many respects, the easier of the tasks facing project management. The most difficult phase of the project will be maintaining the commitment and resources needed to build the management capacity and procedures vital to the long term commercial sustainability of the project. The real success can only be measured over the long term.

Success Stories

Although we still have many difficult hurdles to overcome before the centers are commercially sustainable, the accomplishments to date have been welcomed by the communities involved and have generated much goodwill and support for the Arnavons project. In an area long neglected by "development" agencies, the fisheries project has, despite differences of opinion with the communities on control and funding issues, fostered better community relations and improved understanding of the project and its goals. Related to this, one of the most notable successes has been in the community attitude to the Arnavon



H. Cauley

In one case, the list of potential applicants included one of the most outspoken critics of the Arnavon Community Managed Conservation Area who was eventually chosen for the position and is fast becoming an effective advocate for the project and its goals.

Marine Conservation Area. Prior to the closure of the area in 1995, (on the AMCA Management Committee's decision), the islands were amongst the most heavily fished and hunted in the region. After two years of closure only three incidents of poaching have been reported by our Community Conservation Officers. Only one of these incidents involved the taking of endangered hawksbill turtles.

The completion of the construction and staffing the centers, as well as equipping and training the fishermen was accomplished in record time for the Solomon Islands. Because of the dedication and commitment of the staff, and the diligence of the AMCA Management Committee members in each village, we were able to move ahead at an unprecedented pace.

With the training completed, trial fishing was undertaken under the guidance of the master fisherman. The early results were excellent with an average of 110 kgs of high value fish caught on each trip by the fishermen of Seri, and 100 kgs by the fishermen of Wagina. The initial fishing trials proved that stocks of the target fish are plentiful. The training the fishermen received enabled them to target high value species with a minimum of lower grade fish being caught. The first month of fishing saw the Wagina center produce over 4,000 kgs of fish, which is in excess of the predicted break-even targets.

Another story which illustrates the importance of economic incentives as a tool in conservation involves the recruitment of one of the center managers. The community fishing committee called for names of potential candidates from within their communities. In one case, the list of potential applicants included one of the most outspoken critics of the Arnavon Community Managed Conservation Area who was eventually chosen for the position and is fast becoming an effective advocate for the project and its goals.

Challenges

Dealing with the expectations, pressures and community distortions related to the fisheries projects has overshadowed all other project activities pushing conservation management, monitoring and capacity building into the background. The challenge facing us is to make the alternative fisheries such as the deep-water finfish enterprise commercially viable and sustainable in the face of: deteriorating economic climate and infrastructure, uncertain prices and markets, weak human capacity and high com-



H. Canby

munity expectations. It is indeed daunting but in all probability, it is a pretty standard suite of challenges facing most conservation organizations engaging in enterprise development in remote areas of developing countries.

Our most pressing challenges are to try to solve the market access problems which have besieged the project, due partly to the national cutback of coastal shipping services which has reduced service to an ad hoc basis unless charters are arranged. The centers need a weekly shipping service for them to work to capacity and to generate the throughput of fish needed to make them financially sustainable. There is no simple solution to this problem in sight—short of running our own shipping service which is an option under consideration.

Other challenges include the need for ongoing funding to support the center during this difficult period. Cost overruns due to significant increases over the period between conception and actual implementation, together with

flaws in the original budgeting have driven home the lesson that there must rigorous and realistic monitoring of potential and actual costs with significant funding for contingencies built into the project from the outset.

Looking to the longer term, perhaps the most important challenge we face is to find ways to strengthen the capacity of the local communities to maintain the project and make it financially sustainable. This will require a strong focus on capacity building with our community partners and the development of even stronger linkages between the local stakeholders including the fisheries centers, fishermen, women's and youth groups and community leaders.

Author: Peter Thomas is a "Natural Areas Planner" by profession. For the past six years he has been with The Nature Conservancy and is currently the Director of the South Pacific Program based in New Zealand. He has worked extensively on resource management issues in New Zealand.

The challenge facing us is to make the alternative fisheries such as the deep-water finfish enterprise commercially viable and sustainable in the face of: deteriorating economic climate and infrastructure, uncertain prices and markets, weak human capacity and high community expectations.



S. Roberts

19. Nut Oil Processing and Ecotourism

Location: Makira Island,
Solomon Islands

Partners: Conservation
International (CI)

Solomon Islands Development Trust
(SIDT)

Maruia Society

BCN Funding: \$347,574

Partner

Contribution: \$100,000

Grant Period: January 1, 1994–December 31, 1998+

What's at Stake?

During times of high sea level, Makira Island within the Solomon Islands, was isolated for long periods of time. As a result, a wide variety of unique plants and animals evolved. For example, ten of its 76 species of birds are endemic.

International logging operations are a pressing threat to the island's natural resources. Many Makira communities have already succumbed to the relatively large amounts of cash that the logging companies offer people in order to high-grade the timber on their land.

To resist these threats, the Conservation in Development (CID) program established Makira's first conservation area. The team has been working with the Hauta and Warohito communities for five years to define the area and to identify enterprises whose viability is linked to the need to conserve the area's bio-diversity.

The Conservation Area is situated on the central area of Makira Island. The area covers approximately 63,000 hectares of largely undisturbed indigenous vegetation and includes a large number of villages still engaged in traditional lifestyles and resource use.

To date, the program has focused on conservation awareness and education, ecotourism



and extraction of ngali nut oil for export enterprise development, and monitoring of biological and social factors.

1997 Update

The Ecotourism enterprise follows a strategy that was developed in 1996. The community has set a limit of three tours per year. The 10 day tours (for a maximum group size of 15) provide visitors the opportunity to directly experience the natural and cultural wonders of this unique rainforest. This enterprise directly involves most of the Highlands population and some villages on the North Coast of Makira—in all around 500 people. Tours were run in September of 1996, and July of 1997 with the third tour currently underway as this report is being written.

The July ecotour brought in SD\$9100 (approximately US\$2500) to Makira communities, which was the largest sum yet. The coastal community at Togori put all of their share of the earnings from this tour into a community fund, with no one taking a private share. The Togori fund is used for community works and amounts to SI \$1885 (approximately US \$510). These were their share of the revenues received for two nights of accommodation, food and entertainment as well as carriers and guides for both days.

The Highland communities continued their established system of sharing out the bulk of the money earned in the ecotour to individuals within the communities. Such distribution puts the responsibility for the use of the money

The area covers approximately 63,000 hectares of largely undisturbed indigenous vegetation and includes a large number of villages still engaged in traditional lifestyles and resource use.

in people's own hands. The total amount distributed to highland villages was SI\$6615 (approximately US\$1780). A small amount of SI\$600 (approximately US\$160) has been put aside from the latest tour for a community fund for Highland villages. The income from the June ecotour amounts to approximately 40% of the total cash generated in the Highland communities over the last year.

The **Ngali Nut Oil** enterprise involves the local production of oil for the cosmetic industry. This production involves communities and individuals at Warihito, Highlands, North Coast and Wainoni Extension areas, affecting more than 600 individuals.

The Warihito Ngali Nut Press is the only one of its kind in the South Pacific. This was confirmed during the Indigenous Nuts of the South Pacific' Conference held from July 21 to 25, 1997 in Honiara. There was wide attendance at the conference by other producers and it became clear that Makira's ngali nut oil enterprise was well ahead of other nut products in terms of its production and marketing development.

Significant work was done with partners to develop markets for the ngali nut oil product. Given the positive market responses in 1996, a decision was made to increase production and to extract 1000 liters for the rest of the calendar year, an increase of 30% over 1996 production. It seems likely that production will increase again and so training for local staff in production planning is being provided.

Success Stories

Tourism places a value on traditional activities and material culture, which was previously believed inferior to "modern" ways. It helps the community by allowing households to earn money without the men having to spend extended periods of time away from their families while seeking work on the coast. It also brings the outside world to them, and broadens their understanding of the world and people of different cultures.

In both enterprises it appears that young school graduates are benefiting greatly. These young people return from schooling and often cause social problems because of adjustment and boredom problems. The ecotour has been particularly successful in providing these young people, particularly the young men, with roles as tour guides, pan-pipe band members and carvers. Some young boys are also assisting with the nut press.

Anecdotes are powerful ways to convey some of the success stories in this project:

- Old man Francis, an elder of a Makiran highland village, is an example of one individual's inspiration from the project. He wants to set aside all his land on the other side of the Ravorigi River for permanent conservation.
- As villagers have realized that tourists want to see traditional forms of village life, some of this dying knowledge has been sought out by the younger people and put into practice. Local staff have noticed a rapid 'revival' over the last year in local traditional knowledge and its demonstration through the pan-pipe bands developing more traditional tunes and instruments, custom dancing, carving and other forms of traditional knowledge.
- Francis Tarihao, the team leader, commented that he had seen attitudes to the program change in recent times. For example, the highland community of

Tourism places a value on traditional activities and material culture, which was previously believed inferior to "modern" ways.



H. Caultrey

Maraone initially did not want to join the conservation program. However, since the tourists have come and they have discovered that tourists want to buy carvings, they have changed their minds and want to be part of the ecotour. They are now fully involved in the ecotour and tourists have commented that the visit to Maraone has been particularly significant for them. Other villages (Vugiroga, Wairagiragi) who have not been involved in the enterprises to date, now want to be included in the project, and receive ecotours as well.

