

PD-ABM-969

90256



**MIDTERM EVALUATION  
OF  
BIODIVERSITY CONSERVATION  
NETWORK**

**April 1996**

**Funded by:**

**United States Agency  
for International Development**

***Contract #: AEP-0015-A-00-2043-00***

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**MIDTERM REVIEW  
OF THE  
BIODIVERSITY CONSERVATION NETWORK**

**EXECUTIVE SUMMARY**

The Biodiversity Conservation Network (BCN) is a program dedicated to enlisting the help of indigenous and local people in the conservation of biological resources. To this end, the BCN supports enterprises that earn their income from the sustainable use of those resources. A major task is to monitor resource use, enterprise profitability, and social organization.

More specifically, BCN's function is to (1) monitor the biological resource base to ensure its sustainable management; (2) establish and monitor profitable enterprises that give indigenous and local people a stake in that resource management; (3) develop institutional structures that enable indigenous and local people to participate in all phases of the income-earning enterprise, in the sustenance of the resource base, and in effective action to protect the resource base from internal and external forces; (4) facilitate networking across projects; and (5) promote policy changes essential to biodiversity conservation and to related enterprises.

The BCN is simple in concept, but complex in its operation. Since some of the above actions must be performed in sequence, they take considerable time to achieve their full effect. The present review examines the factors critical to the success of BCN's operation, the adequacy of the monitoring procedures for each of its functions, its progress in establishing enterprises, the policy issues affecting this progress, and institutional developments designed to ensure indigenous participation in the effort as a whole. The review team consisted of specialists in biodiversity and its monitoring, enterprise management, social institutions and organization, and policy (see Annex 6).

The analysis is based on a review of BCN project reports, interviews with numerous persons responsible for formulating and running the network, visits to 3 field sites, meetings and telephone interviews with key personnel directly involved in the work of most of the projects, and discussions with national policy makers and representatives of foreign assistance organizations. A questionnaire was also administered to all the implementation grantees. A draft report was reviewed by key project personnel and discussed in a seminar for BCN staff. This final report reflects those interactions and suggestions.

**HOW IS THE PROGRAM DOING?**

The BCN is by and large on track. Essential administrative structures, while still evolving in response to feedback from the field, are in place. Financial flows, while somewhat slow (28 percent disbursed by the end of the third year), are on track with respect to the realities of

project contracting and implementation. Although monitoring urgently needs to be simplified, it has received substantial attention in comparison with other environmental projects and is headed basically in the right direction. Enterprise profitability is at the level expected, but individual accounting systems need improvement. In addition, the BCN is making good progress in understanding and addressing important social organization issues. Emphasis should now shift to the development and utilization of local social structures.

The grant agreement between the U.S. Agency for International Development and the Biodiversity Support Program was signed on September 30, 1992. After a brief initial delay, a responsive, efficient administrative system was established with headquarters in Washington D.C. and a regional office in Manila. The organizational structure is continually evolving to meet felt needs, and an increasing proportion of the staff is being deployed to the region. Only four regular staff members are now located in Washington: the project director, one senior program officer, one project coordinator, and the program secretary.

The Regional Representatives' Office in Manila has eight regular staff, two of whom are posted in other regions, one in Indonesia and the other in India. Five of the eight are dedicated technical experts in biodiversity conservation, social organization, and enterprise development.

As a first step in applying the BCN concept, the program launched an open and transparent system of selecting projects. It provided a wide range of projects for testing the concept and for identifying problems and future modifications needed to achieve widespread emulation and success. The effort was then widely advertised, particularly in the institutionalized conservation community, and over 400 proposals and concept papers were received. A distinguished selection panel was appointed with worldwide representation (see Annex 4) to assist in the award process.

It soon became apparent that most applicants lacked the experience to formulate a proposal detailing their project's relevance to the BCN concept and did not have the capacity to carry out the project. Thus 34 applicants were awarded planning grants in support of technical assistance in feasibility study, project development, and proposal preparation. A total of 20 proposals were selected for implementation grants (see Annex 5). Seventy-five percent of these were drawn from the pool given proposal preparation grants. This selection process was expensive and time-consuming—it was completed in the thirty-third month of the project. However, the lessons learned made it possible to devise a far less expensive set of procedures for the future.

The total grant of \$20 million is to be disbursed in five tranches. The first, \$7.9 million, was received from USAID in 1993 and the second, \$4.0 million, in 1995. The third tranche, \$1.5 million, is expected in 1996. The fourth tranche, \$4.5 million, is due in the third and fourth quarter of 1997, and the last payment, \$2.1 million, is due in 1998. The project has committed \$11.56 million to grants, of which \$1.64 million has been disbursed for 34 planning grants averaging about \$48,379 each; \$94,317 for 6 small research grants averaging \$15,720 each; and \$9.8 million for 20 implementation grants averaging \$490,986 each. The smallest implementation grant, amounting to \$179,632, is for the ARFAK project in Indonesia, and the largest, totaling \$899,940 and awarded to Conservation International, covers a number of projects in different countries of Asia. The implementation grant obligations were expected to be disbursed in three years, from 1994 to 1996. As already mentioned, however, less than 28 percent of the amount obligated in each of the three years was actually disbursed.

Of the 20 projects selected, 7 were designed to promote ecotourism (one in the marine environment), 12 to utilize nontimber forest products, and 2 to harvest timber resources. The projects are being implemented in 7 countries: 6 in Indonesia, 3 in the Philippines, 3 in India, 2 in Nepal, 3 in Papua-New Guinea, 1 in Fiji, and 2 in the Solomon Islands. Each project has an on-site agency to oversee the work. Through the diversity of the projects and their wide geographic distribution, the program has established a sound basis for judging the success of the BCN concept and its implementation.

Most of the enterprises (at least 15 of the 20) were ongoing efforts prior to project funding and thus will meet the three-year time horizon required to show the effectiveness of an enterprise. The fact that these are ongoing enterprises should in no way bias judgments about the value of the BCN concept. Unlike the enterprises, the indigenous institutions for ensuring local management were almost all in the early phases of development at the beginning of the project. Thus it will clearly take longer than three years to assess the long-term social, institutional, and biological viability of the projects, especially where indigenous takeover of the projects is concerned.

Although three years may be enough time in which to establish and prove the various monitoring systems or to detect the direction of change, it will take much longer to judge the project's overall effect on biodiversity. A longer time frame will also be required to assess the important impacts on local community organization. This suggests that once the monitoring systems are in place, grants will need to be extended to achieve BCN objectives, at least for the monitoring activities, and perhaps for the continued development of appropriate community structures. In any case, the institutional structure built by the BCN represents a large investment and should continue to evolve and provide important services far beyond the present AID grant.

An intense effort went into the review, not to mention a high level of expertise and experience. Thus the preliminary assessment of the likely effectiveness of several aspects of the BCN and the recommendations for improving it and for increasing the probabilities of success will be of great assistance in shaping the future of the program. Most important, the review has clearly established the soundness of the BCN concept.

First, it shows that biological resources used by very poor people cannot be preserved even with police action if the social and economic needs of the indigenous and local people are ignored. As with wildlife preserves, the situation becomes dire when the interests of the indigenous and local people are in direct conflict to those of the animals in their ecosystem.

Second, it demonstrates that profitable enterprises that draw upon biological resources in a sustainable manner can be established in a wide range of ecological conditions. In general, the enterprises BCN selected had large operating margins and low capital costs; thus their potential for success was high. Some projects will undoubtedly prove their success within the three-year time frame.

Third, in several cases national policies will need to be changed to ensure the success of BCN activities. BCN resources are being used to pursue those policy changes, with early indications of a high success rate. By way of example, legislative changes now under way will provide indigenous and local people a major share of the revenues from Chitwan Park in Nepal; land tenure changes in Kalahan prior to BCN also demonstrate how such policy can be modified. As this report cogently argues, the benefits to local people attempting to harvest nontimber forest products under the TERI project will be slim without major institutional change. Indeed, policy

impact must remain a primary concern beyond the three-year time horizon to ensure long-term success.

Fourth, indigenous and local people readily understand the relationship between sustaining the resource base and their livelihoods. Educational programs in the BCN projects have already awakened many of them to a broad concept of resource sustainability that incorporates concern for biodiversity itself. Educational programs in Kalahan, for example, have elicited indigenous support for the protection of primary forest resources. Such a response is best achieved if biodiversity-oriented educational programs are presented as part of an overall social and economic development effort.

Fifth, monitoring systems are difficult to implement through indigenous means. Therefore they must be simple and clearly related to the objectives of indigenous and local people. That means the BCN needs to simplify its monitoring efforts. It can do so by providing specific, results-oriented technical assistance to the project monitoring activities. A simplified monitoring system will not only have greater applicability across projects, but it will accelerate the implementation of the correct activities.

Sixth, it takes a great deal of time to train indigenous and local people to take full charge of enterprise development, monitor the resource base, and build support mechanisms for conservation. Equally important, implementation agencies at the local level must be committed to the turnover of activities. That commitment will have to be fostered by the BCN, since local support groups often fail to undertake the actions needed to make the effort completely indigenous. Because these groups tend to identify with the indigenous and local people, they often, unknowingly and naively, behave in a somewhat patronizing manner. The BCN needs to be more vigorous in encouraging the indigenous takeover of project activities.

In summary, the BCN concept is being proved. Newly established enterprises are beginning to turn a profit, indigenous and local people are learning how to protect their resource base, the participating nongovernment organizations are testing monitoring systems, and the required policy changes are becoming increasingly clear. The next critical step is to greatly simplify the monitoring systems so they can be implemented by the indigenous and local people themselves. Above all, local people need to be organized and more directly involved in all aspects of biodiversity conservation. This, however, will take far longer than the time currently mapped out for BCN projects.

## MONITORING

As already mentioned, the monitoring of biological, economic, and social processes is central to the BCN concept. Three workshops (two in Los Banos, Philippines, and one in Bangalore, India) have been held to determine what form such monitoring should take. But in cutting across all the projects, the workshop approach produced a complex monitoring system that is too cumbersome to implement effectively and too expensive to sustain beyond the present projects. Furthermore, this system has been devised by those purportedly speaking for indigenous and local people but not by the people themselves. To bring them into the process, meetings must take place at the project level. That point should be emphasized in the BCN's follow-up activities. Such meetings would probably give rise to a simpler, more efficient

monitoring system, one that stressed sustainable harvesting of the economically productive resource and that could continue beyond the subsidies provided by the project.

Simple, appropriately focused monitoring systems based on scientific principles can only be arrived at by examining the needs of indigenous and local people. The review team suggests that such bare-bone systems be instituted for each of the network's three fundamental objectives in projects already on the ground: biological conservation, economic profitability, and institutional viability. In addition, some high-level technical assistance and more local personnel may be needed at the country level.

### **Biological Sustainability**

Thus far, biological monitoring has been experiencing three kinds of problems. In some cases, such as the TERI project in India, a high level of scientific effort has gone into shaping the monitoring system, and the results are likely to be scientifically sound, but almost no indigenous and local people have been involved. In others, such as Kalahan in the Philippines, project implementation personnel have expressed an interest in intensive monitoring, but they have no knowledge of the basic scientific principles that need to be applied to make monitoring cost-effective. In still other cases—for example, Humla—local people are involved in the enterprise, but they do not fully grasp the need for biodiversity and sustainable monitoring, and hence there is no basis for implementation. In general, the monitoring plans are too complex to be implemented efficiently and certainly do not lend themselves to continuation after BCN subsidies are ended.

The review team attaches great importance to monitoring biodiversity. Monitoring, team members point out, is usually overlooked or downplayed in internationally financed biodiversity projects, and the BCN deserves high praise for its emphasis on biological, social, and enterprise monitoring. The team's suggestions therefore concentrate on further strengthening the BCN's monitoring capabilities. Since so little is usually done in this area, the team also encourages the BCN to develop community-level monitoring procedures that can be widely emulated.

Biological monitoring should focus on the actual resource being utilized by the enterprise. The first important step is to enumerate the species directly affected by the enterprise; the second is to conduct periodic inventories of minimal sample size to measure significant changes in species distribution and abundance. The indigenous and local people need to participate in all discussions of the importance of maintaining their resource, the dangers of over-exploitation, and the role of monitoring in regulating the use of the resource. Their input into the details of the monitoring process will greatly improve its effectiveness.

Monitoring should be inexpensive and easy for indigenous and local people to manage. At times, conservation concerns and interests may call for a survey of somewhat larger areas than the local people are utilizing. If that is the case, a primary concern should be who is going to pay for the survey, how it will be paid for in the future, and the value of such an effort if it is not to be kept up over time. Above all, it is essential to determine what resources local people use and consider important to conserve.

## **Economics of the Enterprise**

With the aid of basic cash flow information, the review team was able to make a preliminary assessment of the financial viability of BCN enterprises and to elucidate BCN's general approach to monitoring an elaborate program. The team concluded that grantees need to keep enterprise accounts separate from other NGO accounts as far as is possible and require assistance in this regard. For biodiversity monitoring, they recommended a simple system of enterprise accounts that can be applied across all the projects and thus be used to compare the success record and sources of success among enterprises.

## **Institutional Organization and Participation**

So far, indigenous and local people have not been sufficiently involved in the development of project activities to give them a stake in the outcome. Instead, the NGO often speaks for the local people and thus tends to leave them out of the process as a matter of course. In several cases—the TERI project is one—the enterprise touches only a small proportion of those gathering the resources. Attention needs to be given to how to organize the participation of indigenous and local people and develop simple systems for monitoring that participation.

## **BASIC CONCEPTS**

Several basic concepts lie at the heart of the BCN system, in addition to the central belief that enterprises dependent on the biological resource should be used to enlist support for conservation. These concepts have to do with population density, income dynamics, macro impact, the intermediary role of the BCN, and specialization.

### **Population Density**

In general, the natural resource base of biologically diverse environments can only support low population densities. However, that means sparsely populated areas like Humla, Nepal, can take advantage of biologically based enterprises to improve the aggregate incomes of their inhabitants.

Conversely, in areas with dense populations of very poor people, any income effect of the biologically based enterprises will be lost in the general poverty. The mass of poor will overwhelm the protective efforts of the few. This is a serious problem in Royal Chitwan National Park, in the terai of Nepal. In such circumstances, the BCN effort will fail unless an attempt is also made to raise incomes more broadly. This is not to say that the BCN should be directly involved in such activities, but that the program needs to recognize the problem and to encourage other agencies to take the necessary steps to resolve it. Since such encouragement is vital to BCN interests, it must be an explicit part of the network's policy mandate.

For the most part, the problem is already being taken care of in the BCN countries

experiencing rapid economic development. For example, there is no serious danger that the plains people near the TERI project will overwhelm the natural resource because incomes there have risen appreciably as a result of effective agricultural development. Now, the returns to raiding the biological resource are far lower than those gained by other means. The problem is acute, however, in the few countries or regions of Asia not yet experiencing much economic growth, such as Nepal. It would be an immense and perhaps insurmountable problem if the BCN concept was introduced in Africa. In that case, the issue would have to be given explicit attention in the planning stages.

### **Income Dynamics**

In a developing country, per capita incomes rise over time, often rapidly, owing to advances in technology and increases in real prices. BCN enterprises need to identify the means by which incomes can be increased gradually over time. One possibility is to raise productivity, although in general it will be more difficult to continually increase the productivity of biological resources gathered in a natural state than in settled agriculture. The potential contribution of improved technology in this regard should not be ignored, and the opportunity for market differentiation must be seized.

The critical point is that BCN needs to think not in static terms of a single increase in incomes, but rather in terms of how incomes can be increased continually over time—at least up to the time when employment and income opportunities in the rest of the economy will pull people completely out of poor areas. Although such a move may occur, it will probably take place well into the future, particularly if the people are somewhat marginalized by the social attitudes of majority communities. A more dynamic approach would be to address what are now largely neglected technical issues in resource development and market development, notably those connected with green markets in developed countries, where higher prices may be quite feasible.

### **Macro Impact**

A common problem with BCN enterprises, particularly those oriented toward nontimber forest products, is that they directly employ only a small proportion of the people drawing from the natural resource base. Those enterprises should be looked upon as pilot projects for identifying large potential and for showing the way to a broader set of activities. For a macro impact, greater attention will have to be given to the gatherers themselves—a group neglected in both the Kalahan and TERI projects. It is also vital to encourage private sector activities so as to stimulate competitive marketing and processing on a far larger scale than the BCN project can directly support. At the same time, development activities could explore the potential for raising incomes in areas in which natural resource preservation is important.

## **The Intermediary Role of BCN**

Although the BCN is considered an intermediary, its projects employ two or more intermediaries between the sources of funds and the indigenous and local people. The BCN needs to ensure that the local people are indeed organized and speaking for themselves. The report outlines specific ways in which the BCN can promote such participation. In addition, the BCN needs to carry technical assistance all the way to the local organizations of indigenous and local people. Most of the intermediaries that the BCN works with and that are essential to its purpose have little capacity to provide technical assistance in monitoring, in business management, and in the technical aspects of biological resource development.

### **Specialization**

The BCN has developed a diverse portfolio of projects to properly test its key hypotheses. If the network is to develop further, however, it needs a mechanism for wholesaling intermediary services for large funders; otherwise it will be unable to achieve a macro impact. In addition, it must develop a base for the efficient provision of its services and must increase its technical competence. To do so, it will have to divide its own portfolio of projects into groups that will promote such efficiencies and help develop a concept on which to concentrate in the future.

## **RECOMMENDATIONS**

The following recommendations are set forth in order of priority and pertain to a BCN project that appears en route to fulfilling its objectives. They should be seen as supplements to an effective operation.

1. Develop simple techniques for monitoring biodiversity, enterprise profitability, and social structures of participation. This may require some additional funding in order to provide technical assistance from outside consultants for specialized aspects of monitoring. The local staff may need to be expanded in this area. The BCN also needs to persuade NGOs on the scene that local people should be helping to develop and implement systems of monitoring.

2. Make sure that indigenous and local people are participating in all aspects of project activities. Local NGOs should not be confused with the indigenous and local people themselves. Those NGOs of course play a vital role in establishing the institutional structures that will involve local people. But they must remember that the structures should be designed specifically for this purpose. This is another area in which the BCN needs to have direct contact with indigenous and local peoples.

3. Begin to plan for a larger enterprise impact by increasing the competitiveness of the private sector in nontimber forest products. BCN projects tend to be implemented in areas where the infrastructure is poor and thus they attract relatively few private operators. This activity will have a longer time horizon than current enterprise activities and thus would require the project to be extended.

4. Be aware of the relationship between broader development efforts on the perimeter of the biological resource bases and encourage other institutions to take up appropriate action where necessary.

5. Identify the broader policy issues of concern, from the rights of indigenous and local people to land tenure, and develop a plan for policy action across projects and for a general set of policy thrusts. As part of that thrust, the help of NGOs should be sought to generate action at each appropriate level of government.

6. Classify projects and develop a concept of specialization that will make it possible to supervise a large portfolio of projects with the utmost efficiency.

7. Seek funding from AID beyond the present grant, preferably for another five years, to enable the BCN to pursue and spread its central concept as modified by the experience of the first five years.

### **BCN AS A BELLWETHER FOR THE INTERNATIONAL COMMUNITY**

International support for preserving the biological resource base in developing countries is massive. Foreign assistance is already pouring vigorously in this direction. The BCN has a rare opportunity to ensure that those resources fulfill their mission: it can help indigenous and local people conceptualize projects, improve their capacity to articulate their needs, and apply the foreign resources to meeting those needs.

Despite all the limitations and inefficiencies noted in this report, the BCN offers a far more cost-effective approach to biodiversity conservation, with a much more fully developed panoply of resources and approaches, than is typical of other approaches. It stands out for the clarity of its conceptualization, breadth of its approach, and holistic nature of its philosophy. In short, it lays a strong foundation for larger efforts. The international review committee constituted for the award of the BCN grants provides the network with an extensive network of reputable advocates for its approach. The BCN should continue to build on its ongoing involvement with the committee members seeking further input and comment and obtaining outreach.

Above all, that strength lies in the BCN's primary objective: to enable local people to raise their incomes by monitoring the sustainable, economic utilization of biological natural resources. The network provides technical assistance to enterprises that pursue that objective. It mobilizes local people to protect the resource base in their own interest. It relies on national NGOs to provide the protection and support for nascent indigenous organizations. And it provides technical assistance to the monitoring operations so essential to the sustainable use of biological resources.

The foreign assistance community needs to be made aware of each of these elements of the BCN story. That will help to guide environmentally oriented foreign assistance into the appropriate channels and define appropriate levels of foreign assistance. Through the breadth of its projects, the BCN can also demonstrate the priorities for foreign assistance, the kinds of technical assistance that are currently lacking, and the need to sustain and preserve biological resources for the benefit of overall development.

The burden the BCN must carry is unquestionably a heavy one. But the value of the collective experience gained through the mass of its projects will be enormous.

# CHAPTER I

## INTRODUCTION

In the last few decades the developing countries of Asia have experienced two great changes: unprecedented population growth and extraordinarily rapid economic growth. This population growth has had an adverse effect on biologically diverse habitats—in some cases causing serious degradation. There is some hope, however, that the economic growth will provide increasing financial support for resource conservation.

Unfortunately, in the short run the peoples of biodiverse areas may barely feel the effects of such an infusion. These people tend to live on the margins of society and participate less than proportionately in national improvements in wealth. Moreover, their awareness of the need to conserve biodiverse resources has yet to catch up with the financial capacity to preserve those resources. Thus the degradation may continue even where incomes have increased. The consequent loss of genetic diversity, water control and conservation, climate amelioration, and other such benefits, while not precisely known, is unquestionably large and persistent.