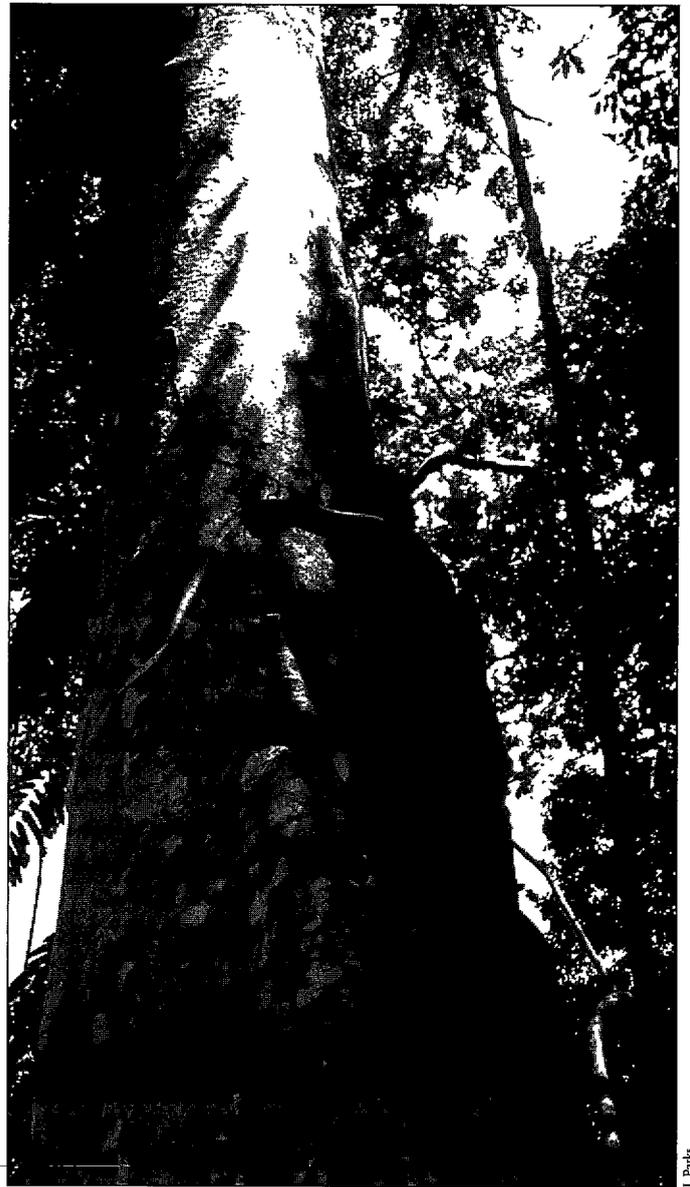
- In July, John Hingia, the nut press manager based in the remote village of Warohito, attended and made a presentation at the first Pacific region-wide conference on indigenous nuts. John's attendance obviously raised the community's sense of accomplishment in the project. In particular, the team took great pride in the fact that the traditional way of cracking nuts is still better than mechanical or electrical machines that crush (rather than crack) the nuts. (This issue of how the nuts are cracked became an issue of hot contention at the conference.)
- John Waihuru, the community organizer of the Makira ecotour, attended a national ecotourism conference and came away with a strong sense of pride in the Makira ecotour. It became clear to him that they were developing their own distinctive approach to ecotourism which suited Solomon Islands village life.

Challenges

We reviewed the project in 1996 and decided to build on the momentum gained in terms of the enterprises and the community work begun with the biological monitoring. As a result two new advisors have been brought into the project.

Project partners have bought on Sarah Wilson as a management advisor who will build on the strategic and human management aspects of the project. Tough decisions need to be made in terms of the management of the project. We need to ensure that there is added value at all levels. A new emphasis on Village-based Resource Management Planning, will strengthen the links between the enterprise successes and conservation goals.

Roger James has previously lived in the Highlands of Makira and is a scientist engaged to monitor native pigeons for the program. He noted "People I've never met



J. Parks

before from villages outside the conservation area have been approaching me to come to their village to tell them about 'life blong kuvwau' (native pigeon)". Building on his strong links with the community, he has been hired as a community resources management advisor.

"People I've never met before from villages outside the conservation area have been approaching me to come to their village to tell them about 'life blong kuvwau' (native pigeon)".

There is widespread local concern over the lack of freshwater fish in the Ravo River (one of the major rivers in the Conservation Area), and the realization that something needs to be done. One of the key challenges is to address the practice of night-fishing which is particularly detrimental to the fish stocks. The land-owners on the coast have raised this



J. Parks

concern because the fishing is happening upstream in the Conservation Area. We are seeking to look at this resource issue in the context of wider resource management planning efforts at the village level.

The project partners have learned that there are things that are very difficult to control in the program.

This ranges from the practical difficulties of working in an area of high rainfall with difficult river crossings, through to the problems that success itself can cause.

The project partners have learned that there are things that are very difficult to control in the program. This ranges from the practical difficulties of working in an area of high rainfall with difficult river crossings, through to the problems that success itself can cause. An example is that ecotourism successes have raised the profile of the area so that bird watching enthusiasts and scientists have tried to gain

access to the Makira communities with no reference to the program. The local community politely refused to allow these people to stay as they had set clear rules that only the tourists coming as part of the ecotour enterprise would be permitted.

During an evaluation meeting for the women at Warihito they commented that it was a problem that nuts from each 'zone' could only be sold to the nut press at one time in the year (the nut collection area is split into 6 zones, with each zone allocated 2 consecutive months of the year to

bring their nuts to Warihito to sell). Hence, the income to a family only comes in during two months of the year. They were keen to think of ways to spread the income throughout the year. However, increasing the quantity of oil produced is dependent on securing markets and further end-product development. The women brainstormed other possible ways of extending their income and these ideas are in the early stages of investigation.

The local community politely refused to allow these people to stay as they had set clear rules that only the tourists coming as part of the ecotour enterprise would be permitted.

There are very real internal challenges related to the oral "story" culture of Makira, which will always be part of the program. The way that the Makirans think and interact often seems inscrutable, not only to westerners but also to other Solomon Islanders! The best approach seems to be to have a process to deal with these, rather than trying to anticipate and prevent them. Also, an increasing level of ownership and management by Makirans themselves is essential, and will involve a commitment to training and capacity building.

Authors:

Francis Tarihao: Manager of Conservation in Development Program, Honiara, Solomon Islands, for SIDT. Francis has been involved in the program over the last five years and brings a strong background of community development and leadership.

Sarah Wilson: Conservation Area Manager, Melanesia Program, CI. Sarah has a special interest and experience in Management and Strategic Planning.

Roger James: Community Resources Management Advisor, CI, previously a pigeon biologist working with the Makira Conservation Area. Roger has a background in endangered species management.



J. Parks

20. Biodiversity Prospecting in the Seas around Verata Tikina

Location: Verata Tikina, Fiji

Partners: University of the South Pacific (USP)

The Rainforest Alliance

South Pacific Action Committee for Human Ecology and Environment (SPACHEE)

BCN Funding: \$348,045

Partner

Funding: USP \$100,000

MacArthur Foundation \$35,000

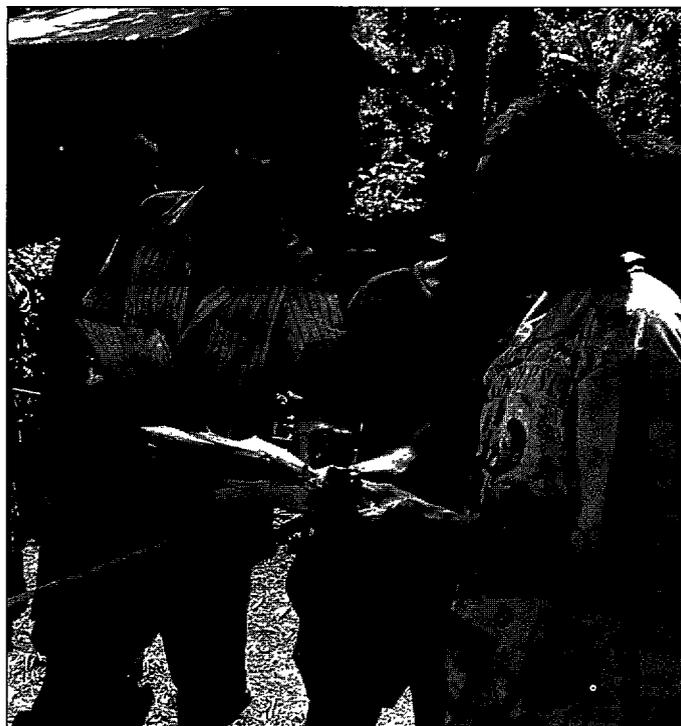
WWF-South Pacific \$10,000

Grant Period: January 15, 1996–December 31, 1998

What's at Stake?

Fiji has one of the best developed coral reef systems in the Pacific. Today, more than even the much touted rainforests, reefs are attracting attention as a source of novel chemicals that may hold cures for cancer, AIDS and drug resistant bacteria. Yet coral reefs are under severe pressure. Destructive natural processes such as reef bleaching and hurricanes have increased in recent years—possibly due to global warming. Some fishers use poisons to stun and catch fish which kill the corals. Land-based activities such as forestry and agriculture lead to siltation which smother the reefs—the foundations of the ecosystems.

The growing interest from pharmaceutical companies to prospect for chemicals with medicinal potential is a new source of potentially significant economic returns from marine resources. In general, the pharmaceutical company compensates the country for the intellectual property rights contained in its biodiversity in return for exclusive rights to screen the biodiversity for pharmaceutical compounds. If such screening leads to the development of a major drug, the agreements provide the host country with a share of the profits.



J. Parks

The University of the South Pacific (USP) and BCN are trying to set up bioprospecting agreements which benefit local communities rather than operating exclusively at the national level. Effective community-based coastal management can support biodiversity preservation as well as sustainable resource use. Fiji is a relatively small country and the project participants have close contacts with the appropriate government officials so the project has a good potential to influence government policy regarding prospecting issues.

1997 Update

In 1996 the project experienced a major set-back when our bioprospecting partner, SmithKline Beecham shut down their natural products branch just as we were about to finalize the deal. After a long search for a new bioprospecting partner and extensive negotiation, on 7 May 1997, the University of the South Pacific (USP) signed a bioprospecting agreement with the Strathclyde Institute of Drug Research (SIDR) based in Glasgow, Scotland. This agreement was subject to considerable scrutiny on a regional, national and international level, including review by a panel of bioprospecting experts.

Rather than selling the plant and marine samples, these extracts are licensed for evaluation by a drug company.

After one year, the samples may be further licensed by SIDR or returned. The USP in turn has an agreement with Verata Tikina, a county near Suva consisting of 7 villages, for priority supply of the organisms to be licensed. To date, about one hundred samples have been collected and supplied to SIDR from one sampling event. The expected cash benefit from these samples is approximately \$US 20,000. The Verata Development Council will decide how to use this money after consultation with the project advisory committee.

As part of the project, USP students are learning how to evaluate extracts. Successful local screening of extracts and isolation of active components would greatly increase the potential returns from the commercial development of the active ingredient. Two screening methods have been developed to study the anti-cancer potential of these extracts. Efforts have begun to try to test the extracts for tropical diseases such as malaria and dengue fever.

A highly successful two-week workshop in participatory, village-based biological monitoring was held in Verata in April. Local project staff and John Parks, BCN consultant, facilitated the workshop. The workshop generated such interest that, although only two representatives each from

the seven Verata villages had been invited, twenty participants were attending by the end of the first week. Participants identified local marine resource management problems, developed action plans to meet these challenges and established monitoring plans to judge the success of these interventions. As part of this workshop, two tabu sites (off-limits areas) have been identified and approved by village meetings and leaders to help conserve biodiversity and also to allow comparison of the levels of organisms in harvested and nonharvested sites. The monitoring results will be reported to village meetings. Several monitoring exercises, counting a salt-water cockle important to the people of Verata have been carried out with excellent results.

The Government and NGO representatives who assisted in this workshop were impressed and enthusiastic. They felt the methodologies were effective for biodiversity conservation in Fiji, and asked for a training workshop to be held for representatives of relevant government departments and NGOs. This workshop was held in July. Thirty participants learned the techniques and theory of participatory biological monitoring methods and assisted the Verata people in a monitoring exercise.



On the policy side, in the first half of 1997, both USP and the government of Fiji approved detailed guidelines for research using biodiversity. We believe that these guidelines will help ensure that such research is carried out responsibly and that benefits are equitably shared. Participation in the BCN project has acted as a catalyst to speed the development of these policies and the international project advisory panel has made useful comments on the proposals in their draft form.

Success Stories

Strong leadership is a powerful force for change. Through his participation in various project workshops, Tomujani Boginivalu, the administrative leader of one of the seven Verata villages, has developed a passionate commitment to monitoring and sustainable resource use. Tomujani recently presented his concerns about coral harvesting in an area near Verata, to a Verata council meeting. The council endorsed these concerns, and presented a motion for a ban on coral harvesting to the Tailevu Provincial Council meeting, to which Verata belongs.

The council also asked the South Pacific Action Committee for Human Ecology and Environment (SPACHEE), which is the local NGO counterpart of the BCN project, to conduct a training workshop on the uses of coral. With the assistance of the Fisheries Department,



the coral workshop was held for representatives of all Tailevu. The workshop recommended that coral harvesting cease in Tailevu and this was endorsed by the Provincial Council.

Malakai Tuiloa, the assistant director of the Fisheries Department in Fiji, was one of the 30 NGO and government representatives who participated in the workshop on the use of community-based participatory methods in resource management and monitoring. At the end of the meeting he declared, "In sixteen years of government service, I have never attended a workshop in which I worked like this with members of NGOs. I had previously viewed their intentions with suspicion but now realize they can be valuable partners in our conservation work."

All workshop participants were amazed at the skills of the Verata people—their ability to monitor their resources and explain the importance of the results. The participants exclaimed that they thought such skills could only be developed through formal university education. The development of these monitoring skills certainly represents a major success for the project.

The Fisheries Department also called a meeting with the BCN project personnel to discuss the regulation of marine bioprospecting. The Department had previously allowed fairly unlimited collection of non-edible resources by researchers, not appreciating their potential worth. A policy of consultation has now been developed between the Department and USP to discuss any proposed marine collections.

Challenges

The major challenge of this project at this point is time. The project start-up was delayed due to protracted negotiations first with the pharmaceutical giant SmithKline Beecham, which eventually dropped out of the project, and then with SIDR. Hence the project implementation period is only two years. The BCN project needs to complete many activities in a relatively short time. The level of activity needed to accomplish the project goals is often difficult to accomplish if we seek to respect the communities' many other demands on their time. Community members have busy schedules made even busier by often unexpected traditional obligations. We have sought to meet this challenge by having project meetings dovetail with scheduled village meetings, but these meeting times often change at short notice.

Lack of leadership in some villages is also a challenge. Two of the seven villages have seemingly less effective leadership than the others, and it is difficult to work through them to include the participation of members of their villages in tikina-wide activities. We hope to address this constraint by making them the focus of some of the socioeconomic development activities.



J. Pank



J. Pank

Author: Dr. Bill Aalbersberg is Professor of Natural Products Chemistry at the University of the South Pacific which operates in twelve Pacific island nations and has its main campus in Suva, Fiji. He has been on staff there for thirteen years. He first came to Fiji as a Peace Corps volunteer in 1970 and taught in rural Fiji and learned the local languages. He has welcomed the chance through the BCN project to combine his work with a long-time interest in environmental matters and development as well as the chance to escape from the laboratory. Bill is also a food chemist and has recently published a book of nutrient composition of local island foods which he has helped analyze over the past decade.

3. Enterprise Analysis

In response to a growing demand for information on community enterprises, BCN has made enterprise analysis a focus of this year's Annual Report. This section represents the first of a number of analyses that the BCN staff and partners will present before the end of the program. Although it is too soon to make definitive statements about enterprise-based strategies and their effect on conservation, it is not too soon to identify common problems that BCN-supported enterprises have faced and assess the variety of solutions attempted. Our goal with this report is not to answer every question and address every issue, but to describe a few of the most vexing issues facing our project partners. As a network, we plan to create a dialogue on these conservation and business issues. One of the means that will be used to foster this dialogue is the BCNet site on the World Wide Web.

Before launching into the key issues facing BCN-supported projects, it is important to keep in mind that the enterprises have a dual role in a community: They are the engines that power socioeconomic development as well as the mechanisms for raising conservation awareness within the communities. It is both the cash benefit and the raised awareness that lead to actions to conserve biodiversity. BCN-supported enterprises not only have to meet the test of financial viability, but they also must meet social and ecological criteria. Hence, the problems that enterprises face are an amalgam of social, economic, and biological issues.

As described in last year's report, BCN has found that enterprise-based strategies are generally insufficient in and of themselves to accomplish conservation. Instead, they must be viewed as one part of an overall solution to conservation problems at a given site. When using an enterprise-based approach, the following six problems should be given priority consideration in the planning process:

1. The lack of secure resource tenure creates a critical obstacle to enterprise development.
2. The impact of enterprise activities on the biodiversity of the area is uncertain.
3. Most businesses are inadequately accounting for costs.
4. There is inadequate managerial and technical capacity.

5. Without an increase in local value added, communities will receive a low return on their labor and remain vulnerable to swings in commodity prices.
6. Separating non-government organization (NGO) project management from the enterprise and its management is an essential but difficult task.

While these key problems are common across BCN, the solutions are not. The approach is necessarily project and site specific and requires innovation and adaptation to local or national conditions. The following sections contain a discussion of each of these problems and examples of how project partners have begun to solve them.

Problem 1. The lack of secure resource tenure creates a critical obstacle to enterprise development.

The major problem remains one of tenure. The ultimate control of the forests and forest resources still largely rests in the hands of the government and not in the hands of the people who are directly involved and affected . . . This means that the funds generated by sale of wood, grazing rights to outsiders, fines and other fees are not at the disposal of the Van Panchayat [local forest users group] but rather under the control of the Revenue Department, which takes most of the funds for its own purposes. This arrangement is a serious disincentive for the villagers. [Silk and Honey in India, #3]

Partner Solutions: As a first step in many projects, communities must gain some control over their resources if the benefits are to be long-term and motivate conservation. The solution is to work with local NGOs who are knowledgeable of the political climate and the existing legislation and have the expertise to make the law work for communities. In cases where no such law is in place the community must organize to demonstrate that there is a need and a justification for tenurial rights. The approach is country and situation-specific, as the following examples demonstrate.

Nepal: Regulations passed in 1996 allowed the formation of Community Forest User Groups (CFUGs), putting into action the principles of the 1992 Forest Act. The *Essential*

Oils in Nepal [#1] project took full advantage of the new law by starting the process of obtaining resource control for 19 communities. As a result, two of these communities now have official title to the land and the right to manage it themselves, including the right to all revenue derived from the land. This project team is using the CFUGs to establish a more sound base to the business. In addition, the newly recognized tenure is having a broader positive impact on the community. As the team writes:

Community Forest Handover activities accelerated as communities became aware of the benefits, in the form of direct royalty payments on materials harvested from registered community forests.