Yet prudence dictates that every effort should be made, especially by the well-to-do of the world, to conserve this diversity. The problem for many countries of Asia experiencing rapid population growth is that their poorest members—many of whom who struggle to wrest a living from natural resources—tend to see conservation as a threat to their only source of income. Others might argue that conservation also poses a threat to the overall economic growth that has produced a rapid decline in poverty and widespread participation in increased income.

These and other important conservation questions are currently being addressed by the Biodiversity Conservation Network (BCN). This program was established in 1992 by a consortium of conservation-oriented institutions (the World Wildlife Fund, Nature Conservancy, and World Resources Institute) and is financed by the Agency for International Development, as part of the U.S.-Asia Environmental Partnership (USAEP). Its purpose is to institute projects designed to preserve important biologically diverse habitats in Asia. The program is scheduled to last for five years.

Under the terms of its grant, the BCN must undergo a midterm evaluation. The findings on its progress to date will be used to determine the future course of the network. Thus two leading questions of this report are how is the BCN doing, and what improvements can be made in its operation and results?<sup>1</sup>

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<sup>1</sup> See ANNEX 1 for the terms of reference.

## THE CONCEPT

BCN operations rest on a simple concept—that biodiversity is a valuable resource. This concept has four important inferences for human society:

1. Society must preserve habitats that provide substantial biodiversity. That is, the pressures of a growing population and its drive to convert natural resources into current income must be prevented from destroying habitats of considerable biological diversity. Priorities can be set to delineate activities with the potential to achieve this conservation.
2. The people currently living in and adjacent to such habitats must be provided for if those habitats are to be protected.
3. Endangered regions can establish enterprises that provide improved incomes to those people through the controlled use of the resources to be conserved; such activities will provide them with an incentive to ensure that the biodiverse habitat is preserved.
4. The consequent desire of local people to conserve such habitats because of self-interest can be mobilized and institutionalized in local organizations that can act effectively to conserve the biodiverse habitat.

These four messages are closely interrelated. That is to say, they form an integrated whole pointing the way to conservation.

Thus the BCN operates as follows: it selects projects in important areas of biodiversity, defines an enterprise that can draw upon that habitat to improve the well-being of local people, and helps them organize themselves into institutions that will protect the habitat and the very resources giving them a livelihood. At present, three major obstacles lie in the path to BCN's objectives.

First, it is not certain that the enterprise aspect of the BCN concept is viable. Hence it is put forth as a hypothesis to be tested: Are there such enterprises, can they be made economically viable, and will they lead local people to mobilize to protect the resource? The first necessary step for BCN was to select projects that could test this hypothesis under a wide range of conditions.

Second, another large concern is whether conservation projects are self-sustainable on the biological, economic, and social fronts. Starting from initial bases of knowledge, income, and social and economic organization, considerable outside technical and financial assistance will be necessary to move the process to the point of self-sustainability. The BCN provided the initial financial and technical assistance. Its projects were to be further subsidized but in a manner expected to lead to sustainable self-reliance.

Third, the BCN effort will falter unless it has the capacity to respond dynamically to changing conditions. That means it must have the means to measure and analyze those conditions as a basis for change and adaptation. If the BCN is to serve as a model for an eventual program with a large aggregate impact, its successes and failures must be documented. Thus the network emphasizes monitoring in its three areas of major concern: biological diversity and its changes

over time; the evolving financial status of the enterprise; and the growing social and institutional structures that will promote local participation in the enterprise and simultaneously act to preserve the biologically diverse resource base. Project funds have therefore been directed mainly toward selection activities, technical and financial support, and the establishment of large and complex monitoring systems.

The BCN has another important objective: to see that the implementation of conservation projects will be devolved to nongovernment organizations (NGOs), preferably local ones, but these may also include an outside partner. In this way the BCN strives to forge a partnership between low-income people dependent on the biodiverse environment, local NGOs serving to organize those people, outside NGOs assisting with the technical aspects of the process, and the BCN staff providing financial and technical assistance.

Although laudable, the BCN in its totality is a complex endeavor. Thus it is not surprising that some of its components, especially those involving social organization and documentation of conservation in the face of biological resource utilization, will take far longer to prove themselves than the expected three years specified in the planning stages.

### **THE REVIEW TEAM AND ITS APPROACH**

While the BCN concept is simple, its implementation, as just mentioned, is exceedingly complex. Therefore any evaluation of its progress requires a diverse team of specialists. The four-person team assembled to conduct the present review included a biological scientist, to assess the progress in monitoring and preserving biodiversity; an enterprise economist, to evaluate the economic impact of the enterprises; a sociologist, to judge the social and institutional structures charged with carrying out the projects and implementing the biological conservation; and a policy analyst, to identify the underlying economic problems, the policy issues, and the aggregate impact. The plethora of overlapping educational, networking, and conceptual issues could only be assessed by technical specialists with experience in arriving at a holistic view of such a complex web.

The team took a holistic approach to the project throughout and fully recognized the integrated nature of the BCN's components. It found that the current problems of the project and the ameliorative actions required are technical in nature and can be divided into several main categories: biological monitoring and management, enterprise monitoring and management, the development and monitoring of community action associations, and policy analysis and action.

This report and its recommendations are organized around those categories. It is of course up to project management to see that the specialized attention devoted to resolving the network's various problems forms an overall integrated effort. At the same time, it should be pointed out that BCN management already deserves high marks for treating its activities as a complex whole. That is why the shortfalls identified in this review are technical in nature.

From the outset, BCN's task was so complex and its experience with an integrated approach was so inadequate that delays in getting under way were inevitable. Several aspects of project development were also understandably slow. This means that it is premature to make a definitive judgment about the success of the BCN approach. For this reason, the reviewers concentrated on ascertaining the extent to which monitoring procedures and capacities were in

place for the eventual documentation of the three key elements of the program. Despite this drawback, they found that the pre-BCN history of some of the projects and the very real progress made by many of them provide a strong indication of whether the basic organizational hypothesis is true, whether sound suggestions can be formulated for follow-up actions at the end of the BCN term, and whether the project's problems can be resolved.

The team proceeded along three fronts: it conducted an intensive review of the copious documentation on the project, both in Washington and their home bases; it carried out a field trip that took them to three project sites and interviewed numerous persons at the field level in these and all the other BCN projects; it interviewed principals at all levels— members of executing agencies, government officials, local implementors, and technical workers concerned with the specific component parts (see Annex 3 for a list of persons interviewed); and it asked project personnel with varying degrees of input to respond to a written questionnaire concerning the BCN effort (see Annex 2).

The questionnaire was designed to obtain a general impression of attitudes about BCN across a broad spectrum. Its purpose was not to provide statistical details but rather to give the team broad impressions, particularly to indicate the validity of impressions from the field visit. It was virtually impossible to obtain a precise measure of attitudes about BCN owing to the complexity of the relationships being analyzed. Consequently, any such effort—for example through the use of Likert scales—was rejected.

The most important sources of information were the intensive interviews carried out in the field, both at project sites and at headquarters, and the communication between team members as they assimilated the details on various subjects and tried to incorporate that diverse information into their specific parts of the report. Thus, the conclusions draw heavily on the long experience of the team members in absorbing and reformulating such information.

The questionnaire was reviewed by a large number of persons associated with the BCN effort. The evaluation team interacted with the BCN staff at all levels and was given complete access to all documents and files in the BCN offices both in Washington and Manila. This report is therefore deemed to be factually accurate, and its assessment should be useful in improving the BCN project and preparing for a level of future activity that will have a major impact on preserving the biodiversity so essential to the future well being of humankind.

The BCN project has generated an immense body of internal reports. These were perused at length, and many of the facts in this report were drawn from them. They will continue to provide a wealth of information for anyone contemplating similar or related programs.

Finally, we want to thank the BCN staff for their constant help. We felt under great pressure to come up with positive suggestions that will help them do a better job, in recompense for the time they took from their important implementational work and their dedication to that work to assist us. As one always is, we were deeply touched by the dedication to conservation among the people who live in conjunction with these wonderful resources. They live for their children and grandchildren; they love their resources. They know far better than we what they have and their responsibilities. We know how difficult it is for them to achieve their goals. Above all, we hope that we will be able to help them in some small way through this report and its various ripple effects.

## CHAPTER II

### PROJECT PERFORMANCE TO DATE

#### BACKGROUND

The BCN was conceived as a five-year program under the Biodiversity Support Program (BSP), an existing consortium of the World Wildlife Fund, the Nature Conservancy, and the World Resources Institute. It was developed and implemented under a USAID cooperative agreement (No. AEP-0015-A-00-2043-00) with the World Wildlife Fund Inc. signed on September 29, 1992. The estimated cost was \$20,000,000, and the completion date was set for September 29, 1997.<sup>2</sup> Table 1 shows the budget breakdown under this agreement.

*Table 1. Breakdown of the BCN Funding by Cost Elements*

Cost Element	Amount (US\$)	Percentage of Total
Salaries and benefits	2,116,079	10.6
Indirect costs	1,464,633	7.3
Travel and per diem	620,542	3.1
Other direct costs	862,634	4.3
Grant program		
Advisory/review/evaluation	775,670	3.9
Technical assistance	1,022,941	5.1
Subagreements	13,137,500	65.7
TOTAL	20,000,000	100.0

*Source:* BCN files.

#### THE COOPERATIVE AGREEMENT

The purpose of the cooperative agreement was to promote the conservation of biodiversity through the application of sound biological, social, economic, business, and tenurial principles with a view to improving economic conditions and the quality of life in Asia. Another objective was to help nongovernmental organizations, government agencies, universities, and businesses in Asia and the United States develop the capacity to implement community-enterprise

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<sup>2</sup> A subsequent request for an 18-month no-additional-cost extension was approved by USAID under the amendment to the cooperative agreement dated October 13, 1994. The agreement is now expected to run to March 31, 1999.

strategies for conserving biodiversity in the interests of subsistence, production, and commerce.

The program consists of two main components. Their respective tasks, as specified in the cooperative agreement, are (a) to set up and manage a competitive grants program to support conservation-oriented proposals that contain balanced participatory scientific, social, and commercial elements; and (b) to establish an information support network for launching programs with the potential to demonstrate that adding value to local flora, fauna, and ecosystems in Asia will help conserve biodiversity while meeting local economic and social objectives.

Under this directive, a central concern of the first component was to develop and circulate the criteria for soliciting and selecting the grants. Three types of grants were to be awarded during the first four years of the program: (1) one-time grants of up to \$50,000 for research supporting proposal preparation; (2) one- to three-year awards of up to \$100,000 per year to supplement existing programs showing some promise but lacking the capacity to apply one of the three (i.e., social, commercial, and biological) essential elements of the BCN concept; and (3) one- to three-year awards of up to \$300,000 per year for proposals requiring full funding of all three elements.

A condition of the implementation grants was that changes in the status of each of the three elements would be monitored and that the techniques and approaches to this monitoring would be systematically documented. Proposals from for-profit organizations were to show matching funds. The agreement envisioned up to 20 planning grants, up to 16 missing-component grants, and up to 8 full implementation grants. These grants were to be funded in a period of five years following the signing of the cooperative agreement, and they were to cover a possible total of 24 conservation/development demonstration research and development activities. Provision was made for a larger number of grants in each category if the proposals received required less than the ceilings announced.

The second component was to focus on setting up a regional BCN office to collect information and data from the grantees as well as from organizations in the field that were conducting work germane to the BCN mandate. In addition to compiling and disseminating these data, the regional office—in collaboration with the Washington office—was to develop, prepare, and disseminate summaries of information for policy makers, planners, and other practitioners on lessons learned, successful approaches, and problems encountered. The regional office was also expected to support south-south, south-north technical and commercial exchanges and to foster interregional and international linkages of benefit to the network.

## **THE RATIONALE FOR THE BCN PROGRAM**

The BCN program was founded on the belief that the community-based management of natural resources with a potential for promoting economic development was still "poorly understood and underfunded." Furthermore, most conservation programs in place had—and continue to have—a sectoral focus. The BCN program therefore planned to take an integrative approach, with a view to demonstrating how biodiversity conservation, economic development, and cultural tradition could be reconciled. As the project document stated, "while significant

scientific and social research had been brought to bear, knowledge of the value of biodiversity assets and their role in sustainable development" is "small" and "inadequate." It was imperative, in other words, to successfully demonstrate the importance of combining skills in commerce and business with those of the other disciplines.

### IMPLEMENTING THE BCN CONCEPT

The BCN thus had two clear programmatic goals: (1) to support enterprise-oriented approaches to biodiversity conservation at a number of sites, and (2) to evaluate the effectiveness of the enterprise-oriented approaches to community-based conservation of biodiversity. A natural corollary of the second goal was that the lessons learned should be widely disseminated—to communities and groups implementing the projects, USAID and US-AEP missions and offices, members of the BSP consortium, and the broader conservation community. At the heart of the BCN approach is a "core" hypothesis: namely, that if enterprises dedicated to community-based conservation are to succeed, they must have a direct link to biodiversity, must generate benefits, and must involve a community of stakeholders. The basic assumption here is that if local communities receive sufficient benefits from an enterprise, they will act to counter the internal and external threats to the biodiversity in their community.

The BCN program was also conceived as a series of sequential yet highly interconnected modules, each one feeding into the next while providing feedback to the preceding one. These modules represent the steps required to achieve the program's objectives: (a) develop program concept and structure, (b) select a portfolio of projects, (c) assist in implementing projects (especially enterprise development and monitoring), (d) collect data and analyze results, and (e) communicate results to clients. Program proponents are encouraged to structure their individual projects along similar lines. BCN's Annual Report for 1995 summarizes the activities and examines the achievements of each module.

Administratively and financially, the BCN is on track, although development of the administrative structure and approach was initially delayed. As already mentioned, the grant agreement between USAID and the BSP was signed on September 30, 1992, but a full-time director for BCN did not come on board until over a year later. Since then, however, the BCN has moved along rapidly in establishing a responsive and extremely efficient system with headquarters in Washington D.C. and a regional office in Manila. The organizational structure is continually evolving to respond to felt needs, and now a larger proportion of the staff is actually in the region. At present, only four regular staff members are based in Washington: the project director, one senior program officer, one project coordinator, and the program secretary. The Regional Representatives' Office in Manila has eight regular staff members, two of whom are posted in other regions; one is in Indonesia and the other in India. Five of the eight are technical staff; these are dedicated young people with extensive training and expertise in biodiversity conservation, social organization, and enterprise development. In this area of the organization, a central objective is to provide a competitive grants program that meets the

evolving needs of the primary clients.<sup>3</sup>

The conceptual model for the overall program was completed in 1995. It grew out of the BCN's efforts to help grantees develop monitoring procedures based on a clear conceptualization of the projects. The evaluation team sees the model as a significant advance in clarifying the program's objectives, defining the program structure, and elucidating the key linkages. It will be extremely useful not only for planning program development but also for helping donors and implementing agencies replicate similar programs in other regions. The BCN has continued to expand its presence in Asia and strengthen its decentralized administrative structure. The plan is to continue to increase staff in the region while reducing the strength in Washington. The larger field-based staff has enabled BCN to better assist grantees in several key areas in which local skills were inadequate, particularly technical monitoring, financial management, and more recently market development.

### THE GRANT-MAKING PROCESS

Since BCN's ultimate success depends on the portfolio of projects selected, it was clear from the outset that projects would have to be well thought-out. Moreover, project proposals would have to be presented in well-developed applications by knowledgeable personnel if they were to be judged properly. Otherwise projects with potential might well be overlooked. BCN's early experience with the project selection process provides lessons for developing a far less expensive set of procedures for the future.

The 1995 Annual Report includes among the program's major achievements the assistance it provided in developing high-quality projects and proposals. The review team concurs that this is a major achievement in the face of immense difficulties. According to its original program description, the BCN was expected to develop criteria for the selection of projects and institutionalize the grant-making process. The BCN has been successful in both respects. Implementation grants, for example, are selected on the basis of the following criteria:

- Quality of the overall proposal
- Strength of the implementing team
- Best judgment as to whether conservation can be achieved.

The BCN has continually sought to define additional criteria that will assist BCN staff and its collaborators in developing a portfolio of projects that

- Allow for cross-project comparisons

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<sup>3</sup> The BCN counts as its primary clients (1) communities and proponents that have received grants, (2) USAID and US-AEP offices and missions, and (3) the broader conservation and development community, including the members of the BSP consortium. Using the term "clients" signifies the strong motivation within the BCN to be a service organization rather than merely a donor.

- Complement broader analytical efforts in the conservation community.

An important characteristic of the projects funded thus far is that they employ a complex mix of conservation strategies rather than a single, focused strategy. The BCN has identified seven use strategies in developing its selection criteria. These strategies are reflected in the choice of BCN projects (see Table 2).

BCN's Peer Review Committee consists of 10 senior-level and distinguished practitioners in the relevant fields who were working in the Asia/Pacific region (see Annex 4). The committee met five times between 1993 and 1995. Through this system of peer review, plus the reviews of staff and associates, the BCN was able to compile a portfolio of 20 implementation grants selected from more than 400 proposals. Of these 20 proposals (see Annex 5 for details), 75 percent were drawn from those that had been awarded proposal preparation grants. As a first effort to test the BCN hypotheses, the selection process was found to be expensive and time-consuming: it was completed in the thirty-third month of the project.<sup>4</sup> The relatively high cost of the selection process, especially in terms of time (the last of the five peer review committee meetings was held in June 1995), is in large measure due to the design of the program. That is to say, the BCN was based in Washington yet had to cast its net all over Asia to find projects that met with BCN's fairly restrictive requirements and were capable of implementing its "new" underlying concept. However, the decision to focus on planning grants, work with the grantees in developing the proposals, and then nurture some of these to the implementation grant stage was a crucial one, albeit difficult, expensive, and time-consuming in putting BCN on the right track.

This decision was reached because the initial proposals received failed to meet the minimum acceptance criteria specified in the cooperative agreement, both with regard to their quality and the skills of the organizations submitting them. While this meant considerably more work for the BCN project staff and added to the overall time spent on appraisal, it ensured that high-quality projects and proposals were developed. BCN's system of planning grants and the interactive process of assistance provided grantees with considerable training and skills. As the evaluation team discovered in its extensive rounds of discussions with different types of grantees, even the planning grantees who were not eventually awarded implementation grants learned a lot and developed important skills.

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<sup>4</sup> One grant, to the Hualopu Foundation in Indonesia, has still to be formally signed 41 months after the BCN program was initiated. This does not, of course, imply that the project has been in the pipeline for 41 months. In fact, the Hualopu proposal was received after the last peer review meeting in June of 1995.

*Table 2. Classification of Use Strategies*

Strategy	Tactics	BCN Example
Create/recognize value in the biologically diverse resource	Foster businesses whose viability depends on the need to conserve: "linked" enterprises	This is condition 1 of the BCN hypothesis—"linked" enterprises  Examples: basically all projects
Substitute value: replace value gained from the resource by an equally or more attractive alternative	Develop economic activities that reduce strain on resources by substituting an alternative	KMTNC, rosewood plantations
Educate and train users for more effective management	Introduce conservation education programs  Promote capacity building  Treat monitoring plans as management tools	WFT, cultural centers, elders passing on their knowledge to younger generations
Develop democratic committees for resource management	Establish stakeholder committees with representation drawn from all groups with a "stake " in the biodiversity	TNC, Solomon Islands
Address population growth threat	Establish population programs	None
Conserve species, populations, and genetic diversity	Extend habitats  Corridors—linking areas of high biodiversity	KMTNC, Chitwan
Optimize land use plans	Develop resource management plans that delineate types of use by area	TNC, Solomon Islands

Source: BCN files.

In addition to the planning and implementation grants, the BCN has awarded a number of small grants to close the gaps in its overall portfolio. These grants focus on "building [the] capacity of grantees to implement successful projects; supporting subsector studies to understand the market size, structure, and value-addition dynamics of commodities and services that are of common interest to several grantees; and strengthening the capacity of local intermediary institutions to provide technical assistance to and policy analysis and/or advocacy for BCN grantees."

The 20 implementation grants covered 7 ecotourism projects (one marine), 12 designed to utilize nontimber forest products; and 2 designed to harvest timber resources. The projects are being implemented in six countries: 6 are in Indonesia, 3 in the Philippines, 3 in India, 2 in Nepal, 3 in Papua-New Guinea, 1 in Fiji, and 1 in the Solomon Islands. Each project has an on-site agency to oversee the work: 9 are national-level NGOs and 7 international.<sup>5</sup> In all cases the international NGOs collaborate closely with the national groups. The types of projects and the geographic dispersion provide for a general assessment of the validity of the concept and the success with which it has been implemented.

Most of the enterprises (at least 15 of the 20) were ongoing efforts prior to project funding, and thus it was possible to demonstrate enterprise effectiveness within a period of three years, as required by terms of the BCN agreement. Even so, judgments about the effectiveness of the BCN concept were not biased, for although the enterprises had already taken shape, almost all the indigenous institutions for ensuring local management were in an embryonic stage at the beginning of the project. These circumstances suggest that it will take longer than the prescribed three years to assess the long-term social and institutional viability of the projects, especially where the indigenous takeover of projects is concerned. In contrast, three years will be enough time to establish and prove the monitoring systems, including those for biodiversity—but not to judge the effect of the project on biodiversity, although in several cases there will be an indication of the direction of change.