Philippines: All projects are involved in assuring that local people benefit from the Certificate of Ancestral Domain Claim (CADC). Possession of a CADC empowers local communities to begin the process of consolidating territorial and financial control of their ancestral lands. It is not yet by any means a secure and easily administered tenure instrument from the perspective and experience of the BCN groups. But it does represent a step in the right direction. For example, the three sites of the *Rattan and Resin in the Philippines* [#13] project have received CADCs as a basis of protection for community-developed business. On the other hand, the *Abaca and Rattan in the Philippines* [#12] project has seen flaws in the delineation process. As they report:

In the Provinces of the Region, political developments of a complex nature are leading to massive land claims by tribal groups that sometimes extend to 60,000 hectares. One such claim threatens the stability of this area and although the community has expressed its interest in an independent small claim, we are unsure whether the national program staff responsible for granting the Certificate of Ancestral Domain Claims (CADC) will support the actual people in the forest, or those closer to the urban centers. The people have been clear in the presentation of their case and have gained attention, yet rights are not yet theirs.

Indonesia: Five of the six projects in Indonesia are trying to demonstrate to the government that local people are capable stewards of the land and deserve more resource control rights. As an example, in 1996, 23 tons of damar resin was collected from the forest floor in the Participatory Forest Management Area in West Kalimantan at the *Forest Products in Indonesia* [#8] project. The damar was gathered by local farmers and given to Yaysan Dian Tama (YDT, the local NGO) in the hopes that they would have access to markets and potential buyers. YDT did find buyers but because neither YDT nor the community

association had a permit to tap and sell damar, they were forced to place the resin in storage for an indefinite period. After almost one year, the project successfully lobbied local government authorities, and the provincial Governor awarded them a permit to tap, process and sell damar. This is a significant step as it establishes precedence for resource tenure. However, the permit is limited to one year and must be renewed. This hinders the business' and hence the community's ability to do long-term planning.



Solomon Islands: In general, the Melanesian countries are advanced in formally recognizing traditional landowner resource rights. The Arnavon Islands at the *Fishing in the Solomon Islands* [#18] site are located in an area that could not be controlled by any one community, being too far away from their traditional "owners" and too close to other stakeholders who were using the resources without any mechanism for controlled harvest. When the three principal communities involved realized that the resources of the Arnavons were depleted—decimated in fact—they decided to create a management institution to regulate access to the Arnavons and to stop harvesting of certain species for a given time period. The idea of a conservation area managed by three distinct communities was unique in the Solomons and is now being observed by the government. The example of the Arnavons demonstrates that community-based conservation need not be confined to one community.



Problem 2. The impact of enterprise activities on the area's biodiversity is uncertain.

We have made little headway in linking sustainable harvest with conservation . . . we still do not know the level of sustainable harvest. [Forest Products in India, #5]

Ideally, an enterprise will have a positive or at worst, neutral effect on the area's biodiversity. However, in a majority of the BCN-funded projects, the businesses are not operating in isolation. There are other subsistence and market demands putting pressure on the resource base. Whether the pre-existing resource use was sustainable or not was unknown when the enterprises began. The new enterprise may not have increased resource demand if it only substituted for previous activities but more than likely it is increasing the demand for raw materials since a cash enterprise cannot completely replace the subsistence activities. For example, at the *Silk and Honey in India* [#3] project, oak leaves are essential to the silkworm enterprise but they are also used as fodder for dairy cattle.

A small-scale forest product enterprise may grow over time. Therefore, it is imperative that the monitoring of the resource base (in terms of stock, yield, harvest rate, regeneration) begin with the start of the enterprise. The success of the monitoring and evaluation activities will depend on whether all the users of the resource can use such information to change their resource use if it is found to be unsustainable. Tenorial status also determines the optimal use of the resources (see Problem 1).

Partner Solutions: Thirteen of the twenty BCN-supported projects have concentrated on community-based monitoring and it appears that developing the skills at that level is not only possible but also has a catalytic

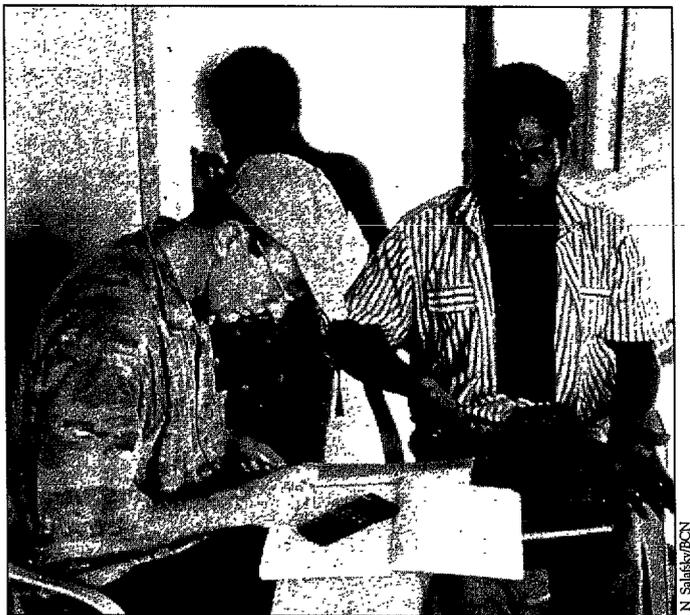
effect on other aspects of local natural resource management. The *Forest Fruits in the Philippines* [#14] project team reports:

We have found that food web seminars are an excellent way to facilitate community understanding of how their local ecosystems function. In each community, the food web seminar comes up with a unique observation. In one, they observed the need to protect the rat snakes in order to reduce the rats which have become horrible pests in the food production fields. Our pastor was hiking with some young people shortly after one seminar where this observation was made and they saw a rat snake crossing the trail. Because of their fear of green vipers, the villagers previously had a habit of killing any and all snakes that they saw. This time his companions made no move to kill the snake.

Similarly, a revamped monitoring activity sparked community involvement in the *Butterflies in Indonesia* [#10] project when, as the team states:

A major challenge for the project has been to implement a coordinated biological monitoring plan. Without a clear coordinator, the monitoring surveys which have taken place have been piecemeal and failed to build upon previous surveys. It became clear that the earlier monitoring plans were overly complicated with too many diverse activities and that a very simple plan was required if it was to be carried out . . . John [Parks, BCN Consultant] led a workshop on biological monitoring for Arfak butterfly farmers from six villages around the Arfak Nature Reserve. Despite a tight schedule and all the setbacks, the workshop was a great success. The objectives set out . . . were accessible and meaningful to the community. They clarified that the biological monitoring should be community monitoring and that the primary purpose was that the results were useful to the community. Monitoring methods and techniques which could be understood and put into effect by the community were established . . . A week after the field study course had been completed, Agus Wonggor, group leader of Mbenti Butterfly Farmers, arrived in the office and presented us with a completed butterfly count . . . Furthermore, the group had sent a question "when are we having a meeting so we can agree responsibilities for the monitoring, sort out who can help which group and coordinate between areas?" [A meeting was immediately planned].

For further information on community-based monitoring see the final community-based monitoring reports by John Parks for *Nut Oil and Tourism in the Solomon Islands* [#19] and *Butterflies in Indonesia* [#10] projects posted on the BCNet Web Site.



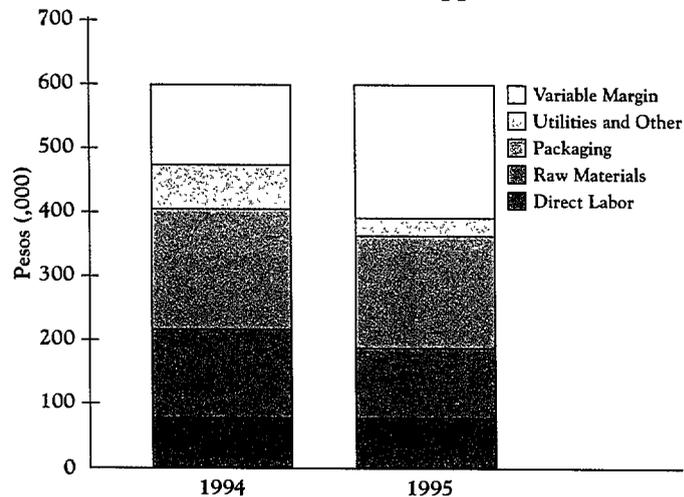
Problem 3. Most businesses are inadequately accounting for costs.

Forty-five different enterprises have been planned using BCN support. Of these, eight have still not been initiated due to a variety of issues ranging from awaiting the government go-ahead (*Logging In Indonesia, #7*) to the need to gain concession rights (*Rattan and Resin in the Philippines, #13*). Of the remaining 37, we have data in-hand that 27 of these are operating at least on a positive variable margin basis. BCN staff cannot make definitive statements about the other 10 due to the lack of information and the possibility that, in at least two of these cases, given either the inexperience of the NGO management team or radically changing conditions which have undermined initial pro forma projections, these business may in fact not be covering their variable costs.

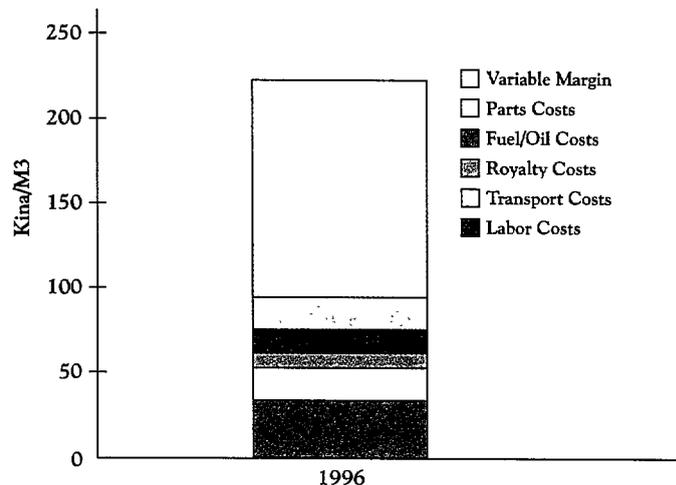
Based on our experience, we suggest that those interested in establishing community-based businesses for conservation plan to invest considerable time in understanding cost accounting. In the majority of our BCN-supported enterprises the businesses have kept adequate revenue records. However, it is the minority that have adequately captured anything approaching a “true” cost of the business. This has been a significant problem as we try to draw conclusions about enterprise viability. As an example of a rarely captured cost, in many of these businesses, subsidies provided by the NGO partner for international marketing and resource monitoring have not been factored into the cost analysis.