The total BCN grant of \$20 million is to be disbursed in five tranches. The first tranche, \$7.9 million, was received from USAID in 1993 and the second, \$4.0 million, in 1995. The third tranche, \$1.5 million, is expected in 1996. The fourth tranche, \$4.5 million, is due in the third and fourth quarter of 1997, and the last payment, \$2.1 million, is due in 1998. The project has committed \$11.56 million to grants; \$1.64 million of this amount has been disbursed for 34 planning grants averaging about \$48,379 each; \$94,317 has gone to 6 small research grants averaging \$15,720 each; and \$9.8 million has been obligated to the 20 implementation grants, which average \$490,986 each. The smallest implementation grant is \$179,632 for the ARFAK project in Indonesia, and the largest is \$899,940 for several projects being implemented in different countries of the region under Conservation International.<sup>6</sup> The BCN has also awarded 7 small grants ranging from \$4,310 to \$25,000 to assist with research and training connected

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<sup>5</sup> This number includes two American universities.

<sup>6</sup> Because of the lack of follow-up and a number of reasons described in detail later in this report, two of the three sites of the regional grant to Conservation International are being closed down.

directly to improving the efficiency of the BCN mandate.

The flow of grant money, both budgeted and actual (to the first quarter of 1996 for implementation projects) can be seen in Table 3.

*Table 3. Cash Flow of Implementation Grants to Date*

	Total	FY94	FY95	FY96(1st)
Obligations	9,819,713	1,857,737	5,399,051	1,913,977
Disbursements (to date)	2,295,349	368,587	1,388,002	538,760
As percentage of obligations	23.4	19.8	25.7	28.2

The implementation grant obligations were expected to be disbursed in three years, from 1994 to 1996. However, less than 28 percent of the amount obligated in each of the three years was actually disbursed,<sup>7</sup> owing in part to the delayed full-scale startup and BCN management's strict financial controls. BCN grantees that have also dealt directly with USAID have found BCN financial controls stricter than those of USAID. The BCN has an excellent financial tracking system that maintains close and constant contact between the Regional Office, Washington, and the grantees. The BCN has sought and received a "no additional cost" extension from USAID that takes the program to March 31, 1999. Its disbursements have been adjusted accordingly.

### QUALITY CONTROL

The BCN has continued to monitor and review its portfolio of grants to ensure that it is maintaining the high quality of the program. It has had to make a number of difficult decisions in this regard. In 1995 it decided to phase out funding for three sites (in Palanan, Isabella Province in the Philippines; the Togian Islands; and Sulawesi, Indonesia) that were performing significantly below expectations. These projects were among those that did not benefit from the planning grant process and were under the regional grant with Conservation International, an international nongovernmental organization based in Washington, D.C. After considerable institutional resources—especially in terms of scarce staff time—were expended in the interchange between the BCN and Conservation International, it was finally decided to close down. The BCN position is that there was very little to show on the ground nearly 12 to 15 months after the award of the implementation grants.

### ASSISTANCE TO GRANTEEES

The third module of the BCN program consists of activities designed to help grantees implement their projects, especially to run the enterprise and set up monitoring systems. These

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<sup>7</sup> The numbers for 1996 are current only to February 1996.

activities are based on a three-part protocol for establishing a conceptual model, a project plan, and a monitoring workplan. The protocol identifies what type of indicators to be used; how these will be measured—where, when, and by whom; and how the results will be used. Three major workshops were held in Asia in 1995 to facilitate interaction between the grantees themselves, and between the BCN and the grantees; to disseminate information; to explain the conceptual model; and to use it to set up monitoring plans. The BCN staff have also visited 22 grant sites in 7 countries to improve their knowledge about project sites and to determine how the BCN can improve its assistance to grantees. The evaluation team has made detailed recommendations on the monitoring effort; these are outlined in the following chapters.

## **DATA COLLECTION AND ANALYSIS**

The fourth module in BCN's program relates to the collection of data and analysis of results. Design and development efforts to this end were begun in 1995. To avoid duplicating previous work in this area and to enrich the program's "experience base," the BCN has been developing links with other organizations doing similar work. Activities along these lines include a study of the linkages between income generation and conservation being undertaken jointly with the Center for International Forestry Research (CIFOR). Such activities are among BCN's important tasks, and it is now gearing up to fine-tune them. The detailed recommendations of the evaluation team are presented in the relevant chapters that follow.

## **NETWORKING AND DISSEMINATION**

In 1995 the BCN also began planning its strategy for the fifth module of its program, that is, how to communicate results to clients and how to relate these results to policy, especially in the 7 countries where implementation grants have been awarded. In addition, it has been formulating a strategy for networking with organizations and persons so as to enhance the overall impact of BCN's work. Although it is too soon to evaluate this aspect of BCN's work, a number of suggestions are offered in the following chapters.

## **SUMMING UP**

As mentioned earlier, the evaluation team finds that BCN is progressing well on the administrative and financial track. If measured by the terms of the cooperative agreement, it has successfully set up and administered a grant-making process that offers several lessons for other programs. Note that little information existed in this area before, and that since its inception the BCN has managed to define criteria for choosing and managing projects that link up the enterprise, the community, and biodiversity conservation. It has set up a dynamic and flexible management system that is attuned to the needs of its clients. It has made progress in fulfilling the second objective of its mandate by setting up a regional office in Manila with close linkages with the BCN clients. And it is constantly trying to find ways of increasing the scope and depth

of these linkages. The BCN sees itself as a service organization, and this attitude, coupled with its team of dedicated professionals, is one of its main strengths.

The organization is now gearing up to address the issues connected with increasing assistance, especially in the areas of enterprise management and monitoring, networking, and information dissemination. As in all cases where very little work has been done before, the research team feels that attention to a number of technical details can make the effort more efficient. These are discussed in the relevant chapters of this report.

## CHAPTER III

### BASIC CONCEPTS

The conceptual framework relating biodiversity conservation, enterprise development, and indigenous and local peoples' support is not the only determinant of BCN's success. The impact of the program also depends on five other factors: the "carrying capacity" of enterprises that use biological resources, the dynamics of income generation, the marginal groups in society, the macro impact of the project activities, and the time allotted to do BCN's work.

#### ENTERPRISE CARRYING CAPACITY

Areas designated for biodiversity preservation tend to be of marginal use for intensive agricultural exploitation and hence are able to support only a small population; in other words, they have a low population-carrying capacity. If the population density of adjacent populations are also low, as in Humla, Nepal, then the BCN activities may provide increased income for a significant proportion of the related population. If the surrounding population is very poor and its density is very high, however, BCN activities can only touch a small proportion of the people.

Where population density is high, the underlying agricultural resource generally lends itself to sharply increased intensity and hence to sharp increases in agricultural income. Such increases in agricultural income normally have a local multiplier of about 2 (through its expenditure, each dollar of direct agricultural income generates an additional dollar of nonagricultural income). To ensure that it will achieve its objectives, the BCN must support broadly based development that will leave its more specialized approach with a task of manageable proportions.

The BCN needs to classify its projects according to the population density of the associated region, the carrying capacity of the biological resource (taking into account a multiplier on the order of 2 for the direct carrying capacity and the indirect multiplier effects), and the extent to which surrounding areas are generating sufficient income to support those populations. In general, it will have to deal with three types of situations: (1) low population density that can be carried largely by the natural resource base (as in Humla); (2) high population densities in surrounding areas that are experiencing rapidly rising incomes, particularly from agriculture-based development (as in BR Hills, India); and (3) high population densities in surrounding areas that are not experiencing rising incomes from agriculture-based development (as in Chitwan).

## THE DYNAMICS OF INCOME GENERATION

The return to labor from the nontimber forest products on BCN projects appears to be considerably higher than the normal going wage. Thus exploitation of these resources appears highly profitable. Enlarging the market for these products can also be an important means of increasing income. BCN projects should therefore be investigating the potential for increasing the yield of these products. The value added enterprises in the BCN projects are adding only a small percentage increase to the returns from the gathering economy. That could change if the enterprises prove profitable and private investors are encouraged to invest for a major expansion that would greatly increase the product benefiting from the value added.

Indigenous and local people appear to be benefiting from the current small scale of operation by turning over the substantial profits being generated to social purposes, particularly health and education. However, the impact on income could be much larger if aggregate effective demand for the gathered products were increased, and as a consequence real prices to the gatherers rose. An important means to this end would be to increase the competitiveness of the private marketing agencies. At one extreme, in the TERI project in South India, the government cooperative is clearly taking a grossly excessive margin from the low-income gatherers. That is a policy issue of considerable importance. In other projects, marketing margins appear high owing to the relative inaccessibility of project areas and lack of competitiveness of private traders. At the operating scale of value added enterprises, indigenous incomes would benefit far more from introducing 10 to 20 percent higher prices through increased competitiveness of the private trade.

It should be noted that many of the NGOs with which BCN associates have negative attitudes toward the private sector and hence may fail to grasp the opportunities for increasing competitiveness and thereby the returns to indigenous and local people. A useful contribution for the BCN would be to study this problem and propose an educational program to help resolve it. USAID could provide numerous examples of successful efforts to increase private sector competitiveness, among them the MARD project in Nepal and the APAP project in the Philippines.

So far, BCN income-raising activities are largely once-and-for-all increases in income, rather than a dynamic process. Over time, the BCN should emphasize putting incomes on a dynamic, rising trajectory, notably through technological change and rising real prices. Many types of technological change appropriate for settled agriculture—such as improved varieties and improved disease control—would have little effect in most of BCN conservation areas. But many other technical changes would be appropriate, however. Technical assistance should be sought to explore such possibilities.

One way to achieve higher prices is to provide products with substantial value added, as is occurring in many of the project sites. Another way is to develop a high-income market willing to pay a premium price for natural products. Here again it is important to support a small number of people well on BCN activities and to cover a much larger number with more general development activities. Those activities could be tied in with major technological change and thus would take a great deal of pressure off the BCN resource effort.

## TECHNOLOGY AND PRICE

Although the BCN is currently focusing on value added enterprises, it also needs to look at technologies that could reduce the cost of production (particularly those that would raise the sustainable harvest levels). And it needs to give some thought to defining high-priced markets.

A simple technology like scientifically correct pruning, rather than the indiscriminate breaking of branches observed in the TERI project, could greatly improve harvest yields. The team found many other cases in which better resource management would have made a difference to the harvest, yet the BCN literature says little about improving technology, even though it is now the basic source of almost all modern growth. BCN enterprises would do well to explore this avenue of growth.

The BCN should also look at the rapidly growing global market in which people with high incomes are willing to pay a premium price for environmentally friendly products. It could achieve the scale economies needed to exploit that market. Of course, such an approach to increasing returns requires open trading regimes that allow the low labor costs endemic in BCN project areas to be reflected in a competitive price. Moreover, it takes skillful coordination of efforts to tap such markets.

## MARGINAL GROUPS

Many of the indigenous and local people in BCN areas are a marginalized population, frequently referred to as "tribals." That is particularly the case in the TERI project in South India, where the indigenous and local people are tribal Soliga, traditionally a downtrodden group. The country is now making a concerted effort to lift them up through education, improved health, and improved income-earning possibilities. The BCN is playing an important role in this larger set of activities. However, the government's cooperative structure is highly exploitative, as is so often the case among marginalized populations. For example, the cooperative renders essentially no service in the marketing of the principal fruit gathered in the forests. The gatherers deliver it directly to the trucks. But the cooperative only passes on half the price received from the marketing agencies. The same is true of honey marketing.

The most important means of increasing the income of these people is to stop such exploitation. The BCN faces a similar, though not as extreme, situation with the Tharu people near Royal Chitwan Park. In cases of this nature, the BCN needs to develop an analytical capacity to diagnose the causes of marginalization and to devise programs for dealing with the consequent discrimination.

## MACRO IMPACT

The BCN goal—to mobilize local people to support biological conservation—can only be achieved if everyone in the community feels they are participating directly in the activities. In other words, BCN enterprises must have a macro impact. The problem is that they usually represent only a small proportion of the total value added, even from the utilization of the

conservation area. Most notably the number of people involved and the direct impact on income are modest.

In practice, the high value added activities being encouraged may be expandable to a macro impact and hence patience may be needed. However, as a positive suggestion the BCN could investigate sources of income to determine which might be the most important means of raising incomes.

## TIME HORIZON

The BCN specifically set a three-year term for measuring the success of its projects. This horizon is obviously far too short.

First, it has meant that the enterprises supported had to be ongoing ventures, since it would in all likelihood have taken longer than a year to select new enterprises, and certainly longer than two years to prove their profitability.

Second, the short time horizon has made it difficult to fully engage the indigenous and local people, since participatory institutions can in no way be up and running in two or three years. Thus their effectiveness simply cannot be judged in that time.

Third, the horizon has not been long enough to bring about a macro impact. One small enterprise can prove itself in three years, but to expect a macro impact or a competitive private sector to emerge in this period is highly unrealistic.

What, then, can be accomplished in three years? The success of the enterprises can be demonstrated in that time, since most of them were already under way. Simplified monitoring systems can be developed and implemented. And the essential policy changes required can be identified. But what cannot be done is to measure the biological effects, or to bring about the full participation of the indigenous and local peoples. The program will need to be extended before results can be seen in those areas of endeavor.

## CHAPTER IV

### BIOLOGICAL MONITORING AND SUSTAINABILITY

As its name clearly indicates, the Biodiversity Conservation Network is above all concerned with the conservation and sustainable use of biological diversity. This concern underlies BCN's two main programmatic goals and the core hypothesis being tested by the program: that is, if local communities receive sufficient benefits from an enterprise that depends on biodiversity, they will act to counter threats to that biodiversity. The degree to which these enterprises use biodiversity in a sustainable manner, and thus conserve it, is the ultimate yardstick by which the BCN concept will be evaluated.

However, no meaningful conclusions about conservation and the ecological sustainability of resource exploitation can be reached without monitoring. In most cases, this is a two-step process. Baseline data about the distribution and abundance of the local biota are first collected, and then periodic inventories are conducted to assess the variation in key parameters over time. Neither activity taken by itself provides an indication of change. Just as the slope of a line cannot be determined from only one point, baseline data without periodic resampling can be extremely misleading; periodic surveys without some idea of the time-0 or initial condition are equally fraught with problems.

Given both data sets, biological monitoring is a tool of incalculable value. It can tell the conservationist whether or not local levels of biodiversity are being maintained, and it can document the habitats and species under the greatest threat. It can provide local resource managers with information on the density, yield, and regeneration status of the species being exploited, and it can greatly facilitate economic planning, the delineation of production areas, and, perhaps most important, the development of sustainable harvesting regimes (see, e.g., Peters, 1994).

These benefits notwithstanding, the development of a viable monitoring system for biodiversity can be a difficult and rather confusing task. The first problem lies in deciding what to monitor. Biodiversity refers to the totality of biological life on a site, including the plants, animals, and microorganisms, together with the ecosystems and ecological processes to which they belong (see, e.g., Wilson, 1988; McNeely et al., 1990; Ehrlich and Wilson, 1991). The term encompasses genetic diversity, species diversity, ecosystem diversity, and landscape diversity. From a conceptual standpoint, the term is an eloquent expression for highlighting the rapid and irreversible loss of species that is currently occurring throughout the world, and it provides a useful framework for orienting and promoting conservation activities. From an empirical standpoint, the term remains essentially undefined. There is probably no spot on earth, certainly no spot between the Tropics of Cancer and Capricorn, in which all of the constituent

biodiversity has been quantified. Current estimates of the number of species on earth range from 2 million to 100 million (Reid, 1992). Barely 1.5 million of these species have even been named, much less studied, counted, or described. How does one collect baseline data on a parameter this elusive and ill-defined? What does one count?

A second problem concerns who collects and analyzes the data. In an ideal world, the people who are exploiting, and hopefully managing, the biodiversity should be the ones who develop and implement the monitoring program. The results from periodic inventories could then be easily incorporated back into the management plan and harvest levels adjusted as necessary to ensure the long-term sustainability of resource harvest. This is the "direct link to biodiversity" envisioned in the first element of BCN's core hypothesis. At the present time, however, most indigenous communities and local collectors lack the technical expertise to collect representative baseline data and to design rigorous and effective monitoring strategies. Stated simply, the best and most appropriate cooks do not have the right recipe.

A final, and especially problematic, stumbling block to long-term biological monitoring is an economic one. Forest inventories, yield studies, and the periodic survey of regeneration plots are expensive propositions, either in direct monetary terms or in the loss of time from basic income-generating activities. Even given the local expertise available to collect the data, where will the financing come from to continue monitoring throughout the entire life of the enterprise? To truly maintain sustainability and reap the benefits of biodiversity conservation, these activities must be viewed as a fixed cost—and provisions made to ensure that they are continually covered from the revenues generated by the sale of biological resources.

## THE BCN MONITORING AND EVALUATION CONCEPT

BCN vaulted into the limelight the conservation milieu in late 1992 with its concept of enterprise-based conservation and hypothesis testing. Biological monitoring is a key component of this concept, and much effort has been expended on explaining its importance and helping grantees to develop their own programs of data collection and evaluation. The BCN monitoring effort has gone through several iterations and is still evolving. The original Request for Proposals highlighted the importance of biological monitoring and required all applicants to provide a detailed description of the data collection procedures to be carried out "to ensure sustainable resource use and the conservation of biological diversity" (BCN Request for Proposals and Application Guidelines, February 1993). Few projects, however, were able to comply with this requirement and provide a workable monitoring plan. To simplify things somewhat, BCN staff then compiled and circulated a list of relevant questions that communities would need to ask "to ensure that they are using their resources in a sustainable manner" (Draft Biological Monitoring Matrix, BCN 1994 Annual Report). This list was later condensed into the Guidelines for Monitoring and Evaluation of BCN-Funded Projects and sent to all BCN grantees in April of 1995.

Subsequent proposals and technical reports revealed that most groups were still having problems developing a viable, useful monitoring plan. Apparently, there was general confusion about the main objective of the monitoring and evaluation work. Which questions from the Monitoring Guidelines were most appropriate for individual projects—or the overall BCN

In response to these queries, BCN refined its thinking again about the analyses that needed to be done to evaluate its core hypothesis. The result was a new, systematic approach to conducting monitoring and evaluation within the context of the project cycle. As described in the BCN 1995 Annual Report, this approach involves developing a complete monitoring plan that contains (1) a conceptual model of the project, (2) a project plan, and (3) a detailed monitoring and evaluation workplan. The mechanics of the new BCN approach were disseminated in three monitoring workshops. The first of these meetings, held in Bangalore, India, in May 1995, was attended by representatives of the nine projects in South Asia that had planning or implementation grants. The second was held in September 1995 in Los Baños, the Philippines, and included grantees from 16 projects in Southeast Asia and the Pacific region.

The fact that the BCN has consistently assigned high priority to monitoring and collecting the biological evidence for sustainability is exemplary. The program has appreciated the importance of monitoring from its inception and has gone to great lengths to develop analytical tools for facilitating the development of community-based monitoring initiatives. BCN has obviously put enormous thought, sweat, and money into biological monitoring. There are currently hundreds of integrated conservation and development programs operating throughout the world. All of them have different objectives, many of them involve local enterprises, and all of them are doing things a little differently. None of them have biological concerns hardwired into their basic agenda the way that the BCN does. The BCN has taken an R&D or "prove it" approach to addressing one of the most pressing environmental questions of our time, -- can indigenous communities both use and conserve biodiversity given sufficient incentive? It is an extremely innovative and worthwhile endeavor that they are attempting.

### **CURRENT STATUS OF MONITORING PLANS**

Site visits to three BCN-funded projects, conversations with representatives from 12 other projects, and a detailed review of the technical papers, proposals, and site reports from the 5 remaining projects all suggest that the biological monitoring at most sites falls short of the ideal set by BCN. Although some of the projects have gotten further with the development of their monitoring plans than others, to date only two projects, those operated by the Research and Conservation Foundation in Papua New Guinea and the Nature Conservancy in the Solomon Islands, have operational systems in place to collect the total suite of biological data required to ensure enterprise sustainability and to test the BCN core hypothesis.

### **IMPLEMENTATION**

Although BCN has tried several approaches to help projects develop their biological monitoring plans, most grantees are quite late in getting their plans designed and implementing them in the field. Five of the projects, for example, have not been taught the basic BCN protocol for developing a conceptual model and a detailed workplan. The King Mahendra Trust in Nepal—which has been operating for over 20 months with BCN funding (contract date of 5/17/94)—is in this position.

The projects that have participated in either the Bangalore or Los Baños workshops are also slow in getting monitoring activities started, perhaps as a result of the new ideas and change of focus engendered by the workshop experience. As of late February 1996, none of the 20 projects were operating under a finalized, BCN-approved monitoring and evaluation plan; 10 of the projects have submitted a first draft of their biological monitoring plan to BCN; and 5 are still working on their first draft (see Table 4). The situation is most pronounced in the case of Conservation International's Solomon Islands project and the Kalahan Education Foundation in the Philippines: both of these projects are entering their third year, which is also their final year of BCN funding. Only 11 of the projects have an ongoing system for collecting biological data, but whether these data are linked to an appropriate monitoring framework is another matter.

The basic problem here is a straightforward one. The effects of resource over-exploitation and biodiversity loss are not always immediately apparent, and there is usually a lapse of time before the ecological impacts of perturbation start to cascade through an ecosystem. This is especially true when the total pool of species is large. If one fails to look in the right place, count the right taxa, or compare the right data sets, one could easily miss the entire process. As it is, three years is an inordinately short time to assess biodiversity conservation and the sustainability of resource exploitation. Reducing the size of this window to one year makes it even more difficult to detect a trend. This is not to say that the projects of Conservation International and the Kalahan Education Foundation will not be successful, only that the results will be exceedingly difficult to quantify in the little time that remains in the granting period.