Partner Solutions: The first part of the solution practiced by the majority of the supported businesses is to first capture the operation’s variable costs. Variable costs are those that vary with the level of production or delivery of the service such as raw materials, fuel, wage/labor, etc. Two examples of projects providing data to illustrate their positive variable margins are shown below.

Variable Costs and Margins for the Forest Fruits Business in the Philippines (#14)

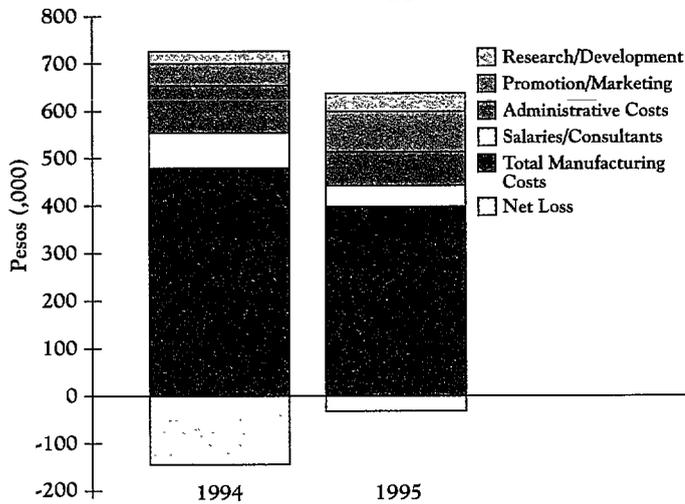


Variable Costs and Margins for a “Walkabout” Sawmill

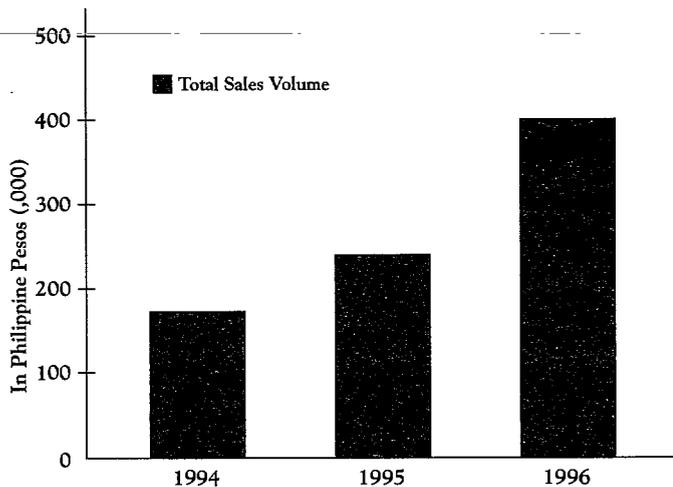


The next level of cost analysis is to assess the status of the business when variable and fixed costs are included. Because few of our businesses are stand-alone activities, it requires some allocation of fixed costs from the broader project activities or perhaps from other businesses to the BCN-supported enterprise. Depending on the allocation basis used—and we hasten to add that these can be some-

Fixed and Variable Costs at the Forest Fruits Project in the Philippines (#14)



"Mountain Fresh" Sales in Metro Manilla* (#14)



* Effected through the Upland Marketing Program (UMP) of the Philippines Business of Social Progress

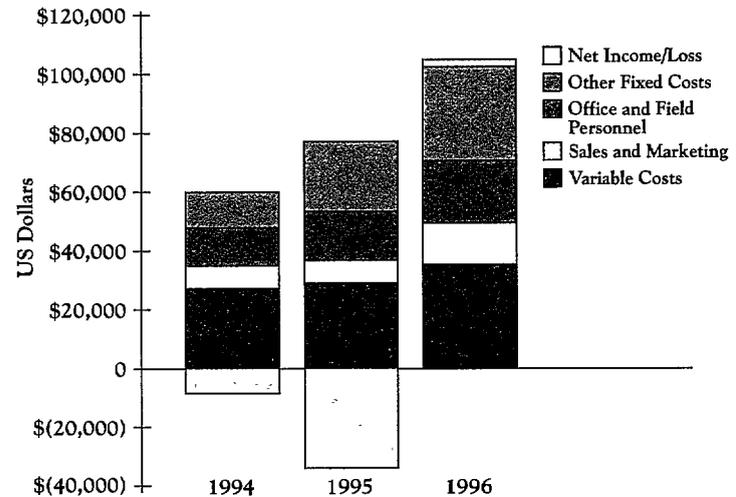
what subjective—some business will appear to be losing money as illustrated using the Kalahan fruit processing business *Forest Fruits in the Philippines* [#14] above for 1994 and 1995.

Here is where the issue of the differing goals of a business and NGO become most noticeable: Kalahan's perspective is that the business is creating much valued jobs and a better understanding of the local environment. BCN staff agree. Our role as technical advisors is to point out, however, that under some costing regimes, the business is losing money and, in the event that the NGO in the future cannot subsidize the business, the business will either have to adjust its pricing or its cost structure to address the net loss issue.

The above analysis of KEF's operations by BCN staff was used by KEF management to adjust their costs and pay more attention to fixed costs. As a result, the business now operates in the black and sales of its "Mountain Fresh" line of jams and jellies have continued to rise quickly.

An example of another business which is covering its fixed and variable costs is the *Butterflies in Indonesia* [#10] project as shown below.

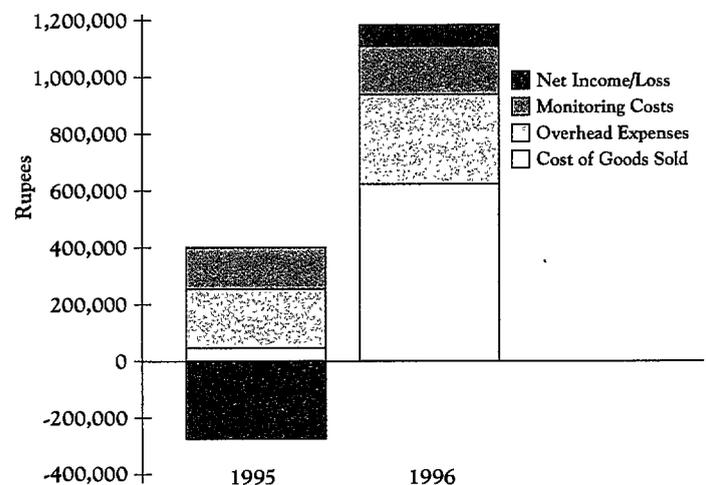
Fixed and Variable Costs for the Butterflies Business in Irian Jaya Indonesia (#10)



The final step towards enterprise viability, is reached when a business accounts for all costs, including monitoring of natural resources. Based on our analysis, only one enterprise, the Honey and Fruit Processing Unit at the *Forest Products in India* [#5] project has reached this self-sustaining level.

Even so, the Western Ghats team is quick to point out that they still have not reached a conclusion regarding the ecological sustainability of the extractive activity.

"Fully Loaded Costs" for the Forest Products Business in India (#5)



Problem 4. There is inadequate managerial and technical capacity.

Different enterprises have different needs for capacity and technology—some operate at higher risk and require more technology than others. Different investments are needed depending upon those criteria. Some skills are readily transferable or already exist in the community, while other skills such as marketing are foreign to many communities. The idea is not only to design an enterprise that draws on the existing skills and resources as much as possible, but also to realize the value in using outside training or assistance to jump start the enterprise.

Partner Solutions: Given the limited time frame of the projects, most are bringing in qualified staff from outside or finding business partners. An example of this is the *Honey, Butterflies, and Rafting in Indonesia* [#9] project:

One of the major challenges faced by the butterfly enterprise is to ensure that a local marketing capacity is in place during the next butterfly export season. It's difficult to see this capacity arising in the village itself, particularly if we are looking to export directly from Central Sulawesi; the level of education isn't high enough. There are several options: to involve a local business to open a branch in Palu. Or to organize shipping to an existing butterfly business for them to export. The latter seems the best course, especially as the company we are currently working with has its own butterfly farm which can receive excess stock. Shipping within the country is easy, cheap, and involves a minimum of bureaucracy—the latter would be a major problem for villagers to overcome.

However, recognizing the need for the community to eventually rely on itself, most projects are at the same time building the business management capacities of the local people. Such a process takes time and expectations should be properly gauged. An illustration of this is *Abaca and Rattan in the Philippines* [#12] project, where the team writes:

It is naive to think of them [local, rural people in Mindanao] as entrepreneurs. Other support must be sought over time, like broader abaca growing that will form a significant portion of the local market so much so as to influence it, along with the identification of interested parties to invest in the resource development. The biggest challenge is to work with reality and not be confined by the prism of project accomplishments which have a short lifetime.

Problem 5. Without an increase in local value added, communities will receive a low return on their labor and remain vulnerable to swings in commodity prices.