## METHODOLOGIES

One of the first things that the grantees learned at the monitoring workshops was how to develop a conceptual model of their project. As defined by BCN, a conceptual model is a diagram of a set of relationships between certain factors that are believed to influence the project's target condition (BCN M&E Workshop Session Instructions, November 1995). Although it was emphasized that such a model "should not try to incorporate every factor and every relationship", the exercise was by all accounts well received, and by the end of the fifth day some very detailed conceptual models and workplans had been developed. Unfortunately, none of the workshops provided enough time to adequately review the methodologies for monitoring the various indicators outlined in the workplan. This emphasis on the what? where? and who? with little explanation of the mechanics of how? was an obvious source of frustration for many participants.

This exercise left many projects with only a "shopping list" of indicators, and little sense of the method, cost, or time required to measure each one. For example, the conceptual model of the Pacific Heritage Foundation's small-scale logging project in Papua New Guinea (featured in BCN's 1995 Annual Report) diagrams the relationships between 28 key factors and five project activities. One of the factor boxes is labeled "trees." The methods to be used to document the impact of logging are described as "mapping, aerial photos, and surveys" of forest and reef areas, "observations and census" of hornbills and birds of paradise, and "water samples" for ecosystem function. Given that the project area extends over 85,000 hectares, it is difficult to predict exactly what types of data will be collected and how they will be used to

assess the sustainability of timber extraction. Where are the inventories of timber species and growth studies?

The Conservation International project in the Solomon Islands is built around the sustainable exploitation of ngali nuts, butterfly collecting, and bee keeping. Of the 19 indicators described in its technical report of September 1995, one relates to the impact of ngali nut harvesting, one to butterflies, and one to the overall biodiversity of the project area. And the impact of collecting nuts and butterflies are to be monitored by "transect surveys carried out by landowners after training by scientists", while the general project impact on biodiversity is to be documented by monitoring "the presence/absence of key species indicators for insects, molluscs, reptiles, amphibians, mammals, and birds."

Yet another example of the lack of methodological clarity is found in the monitoring plans of the Kalahan Education Foundation project in the Philippines. To assess the ecological impact of producing jams and jellies from guava and other fruits harvested from secondary forests, this project has proposed to annually conduct a 100 percent inventory of 24 sample plots arranged among eight forest types at a cost of approximately US\$30,000. Furthermore, the foundation has planned a 25 percent inventory of all woody plants greater than 10 cm DBH (diameter at breast height) on 7,000 hectares to assess the potential for improving the timber stand in local forests. An additional US\$30,000 has been budgeted for this activity. It is somewhat surprising that these proposal items actually passed BCN's rigorous system of inspection.

## COMPARABILITY

There is great disparity in the types and quality of data collected by each project. Much of this is to be expected given the diversity of projects in the BCN portfolio and the wide range of habitats, enterprise types, level of community organization, and technical expertise involved. Presumably each project is monitoring the biological parameters that are key to managing their enterprise on a sustainable basis and to conserving biodiversity. There are as many different ways to approach this task as there are projects. If the monitoring actually does what it should, one type of data collection procedure is really no better than the other. The problem, however, is that this heterogeneity makes it extremely difficult for BCN to compare the data from different projects in the evaluation of its core hypothesis.

The monitoring plans from the Tata Energy Research Institute (TERI) project in India and the Research and Conservation Foundation (RCF) project in Papua New Guinea are being coordinated by teams of university biologists. Not surprisingly, the data collection activities in these plans are extremely detailed, well-designed, and very expensive. The RCF project is using LANDSAT imagery, GPS technology, replicate use and control transects in different habitats, periodic monitoring of indicator species (e.g., birds, mammals, snakes, butterflies, and vascular plants), and multivariate and route regression analyses. The TERI team, which is following a similar tack, proposes to develop a geographical information system (GIS) for compiling spatial data from the project area, establish systematic nested-plot samples to quantify the structure and composition of the forest, and conduct a replicated, factorial experiment to assess the ecological impact of differing harvest intensities on several fruit species. The collection of these data will

undoubtedly enhance efforts to manage and conserve the biodiversity on each site. Yet, how are these data sets to be compared with those collected by projects that do not have a computer, GIS software, or even a monitoring plan? How can one year of monitoring data be compared with those collected over a period of three years?

A final observation about comparability and the heterogeneity of monitoring systems concerns the types of projects and enterprises that are undertaking these activities. Although there are exceptions, the BCN projects that could have the greatest potential negative impact on biodiversity (e.g., commercial tree felling or the harvest of non-timber forest product in species-rich tropical forests) appear to be precisely the ones that have not developed a well-focused, comprehensive management plan (Table 4). Examples include the Harvard project in West Kalimantan and the Pacific Heritage Foundation project in Papua New Guinea (both are small-scale timber operations), the Manila Observatory/ERD and World Wildlife Fund projects in the Philippines (rattan, abaca, and almaciga), and the Yayasan Dian Tama project in West Kalimantan (damar, bamboo, and rattan). In contrast, the projects with the lowest potential for a negative impact on biodiversity (e.g., ecotourism or NTFP harvest from low-diversity or secondary forests) are currently the ones collecting the most biological data.

## PARTICIPATION

A common problem with much of the biological monitoring is that it has been designed and is being implemented by someone other than actual stakeholder. This may be a graduate biologist, a member of the local NGO, or a short-term consultant, but it is usually not the local collectors and indigenous communities that have the ultimate responsibility for continuing this work.

The three monitoring workshops brought BCN grantees together to design, discuss, and refine their monitoring workplans. The invited participants were, in most cases, project directors and their staff. These were the people who learned how to design a conceptual model, build a project outline, and formulate a detailed monitoring workplan. Although it is assumed that all of this experience and information eventually will filter back to the communities at each project site, something fundamental will have been lost in the process. Not only did they not learn the techniques firsthand, but community members also missed the chance to interact with people from other areas who are struggling with the same problems and trying to accomplish many of the same things that they are.

The monitoring fieldwork in most projects is notable for its lack of involvement of local people. The TERI project in India, for example, employs only one Soliga assistant to help with the data collection. The results from the field surveys are stored in a computer at the site and backup copies are kept in Bangalore and Boston. The data are communicated to community representatives once every six months, and papers describing the results of the monitoring activities are to be "published in national and international journals to keep biologists, resources managers, and policy makers informed." From a sustainability perspective, it would seem more useful to keep the people who are actually exploiting and managing the biodiversity informed of the monitoring results.

## PROVISIONS TO CONTINUE MONITORING AFTER BCN

Most of the BCN grantees have trained their project directors and field coordinators rather than the community groups with which they are working. Many have designed overly complex or inappropriate working plans rather than simple, inexpensive, and easily understood ones. Most of their programs offer local people limited involvement in the collection and evaluation of biological data. This does not bode well for the future of biological monitoring on most of the project sites. Who will continue surveying the biodiversity plots after the funding from BCN has ended? Who will run the requisite inventory transects once a new harvest area has been opened? Has anyone been trained to update the maps and test the ground-truth of the LANDSAT images for the project GIS? On an even more basic level, does anyone know how to get the field data from previous monitoring operations out of the computer? The considerable amount of training that post-BCN monitoring will require is not discussed in any of the proposals or workplans.

Technical shortcomings are not the only barrier to continued monitoring. None of the business plans contain a provision to divert a percentage of the annual profits from the enterprise to support biological monitoring. Where will the money come from to maintain these activities? In addition to the costs of fieldwork and data collection, there is the chronic problem of equipment maintenance and repair. Computers, GPS instruments, and GIS software are analytical tools of unquestionable value if the operator is skilled in their use and has the money to repair them when they break down. Once the expert and the donor leaves, this technology can become more a source of frustration than a source of insight. It is a pretty safe bet that whatever monitoring activities are carried over after the BCN funding has ended will be a bare-bones, extremely focused, and cost-conscious endeavor. In hindsight, this may not be such a bad thing.

## LINK BETWEEN MONITORING AND MANAGEMENT

To sustain resource use and conserve biodiversity it is absolutely essential to continually channel the diagnostic data from monitoring to the management system and to act upon the data as necessary. Sustainability is achieved through a continual process of reciprocal feedback between the user and the biota. For this process to work, any significant change in the population dynamics, regeneration success, or areal extent of the resource in question must result in a corresponding change in the nature or intensity of resource exploitation.

There are essentially two parts to the sustainability equation. The ecological impact must be detected, and this impact must trigger an appropriate remedial response from the user group. The old adage that "you can't fix something if you don't know it's broken" is indeed applicable here: that is why the tardy implementation, vague focus, and dubious longevity of the monitoring efforts of many BCN grantees are especially worrisome. It will be hard for these projects to detect over-exploitation or biodiversity loss, and it will be even harder for the BCN to arrive at some realistic appraisal of the project's effectiveness as an enterprise-based approach to conservation.

The second part of the equation is even more problematic, because there is never any guarantee that local enterprises will actually respond to the results of the biological monitoring.

Suppose for a moment that everything works. New markets are created for a certain NTFP, all the baseline data have been collected and the monitoring systems are in place, a local cottage industry has been set up, and sales are increasing every year. The revenues from the enterprise make a significant contribution to the well-being of the community. During the fourth survey of the regeneration plots, it becomes obvious that the current rates of harvest are not sustainable and that the resource is being progressively overexploited. The appropriate management prescription is that harvest levels should be reduced by 20 percent until the species can replenish its populations in the forest. A harvest reduction of this magnitude, however, will cause an immediate and notable drop in the profits from the enterprise. Where does the incentive come from to follow the path to sustainability?

The current crop of BCN projects can be classified into three main groups. Those in the first group have a successful enterprise, but only cursory biological monitoring or management. Those in the second group have a poor monitoring plan, minimal management, and a marginal or failing enterprise. Those in the third group have a successful enterprise, an active monitoring program, and a clear and well-defined management objective. They are clearly the most interesting to BCN because they will ultimately become the actors in the scenario described above. They are the projects that will either verify or negate the core hypothesis that BCN is testing. They are also the projects that will have the greatest influence on policy. At this stage in the implementation process, however, projects with these characteristics are definitely the minority in BCN's portfolio.

## **STEPS TOWARD A MORE EFFICIENT ASSESSMENT OF BIOLOGICAL IMPACT**

To provide a more robust test of its core hypothesis, to increase the potential for biodiversity conservation, and to maximize the flow of information from the 20 projects that it has funded, the BCN should strive to optimize and accelerate the biological monitoring activities of its grantees over the next three years. A few suggestions as to how to achieve this objective are outlined below.

### **Pay More Attention to Biology**

The first and most fundamental step toward improvement is for BCN to programmatically assign a higher priority to issues of biological sustainability. A close review of the correspondence between BCN and different applicants during the preproposal and project development phase suggests that biological concerns have frequently been subjected to less scrutiny, and perhaps given less weight, than economic or social issues. A group with a good site, a good idea, and very weak biology, for example, might be given a planning grant. The grants were usually awarded so that the group could flesh out the business plan and community aspects of the project. Most of these groups would later apply for an implementation grant. Although their proposals would indeed reflect a notable improvement in the social and enterprise components, the biological side of things, even after repeated review and comment by BCN, was

still very weak. A large number of these proposals were funded, and some have now been operating for almost two years without an appropriate monitoring plan.

Going through a planning grant, site visits, and extensive evaluation and comments by the BCN Review Panel and then coming out the other end with a project that does not collect the biological data necessary to monitor conservation or manage resources is a strong sign that a greater emphasis on biology is needed. Biological monitoring should become a concern of everyone in BCN, and it would help if there were more people on the staff who were trained in this area. It is notable that there are no foresters, agronomists, wildlife managers, or mensurationists in the program. BCN should seriously consider hiring a few professionals with these skills to help grantees with the biological aspects of their projects.

### **Simplify and Implement Monitoring Plans**

A major task at this point is to facilitate the revision and implementation of the biological monitoring plans of all projects as soon as possible. Given the limited time remaining and the importance of collecting data that may actually illustrate something, it is suggested that the monitoring plans of all projects be closely reviewed and a concerted attempt be made to simplify them. Three years is a very short time to be able to detect changes in species composition and abundance. Those projects that currently are meticulously monitoring certain mammals, birds, reptiles, and butterflies and are inventorying all plant species may very possibly not be able to detect any change at all during the granting period. This is not to say that these activities should not be conducted, but only to point out that they are extremely time-consuming and expensive and may not generate any information of value to either the enterprise or the BCN. Of greater immediate interest to the BCN, and the project for that matter, is the collection of biological data about the species and habitats that are directly affected by the enterprise.

The BCN-funded enterprises that pose the greatest threat to biodiversity are those that are actively harvesting and processing wild species. By monitoring the population structure and regeneration of these species, any adverse impact can be detected and perhaps avoided (Hall and Bawa, 1993). It is fine to conduct forest inventories, but why count and measure all species? It makes more sense, and is more cost-effective, to focus solely on the resources being consumed by the project. The same time and expense required to survey all of the biodiversity in a 1.0-hectare plot would be sufficient to conduct a baseline resource inventory in an area that is two to three orders of magnitude larger. The results from such an inventory would be very useful for management and would also provide the time-0 data required for biological monitoring.

Recording the change in the extent of different habitats within the project area can provide a useful surrogate measure of biodiversity conservation without the expense of total species counts or surveys of indicator species. If the total amount of forest in the project area decreases during the granting period, it is fairly safe to assume that there has been a loss of biodiversity. Similarly, if the total area in the forest remains more or less constant, and the baseline resource inventory and biological monitoring show that the harvest species are maintaining themselves there, there is a very good chance that the enterprise has had a minimal ecological impact on the local biota.

The methodology used to define a sustainable harvest level can also be greatly simplified.

Many projects have adapted an experimental approach to quantify the effects of harvesting different quantities of resource from a single individual. A sample of plants of varying size are first selected, and then increasingly larger percentages of the total resource yield are harvested and the impact recorded. Although this approach can provide some precise results about the effects of different harvest regimes and was recommended in the Guidelines for Monitoring and Evaluation of BCN-Funded Projects, the data are very difficult to apply in the real world. How does one explain to a local collector that he can harvest only 40 percent of the fruit produced by a given tree species? And how does one teach him the difference between 40 percent, which is sustainable, and 50 percent, which is not?

Area controls are a more effective method of determining a sustainable level. If only 40 percent of the fruit should be harvested, this quantity can be approximated by harvesting only 40 percent of the trees. The remainder of the individuals are left unharvested to drop their seeds and regenerate the population. A sustainable harvest regime can be implemented simply by dividing the project area into 10 parcels and harvesting only 4 of them each year. The 6 "fallow" plots are rotated sequentially so that the seedlings are distributed evenly throughout the site. Harvest controls are maintained by telling collectors where they can and cannot harvest each year. This "crop rotation" approach can be employed for any type of forest resource, and it appears to be an effective method for promoting the sustainable exploitation of grasses and other herbaceous plants. A similar procedure could be used to regulate the impact of tourists visiting national parks and game reserves.

Once the monitoring plans have been reworked, it is critical that basic data collection activities get started as quickly as possible. Given the great importance of these biological data, the BCN might consider granting an extension of some sort to projects that are already extremely late in implementing their monitoring activities. Two years of data are probably the bare minimum for any type of meaningful evaluation.

### **Enhance Participation and Training of Local Collaborators**

Most projects will require additional technical assistance to produce an effective plan for monitoring biological impact. This would be the perfect opportunity to start increasing the level of participation of local communities in the monitoring process. Rather than sending letters or a list of guidelines, the BCN should send a qualified team of professionals to each project site to reopen the dialogue on monitoring goals and on suitable methods of data collection. The process will undoubtedly require more time than a routine two-day site visit. While in the field, the BCN team should continue to refine the discussion of the conceptual model and monitoring plan with project staff and key members of the local community. They should go to the forest with local collectors and work together on developing appropriate methods for biological sampling.

Once a suitable sampling protocol has been agreed on, the BCN team should start training community members in the different procedures for data collection. The team and the community should field-test these procedures together and should correct any problems they detect to make the process as quick, efficient, and easily understandable as possible. The team should then help the local community conduct a preliminary graphical analysis of the results from the first sample

plots or transects. This analysis could entail making histograms of the density or size-class distribution of the different species, drawing a vegetation map of the sample area, or constructing tables with the data from different plots. The objective here is to demonstrate that the data from the fieldwork can actually be used for something. Training should continue until the participants have reached a sufficient level of understanding that they can confidently train other people in the collection procedures.

The benefits of including local people in the biological monitoring process are manifold. By involving them in the development of the field methodologies and training them to pass on what they have learned, there is a much greater probability that some sort of monitoring activity will continue on the site after the BCN funding has ended. The tedious process of counting plants or animals can also instill a certain feeling of pride and stewardship among the crew members conducting the fieldwork. For example, after spending several days counting and measuring the rattan canes in a tract of lowland forest, most community members would be very much against someone logging, burning, or putting a swidden plot on the site. A final benefit of participatory monitoring is that it puts the biological data required for sustainable resource management directly into the hands of the people who will ultimately be putting this practice into effect.

### **Network with Other Projects**

Many projects in the BCN portfolio are involved in more or less the same activities. Several projects are exploiting rattan, a few are harvesting fruit, and a couple are promoting the small-scale extraction of timber. The biological monitoring needs of each type of enterprise are essentially the same. Considerable time could be saved, for example, by bringing all of the rattan projects together to share their monitoring experiences and work together on developing a common data collection system. This would greatly enhance the comparability of the data collected and would save some projects the long and frustrating struggle of trying to reinvent the wheel. Cross-site visits are probably the most effective way to stimulate this type of networking between projects.

Improving the efficiency of the biological monitoring in the 20 projects currently being funded should become one of the BCN's top priorities. This program has the potential to make a major contribution to the conservation of global biodiversity and the rational use of biological resources. The policy implications of the BCN experiment are profound and far-reaching. Just like any other experiment, however, the final conclusions will only be as good as the data that back them up.

*Table 4. Current Status of BCN Grantee Programs for Biological Monitoring with Habitat, Potential Impact, and Conservation Rankings*

BCN Project Code	Country	Project Title	Contract Starting Date	Status of Monitoring Plan	Data Collection	Habitat*	Type of Intervention	Potential Impact <sup>b</sup>	Potential for Biodiversity Conservation <sup>c</sup>
ATI-I	India	Biodiversity Conservation through Small Producers' Enhanced Commercial Utilization of Natural Resources in the Garhwal Himalayas of India	9/1/95	Draft	Ongoing	LDPF	Harvest of NTFPs	Low	Low
TERI	India	An Integrated Approach toward the Management of Tropical Forests for Extraction of Nontimber Forest Products	12/15/94	Rough draft; not fully developed	Ongoing	LDPF, grassland	Harvest of NTFPs	Low	Low
TMI	India	Sikkim Biodiversity and Ecotourism	9/1/95	Draft	Just started	Alpine	Ecotourism	Low	Low
KMTNC	Nepal	Promoting Local Guardianship of Endangered Species and Wildlife Habitats in Royal Chitwan National Park, Nepal	5/17/94	Rough draft; needs development	Ongoing	LDPF, Grassland	Ecotourism, rosewood plantations	Low	Moderate
ATI-N	Nepal	Integrated Community-Based Ecosystem for Humla, Nepal, through Local Enterprise Development	1/15/95	Plan submitted	Not yet begun	Alpine	Harvest of NTFPs	Low	Low
TNC-I	Indonesia	Wildlife and Nature-Based Tourism Enterprises in Lore Lindu National Park, Central Sulawesi, Indonesia	8/1/95	Draft	Ongoing	HDPF	Ecotourism	Low	High

WWF-IP	Indonesia	Butterfly Farming Enterprise Development in the ARFAK Mountains, Phase II-Implementation	4/1/95	Draft	Not yet begun	HDPF	Butterfly farming	Low	High
BScS	Indonesia	Development of Local Enterprises in and around Gunung Halimum National Park, West Java	12/1/95	Draft	Not yet begun	HDPF	Ecotourism	Low	High
LTFE	Indonesia	Developing Community Forest Management in Buffer Zones for the Conservation of Biodiversity in Gunung Palung National Park	11/15/95	Draft	Only pilot information	HDPF	Small-scale timber harvesting	High	High
Rumsram	Indonesia	Sustainable Community-Based Marine Conservation in Maluku and Irian Jaya, Indonesia	1/1/96	Pre-draft	Not yet begun	HDMarine	Marine ecotourism	Low	High
YDT	Indonesia	Development of Small-Scale Forest-Based Enterprises within the Participatory Forest Management Area (PFMA) Model in West Kalimantan, Indonesia	10/1/95	Draft	Just started	HDPF, secondary forest	Harvest of NTFPS	Low	High
KEF	Philippines	Forest Farms Development Project	3/1/94	Draft	Ongoing	LDPF, secondary forest	Harvest of NTFPS	Low	Moderate
ERD	Philippines	Bendum, Pantaron Forest Management Project, Bukidnon, Mindanao	5/1/95	Pre-draft	Ongoing	HDPF	Harvest of NTFPS	Low	High

WWF-P	Philippines	Community-Based Conservation and Enterprise Program for Indigenous Communities in Palawan, Philippines	1/15/95	Draft	Ongoing	HDPF	Harvest of NTFPs	Low	High
PHF	Papua New Guinea	Community-Based Ecoforestry Projects	10/1/95	Draft	Just started	HDPF	Small-scale timber harvesting	High	High
CI-PNG	Papua New Guinea	Landowned-Based Conservation, Fostered by Science and Adventure Tourism in Lakekamu Basin, Papua New Guinea, Phase II-Implementation	8/1/95	Draft	Just started	HDPF	Ecotourism	Low	High
RCF	Papua New Guinea	Crater Mountain Wildlife Management Area: A Model for Testing the Linkage of Community-Based Enterprises with Conservation of Biodiversity	8/1/95	Draft	Ongoing	HDPF	Ecotourism	Low	High
TNC-SI	Solomon Islands	Community Marine Conservation and Enterprise Development	10/1/95	Draft	Ongoing	HD Marine	Deepwater finfish	High	Moderate
CI	Solomon Islands	Asia and Pacific Regional Initiative in Biodiversity Conservation and Enterprise Development	1/1/94	Draft	just started	HDPF	Harvest of NTFPs	Low	High

\* HD = high diversity, LD = low diversity, PF = primary forest.

<sup>b</sup> Ecological impact if the project fails.

<sup>c</sup> Biodiversity conservation if the project succeeds.

## CHAPTER V

### THE ENTERPRISE COMPONENT OF THE BCN

Mentioned throughout this report is the BCN's core hypothesis. As the BCN itself puts it: "if enterprise approaches to community-based conservation are going to be effective then the enterprises must: (1) have a direct link to biodiversity, (2) generate benefits, and (3) involve a community of stakeholders" (BCN 1995 Annual Report). The system of awarding planning grants and the subsequent peer review and awarding of implementation grants were designed to ensure that the three essential elements outlined above are present in all implementation projects awarded a grant. Since most of the project proposals originated in remote areas without effective markets, the requisite infrastructure, or people adequately trained in preparing a proposal, it is not surprising that the enterprise component was commonly the weakest element in the proposals evaluated.

At the same time, the evaluation presented in chapter IV indicates that the BCN projects—if they succeed—have the potential to greatly assist in biodiversity conservation. The selected projects represent a wide range of activities, from the extraction of nontimber forest products (including honey, tassar silk, and butterflies) and small-scale timber harvesting to marine ecotourism and the sale of research support. Four of these categories apply to projects in the high-potential biodiversity conservation locations and three to the areas of low potential (see Table 4 in chapter IV). These projects thus cover a wide enough range to test the BCN hypothesis.

As Table 5 shows, however, less than 17 percent of the time on each grant has elapsed in 65 percent of the cases. This means that not enough time has elapsed to properly test the hypothesis. On the other hand, it means there is still time to strengthen the linkages between the enterprise, the community, and biodiversity conservation. Presumably this is the reason for the emphasis on monitoring and evaluation in the BCN approach; these activities can be used to fine-tune the core linkage in the specific enterprises and obtain generalizable results for other sites. Given the dynamic nature of the BCN team, it should be able to feed the results from the monitoring and evaluation exercises back into the projects.

As a first step, the BCN should seek to verify the assumptions in each of the business plans and help the grantees augment or strengthen the components that are weak. This can come in the form of technical assistance on those aspects that are found to be lacking. To this end, the BCN's program of field visits by technical staff should be accelerated.

Table 5. Status of Implementation Grants, as of January 22, 1996

BCN Number	Recipient	Start Date	Grant (US\$)	Disbursed (%)	Time Elapsed (%)
NI01	Conservation International (Regional)	Jan. 94	899,940	43.4	69.44
NI02	Kalahan Education Foundation (Philippines)	Mar. 94	321,190	56.7	63.88
NI03	King Mahendra Trust for Nature Conservation/World Wildlife Fund (Nepal)	Mar. 94	636,607	60.81	62.16
NI04	University of Massachusetts (India)	Dec. 94	610,404	41.26	37.84
MOU #4	WWF Asia/Pacific Program (Philippines)	Jan. 95	627,698	43.49	30.95
NI05	Appropriate Technology International (Nepal)	Jan. 95	549,995	30.81	35.13
NI06	World Wildlife Fund-Indonesia	Apr. 95	179,632	16.70	27.78
NI07	Manila Observatory (Philippines) May 95	426,798	43.27	16.67	
NI08	Research and Conservation Foundation of Papua New Guinea	Aug. 95	498,107	18.16	16.67
NI09	The Nature Conservancy (Indonesia)	Aug. 95	584,892	17.10	16.67
NI10	Conservation International (Papua New Guinea)	Aug. 95	355,487	22.50	13.89

[Table 5 continued]

NI11	Appropriate Technology International (India)	Sept. 95	571,201	17.51	11.11
NI12	The Nature Conservancy (Solomon Islands)	Oct. 95	545,372	27.50	13.89
NI13	The Mountain Institute (India)	Sept. 95	449,465	21.14	13.89
NI14	University of the South Pacific (Fiji)	Sept. 95	348,045 <sup>a</sup>	1.99	13.89
NI15	Pacific Heritage Foundation (PNG)	Oct. 95	451,738	16.60	11.11
NI16	Biological Science for the Community (Indonesia)	Dec. 95	448,430	21.18	5.55
NI17	Harvard University (Indonesia)	Nov. 95	547,560	0.00	8.10
NI18	Yayasan Dian Tama (Indonesia)	Jan. 96	466,249	21.45	2.78
NI19	Hualopu Foundation (Indonesia)	Jan. 96	300,903 <sup>b</sup>	0.00	2.78
TOTAL			\$9,819,713		

<sup>a</sup>Awarded only \$69,150 for six months. The remainder is contingent upon the development of an equitable sharing agreement.

<sup>b</sup>Contract not yet signed.

These visits and the detailed site reports that they generate will help grantees identify a fairly general set of issues that need to be addressed and their order of priority. These are the things that grantees should monitor on a regular basis. The BCN staff has the technical ability to help the grantees identify and monitor progress on these issues and to adjust the projects accordingly.

A recent BCN document, Studying the Social Dimensions of Biodiversity Conservation, presents excellent and insightful details of the strategies, approaches, methods, and resources needed to collect the required data. The evaluation team feels that the approaches described in this document should be used to develop monitoring and evaluation criteria in collaboration with the grantees, that the grantees need to be made comfortable with the underlying rationale for the monitoring and evaluation exercises, and that they need to be reassured of the usefulness of the effort. This is best done by illustrating how each element and each indicator fits back into the overall plan, but particularly into the enterprise plans.

In more than one instance, the evaluation team found that the grantees were collecting data merely to meet a requirement of the grant. This is a futile exercise. Not only does it yield meaningless information, but it places an unnecessary burden on the enterprise and reduces the probability that the monitoring process will be sustained over the long term.

The evaluation team's interactions with the grantees on the field trip and a detailed review of the project proposals also pointed to a number of general problems. These can be divided into two broad categories: those pertaining to the business aspects of implementation grants, and those connected with the monitoring and evaluation processes being introduced by the BCN through its training workshops.

## **BUSINESS CONCERNS**

The BCN needs to address several business concerns. Specifically, it needs to increase the indirect impact of the enterprise, keep enterprise costs separate from other NGO-related costs, improve management practices, keep monitoring costs to a minimum, develop "high-end" markets, relate grant disbursements to technical reports as well as financial reports, extend the three-year time span of the grants, and verify specific assumptions used in individual proposals.

### **Increase the Indirect Impact of the Enterprise**

Most of the extractive enterprises in the BCN portfolio will have limited direct impact in terms of providing employment and incomes. In most cases, the projects are small, they function in segmented markets, and the information flow is limited. Thus the proportion of the community directly affected by the enterprises is insignificant. However, the projects do have the potential to create a substantial indirect impact—through their demonstration effect and through the networking and information

dissemination that are essential elements of the BCN strategy. As noted in chapter II, the BCN is now beginning to concentrate on these activities. The evaluation team recommends that networking and dissemination be given close attention over the coming years. Not only are these factors stressed in the original BCN project document, but the overall success of the program will ultimately depend on the success of the networking and information dissemination campaigns. The ecology seminar series being undertaken by the Kalahan Education Foundation is an important step in this direction. In the long run, the awareness that this is creating will be of great significance.

### **Separate Enterprise Costs from Other NGO-Related Costs**

In many communities the costs of BCN enterprises are entangled with the costs of other NGO activities. This makes it impossible to evaluate the profitability of the enterprise. BCN site visits should be increased to help the grantees separate these costs and determine what should be charged directly to the enterprise and what should not. Enterprises loaded with these extra costs give the impression that they are not financially viable when in reality this may not be so. Since the monitoring and evaluation costs that the BCN project considers essential may already be a burden to an enterprise, it is important to determine precisely the nature of its overall costs. The BCN project recently helped the Kalahan Foundation in the Philippines come up with a more precise set of cost figures for the enterprise. This experiment can be repeated at very low costs in other projects.

### **Improve Management Practices**

Grant funds sometimes have an adverse effect on business practices. At times they encourage an enterprise to build up large unsustainable inventories of raw materials and products, or they introduce distortions that lead to inoptimal input use and resource allocation. It is only through efficient bookkeeping that management practices can fulfill the objectives of a well-defined business plan and move a project on to self-sustained and financially viable growth.

### **Keep Monitoring Costs to a Minimum**

If monitoring procedures are simple, monitoring costs will be low. In view of the clearly demonstrated benefits of enterprise monitoring—increased efficiency, lower costs, and significantly higher revenues, to name but a few—the enterprise should automatically search for the most cost-effective methods to collect the information required to carry out the monitoring function. But biological monitoring is equally important, since biological resources provide the raw materials for the enterprises. Here, too, the monitoring procedures need to be kept simple and the existing costs reduced significantly. This can

be done by involving local people in the monitoring procedures. Often the wage rates among local communities are much lower than those paid to outsiders who may be considered "experts." Monitoring costs can be further reduced wherever these activities can be made part-time assignments for local inhabitants. These are important considerations in formulating a strategy to ensure that monitoring is continued beyond the three years of the BCN funding.

### **Develop "High-End" Markets**

By the very nature of the BCN enterprises, their local markets are fragmented and ill developed. At the same time, there is a lucrative international market for their "green products." Although these enterprises could cater to the international "high-end" markets, most of them—even the ecotourism enterprises in the BCN portfolio—continue to operate in the poorly developed local markets. In most cases, they lack access to the high-end markets simply because of poor information flow. The BCN is ideally placed to help these enterprises gain access to these markets. In other cases, these markets can be reached through product development, better packaging, and improved marketing strategies. The BCN has moved in this direction in its regional office by recruiting specialist staff with a proven ability in helping disadvantaged NGOs in remote areas develop effective markets for their products. It is in the process of developing workplans that focus on these aspects of enterprise profitability. These efforts need to be given even more priority and replicated in the other countries with BCN projects.

### **Tie Grant Disbursements to Technical Reports in Addition to Financial Reports**

At present the disbursement of grants is tied closely to the submission of financial reports. The BCN maintains an effective financial tracking system and its grantees are subject to all the USAID financial controls. However, it is important to also link the technical reporting requirements to this process. With technical reporting tied to financial reporting and grant disbursement, grantees will have additional incentive to speed up the monitoring and evaluation processes.

### **Extend the Three-Year Time Span of the BCN Grants**

The three-year time span of BCN projects is far too short to assess the viability of the enterprises. Even in developed countries with integrated markets, a strong infrastructure, and easy access to information, technology, credit, and the other resources needed to establish successful businesses, it still takes a minimum of three to five years for firms to break even. Although 75 percent of the BCN projects were in existence before the BCN funding came about, their impact is almost impossible to evaluate in the three-year time horizon. Admittedly, it might not be possible to grant "cost-less"

extensions, since most grantees will have utilized the BCN funds by the end of the third year, but access to local and international sources of credit is one answer to this problem that could be explored. One form of assistance that BCN should be able to offer its grantees in the next few years is to identify sources of credit so that these worthwhile enterprises can continue beyond the stage where most are just about to come out of the red.

### **Specific Assumptions Used in the Individual Proposals That Need Verification**

The following paragraphs examine a few key assumptions of some of BCN's individual business proposals. These assumptions need to be verified now that the enterprises are on the ground, since they play an important role in the overall long-term financial viability of the enterprises. Alternatives suggested from within the business plan are also reviewed to bring attention to what may be more profitable alternatives for future enterprises. These assumptions give some idea of the sort of detailed site-specific information that the monitoring and evaluation exercise needs to incorporate.

The ATI project in India assumes much lower mortality rates for the silk pupae and much higher yields of honey for its honey production than historical records in the area would suggest. While this project is one of the strongest with respect to scientific content, it does not provide enough details or scientific information to indicate how these significant differences will come about. Yet the overall viability of the projects cannot be judged without insight into these technical rates. On the business side, the project proposes to create considerable incentives (7 percent for the distributors and 25 percent for the retailers) to encourage the marketing of its product. Given these margins, it seems worthwhile for the project to explore direct marketing. The project also calls for 150 families to act as rearers in the silk production and 200 families to participate in the refined honey production. From a purely enterprise point of view, these should be families that have the most comparative advantage in each of the activities. From an equity and social development point of view, however, they may not be the most suitable. What criteria were used in selecting these families? Will these criteria change as the project is enlarged? These are important questions, the answers to which have important implications for the financial viability of these endeavors and for the replicability of this project.

The Biological Science Club's ecotourism project in Indonesia is relying on McDonald's to assist in the promotion of its venture. While this offers McDonald's an extremely worthwhile environment-related "cause" to associate itself with, the enterprise is not being directly compensated by the multinational. It would be important to find out what McDonald's has done so far and on its own. The possibility that a profit-making multinational might ride piggy back on the public funds being put forward by the BCN on this project should be carefully monitored.

The Ngali nut oil production enterprise in the Solomon Islands assumes that production of this oil will divert production away from timber harvesting. However, it is not clear why the ngali nut oil enterprise would not be an additional source of income.

What mechanisms will enable the enterprise to create the stakeholders who will enforce the conservation/sustainable harvest of the timber? This is a central issue for the BCN hypothesis and one on which data need to be collected from the range of enterprises covered. Does the setting up of a resource-based enterprise lead to effective conservation of that and other resources?

The Hualopu Foundation's Ecotourism project in Indonesia provides an interesting example of an enterprise that is competing against others, including the government, in the supply of a tourism package. Thus this is an area in which product differentiation and effective marketing will be crucial in determining the financial viability of the new enterprise. This project, like the ATI Humla Nepal Jatamansi oil production project, is also expected to be handed over to the "stakeholders"—in this case the tourist guides and handicraft persons who will be asked to be shareholders. This process of handing over and the set of "owners" that results from the process will be important indicators of the success of the BCN effort. In developing countries with skewed distributions of power and wealth, it seems that whenever profitable assets are transferred from the public or quasi-public sector to private individuals, these end up being concentrated in the hands of the privileged few. This is not to say that such outcomes will automatically occur, but merely that this possibility should be carefully monitored as this project and others like it develop.

The Humla Nepal Jatamansi oil project appears to be a successful example of community participation in an effective conservation scheme that involves setting up rotations to ensure that the harvested jatamansi is the right age and that the shrub is not overharvested. Although the direct labor employed in the processing activity is small, a larger number are involved in the collection of the shrub. At the heart of most successful rural development programs in developing countries are charismatic personalities with vision, drive, and the ability to motivate people to socially correct behavior. The BCN portfolio of biodiversity conservation projects also has its own collection of charismatic personalities. In the case of rural development projects, however, the inability to replicate successful projects is generally attributed to the inability to clone the project leader. While little has been done in rural development projects to use these leaders as trainers and motivators, in other projects the BCN offers just such an opportunity. The BCN should explore the possibility of using these successful project leaders in its networking and dissemination program.

While community forestry has had mixed experiences in different parts of the world, the BCN experience in the Chitwan area of Nepal has been extremely successful. Though expensive, the rosewood plantation component of the Chitwan project has brought the community together in its effective management of the plantation. The BCN has funded a community forestry management project with the Harvard University group in Indonesia; the success of this project can "lead to policies that ease the turnover of abandoned concession areas to community organizations and gain support in government circles" (p. 25). This is an area in which the cross-fertilization of BCN projects can lead to greater success. The experience in Nepal can be used as a learning model in Indonesia.

Among other things, the Nature Conservancy project in Indonesia will produce

honey. At least three of the BCN projects are producing honey or jams, and this introduces considerable economies of scale. These projects can be assisted at very little cost with information on how to market these products in the United States and Europe. If these markets are assured, then the financial viability of these projects is assured.

## ENTERPRISE MONITORING

BCN's Guidelines for Monitoring and Evaluation of its funded projects provides a description of the common set of questions that grantees need to address to assess the biological, social, political, and economic impacts of their projects. This description has been widely disseminated and forms the basis for BCN's monitoring and evaluation workshops, three of which have been held to date. This publication covers biological monitoring, sociopolitical economic monitoring, enterprise monitoring, and overall project evaluation.

In view of BCN's diverse enterprise types, project locations, and participant backgrounds, the program is unable to develop a recipe of guidelines for monitoring and evaluation. Furthermore, the communities' own specific information needs have to be merged with those of the project and these two combined with the overall needs of the BCN program to generate an information base that can be generalized for the good of the local population. In the initial proposal, each project was to be asked to draw up detailed monitoring plans that would outline the specific questions that needed to be asked, the methods that would be used, the resources available to do this, how data would be collected and handled, and what results were expected. It became clear over time, however, that many groups had difficulty in developing comprehensive monitoring plans. There were a number of clarifying queries as to what was expected in terms of the monitoring and evaluation work. As the BCN refined its thinking about the kind of analysis needed to evaluate the core hypothesis, it became apparent that comparability and compatibility needed to be ensured across the monitoring efforts to facilitate this analysis.

In the economic context of cost-benefit analysis at the local level, the guidelines are grouped into four set of questions. According to the BCN, the important questions here are: What are the important economic cash and noncash activities for various social groups within the project area? Is there seasonal variation in these activities? How are these activities changing over time? How dependent are community members on internal and external subgroups for their income? What cash expenses do people in the community face?

In explaining the purpose of these questions, the guidelines state that answers are needed to determine the economic baseline in the area so that it is possible to assess the impact of the project on the local economy. Questions about dependency are posed to determine the community's dependence on external agents such as moneylenders, store owners, resource buyer traders, and other "big people" in the community or on outside sources of employment. These baseline economic data can be collected through a combination of household surveys and discussions with knowledgeable people in the area.

At a minimum, such baseline data should be collected the start and the end of the project.

The second set of questions deals with the magnitude of benefits and costs. What types of direct and indirect benefits and costs are communities and other players receiving from the BCN-supported enterprise? From other project activities? How do these benefits compare with those of other economic activities in the project area, from both a household and community perspective?

These questions relate to information required to verify the second element of the BCN core hypothesis, namely that enterprises will contribute to conservation if they provide benefits for a community of stakeholders. These benefits can be financial (e.g., money, shares of stock in an enterprise) or social (e.g., improved tenure rights, maintenance of traditional beliefs), or environmental (e.g., watershed protection). The guidelines advise that such analysis should be conducted in both quantitative and qualitative terms using a with- and without-project framework. The guidelines also recommend that the initial benefit-cost analysis be conducted during the early stages of the project and that it be updated over the life of the project.

The third set of questions asks who will receive these benefits and bear these costs, both within and between households? Do community members and other actors consider the distribution to be fair? How are conflicts resolved? The purpose of these questions, according to the guidelines, is to assess the overall magnitude of benefits flowing into the community and the distribution of such benefits. To answer the first question, the guidelines advocate the use of benefit cost-analysis from the perspective of various subgroups within the project site. The second question can be answered in surveys and through participatory rural appraisal conducted with community members. This analysis should also be conducted during the early stages of the project and then updated over the life of the project.

The fourth set of questions relates to changes in overall welfare. How is overall community welfare changing over time? How is the welfare of project participants changing in comparison with the welfare of community members not participating in the project? What are the causes of these changes? The guidelines propose that the impact of the project on the welfare of the community member be assessed through answers to these questions. The guidelines state that changes in overall community welfare can be measured by looking at quality-of-life indicators and that these will vary greatly from site to site, and that they need to be locally determined. The examples used in the guidelines include literacy incidents and prevalence of disease, access to safe water, nutritional status, food consumption, and proxies for income, such as type of house construction and ownership status. These indicators are to be measured through surveys and interviews and are expected to be collected at least at the start and the end of the project.

The four sets of questions are complex and generally beyond the scope of skills available in most communities living in remote threatened environments. Sophisticated enumeration of the entire population of the area (and a basically multistage and stratified sampling framework) is required to capture a representative sample for such analyses. Attempts to collect such data in the BCN project areas have not been too successful, as demonstrated by the experience with collecting basic income and expenditure data in the Kalahan area of the Philippines. The evaluation team recommends that the combination

of strategies outlined in the recent BCN document Studying the Social Dimensions of Biodiversity Conservation be used to collect information that might shed light on the success of the BCN paradigm. It should be remembered that elaborate methods of collection may be useful where precise data are available, but they can also be of little value where such data are not available. Simple methods and basic data are sometimes perfectly adequate. The evaluation team strongly recommends that the BCN assess analytical techniques and data needs in the light of its analytical objectives and the detailed feedback obtained by the BCN from its monitoring workshop participants. The evaluation team's recommendations regarding each of the three elements in the core BCN hypothesis should also be given close consideration. This would be a worthwhile contribution not only for the BCN grantees but also for all those in the conservation community struggling with similar issues.

The guidelines for monitoring and evaluating the enterprise are divided into three groups. These cover enterprise ownership and structure, the financial status of the enterprise, and the enterprise's successes and constraints. In this case the questions are straightforward. However, they assume that an outside person or agency will be conducting this evaluation and that such persons will have a level of business education that enables them to translate and record information on standard economic and business concepts. Another concern is how this information can be used by the projects in refining and fine-tuning their business plan. While the answers to each set of questions indicate what information the questions are supposed to seek, this module of the monitoring and evaluation document would be greatly improved if the grantees were shown how to use this information to increase the efficiency of the enterprise.