The level of value added is a function of:

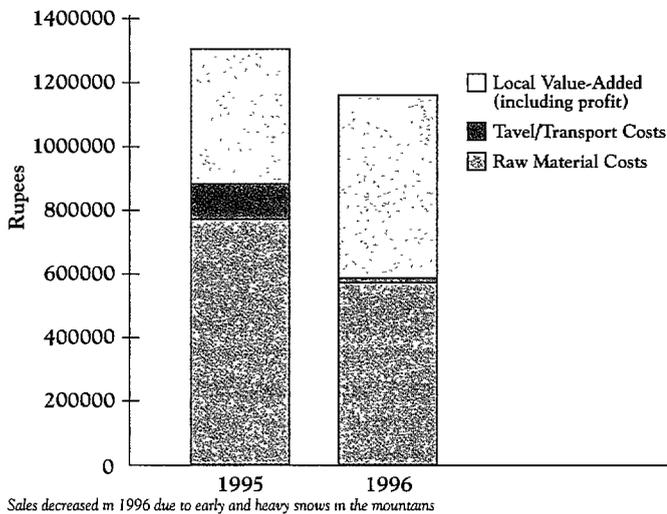
- Level of investment, which in turn determines the scale of operation,
- Technology, which is also correlated with investment levels, and
- Availability of local technical and managerial capacity now and in the foreseeable future.

Value addition and relatively high returns are one side of the coin. The other side is risk. Some of our partners' most valuable lessons (many in hindsight) have to do with risk assessment and their capacity to manage risk.

Partner Solutions: An important consideration in selecting the BCN projects was the grantees' ability to add value at the local level to a product. As a result, all of the product enterprises in the network involve value added processing of a local resource. This varies from the distilling of essential oils in the Himalayan mountains of northwest Nepal to lumber production at "walkabout" sawmills in Papua New Guinea. To continue to add local value to a product year after year the key is to 1) select technologies that are appropriate for the location, and 2) train community members to maintain the operation. For example, the team at the *Essential Oils in Nepal* [#1] project describes how the new distillery unit at the is now sufficiently maintained by the local people such that last year the business experienced no down time from equipment problems:

Distillation activities began in October [96] and the unit has been in continuous operation since then, producing Jatamansi oil exclusively. The manager-technician and workers were trained in the operation of the facilities by the staff from the Kurilla factory. No assistance from outside Humla was needed for the actual start-up and operation of the facility in Rodikot. While technical and managerial support was provided from Kathmandu, only Humli people were involved in the construction of the building, installation of the equipment, and start-up of operation. The unit has continued in operation since start-up and is operating well.

Local Value-Added at the Essential Oils in Nepal (#1) Project



Problem 6. Separating the NGO project management from the enterprise is an essential but difficult task.

Enterprises that are part of a conservation effort are subject to the constraints and conditions facing any business. In addition, because so many of the projects are led by NGOs, the challenges particular to NGOs must also be considered. NGOs often have goals other than enterprise development and these goals require a responsible image in the community, a need to be fair to all sectors, and a good relationship with government. The NGO often has relatively little business experience. These factors can render NGO-based businesses “less competitive” than businesses that can afford to place image second to profit. Hence there is a need to assess the business separately from the NGO in order to understand if it is competitive.

Partner Solutions: As NGOs, the project partners generally have expertise in social issues and natural resource conservation. An NGOs tends to view an enterprise project as an addition to their usual range of conservation activities and does not analyze its performance separately of the whole project. As time has passed, and the BCN enterprises have been exposed to the vagaries of the market, the project managers are beginning to realize the importance of tracking specific aspects of business performance using full cost accounting, including overhead for related activities such as monitoring. These are necessary steps towards making the community enterprise accountable without the NGO. The team in the *Forest Products in India* [#5] project describes how the first steps are being taken by the local villagers who:

Were encouraged by the partners to form another community organization to take over the honey processing and food processing plant, to initiate other enterprises and to eventually participate with VGKK [a local NGO], in participatory resource monitoring and other community outreach activities associated with enterprises, conservation, and environmental education. The organization would obtain income tax exempt status, and VGKK will transfer the assets and provide working capital to the new organization, and maintain a close working relationship with it.

As another example, the *Butterflies in Indonesia* [#10] project has tried to get a permit to establish an affiliated but separate for-profit company based on the sale of butterflies and other products coming out of the Arfak Mountains communities. As of yet, their applications have not been approved by local government authorities. In spite of this delay, YBLBC (the lead NGO) recognized the importance of separating YBLBC’s “regular” community development and conservation functions from the butterfly business, and decided that in December 1997, the enterprise accounts will be separated from other YBLBC activities.

Summary

In summary, our advice to any group considering an enterprise-based strategy to conservation is to treat the business like a business. It sounds simple enough but we’ve seen too many NGO’s mix the NGO’s agenda and systems too closely to the business. Successful businesses stay focused on what they are good at, are creative to responding to changing customer needs and market forces, and develop and reward individuals who work for or with (e.g. suppliers) the company. In addition to these, successful natural resource-based businesses are attuned to the impacts that they are having on their resource base and the local community and modify operations accordingly.

Over the next sixteen months, BCN staff and grantees will continue to develop more detailed descriptions of the types of business problems encountered and the remedies tried. We would also encourage the serious conservation program planner that intends to use an enterprise-based strategy as part of a broader set of interventions to review the considerable amount of literature available on micro-enterprises in rural environments. The publications and experience of more business-focused NGOs such as Appropriate Technology International and Technoserve should also be consulted.

4. Financial Analysis

4.1 The costs of community-based ecological monitoring.

The BCN is all about evaluating enterprise-based approaches to conservation. To do this, BCN staff and especially grantees have expended considerable effort into ascertaining the social, biological, and economic impact of the various BCN-funded interventions. In last year's Annual Report, we pointed out that, on average, one-third of project budgets were set aside for all types of monitoring. However, not surprisingly, what we've learned over the past four years is that money is not the answer.

As illustrated in a number of the stories from the field, original monitoring programs, especially ones for ecological impact, were too complex (read academic), ill-focused, and unsustainable from a community perspective. As discussed in section 2.1, a strong theme across the stories is that in order for conservation to be sustainable, communities must be given better "tools" to understand what is happening, why, and how to adapt to the new situation. For this reason, 13 of the 20 projects have moved toward community-based monitoring. Community-based monitoring pushes the collection, analysis and use of the information down to the community level and, as a result, is much more likely to be sustainable, lead to better natural resource management decisions, and be cheaper. However, as illustrated in the stories, community-based monitoring does not necessarily—and in fact rarely—involve just the community. Appropriate expertise is crucially important during the start-up phase and on a periodic basis to ensure that the monitoring suits the community's needs for information.

The purpose of this section is to illustrate what it has cost to implement community-based monitoring at a terrestrial and a marine site. The two examples described below are, in our view, two of the better examples of community-based monitoring within the Network. Do we have answers regarding the conservation impact? As stated numerous times earlier, no. But we believe that the project teams have made successful enabling investments for the technical skills necessary to do community-based monitoring. We will keep you informed as to their progress.

Experience has demonstrated that there are two phases of investment for a community-based monitoring program: the *start-up* phase, and the *operational* phase. Under the initial start-up phase, investments made toward the monitoring are high due to the fixed costs associated with this phase, including: a) purchase of monitoring equipment; b) the completion of rapid assessments leading to the design of an appropriate monitoring approach; c) external technical support and consultations provided to facilitate and train local residents in the design and initial implementation of the monitoring approach; d) field testing a newly designed approach and working out any methodological 'bugs'; e) travel costs associated with bringing project partner staff and external consultants into the field to work with the communities in setting up the monitoring. On-going costs are typically at significantly lower levels once the original investment has been made. These costs include travel for project staff to the monitoring site, equipment, workshop expenses and a minimal participant stipend.

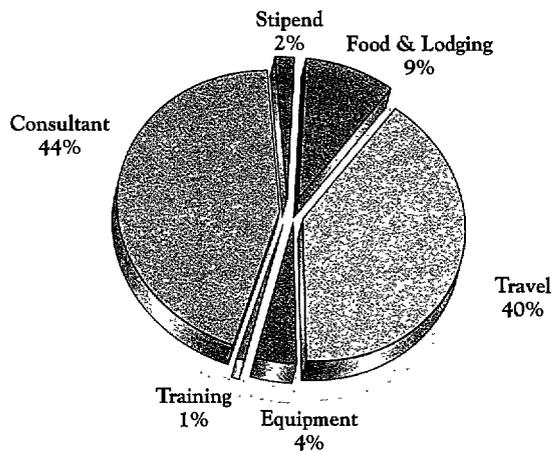
Below are two examples to illustrate representative costs and cost categories for the start-up and on-going operation of a community-based ecological monitoring program. The first example is from a non-timber forest product project in the Solomon Islands and the second example is from a marine product harvesting project in Fiji.

Example 1—Solomon Islands Ngali Nut Project (#19)

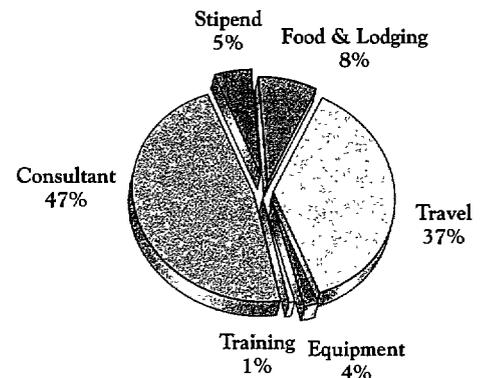
The primary purpose of the community-based biological monitoring program was to capture the impact of harvesting Ngali nuts (*Canarium Indicum*) for the production of a seed oil. As such, data needed to be collected on the trees' growth, yield of nuts, and regeneration, as well as the current nut harvest rates to ascertain the sustainability of the harvest.

To date, the grantee's monitoring efforts for a project based in the Solomon Islands have resulted in one of the most comprehensive and successful examples of community-based biological monitoring. Estimated actual costs associated with the start-up phase of the Ngali nut monitoring (1996) were \$14,500, and 1997's operational costs totaled \$5,725. These costs are summarized in the following pie-charts.