## CHAPTER VI

### SOCIAL ORGANIZATION AND COMMUNITY PARTICIPATION

As noted throughout this report, several basic assumptions of the BCN paradigm concern local participation. One is that community members will participate in the development of enterprises that utilize natural resources and in the conservation of those resources when they derive significant benefits from these activities. They will be expected to assist in the biological monitoring of natural resource use as related to the activities of the enterprise and thus be in a position to (a) process and interpret that information regarding risks to the raw material base and (b) identify possible actions to mitigate risks to the resource base. These stakeholders are then assumed to have the organizational ability to manage the resources in a sustainable manner and to protect the resource base.

A second assumption of the paradigm is that the natural resource based enterprise provides significant benefits to community members. In part, these are direct benefits, in the form of domestic consumption goods such as fuel, building materials, food, fodder, and other useful raw materials and cash income from the sale of such products to individuals and households. Some, however, are indirect benefits; these consist of common social goods such as health and educational services and community development activities resulting from enterprise profits channeled through an NGO, local community body, or the investments of an enterprise/producers group.

Third, it is believed that these beneficiaries can effectively lobby, make their concerns known, and have them acted upon by enterprise-related organizations, including production management, marketing networks, and consumers, as well as other institutions controlling access to and utilization of the natural resources (e.g., forestry departments) to protect the resource base from internal and external risks.

Participation is a means to a range of ends. In this paradigm "people power" signifies the capacity of people not only to benefit from livelihood activities but also to take part in setting priorities and determining how subsequent actions may be taken, especially those that will conserve resources: in other words, it signifies the capacity to ensure a sustainable harvest, protect and maintain the habitat, protect species, and conserve biodiversity.

Since participation permeates the BCN paradigm, support for this concept should be a central concern of all actors and activities. The social scientist can play an important role in this regard through innovative ideas and activities to encourage participation. She can assist, for example, in the dissemination of vital information on participation, as she

did in distributing copies of the PLA Notes, Notes on Participatory Learning and Action, Critical Reflections from Practice (October 1995) to BCN project partners.

Organizational structures must allow for the wide circulation of information to enable local people to set their own agendas, define their priorities, and play a more prominent part in decision making. The BCN staff meetings in the Manila office, for instance, follow a participatory format with staff taking turns facilitating open discussions.

In addition to supporting participatory processes, the BCN recognizes the importance of measuring this aspect of the implementation activities. The BCN 1995 Annual Report highlights participation as an incentive for conservation and gives high priority to tracking forms and levels of participation in relation to various project factors.

### **SOCIOECONOMIC MONITORING**

The RFP stipulated that proposals eligible for BCN grants must present plans for sound biological, socioeconomic, and enterprise project components; link conservation of biodiversity to local economic development; attempt to meet the needs of applied research geared to conserving biodiversity linked with economic and social development; embody the collaborative approach encouraged by the BCN program, including participatory design and implementation with intended beneficiaries; and address issues related to protecting intellectual property rights. Clear BCN ethical guidelines were provided with each RFP.

The RFP outlined very broad and ambitious objectives for the socioeconomic component of BCN project grantees:

- Socioeconomic components should be designed to gather, assess, and develop the social, economic, and cultural information necessary to ensure the sustainable use of resources and the conservation of biodiversity, and to develop appropriate methods and the institutional capacity for conservation and the enterprise.
- Social analysis is necessary to determine how local people use biological resources and why, what local tenurial systems people have developed to share and protect the resource base, and what conditions in local people's lives promote patterns of use that deplete or conserve biological diversity.
- Cultural research should identify the locally valued benefits that could be enhanced to support improved local management of biodiversity.
- Social analysis may also identify policy constraints to sound resource management and local empowerment.
- Economic research should identify forces leading to the loss of biodiversity within a region or village, determine the economic principles operating in cases

of successful development and conservation, and test economically viable mechanisms for slowing resource depletion while stimulating the conservation of biodiversity.

To assist in meeting BCN's socioeconomic objectives, grantees were provided with copies of "Guidelines for Monitoring and Evaluation of BCN-Funded Projects: A Description of the Common Set of Questions that Grantees Need to Address to Assess the Biological, Social, Political, and Economic Impacts of their Projects."

The monitoring frameworks of biological, socioeconomic, and enterprise questions presented in the 1994 Annual Report were intended to serve as a template from which communities could select questions relevant to their situation and needs. That report provides yet another set of suggested issues for projects to track. Unfortunately, these lists are slightly confusing because they lump various questions together. Core questions of concern in running an enterprise based on natural resources (e.g., questions about monitoring the raw resource supply that would provide the basis for a practical, useful monitoring system) are often mixed in with questions about impact evaluation and the conditions under which enterprise-based approaches can contribute to biodiversity conservation, as well as higher level questions related to participation in community decision making.

In June 1995 the BCN social scientist completed an informative review of research methods, "Studying the Social Dimensions of Biodiversity Conservation: Strategies, Approaches, Methods and Resources," which includes several useful examples, regarding methods that might be appropriate in the BCN context. In addition, monitoring and evaluation (M&E) workshops have been held in Bangalore and Los Baños to give project grantees assistance on formulating an explicit conceptual model of the project and on the general uses of monitoring, but only limited help was provided with the "nuts and bolts" of setting up a functional monitoring system. Workshop participants identified as a key constraint "difficulties in setting up sustainable monitoring systems, particularly simple monitoring techniques that require very limited resources and are useful to local communities" (Final Report on the BCN Monitoring Workshops in the Philippines, p. 4).

BCN grantees are now in the process of drafting or revising M & E plans which are being reviewed by BCN staff. At the same time, BCN staff in Washington are preparing M & E developmental histories for each of the 20 implementation projects, along with files tracking all correspondence on this subject.

### **Project Data Collection and Utilization to Date**

Projects that received early implementation grants have already collected some socioeconomic baseline data to address the concerns outlined in the RFP and monitoring guidelines, in many cases without the direct input or guidance of social scientists. The projects visited by the evaluation team showed almost no evidence of these data sets having been analyzed or used.

One exception is the B. R. Hills project in India, which built on available data concerning the extraction of nontimber forest products. Research carried out by professionals has been distributed to the professional community. However, there is limited evidence of any sharing of this information with the grassroots community.

Another project that has collected socioeconomic data but not analyzed the information is the KEF project in the Philippines. It carried out a census of the population living within the area covered by the NGO to track the health of its population. Data on household income and natural resource utilization have also been collected from readily accessible households that harvest products for the enterprise activity.

KMTNC/WWF in Chitwan carried out a large survey of almost 1,000 households in which the data were provided mainly by women, who happened to be the ones at home. A person involved with this project has been trained in data entry using Quattro Pro spreadsheet software at the Research Center, but he does not know how to manipulate the information, construct indexes or composite scores, or produce correlations to summarize data for interpreting and utilizing the information. Census data were also collected for 53 hotels and lodges, as well as information on tourist guides. The questionnaire for the tourist guides is included in Technical Report # 2, but without documentation, frequencies, or interpretation. The census of 53 hotels and lodges, which produced data having the most immediate potential use, was conducted in February and March of 1995, but no analysis was being done or found on site. WWF has focused on developing a GIS system that tracks preliminary rhino-poaching data over a number of years, but the rudimentary system was not in evidence at Chitwan Park headquarters or the Research Station and did not appear to be used. No one interviewed at the Chitwan site had the capability to update and add information to the GIS database. None of the additional biological monitoring information on bird species or vegetation or the social data, including the location of tourist lodges within the park or populated centers in the buffer zone, has been incorporated into the GIS data presentations. Technical Report No. 2 dated 12/30/95 provided three GIS maps; they indicate rhino-poaching hotspots, habitat zones of the BCN project study area, and village development committee areas on the Park's northern border. The names for computerized fields (some items omitted from the data processing) from the Natural Resource Use Questionnaire and marginal frequencies were published in a less than optimal format by Wards for two of the Village Development Committee areas with no accompanying interpretation. No copies of this technical report were available at the Chitwan research site.

In August 1995 the BCN recognized the need for technical assistance in the area of M & E and provided KMTNC with a draft TOR for a socioeconomic monitoring and evaluation consultant. It also provided for a review of current socioeconomic M & E systems, analysis of key indicators of data collected in year one, and the training of key KMTNC counterparts to design socioeconomic M & E data collection methodologies. Counterparts were also to be trained in stakeholder analysis and ways to increase participation in project design and implementation.

Although not explicitly mentioned in the draft TOR, counterparts should be trained in techniques of analyzing data and utilizing information, as well as in data

collection and entry into databases. Emphasis should be placed on linking information—for example, on tracking areas and incidences of rhino excursions into agricultural land and on the actions taken by residents to protect against the destruction of agricultural resources in relation to poaching incidents. Information about levels of income and benefits accrued from ecotourism should also be introduced to track differential responses.

A stakeholders' group from the park and buffer zone has been organized providing a forum in which the monitoring information could be initially discussed.

CREST, a Kathmandu-based consulting firm, has now been contracted by KMTNC to develop a carrying capacity study and is utilizing some of the available information for that report. Information about other baseline data sets collected by BCN projects to date is being organized in M & E files in Washington.

The BCN should take several steps to strengthen socioeconomic monitoring in its projects. First, it is imperative the emphasis be placed on the "intervention." The development of enterprise/livelihood activities needs to be linked to natural resource management and a simple, functional monitoring system which will link the enterprise activities and the conservation of the natural resource base.

Second, the utilization of M & E information should be highlighted. As the BCN Guidelines for Monitoring and Evaluation clearly point out, "Monitoring is of no use unless the results of the monitoring efforts are used to revise and improve the overall project being monitored" (p. 3).

Third, the level of local "ownership" of the enterprise and project activities should be strengthened through community involvement in the monitoring process. Although the BCN projects are community-based enterprises, it appears that many of the activities have been initiated by researchers from the outside in conjunction with a small number of NGO leaders (as in the B. R. Hills project).

Once the monitoring of the enterprise "interventions" has been institutionalized, changes can always be made in monitoring indicators and formats as experience teaches what is more useful or practical. Attention can then turn to evaluating the approach and impact of the enterprise with respect to biodiversity and understanding the conditions under which participation in benefits from such livelihood activities can promote environmental awareness and conservation activities.

## **COMMUNITY-BASED MONITORING**

The BCN needs to take several basic steps to carry out community-based monitoring that emphasizes local analysis by local people.

### **Participation Baseline**

The first step is to establish a baseline of parameters of participation to determine

the extent to which communities are participating in project implementation. Benchmarks should relate to the level of local participation in the following natural resource and livelihood activities: making decisions about BCN project activities (e.g., the degree of grass roots initiative in designing the project, monitoring, and managing the project activities); biological monitoring and decision making; and livelihood/enterprise production, monitoring, and decision making. It also needs to document the extent to which the local community benefits directly from the enterprise and/or conservation (who, what, and how much), and indirectly from the project's social impact (on education, health, public infrastructure). Another important factor to consider is whether community members perceive the importance of maintaining the natural resources, based on their cultural/historical ties, concern for general well-being (including spiritual and physical health and economic gain).

The BCN also needs to conduct a critical review of participation in economic benefits to determine who benefits from the activities it supports. Thus far, it appears that in some cases large benefits from donor funds to develop enterprise activities, or monies from the livelihood activities themselves, may accrue to and be distributed by a small number of professional and managerial persons with access to positions of power and decision making while only very modest benefits from the natural resource based livelihood activities, such as gathering the raw materials, are enjoyed by a larger number of participants. If resource collection activities provided benefits prior to the BCN activities—as in the case of amla gathering and marketing through profit-generating LAMPS cooperatives in the B. R. Hills—such activities are not likely to provide significant gains in income or resources for domestic use. The BCN could suggest ways to expand economic participation. For example, it could look for ways to enable more local people to engage in value added activities such as amla processing, drying fruits for local snack food, or producing condiments as a home-based activity as is done by the WEAN cooperative in Nepal. According to the 1990 monograph on the Soliga, women in the B. R. Hills used locally available materials to roll about 2,000 sticks of incense per day in their homes.

While many of the BCN enterprise operations do not appear to be directly generating profits at the current time, the organization of the enterprise's profit-sharing plan to benefit local workers and the larger communities should be documented at all sites. Is the enterprise worker-owned and operated, privately owned and managed, community-owned but privately managed, NGO-managed? Some sites have begun to collect this information.

Where enterprise activities are imported from the outside and are not based on traditional, ongoing livelihood activities, it is important to emphasize community "ownership" or involvement through monitoring. This can be done by developing simple, useful, unobtrusive, and routine monitoring systems. The systems should enable people who are not necessarily literate to keep public records while providing institutionalized channels for discussing interpretations and implications of the data, making decisions, and improving project and enterprise-related activities.

The Los Banos workshop report indicated that BCN staff found that "the workshops helped create understanding and ownership of the project by local staff who

had not been in on the design of their own projects." (p. 13) One of the activities listed in a Conservation International draft M & E plan (9/17/95) was to "organize groups and inform them of what is the most suitable enterprise for them and advise each group to set up these suitable enterprises."

In the B.R. Hills project, the social worker organized meetings to explain the project objectives and to convince the residents of the connection between local residents and the enterprise. The problem of finding ways to demonstrate to the Soligas the flow of the extracted products to the enterprise and to the generation of profits and the flow of profits back to them was included in the January 1996 draft of the project's Annual Report. "We need to demonstrate that the viability of the enterprises is in their self interest and linked with the sustainability of extraction."

In its midterm questionnaire, the ATI Humla project mentions the need to "turn control and ownership of community common property back to the community." A plan for restitution is subsequently documented in a technical report. A review of the status of control and ownership of BCN-supported community based enterprises and systematic presentation of this information would be useful.

What is the relationship of the NGO to the communities? Will the NGO always be there providing leadership, management and development? Or is the NGO carrying out punctual development activities for the life of the grant with the expectation that the community and enterprise will continue on their own at the end of support period? Is the intention to leverage funds to continue support and management for a longer period?

A data collection schedule should be developed to benchmark the level of organizational participation. Project managers may be able to describe in both qualitative and quantitative terms the involvement of local community members and livelihood participants in benefit distribution from routine records on natural resource extraction, enterprise profit distribution, and BCN grant utilization. Investment in human capital development should be also tracked.

The monitoring plans being developed should be evaluated in terms of the type and level of involvement of grassroot community members as well as other stakeholders. Monitoring activities under way should be scrutinized to see how and by whom the information is being used.

### **Increasing Community-Level Monitoring and Data Utilization**

Once the current level of participation (or the development of participatory involvement over the life of the NGO or BCN support period) has been described, the BCN staff—in conjunction with the NGO and community—may find it desirable to focus assistance with monitoring efforts on developing community level participatory monitoring including the utilization of information gained to guide project interventions, enterprise development, and community actions. These should be simple, enterprise-centered efforts that provide routine and useful public information to the larger community, not just to project managers or community leaders.

The BCN has identified the lack of practical tools for designing and implementing

information, collection, analysis, and use systems for conservation and development projects as a key issue for implementing monitoring in the context of the project cycle. (1995 Annual Report, p. 34). This problem could be addressed with the aid of experienced consultants skilled in working with local people and in simplifying biological monitoring techniques. In addition, publicly accessible systems for tracking inputs and output would greatly assist in record keeping. Yet another important step would be to contract community development practitioners based in the region to establish communication and decision-making institutions so as to strengthen conceptual linkages and data utilization among a wide variety of stakeholders, but with the primary emphasis on local communities and community resource users groups.

### **Building the Capacity for Influencing Decision Making**

The BCN has identified the importance of access to and control of resources as a key policy issue and practical concern. Thus a concerted effort should be made to set up channels that would give communities direct access and control as well as a stronger voice in decisions connected with resource management.

### **Utilization of Available Baseline Information**

Some projects have developed community sketch maps showing the use of natural resources. Other BCN projects have conducted household surveys to determine how local natural resources are used and to estimate their direct benefits. At least one project (KEF) has carried out a census. Much of this information has not yet been analyzed or put to use. The BCN needs to help communities analyze this information so that they can understand its implications for ecological systems.

For example, the data from a census or large-scale survey can be used to construct human resource pyramids with overlays of natural resources utilization and participation in enterprise activities. These graphics could then be used to discuss or develop simulations of population pressures and thus identify the need for increased consumption goods and employment generation. The human resource pyramids can also be overlaid with education and literacy statistics to provide a platform for the discussion of human capital development needs.

### **Summary of Key Recommendations for Benchmarking and Increasing Participation in Community-Level Monitoring**

1. Describe the primary dimensions of participation in natural resource and enterprise monitoring, management, benefit distribution and decision making to establish

the level of involvement of the local stakeholders in the BCN projects.

2. Assess the need to increase local participation in these activities and work with local NGO partners and community residents to develop strategies and plans to increase the levels of participation, to institutionalize the utilization of information in decision making, and to improve chances for the sustainability of activities after BCN support ends.

Also, focus on establishing community enterprise-based monitoring systems that are institutionalized and sustainable. These monitoring systems should be simple, useful, unobtrusive, and directly linked to the enterprise-based resources and operations, and they should provide public domain information that is routinely used by enterprise participants and larger community supporters and beneficiaries to identify and resolve those problems.

3. Build the organizational capacity to use information for decision making on a routine basis by working through open community forums and elected representatives with oversight and management skills. Develop a knowledge of available resources and the capacity to tap them and engage in lobbying.

Develop the technical capacity of a number of persons, including women (not just a single person who can become a gatekeeper to information), in leadership, financial accounting, enterprise management, marketing, lobbying, negotiation, and other key areas. Also help develop the technical skills required for the analysis, presentation, interpretation, and consideration of the implications of the available socioeconomic data and of linkages between natural resource utilization and maintenance and enterprises dependent on biodiversity conservation.

Although there should be a high level of local participation in data analysis, the BCN should concurrently continue to help communities identify appropriate statistical software and to provide training in its use where computer systems are being used for data entry. Here, it is vital to train a number of persons, rather than a single computer guru, to develop univariate frequencies and graphs such as human resource pyramids, contingency tables, and bivariate correlations utilizing actual data collected by each project. Before employing a computer, however, it is usually preferable to start with a paper-and-pencil analysis of a small data set on site. Simple examples that can be manipulated by each person lead to a better understanding of the situation and less dependence on sometimes tricky technology.

Indigenous understanding and the already collected data can be used to foster ecological awareness in a number of audiences: primary and secondary school children, other community members (including women and youth groups), and traditional leaders.

4. Another important goal is to develop linkages. The necessary steps here are to identify key stakeholders and institutions related to the well-being of the natural resource enterprises; create opportunities to build regional institutions and lobbies; provide experiential, hands-on leadership and negotiation skills; and strengthen existing institutions and develop new ones to work with other communities and groups with similar interests to tap local resources and develop positive working relationships with sectoral and local government services (e.g., forestry, parks, and local development committees).

In addition, encourage community enterprises (including users or producers groups) and community advocates to serve as models and resources that provide technical assistance to others. For example, communities in B.R. Hills where LAMPS are functioning help neighboring communities develop mechanisms for collecting and marketing natural resources products where no cooperative organization is currently functioning).

5. The BCN should expand its collaborative relationships with selected regional social science organizations that are experienced in participatory methods and have local institution-building skills in order to work with NGOs and local community constituents employing monitoring data and other available information in decision making.

The initial support here should be for developing collection techniques and methods of displaying information in graphic and easily intelligible form. The techniques should be simple and should not take time away from enterprise activities. A public chart at the delivery site could be used to record each time a batch of product is presented for purchase by the enterprise. This provides a public record and accountability for the purchase of key raw materials from the local resource base. For example, symbols could be devised to record the amount of product harvested on a given day or week, the area the harvest came from (perhaps refer to a sketch map of the community region), and who did the harvesting. Such record keeping would provide data that could be used in assessing direct economic participation as well as in biological monitoring of the harvest.

Households may be able and willing to maintain simple tallies or graphs of the domestic consumption of raw materials—such as fodder—for sample periods throughout the year. Students could be involved in this participatory monitoring of their household's use of local resources. In Chitwan, for example, permits for harvesting products such as grasses and, by common consent, firewood can be correlated with data from a small sample of permit holders and other harvesters to measure the amount of product harvested and thereby track estimated yearly changes in raw materials extracted from a zone. It is essential that the community understand and perceive the utility of collecting such information. It must be routinely combined with other data and discussed to make clear the linkages and implications for the sustainability of the resource base.

Data collection may reveal interesting patterns to a local "researcher" but unless the larger community can act upon the findings, it is not informative. Thus participatory discussions should be held periodically to examine the information relating resource harvesting to changes in the availability of that commodity and the possibility of developing associated natural resources. Such discussions can take place at community forums and with focus groups ranging from students to harvesters and elected decision makers. These meetings should strive to achieve local understanding and to clarify local perceptions of the implications of information rather than present a lecture by a researcher docent.

The social scientist, community development practitioners, and other technical assistants should seek out ways to take the available data into account in both short- and long-term decision making. They should also identify opportunities to utilize existing information as the basis for assessing the long-term consequences of demographic pressures and activities. A question that might be raised here, for example, is what if

twice as many elephants were to be utilized in a national park or there was a 10 percent increase in rhinos? What are the perceptions of the possible consequences? Some BCN projects already have ample data available—from censuses and large surveys—but the data have not been systematically analyzed or made use of by the local NGO or the communities. It should be relatively easy to help local participants, including school-aged children, to develop human-resource sex/age cohort pyramids with paper and pencil and hand tabulation. (While computer systems exist in several projects, the operators sometimes tend to hold up the flow of information. Things often move faster when local community members directly manipulate and review the data, and then use the skills and resulting information in other areas.)

The human resource pyramids immediately make clear that a large proportion of the community population is female and a great many community residents are young. What are the implications of these factors for future resource use? What are the alternatives for meeting the needs of this population in the coming decades? To find the answers, communities should be encouraged to experiment with simulations. They could draw zones on the ground to represent the area utilized by local communities and have people stand in these areas. To envision the situation 10 years hence, they could ask additional community residents to stand in these community zones and continue in this manner for the succeeding decades. As the crowding becomes apparent, they can discuss the consequences for land and resource utilization of the increased population. Turning to the resources themselves, they could discuss the growth rates of trees and the utilization of fuelwood. How fast is fuelwood being consumed? How fast do trees regenerate? If the rate of use does not change, what would the consequences be? What changes might meet the needs of the population and bring these requirements into balance with the rate of natural resource regeneration?

These simulations and the available data could be incorporated into lessons for use by teachers and environmental education workshops. Posters could remind people of the ecological relationships and concerns.

## **COMPARATIVE ANALYSIS OF ISSUES KEY TO SETS OF PROJECTS**

Analytical topics of high priority identified in the BCN's 1995 Annual Report focus on understanding potential project impacts. Analytical discussions should involve NGO partners to add further insights, help clarify interpretations, and find ways of increasing linkages between environmental conservation and opportunities for enhancing livelihoods and local levels of living.

One means of achieving such understanding that has not been specifically recognized by BCN's model is environmental or ecological education as explicitly promoted in several projects. The BCN has reportedly made a conscious decision not to fund environmental education components of projects. Nevertheless, the effect of

activities designed to increase awareness of environmental conservation attitudes and practices apart from participation in enterprise development needs to be measured. The BCN has indicated that projects have been requested to document this effect. Summary descriptions of information, educational activities, and communication strategies used by all of the projects would provide a useful overview of the level of input in this area and could lead to an exchange of IEC (information, education, and communication) techniques through the network.

Projects such as KEF are developing numerous inputs through the local school and community workshops. The BCN could provide grass roots audiences with information about materials available and could conduct a study tour to generate creative ideas. This approach would be particularly beneficial to ecotourism, where the primary emphasis could be on providing innovative conservation education for a wide variety of visitors.

It is desirable to exchange experiences and materials developed by project partners in the area of ecological education and awareness, including materials relating to environmental health to take a holistic approach to environmental linkages and the well-being of populations. One useful reference manual that the BCN could share with partners is Jan Rozendaal's Handbook for Vector Control: A Practical Guide to the Prevention and Control of Vector-Borne Diseases in the Community published in 1994 by the World Health Organization.

### **IMPACT EVALUATION (PARADIGM OR HYPOTHESIS TESTING)**

Ostensibly, the BCN does not currently have an explicit conceptual model that codifies the variables mentioned in the monitoring guidelines or pieces on participation. Such a model would be extremely helpful in specifying how the information the projects are requested to collect will be used to test the BCN-linked hypothesis. The following paragraphs offer some other suggestions for testing the BCN paradigm.

1. Continue to elaborate an explicit conceptual model of the BCN paradigm by reexamining the model presented in the 1996 workplan. Start by specifying the variables (and subsequently the indicators) for each of the three key dimensions (biological, economic, and social) and then pull together and incorporate them in a diagram positing relationships of different factors identified in the monitoring guidelines, the section on participation in the 1995 BCN Annual Report, and the "Significant Factors for BCN Analysis" laid out in a draft analytical framework (see Memo from BCN Social Scientist of 1/9/96). The purpose is to construct a guide for testing the core hypotheses and for identifying key intervening and contextual factors.

2. Design an analytical framework that can build on several strategies; the emphasis here should be on involving NGO partners as identified in the FY 1996 workplan Objective D.: "High-Quality Analyses." In addition to compiling case studies and qualitative analyses of cross-cutting issues, try to expand upon existing instrument models to develop tools for cross-project comparisons to measure identified variables, typically with ordinal level measures. Use appropriate summary techniques such as factor

analysis as required to combine a number of indicators into a basic set of dimensions for testing the model.

Develop general benchmarks for each variable. These measures can be used to determine each project and community's position along a continuum for each identified component of the three key dimensions.

The following are some examples of composite indexes based on benchmarks or judgement ratings for comparative analysis of units from different contextual environments:

- Measures of seven dimensions, including participation at the community level, are specified by Save the Children in Planning and Monitoring Tools, Community Management and Participation. Measuring Institutional Development, report of the PACT Workshop, Illinois State University, Normal, Illinois, July 18-20, 1990.

- In Intermediary NGOS: The Supporting Link in Grassroots Development (1992, Kumarian Press), Thomas F. Carroll suggests six dimensions and criteria for evaluating the performance of NGOs.

- The Development Alternatives, Inc. (DAI) empirical study of rural development projects in ten countries devised a self-help index as a measure of group participation, formal or informal, that complements the project's economic activities. The DAI study created 3 additional indexes: (1) to measure agricultural knowledge, (2) a self-sustaining index based on recapturable project costs, income increases, and self-sustained benefits and domestic support for the development project to suggest whether project benefits could continue in the absence of subsidies, and (3) a replicability index that takes into account the uniqueness of the environment; past history of projects in the area; the social, cultural, and economic relationships that have evolved over time; the uniqueness of project leadership; and the level of motivation and managerial administrative talent demanded by the particular development approach. These composite indexes are based on ratings by project staff familiar with the projects (see Elliott R. Morss, John K. Hatch, Donald R. Mickelwait, and Charles F. Sweet, Strategies for Small Farmer Development, vol. 1 [Westview Press, Boulder, Colo., 1975]).

3. Develop well-documented case studies of each project's interventions and contextual conditions using as a guide the BCN conceptual model developed in conjunction with monitoring guidelines. The BCN is currently amassing a large amount of documentation. The accessibility and utility of the myriad of information from proposals, technical reports, field trip reports, and the like can be improved by developing a systematic classification system along the lines of the Human Relations Area Files (HRAF), a tool long used by anthropologists to facilitate comparative analysis.

To assist in designing the database and entering data from reports and site visit forms based on the FY 1996 workplan, the BCN should develop a text-retrieval capacity

utilizing WordPerfect macros. With this tool, it would be able to locate and compile textual materials relating to key BCN concepts. These concepts will be made explicit in the conceptual model based on Monitoring Guidelines and materials in the 1994 and 1995 Annual Reports. Much of the work of retrieving, organizing, and analyzing information could be done by the Manila-based staff under the guidance of the BCN senior social scientist once she was relieved of administrative duties.

The BCN should seek innovative ways to promote self-descriptions and ownership of information by interested NGOs and communities. For example, it could offer minigrants through NGO partners to involve teachers as research coordinators. They could work with students from the communities during summer break to develop Foxfire - type descriptions of knowledge, attitudes, customs, and practices regarding natural resource utilization and management. The BCN could provide general guidelines on the key questions to be addressed, accompanied by a small stipend to cover research time and the costs of equipment, such as a simple camera, film, film processing, and the costs of local printing and publication of the studies in the most readily accessible local language in addition to an English translation. Place a copy of the material in a "time capsule" to be reviewed ten years hence.

"The Soliga. The Tribe and its Stride" provides an example of this type of general descriptive study. In the Philippines, communities are developing historical perspectives for ancestral claims applications, and such studies would be useful for many claims to land tenure or access to natural resources. In addition to a historical perspective, it is important to briefly describe what is going on at present in terms of the existing natural resource base, utilization of key commodities, decision making, and the impact on people's livelihood. People's participation should be underlined.

4. Involve NGOs in self-assessment of "success" using benchmarked indexes for the three key dimensions. Once a well-functioning, enterprise-based monitoring system has been established and existing materials have been classified on the basis of already identified dimensions, the NGO partners should be involved in interpreting data and working with the analytical framework to "test" the paradigm. A workshop for this purpose should be held as the time approaches to terminate the implementation grants of the majority of the partners—tentatively in the last quarter of 1998. NGO partners should be involved in adapting and applying benchmarking indexes based on their experiences and judgment to rank communities, NGOs, and/or projects along a continuum in terms of "success" achieved to date in the biological, economic, and social areas.

The BCN should recognize and attempt to assuage or mitigate the potential tension between the role as interventionist-seeking to make the connection between enterprise and biodiversity conservation—and the need for objective self-evaluation in a comparative research setting in order to estimate levels of success, identify constraints, and determine the lessons learned.

5. Undertake an end-of-project community assessment to determine in what ways and to what degree the project has been successful and systematic identification of related factors. The necessary data should be collected systematically at the community level in conjunction with BCN partners with the assistance of key informants and participatory assessment of the three key components of the BCN paradigm in addition to important

contextual factors. Surveys of this type are quick and inexpensive in comparison with large-scale household surveys. They should be carried out at the community level to provide local inputs to the evaluation and to provide comparative data for a large number of units. Because projects typically involve a number of villages, the universe of sites experiencing the BCN intervention is large enough to explore numerous relationships. Neighboring villages that were not included in BCN project activities can be included as "controls." In the absence of comparable baseline data for all units, recall data from before the project and judgment comparisons would be used to detect perceptions of change over time.

In addition to the intervention dimensions and contextual variables identified in the BCN monitoring guidelines and other documents, the analytical framework should include levels of community differentiation/specialization indicating access to knowledge and livelihood opportunities, social cohesion and conflict, marginality/centrality in relation to market and administrative centers, and linkages with key resource persons and organizations, including local government and sectoral support institutions. These community-level factors often have important contextual impacts and can be easily measured with a community level instrument for collecting data (see, e.g., Frank W. Young, ed., Informant Survey Research [Ithaca, N.Y., 1995: Cornell University, Department of Rural Sociology]).

6. Multilevel models could ultimately be specified and empirically tested using the data collected in the stages outlined above to explicate the links between macro and micro levels and to specify the effect of social context on individual outcomes. Individual behavior is hypothesized to be affected by household needs, the interests of the producer group/enterprise organization, village opportunity structures and community norms, and regional and national contextual factors (see Thomas A. DiPrete and Jerry D. Forristal. "Multilevel Models: Methods and Substance," Annual Review of Sociology 20[1994]:331-57).

## NETWORKING

Currently the BCN relies on extensive written communications, telephone conversations, meetings in urban centers, and on-site visits by staff members to communicate with NGO project partners. It has been suggested that this system be simplified to lighten the demands on all the staff. This problem could be alleviated somewhat by relying more on existing regionally based staff to assist with enterprise development and biological monitoring, and, in conjunction with community development practitioners from these areas, to work directly with projects to promote the use of monitoring information and analysis of available data for decision making. This would not only prove helpful to projects but would also free senior staff from excessive travel. The three regional monitoring and evaluation workshops have provided the main opportunity for project managers and participants to communicate with one another directly.

Networking activities that participants see as desirable include study visit

exchanges. As a result, the BCN is planning several study tours. When feasible, it should combine workshops with site visits by holding meetings and workshops at project sites rather than in urban hotel settings.

It has also been suggested that country-level meetings be held to discuss public policy issues such as tenurial rights to natural resources. If jointly sponsored by several organizations and institutions and if a number of community groups are invited in addition to BCN participants, a coalition or federation may develop that could have a broad impact over the long term.

In addition to the networking done by the 20 BCN-NGO partners and project managers, community-level exchanges should be given some consideration.

### **EXPANDING HORIZONS EYE TO EYE**

Modern technology has made it possible to move beyond the traditional *bouche a l'oreille* system of communication, which can only take place in close proximity, to portable video contacts over wide distances and harsh terrains. Video technology should be used to share ideas visually with a large number of grass roots participants as well as NGO managers at the project site and at home offices. Evaluators and other technical consultants would also benefit from such presentations when they are unable to visit all sites in person.

As a first step, a "video study tour" of all BCN project areas could be taken to see their enterprise activities in operation, learn about their monitoring techniques, and find out how the resulting information is being used in project management. Since appearing in a video can be an exciting experience, it may serve to promote pride and ownership in an activity. Although such activity should take into account gender concerns in Moslem countries, women's voices should be heard in all instances.

Video can also be used effectively to teach a wide variety of creative how-to techniques such as being creative facilitators for community forums, community resource mapping techniques, ecological awareness discussions (to assist communities to see the adverse consequences of demographic pressure on natural resource utilization and regeneration without conservation efforts) or the basics of green marketing. Video material not only reach a wide audience including local community members beyond a few leaders at small workshops, but they can be reviewed repeatedly. If the questions and subsequent discussions of the local participants are taped with audio cassettes or videotaped after watching the video presentation, their concerns can be shared directly with others as well as archived.

The BCN should endeavor to develop models of community-based monitoring for the use of local participants and could share these efforts by constructing "modules" that can be combined into loose-leaf handbooks and presented at "each one teach one" workshops on community-based monitoring. NGOs that are developing useful monitoring "techniques" should be encouraged to share their experiences through published modules outlining the "how to" aspects of the activities, perhaps accompanied by a video presentation and other such easily accessible means to disseminate ideas and stimulate

creativity.

The ERD community sketch maps designed to assist community members in recognizing patterns of natural resource endowment and utilization could provide a starting point. Human resource pyramids reflecting natural resource utilization that can be developed from community census data or representative household survey data would be another example.

### **NETWORKING WITH EXTENDED AUDIENCES: SPREADING THE BCN MESSAGE**

Videotaped materials, although considered primarily for internal use by BCN grantees, could be shared with other groups and thus used to promote the enterprise-based conservation paradigm through national and international media. In particular, grant applicants who did not receive BCN implementation support would benefit greatly from this method of sharing BCN experiences. A program officer of the Mountain Institute, Sikkim Project, believes it is important to know what has happened at the many sites where the BCN application process was unsuccessful. The BCN should follow up to see if these sites have found other sources of donor funding or have mobilized local resources without external support.

The BCN should identify additional projects involved in activities based on natural-resource enterprises outside the BCN-supported ones, such as the UNICEF paper-making or private-enterprise allo fabric production in Nepal and should include representatives from these enterprises in meetings, workshops, and other networking activities, as appropriate.

### **INFORMATION UTILIZATION FOR PROJECT MANAGEMENT AND ENVIRONMENTAL EDUCATION**

As indicated earlier, environmental education and information play an important role in ecotourism projects. The BCN should also recognize and support the multiple uses of monitoring information. The Chitwan project has already invested heavily in the development of a GIS system, which makes it possible to produce an integrated system of biological, enterprise, and socioeconomic information that could be accessed interactively by environmental education presenters, community members, and visitors to Chitwan Park in a hands-on display.

To turn the GIS system into a useful management tool as well as an educational product, the BCN would have to put more effort into the local training of technical experts so as to create a local capacity to develop and maintain the GIS system while constantly upgrading it. From the project perspective, it would be more cost-effective to develop local expertise and ownership than to continue to do all the R&D for the system

in Washington. A wide spectrum of persons should be trained to develop, support, and make use of the system rather than one or two gatekeepers or specialists whose knowledge would be lost if they were to be relocated.

Ideally, such training and support would be underwritten by a combination of stakeholders, including tourist concessionaires, the National Parks Department, Forestry Department, and VDCs (village development committees). This might be combined with a refurbishing of the museum located in the center of the park or with a Conservation Education Hands-on Center developed at the Research Station. Supported in part by an entrance fee, various activities could be developed to focus attention on conservation issues: visitors could make plaster casts of tiger or elephant prints that they could keep as souvenirs, they could participate in workshops on wildlife photography, and they could play interactive quiz games dealing with conservation.

The environmental education center could also develop instructive materials that local entrepreneurs could market: guidebooks to local flora and fauna, educational cards with photos and information on local species and their conservation, postcards, jigsaw puzzles with conservation messages, small wood carvings, games revolving around key species, a local magazine related to conservation—these are but a few examples. Such activities would stimulate local enterprises such as photo processing, printing and publishing, and handicraft development.

## SUMMARY OF RECOMMENDATIONS

### Short Term

1. Establish priorities to ensure that the "BCN intervention" is in place in all 20 projects. Develop simple, direct, and routine monitoring techniques related directly to the livelihood and enterprise activities. Make a concerted effort to institutionalize the steps required to monitor natural resource utilization, the impact and benefits of enterprises, and information gathering and reporting on a routine basis in the course of normal activities. Make certain that this information is used by enterprise management in their decision making. Link enterprise/livelihood activities, natural resource utilization, and management activities and the forms and levels of community participation. Pay special attention to providing the public community with access to easily interpretable information, analysis and discussion, and opportunities for participating in decision making, especially as it concerns resource management.

2. Collect baseline data on the knowledge, attitudes, and practices of local community groups regarding natural resource utilization and management and perceptions of efficacy in decision-making processes. (Video documentation of harvesting and utilization, followed up by focus group discussions, might be an appropriate direct technique.)

## **Medium Term**

3. Develop working partnerships with NGO grantees through networking activities and technical assistance to enhance their capacities in key areas. For example, (a) provide on-site assistance with the analysis and utilization of existing data; (b) hold workshops on techniques to enhance community participation, help NGOs learn how to assess their capacities for promoting local participation and capacity building, share examples of participatory approaches, and identify training needs or other required support at the NGO level; and (c) in the area of policy analysis and inputs, focus on fundamental issues such as access to and control of resources and promote country-specific workshops on land tenure issues and community access to and management of natural resources to build coalitions concerned with policy analysis and lobbying that would use BCN project experiences to identify core issues and options.

4. Develop and organize existing BCN case study materials by classifying them along conceptual lines and around key issues.

## **Long Term: Impact Evaluation and Hypothesis Testing**

5. In conjunction with NGO partners, develop a general conceptual model for hypothesis testing, starting with the linked hypotheses of BCN-supported enterprise/livelihood activities leading to benefit participation and sustainable natural resource management objectives, which if obtained would contribute toward the attainment of biodiversity conservation goals. Then specify the intervening and contextual variables.

6. Develop an analytical model specifying objectively verifiable indicators for a limited number of key components and specify the means of verification.

7. With NGO partners, develop calibrated instruments for comparing activities across projects, and use self-assessments to evaluate the level of "progress or success" achieved for selected components, including community-level participation in management and decision making. Identify the constraints and problems encountered.

8. At the community level, develop standardized instruments for collecting data and use participatory methods to evaluate changes in knowledge, attitudes, and practices concerning natural resources and benefits achieved from BCN-supported livelihood/enterprise activities. Collect data from a sample of community units participating and not participating in BCN activities, and use recall for perceptions of changes subsequent to project implementation.

## CHAPTER VII

### POLICY

As should be clear by now, the success of the BCN hinges on policy at various levels. At the same time, the BCN has an ideal opportunity to influence policy in the light of the factual information from its projects, including their monitoring operations and the experience and analytical capacity of the BCN staff. These are vital resources for improving policy, and it is important that they not be lost. As the social organization of indigenous and local people takes place in alliance with NGOs, an effective source of pressure will emerge. The BCN needs to harness this energy for policy change. The review team found that a number of policy issues need to be addressed at the project, national, and international levels. Several of these issues are covered in earlier chapters and hence are only summarized here.

#### NATIONAL LEVEL

Several of the BCN projects require national-level policy changes to ensure that local efforts are successful. In particular, policy attention needs to be given to improving land tenure, the status of now-marginalized people, the technical support for natural resource development under biodiverse conditions, and agriculture in surrounding areas.

#### Land Tenure

Land tenure remains a serious issue in several of the BCN projects. The underlying problem is the restrictions on nationally owned land. These restrictions prevent the BCN from working out the optimal uses. The reason for this problem is that control rests with national-level bureaucracies rather than with organized indigenous and local people. Where land tenure is a problem, its reform is critical to BCN success.

The BCN has much to offer in this context. First, it is helping to develop the natural resource monitoring systems that will provide the information essential to sustained management of the resource base. With that knowledge system, the case can be made for local management. Second, through its emphasis on enterprise development the BCN is increasing the stake of indigenous and local people in sustainable management of the resource base. Third, through its emphasis on encouraging indigenous and local people to act on their own behalf, in alliance with national-level NGOs, it is helping to provide the power structure for achieving change.

The land-tenure and control situation is sufficiently important to justify doing an inventory of land-tenure conditions across BCN projects and holding a meeting to exchange the resulting information, with a view to eliciting effective action. A group such as that at Kalahan, which basically solved the land-tenure problem many years ago, could help others just starting out to identify the necessary changes.

### **Marginalized People**

The problem of marginalized groups, particularly tribal peoples who are seen as existing outside the mainstream of modern national society, is another policy issue that interacts with that of land tenure. The basic concern is how to help indigenous and local people gain control of their own resources. A patronizing attitude among national agencies often becomes transformed into rank exploitation, as in the case of the government cooperatives in the Teri project. By generating information and fostering local organizations, the BCN can set the stage for essential policy changes to give indigenous and local people greater control of their own resource base.

### **Technical Support**

National systems of technical support for the management of resources in biodiverse environments are at best at an embryonic stage. The BCN can provide international technical assistance to bring state-of-the-art knowledge to its sites and from that develop a basis for promoting the development of national structures for research and technical assistance. At present, the BCN's technical capabilities are modest in total and not related to technology development at the national level. The few exceptions, such as the high-level technical input into Teri, are largely in ecological science, rather than production systems for the resources being utilized.

### **Improved Agriculture**

For the most part, development of the biological resource base of conservation areas can only provide substantial income increases to a portion of the people who may otherwise depend upon and overexploit the natural resource base. That is certainly a prominent concern where population growth is concerned, which at its current rate may double the number of people to be supported every 25 to 35 years.

The BCN is properly a specialized agency concentrating on the potential for increasing incomes through the utilization of the biological resource base. There are highly developed national institutions for improving agriculture, and it makes no sense for the BCN to diffuse its effort to duplicate those institutions. What it can do is bring awareness, through the success of its own activities, of what improved incomes can do for environmental sustainability; bring attention to the resources that need developing for

agriculture; and apply pressure in the name of biological resource conservation for appropriate actions by other institutions.