Solomon Islands Start-up Costs – \$14,500



Operational Costs – \$5,725



Cost Categories	SI Start Up Costs	SI Operating Costs
Food and Lodging	3 people, 29 days	1 person, 18 days
Travel	2 round trips U.S. to Solomon Islands, 1 round trip Australia to Solomon Islands	1 round trip U.S. to Solomon Islands
Equipment	compass, tape measure, etc.	tape measure
Training & Workshops	data books	flipcharts, pens, paper
Consulting Fees	14 days, 1 consultant	18 days, 1 consultant
Participant Stipend	4 people, \$6/person, 14.5 days	9 people, \$6/person, 5.5 days

Two conclusion that can be drawn from the above are 1) the start-up costs are nearly twice the first-year operating costs, and 2) while the total is reduced in the operating stage the cost allocation has remained the same—consultancy and travel costs are roughly the same portion of the total monitoring costs.

Several factors contributed to the high start-up costs of the Ngali nut project:

Logistical difficulties. The project site where the Ngali nut trees are located is quite a distance from the project offices so there are substantial staff travel costs associated with the monitoring programs.

Expert consultants. It was decided at the outset of the project to bring in a very knowledgeable technical advisor (consultant) to the project who commands a fairly sizable consulting fee. It was also decided that a BCN staff

member and another consultant should be present during the initial phase of monitoring to help conduct a training workshop.

Top-down planning. In order to induce community members to attend the workshop, the project had to pay a small daily stipend to cover food, travel and other miscellaneous costs.

Each of these factors was mitigated in the following year. For example, just one consultant made a second trip to the Solomon Islands after the start-up phase and most of the equipment used for monitoring had been purchased at the outset. The costs of putting on a training workshop in the Solomon Islands is very minimal. Subsequent monitoring costs will be lower still because there is no need for a consultant to travel to the Solomon Islands for some time.

Example 2—Biodiversity Prospecting in Fiji [#20]

In comparison, the costs associated with this next project, a marine project located in Fiji, are almost one third of the preceding project. This program was structured in such a way as to minimize start-up costs and provide initial training in monitoring so that on-going monitoring efforts would be very low in cost.

Factors that contributed to the low start-up costs are:

Narrow focus. The survey design was simplified; for example, the same set of questions was applicable to all three species of plants being monitored.

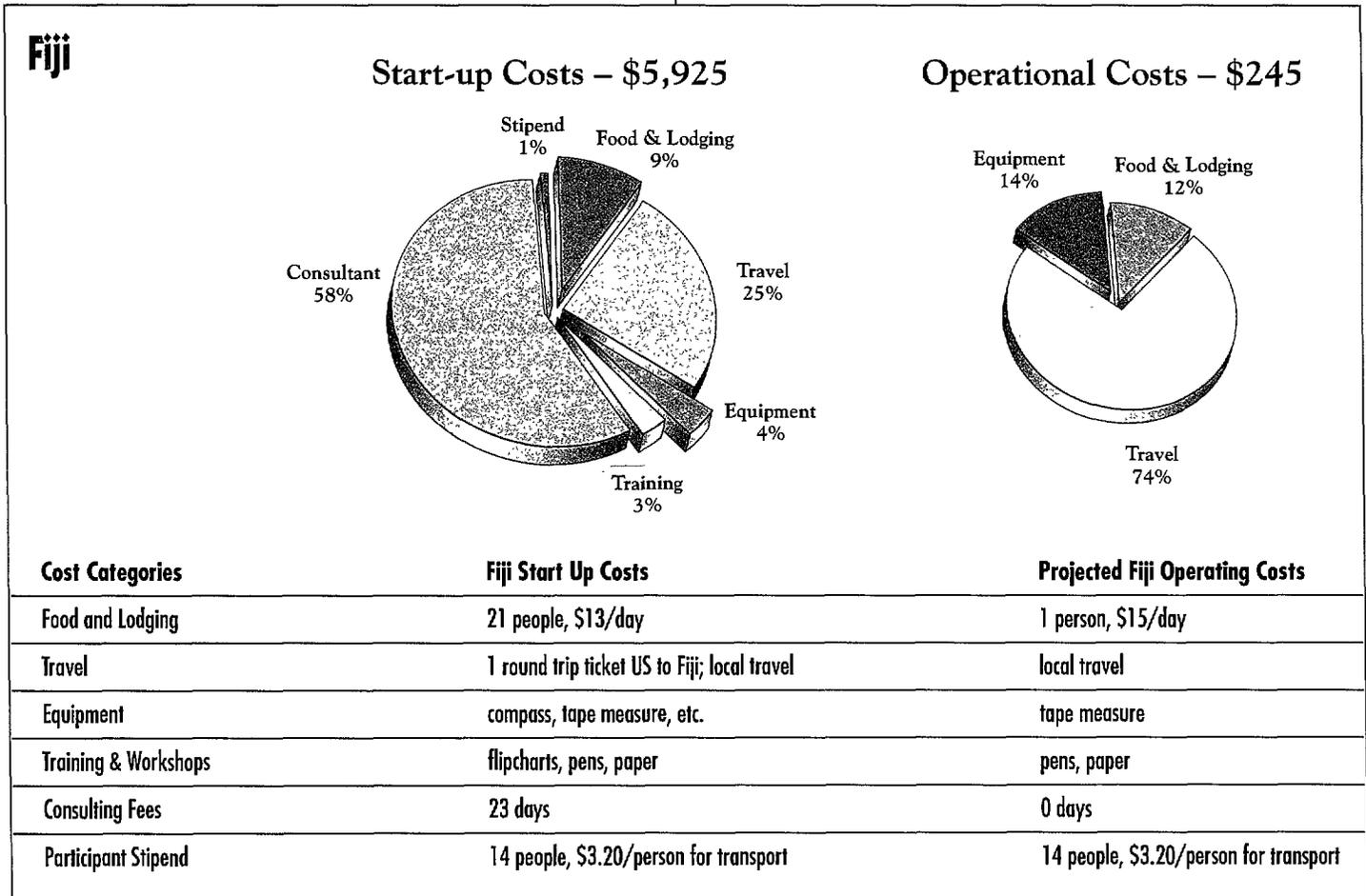
Feasible sampling area. In addition, the species being monitored are in small plots very close to the village and project office so that travel costs are very low.

Pared-down consultancy. The project was designed to utilize a single consultant only once during the initial phase. Operating costs are extremely low at \$245 per year because there are no additional workshops for the project and no need for outside consultants. Participant stipends in Fiji are also much lower than in the Solomon Islands, which helps in bringing down the costs

Conclusions

BCN experience has demonstrated that community-based ecological monitoring programs can collect the data that will be ultimately necessary to make better natural resource management decisions. The examples discussed here are intended to illustrate that the start-up and operating costs do represent a significant reduction over what was originally planned in project proposals. This reduction can be as much as 75 percent below original projections. A key element of these programs, and a majority of the cost, is typically the outside expertise to design a targeted, culturally appropriate, and simple monitoring plan. It remains to be seen how effectively the communities use the information although we feel that conservation will have the best chance of occurring if decision making is pushed down to the local level.

For more information . . . check out the BCN Web site (www.BCNet.org) or write to us. Full reports on the two monitoring examples used here are available in the "Library" section of the web site. All or portions of these reports can be electronically downloaded.



4.2 BCN Financial Summary

Budget Item	Authorized Amount ¹	Total Obligations To Date ²	Disbursements					Total Disbursements To Date
			FY 1993 10/92-9/93	FY 1994 10/93-9/94	FY 1995 10/94-9/95	FY 1996 10/95-9/96	FY 1997 ³ 10/96-9/97	
Salaries/Benefits	2,116,079	2,412,072	112,607	530,117	574,955	570,245	624,148	2,412,072
WWF Indirect Costs	1,464,633	1,380,168	84,821	350,808	346,788	303,561	294,190	1,380,168
Travel & Per Diem	620,542	495,669	3,841	127,650	134,437	106,937	122,804	495,669
Other Direct Costs	862,634	861,119	62,066	153,114	266,294	197,839	181,806	861,119
T/A, Advisory Groups	1,798,612	479,537	309	140,153	70,610	177,387	91,078	479,537
Small Grants	483,000	256,194	0	0	64,648	33,135	158,411	256,194
Grants	12,654,500	11,493,758	19,660	1,127,768	1,802,563	2,795,525	2,181,033	7,926,549
TOTAL	20,000,000	17,378,516	283,304	2,429,610	3,260,295	4,184,629	3,653,470	13,811,308

Notes:

¹Original program was for five years; program now includes an 18-month no cost extension for 6.5 total years.

²Expenses for salaries, indirect costs, travel, other direct costs, and technical assistance are disbursed through 9/97. Expenses for grants are total Planning and Implementation Grants and Small Grants awarded through 9/97.

³Line item expenses for FY97 vary slightly from official financial reports due to location of small grant expenses in accounting system.

Appendix A

Summary of BCN Implementation Grants

Country	Lead Organization	Collaborators Receiving BCN Funds	Funds U.S. \$	Enterprise Component	Policy/Technical Issues	Threats to Biodiversity*
Nepal	Appropriate Technology International	Asia Network for Small-Scale Agricultural Biotechnologies Humla Conservation and Development Association	\$549,995	Aromatic plant collection and processing	Community management plans for natural products Keeping larger portion of NTFP taxes locally	<ul style="list-style-type: none"> • overharvesting of NTFPs*, fodder, and fuelwood
	King Mahendra Trust for Nature Conservation	World Wildlife Fund - US	\$636,607	Ecotourism Rosewood plantations	Legislation for tourism tax recycling to local communities Buffer zone enhancement	<ul style="list-style-type: none"> • poaching* • extraction of NTFPs & fodder • population growth • uncontrolled development of tourism
India	Appropriate Technology International	EDA Rural Systems Kumaun University	\$571,201	Harvesting and processing of tasar silk, and honey.	Supporting local community forest resource management	<ul style="list-style-type: none"> • overharvesting of NTFPs, fodder, & fuelwood
	The Mountain Institute	GB Pant Institute of Himalayan Environment and Development	\$449,465	Ecotourism	Ecotourism policy Strong emphasis on private sector conservation	<ul style="list-style-type: none"> • overharvesting of NTFPs, fodder, & fuelwood*
	University of Massachusetts at Boston	Tata Energy Research Institute Vivekananda Girijana Kalyana Kendra	\$610,404	Non-timber forest product collection and processing	Building a case for local management of resources	<ul style="list-style-type: none"> • overharvesting of NTFPs*
Indonesia	Biological Science Club	Wildlife Preservation Trust International University of Indonesia Gunung Halimun National Park	\$448,430	Domestic ecotourism	Building a case for local management of resources Working with GOI (PHPA) on allowable access to protected area	<ul style="list-style-type: none"> • agricultural encroachment • infrastructure development • overharvesting of NTFPs • gold mining* • illegal logging*
	Harvard University Laboratory of Tropical Forest Ecology	Ministry of Forestry	\$547,560	Sustainable timber harvesting	Working with GOI to set precedent for community-owned timber operations Working in critical orangutan habitat	<ul style="list-style-type: none"> • mechanized logging • handlogging* • agricultural encroachment

The "" next to a specific threat refers to some reduction in that particular threat. It does not mean the threat is removed.

Country	Lead Organization	Collaborators Receiving BCN Funds	Funds U.S. \$	Enterprise Component	Policy/Technical Issues	Threats to Biodiversity*
Indonesia (Continued)	Yayasan Dian Tama	P.D. Dian Niaga Appropriate Technology International	\$466,249	Harvesting and processing of ilipe nuts, damar, and rattan	Working with SFDP project on community resource control in GOI recognized Protected Forest Management Area	<ul style="list-style-type: none"> • overharvesting of rattan* • hunting • agricultural encroachment • unsustainable NTFP harvest
	The Nature Conservancy	Sobek Expeditions University of Guelph University of Hasanuddin Directorate General of Forest Protection and Nature Conservation	\$584,892	Ecotourism (rafting) Butterfly ranching Honey collection and processing	Building a case for local management of resources Working with Government of Indonesia (GOI) via PHPA on allowable access to protected area	<ul style="list-style-type: none"> • agricultural encroachment • unsustainable NTFP extraction • rattan harvesting • infrastructure development*
	World Wide Fund for Nature Indonesia Programme	Yayasan Bina Lestari Bumi Cenderawasih	\$179,632	Butterfly farming	Streamlining CITES permitting process	<ul style="list-style-type: none"> • illegal butterfly capture/sale* • agricultural encroachment • rattan harvesting
	Hualopu Foundation	Rumsram Foundation Canadian University Service Organization	\$295,843	Marine tourism	Developing legal mechanisms to integrate traditional marine tenure	<ul style="list-style-type: none"> • overharvesting of marine species • cyanide/bomb fishing*
Philippines	Manila Observatory/ Environmental Research Division	Southeast Asia Sustainable Forest Management Network	\$426,798	Abaca and rattan, and other NTFP harvesting and marketing	Working to formalize community-controlled rattan concessions Tenure for local community seeking CADC	<ul style="list-style-type: none"> • agricultural expansion* • migration*
	Nagkakaisang mga Tribu ng Palawan (NATRIPAL)	Tanggapang Panligal ng Katutubong Pilipino Tribal Filipino Apostolate	\$627,698	Rattan and almaciga product harvesting and marketing Honey Production	Building a case for local management of resources — seeking CADC	<ul style="list-style-type: none"> • overharvesting • agroforestry* • hunting
	Kalahan Educational Foundation	Nueva Vizcaya State Institute of Technology University of the Philippines, Los Baños Upland NGO Assistance Committee	\$321,190	Forest fruits processing Small-scale timber	Timber stand improvement Site is formally recognized by GOP. Project is working on building case for local resource management	<ul style="list-style-type: none"> • expansion of agriculture* • hunting* • road building and access*

The "" next to a specific threat refers to some reduction in that particular threat. It does not mean the threat is removed.

Appendix A Summary of BCN Implementation Grants

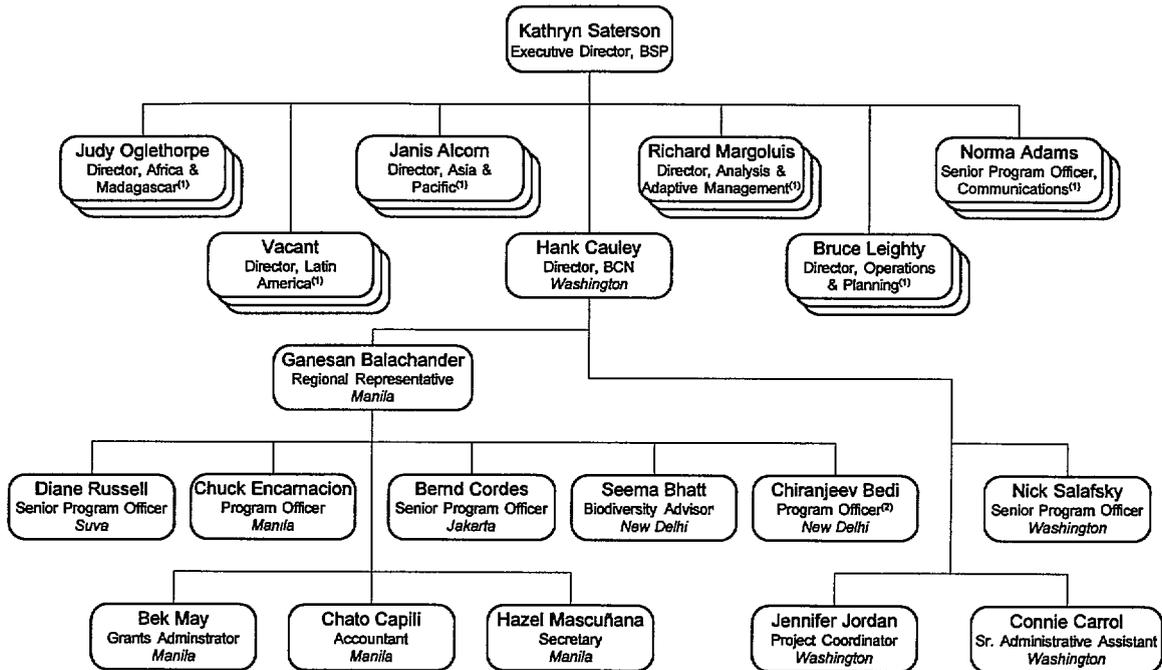
Country	Lead Organization	Collaborators Receiving BCN Funds	Funds U.S. \$	Enterprise Component	Policy/Technical Issues	Threats to Biodiversity*
Papua New Guinea	Research and Conservation Foundation	Wildlife Conservation Society	\$498,107	Research-based ecotourism	Community management of ecotourism business as an alternative to logging and mining	<ul style="list-style-type: none"> • industrial logging • Oil palm plantations • hunting • mining*
	Conservation International	Foundation of the Peoples of the South Pacific	\$355,487	Ecotourism	Community management of ecotourism business as an alternative to logging	<ul style="list-style-type: none"> • industrial logging • mining
	Pacific Heritage Foundation	Forest Research Institute	\$451,738	Small-scale timber harvesting with a credit facility to assist local landowners	Demonstrating sustainability of small-scale timber operation	<ul style="list-style-type: none"> • industrial logging* • mining • hunting*
Solomon Islands	The Nature Conservancy	Ministry of Forests, Environment, and Conservation	\$545,372	Deep-water finfish enterprise	Establishment of community-sanctioned sanctuary and cooperatively managed marine conservation area	<ul style="list-style-type: none"> • overharvesting of marine species*
	Conservation International	Maruia Society Solomon Islands Development Trust	\$347,574	Ngali nut processing Ecotourism Honey processing	Assisting communities develop resource management plans	<ul style="list-style-type: none"> • agricultural expansion • industrial logging* • overharvesting of NTFPs*
Fiji	University of the South Pacific	SPACHEE Rainforest Alliance	\$348,045	Biodiversity prospecting for pharmaceutical compounds with an equitable prospecting agreement	Policy framework for biodiversity prospecting in the Pacific Region	<ul style="list-style-type: none"> • overharvesting of marine species* • overharvesting of NTFPs

The "" next to a specific threat refers to some reduction in that particular threat. It does not mean the threat is removed.

Appendix B

BCN Staff Organization

Biodiversity Support Program (BSP) Biodiversity Conservation Network (BCN) Organizational Chart, October 1997



Substantial assistance was also provided by John Parks of EcoTrack Consultants.

Interns include Jennifer McLean and Sarah Christenson (Washington) and Karina Quintans (Jakarta).

(1) = Organizational chart does not show staff in these programs

(2) = Employed by the Indian NGO Development Alternatives and managed by BCN

Appendix C

BCN Program Description - October 1997

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 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 would 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. As a result, 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 brings together organizations in Asia, the Pacific, and the United States in active partnerships with local and indigenous communities. The Network provides grants for projects that encourage the development of enterprises that are dependent on sustained conservation of local biodiversity. Projects supported by BCN grants must 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, will be 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, feasibility study funds, were awarded up until April 1994 to offset the costs of project design. Three-year Implementation Grants 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 is a 20-million dollar, 6.5-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-0015-A-00-2043-00. The BCN is a USAID attribution to the Global Environmental Facility (GEF). The program is 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. USAID's Office of Environment and Natural Resources, Center for the Environment, Bureau for Global Programs, Field Support, and Research now has management responsibility for BCN.