This problem is acute in the lower-income countries. For example, in the plains areas surrounding Kalahan (the Philippines) and TERI (in India) the pressure from the high-density surrounding populations does not seem to be severe. In Chitwan, Nepal, however, the pressures are overwhelming, even though the agricultural resource base lends itself unusually well to a high level of income; the situation is similar, although not as extreme in Garhwal, India, and Sikkim.

### **Physical Infrastructure**

Typically, areas that give concentrated attention to biological resource conservation are areas of low population density, difficult terrain, and hence poor infrastructure. That tendency is reinforced by the marginalization of many of the peoples of such areas. Thus a substantial investment in infrastructure will be required to integrate those people into enterprises that are connected with national and global markets. Failing such national investment, markets will continue to be fragmented, competition among private operatives will remain low, and hence margins between what the producers get and consumers pay will be large.

## **PROJECT-LEVEL POLICY**

Policy needs at the project level are by and large related to the lack of local institutional structures. Policy changes in this area should be pursued at two levels.

First, indigenous and local people must have their own governance systems. The development of such systems is at best proceeding slowly in most of the project sites, with an input from national NGOs in effect substituting for indigenous organization.

Second, for some time to come, a national NGO will be needed to provide continuing support and protection to indigenous organizations. There is an important distinction between a patronizing NGO and one that quietly acts as a backstop for the indigenous organization where necessary.

Third, technical assistance is needed not only to ensure cost-effective monitoring systems but to help develop the full potential of the resource base as well. Structures are needed at the local level to provide long-term technical assistance to sustainable resource management. The national NGO is unlikely to have the technical capacity for such efforts, and the national technical systems, while perhaps moderately effective for agriculture, are unlikely to exist at all for the use of biological resources in their natural state. Thus the BCN itself will have to play an important role in the initial stages. At present its capacity for doing so is weak.

## INTERNATIONAL LEVEL

International support for preserving biological resource bases in developing countries is massive. Foreign resources are already being channeled in this direction. The BCN has an outstanding opportunity to influence the effectiveness of such resources. That is because many conservation projects in these countries still tend to be poorly conceptualized, there has been an explosive increase in international assistance, and local capacities to articulate local needs and to adapt foreign resources to those needs are still in their infancy.

The BCN, despite all the limitations and inefficiencies that are suggested in this report, is a far more cost-effective approach, with a much more fully developed panoply of resources and strategies, than is typical in this area. It stands out for the clarity of its conceptualization, breadth of its approach, and its holistic philosophy. It represents an increasingly valuable resource to be drawn upon for larger efforts.

At its most successful, the BCN focuses on monitoring the sustainable, economic utilization of biological natural resources to raise the incomes of local people. It provides technical assistance to enterprises dedicated to that goal. It mobilizes local people to protect that resource base in their own interest. It utilizes national NGOs to provide the protection and support for nascent indigenous organizations. And it provides technical assistance to the vital monitoring operations so essential to the sustainable use of biological resources.

It needs to carry all these elements of its story to the foreign assistance community. That will help to guide environmentally oriented foreign assistance in more appropriate channels than at present and to define appropriate levels of intensity of foreign assistance. Through the breadth of its projects, the BCN can indicate priorities for foreign assistance, it can demonstrate the technical assistance needs that are currently lacking, and it can endorse the need for sustainability and biological resource preservation from an overall developmental point of view.

We suggest this heavy burden for the BCN because it is unique in cutting across such a wide range of issues on a critical mass of projects. The collective experience of these projects will be far more valuable than the isolated experience of individual cases.

## ANNEX 1

### TERMS OF REFERENCE

#### I. PROJECT DATA

Project Title: Biodiversity Conservation Network: Evaluating an Enterprise-Oriented Approach to Community-Based Conservation in the Asia/Pacific Region

Amount Authorized:	\$20,000,000
Amount Obligated:	\$11,900,000
Life of Project:	6.5 years (1999)
Cooperative Agreement Number:	AEP-0015-A-00-2043-00
Cooperator:	World Wildlife Fund
Consortium Members:	The Nature Conservancy World Resources Institute
PACD:	March 31, 1999
AID Project Officer:	Jerry Bisson

Project Purpose: 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.

#### II. BACKGROUND

AID established the \$20 million Biodiversity Conservation Network (BCN) as part of the United States-Asia Environmental Partnership (USAEP) in late 1992. The BCN is administered by the Biodiversity Support Program (BSP). BCN's mandate is 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, the BCN brings together organizations in Asia, the Pacific, and the United States in active partnerships with local and indigenous communities. The program provides grants for projects that encourage the development of enterprises that are dependent on sustained conservation of local biodiversity.

Subprojects supported by BCN competitive grants must monitor the social, economic, and biological impacts of this enterprise-oriented approach to community-based conservation. A key outcome of the 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.

### **III. OBJECTIVES OF THE EVALUATION**

A. The general objective of this evaluation is to provide:

- Recommendations to improve or strengthen BCN project implementation, the use of project resources, and the quality of outputs over the remaining life of the project relative to its mandate which is 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, the BCN brings together organizations in Asia, the Pacific, and the United States in active partnerships with local and indigenous communities.

B. More specific objectives are to assess BCN activities to date and provide constructive suggestions regarding

1. The portfolio of Implementation Grants funded under this program, vis-à-vis the objectives and anticipated outputs set forth in BSP's project proposal and annual workplans.
2. Whether BCN grantees are on track with their monitoring efforts in order to provide useful information for communities to use for (1) strengthening local conservation initiatives, (2) determining the potential viability of the enterprise-oriented approach to community-based conservation in the Asia/Pacific region, (3) determining the effectiveness of a hypothesis-based approach to project implementation, and (4) determining the sustainability at the site level following the three-year Implementation Grant.
3. BCN's potential contribution to (1) the achievement of environmental and natural resource management objectives of selected USAIDs in Asia and the Pacific; and (2) potential unanticipated impacts (e.g., Kehati's use of BCN's proposal evaluation methodology).

4. The appropriateness of a three-year time frame for Implementation Grants.
5. The ways in which BCN grantees can have a larger policy impact at the local, national, and regional level.
6. Specific types of technical assistance that the BCN staff has provided and could provide in the future.

#### **IV. EVALUATION TASK DESCRIPTION**

**Task 1.** Collect and review relevant BCN and Bureau documents, including the project proposal, the US-AEP Project Paper, BCN annual workplans, six-month reports, BCN reports on project activities and accomplishments, trip reports of BCN-funded activities, and other relevant documents.

In addition, it is essential that evaluators review any Bureau or USAID commentaries on BCN activities. The findings of any such documents that assess all or part of BCN effectiveness should be addressed explicitly in this evaluation. Special attention should be given to BCN's contributions to selected Missions' Environment and Natural Resources Strategic Objectives, program outputs, and progress indicators.

The evaluators shall review the documents and note such factors as

- project goals and approaches—how these were initially described in the project proposal and how they are evolving through the course of implementation of the project;
- the various types of activities (e.g., networking, grant giving) planned, versus those actually implemented;
- how the approaches to each of the activities planned for are evolving;
- how the relative roles of key actors are evolving.

**Task 2.** Based upon the preliminary research, the evaluators shall develop a Workplan within eight working days that includes (1) a proposed schedule for activities of each of the evaluation team members and any supporting staff; (2) a description of how the evaluation team proposes to address the key evaluation issues; (3) a tentative list of interviewees and an interview instrument to be used in a relatively unstructured interview setting for soliciting information and views on BCN from participants and others familiar with the project in the field; and (4) how they plan to complete the detailed scope of work. The workplan will be submitted to the BCN and AID for comment.

Task 3. Devise a questionnaire to be sent to individuals and groups outside of the United States. Potential recipients include BCN Grantees, AID Mission personnel, others knowledgeable about the BCN, BCN proponents who failed to receive funds, and other donor and networking organizations. Before being sent, the questionnaire will be reviewed with BCN management.

Task 4. Evaluation team members simultaneously will begin to participate in interviews in Washington, D.C. These interviews will be with BCN staff, BCN Grantees, persons knowledgeable about BCN activities (including current and former AID direct hires), contract staff, US-AEP staff, members of the environment and development community as appropriate, and others (e.g., other donor personnel). Evaluation team members may want to arrange to speak to members of the BCN Peer Review Panel in person or by phone to obtain additional information.

The evaluation team shall utilize the interviews to extend and verify the information presented in project documents. To the extent that contradictory views are expressed through the interview process, these differences should be explored in follow-up interviews and noted.

Task 5. Visit the Manila field office of the BCN to interview BCN-staff based in the region, USAID and USAEP personnel, Peer Review Group members, members of the conservation community, and BCN Grantees.

Task 6. Visit three Implementation Grant project sites in the region. (The specific sites to be visited have been chosen by the evaluation team leader in consultation with BCN Staff. These sites are located in the Philippines, Nepal, and India.)

Task 7. Prepare the draft Evaluation Report. Illustrative Issues and Questions to Be Addressed in the report are outlined below.

Task 8. Once a draft report is complete, all team members will be expected to participate in a briefing of appropriate BCN, BSP, US-AEP and AID staff.

Task 9. The team leader will submit the final draft which addresses comments from appropriate BCN, BSP, US-AEP, AID representatives. Other team members will be consulted as necessary for additional input.

## **V. ILLUSTRATIVE ISSUES AND QUESTIONS TO BE ADDRESSED FOR OBJECTIVES**

Objective #1: Assess BCN activities to date and provide constructive suggestions regarding the portfolio of Implementation Grants funded under this program, vis-à-vis the objectives and anticipated outputs set forth in BSP's project proposal and annual

workplans.

Does the BCN portfolio of projects have the potential to effectively evaluate an enterprise-oriented approach to community-based conservation?

Does the BCN have specific indicators that demonstrate that it is moving toward achieving its broader set of goals and objectives (e.g., networking, policy impact, information dissemination)?

Have BCN staff developed a good working relationship with the various implementing institutions? How effectively has the project taken into consideration the needs of the various grantees?

Has the grant awarding process allocated resources efficiently, effectively, and equitably? Assess the criteria and guidelines that were established for Planning and Implementation Grant awards. What lessons have been learned about a grants award process from the BCN experience? Even though this component of the project has been completed, do you have suggestions for alternative approaches that might have been more effective and efficient?

Does the BCN have sufficient staff capacity to actively manage approximately 20 Implementation Grants (e.g., review reports, provide timely feedback, provide technical assistance on monitoring plans, and visit project sites)?

Is the BCN monitoring the partnerships and their impacts that are being established between the United States and Asian/Pacific organizations? How could this be improved?

Objective #2: Assess BCN activities to date and provide constructive suggestions regarding whether BCN Grantees are on track with their monitoring efforts in order to provide useful information for communities to use for (1) strengthening local conservation initiatives, (2) determining the potential viability of the enterprise-oriented approach to community-based conservation in the Asia/Pacific region, (3) determining the effectiveness of a hypothesis-based approach to project implementation, and (4) determining the sustainability at the site level following the three-year Implementation Grant.

Assess the development of the monitoring questions and indicators (biodiversity, socioeconomic, enterprise) developed for the BCN grantees. Are they practical at the field implementation level and appropriate at the program implementation level? Are they useful for evaluating the effectiveness of an enterprise-oriented approach to community-based conservation of biodiversity from both quantitative and qualitative perspectives?

How can the BCN more appropriately affect biodiversity-related policy in each of the countries in which it is working?

Are there other institutions not currently involved with BCN Grantees which can aid in the development of policy initiatives?

Objective #6: Assess BCN activities to date and provide constructive suggestions regarding specific types of technical assistance that BCN staff has provided and could provide in the future.

How effective has BCN Staff been in providing overall technical direction in the following areas:

1. Biological conservation
2. Enterprise development
3. Social sciences?

Are the kind and level of technical assistance provided in each of these areas appropriate to the needs of grantees? What changes in the technical assistance strategy of BCN might enhance grantee implementation at the field level?

What additional short-term technical assistance requirements appear to be needed by grantees over the short and medium term? Does the BCN have the necessary time, budget, and/or staff to provide this technical assistance?

What is the perception of project grantees about the kinds, levels, and timeliness of technical assistance provided to date?

## VI. COMPOSITION OF EVALUATION TEAM

The evaluation team should include four individuals who have no past connection with the BCN. All team members should have the following broad types of experience:

Project design and development;

Systems integration; and

Interdiscipline team experience (e.g., working on a team that combines skills in the social, biological, and economic areas.)

Descriptions of the general qualifications for team members follow:

Team Leader: A senior expert (over 10 years of development experience) knowledgeable

community actions and needs and enterprise approaches that are appropriate to ensure the conservation of biodiversity.

## VII. DELIVERABLES AND REPORTING REQUIREMENTS

The deliverables of this evaluation are

- Draft Work Plan (1 copy)
- Draft Final Evaluation Report (3 copies)
- Final Report (5 copies)
- 3½-inch DOS-formatted diskette with report in Word Perfect.

The format of the Evaluation Report will follow AID guidelines established in the supplement of AID Handbook 3. It will include an executive summary with highlights of the major findings and recommendations, a PES facesheet, a table of contents, the body of the report (including the purpose of the evaluation, a description of the methodology used in the evaluation, the findings from the evaluation, lessons learned and recommendations for continuation or modification of activities), and appropriate appendices (e.g., evaluation scope of work; list of all recommendations in the report subdivided by groups such as short, medium, long-term actions; bibliography; list of people interviewed; additional data—not found in the body of the report—that support the findings and recommendations).

The evaluation team will specify conclusions based on the findings of the study and prepare a set of recommendations for continued activity, changes in activities, termination of activities, and/or future directions for BCN. The team leader will be responsible for the delegation of analysis and for writing draft portions of the evaluation report. After AID, BSP, and BCN comments are received and incorporated, the contractor will be responsible for submitting five copies to BCN Management.

The draft Evaluation Report is due one week after the team's arrival from the field visits. Four (4) copies of the draft final report are required to be transmitted to AID(2) and BCN (2). The final report is due no later than 12 weeks after the start of the evaluation.

The final Evaluation Report should also be submitted in Word Perfect for DOS on 3½-inch diskettes.

## VIII. SCHEDULE

The evaluation will be carried out over a 12-week period using up to 29 person-weeks of consulting time. The evaluation will start with the issuing of the evaluation contract. The final version of the Evaluation Report is due no later than 12 weeks after the start of the evaluation.

ANNEX 2

QUESTIONNAIRE

Biodiversity Conservation Network  
MID-TERM EVALUATION QUESTIONNAIRE FOR BCN GRANTEES

Dear Recipient:

John Mellor Associates (JMA), a Consulting Firm, has been retained to conduct a midterm evaluation of the Biodiversity Conservation Network. The objective is to help the BCN strengthen its program. As part of this evaluation, the team will be meeting key people in Washington, D.C., including US-AEP, USAID, the BSP consortium, members of the Peer Review Committee, and some grantees; it will also be visiting selected sites in the Philippines, India, and Nepal. Since it is not possible to visit all the sites, this questionnaire is being sent to you in order to obtain additional insights into the program. We greatly appreciate your cooperation and assistance in filling out the questionnaire as completely as possible. You may consult with other key persons involved in your project. Please fax the completed questionnaire **directly to John Mellor Associates at 202-347-8806 USA.** Thank you for your help.

Name of Project	
Country	
Type of Activities	
Number of Communities in the Project	
Project Area (hectares)	
Name of Person Filling In Questionnaire	
Job Title/Position	
Are you involved in the day-to-day decision making of the Project in the field? (Please circle one)	Yes                  No

1. What is your overall impression of the BCN grant application process? Were the application materials and technical assistance of the BCN staff useful?
  
2. Does the project have other donor support? If so, did this support exist prior to the development of the BCN proposal? Has funding from the BCN led to additional investments by other donors?
  
3. How have local communities and other stakeholders participated in the development of the proposed project activities? Please elaborate.
  
4. Which individuals or groups within the communities have provided key inputs (e.g., traditional leaders, women's groups, persons from the area now residing elsewhere)?
  
5. Were participatory techniques used by the community and with other stakeholders to develop the proposed activities? Briefly describe the steps or processes employed.

6. If community members were not initially involved in the project conceptualization, at what stage was the proposal communicated or discussed with them? Did community concerns lead to any project modifications? Why or why not?
  
7. Did a representative from your project attend a BCN workshop on monitoring and evaluation? If so, was the workshop experience useful for conceptualizing or clarifying the project model and facilitating the involvement of project beneficiaries? Briefly discuss the ways in which the workshop was of value to you.
  
8. For commodity-based enterprises:
  - 8.1 Have baseline density and yield data been collected for the resource(s) on which the enterprise is based? If so, how were these data collected and by whom?
  
  - 8.2 Have initial estimates of a sustainable level of resource harvest been derived for the enterprise? If so, how were these estimates derived?

8.3 Have field activities been initiated to monitor the biological impact of resource harvest? If so, how were these monitoring systems developed (i.e., by whom and on the basis of what criteria)? Which parameters are being monitored? Who is collecting these data?

9. For ecotourism enterprises:

9.1 What types of baseline data are available on the extension and condition of local ecosystems?

9.2 Have initial estimates of the maximum tourist capacity been derived? If so, how were these estimates obtained?

9.3 Have field activities been initiated to monitor the ecological impact of ecotourism? If so, how were these monitoring systems developed (i.e., by whom and on the basis of what criteria)? Which parameters are being monitored? Who is collecting these data?

10. What networking activities do you propose or suggest that BCN expand and share from your project?

11. What are the most important national policy issues with respect to your project?

12. What can BCN staff do to help improve your project in the future?

ANNEX 3

LIST OF PERSONS INTERVIEWED

List of Persons Met/Contacted by the Evaluation Team in  
Washington, D.C., USA

Mr. Hank Cauley and BCN Staff  
Mr. Jerry Bisson, USAID (BSP/BCN Project Officer)  
Mr. Frank Hicks (BCN Regional Director)  
Mr. Nick Salafski / Mr. Richard Margoulis (BCN, Presentation)  
Ms. Kathy Saterson (Executive Director BSP)  
Mr. Eric Dinerstein (WWF KMTNC Grant)  
Ms. Frances Seymour (WWF, Acting BCN Director, 1993)  
Mr. Marshall Bear (Peer Review Committee)  
Mr. Dan Miller (former USAID Nepal/BCN)  
Mr. David Richards (Consultant, "Father" of BCN), on telephone  
Ms. Anne Koontz, ATI (Grantee), on telephone  
Ms. Anne Bodnar (Former Vice President Chase Manhattan), Reviewer, on telephone  
Ms. Cynthia Mackie, Vice President  
Ms. Wendy Tan, Director, Asia (Conservation International Grantee)  
Mr. Lewis Reade, Director General, USAEP  
Ms. Molly Kux, USAID

## List of Persons Met by the Team in the Philippines

Rev. Delbert Rice, Executive Director  
Romy Balinhawang (Project Officer)  
Tamano Bugtong (Forester)  
Ms. Magda (Socioeconomist)  
Timothy Rice (Chemist, Computer Programmer)  
Kalahan Educational Foundation, Inc. (KEFI)  
Imugan, Sta. Fe, Nueva Vizcaya

Jim Mudge, Chief Economist  
Mike Gould, Chief, Office of Environment (ENV)  
John Grayzel, Chief, Office of Government Participation (OGP)  
Delbert N. McCluskey, Chief, Forestry & Energy Division  
Ernesto Wijangco, Head, Environment Office  
Dennis Zvinakis, Field Director, US-AEP  
Joyce Coffee, Manager-Field Operations, US-AEP  
USAID/Manila

Dr. Gene M. Owens, Senior Environment Specialist, Office of Environment & Social Development, Environment Division  
Dr. P. Abeygunawardena ("Piya"), Environment Specialist, Office of Environment & Social Development, Environment Division  
Robert Dobias, Environment Specialist, Office of Environment & Social Development, Environment Division  
Lisa Kircher-Lumbao, US-AEP/ADB Liaison Office  
Asian Development Bank (ADB)

Benjie Navarro, Program Officer for Information, UNAC Secretariat  
Dave de Vera, Vice-Chairperson, PAFID and Program Coordinator for UNAC  
Bruce Young, PAFID  
Rene A. Guarin, Officer-in-Charge, Upland Marketing Team, Philippine Business for Social Progress (UMT-PBSP)  
Upland NGO Assistance Committee (UNAC)

Ester "Iting" C. Isberto, Executive Director National Integrated Protected Areas (NIPA)  
Veronica "Brownie" F. Villavicencio, Grants Director  
(formerly Acting Executive Director) Foundation for the Philippine Environment (FPE)

Frank A. Tolentino, Program Manager, Appropriate Technology International (ATI)/Philippines  
Felimon "Mon" G. Romero, Vice-President, International Marinelife Alliance (IMA)/Philippines

Karen Lawrence, Field Administration Coordinator cum Biophysical Associate,  
ERD Malaybalay Station

Grace Toledo, Biophysical Assistant, ERD-Malaybalay Station

Eric Bruno, Cultural Associate, ERD-Malaybalay Station

Chuck Encarnacion, Research Associate/Sociologist, ERD-Manila

Cesar Carreon, Research Assistant (Forestry), ERD-Manila

Chrisma Salao, Program Officer, WWF/P

Femy Pinto, NATRIPAL Project Coordinator

Atty. Cesar Awat, PANLIPI Legal Area Manager

Jimmy Ang, WWF/Philippine Program Finance Officer

Marcelo R. Caleda, Consultant (biological component, fauna)

Kit Sabban, Deputy Director, Social Development Research Center, De La Salle  
University (SDRC-DLSU), Consultant (socioeconomic monitoring) World Wildlife Fund  
(WWF)/Philippine Program

Nagkakaisang mga Tribu ng Palawan (NATRIPAL)

Tanggapang Panligal ng Katutubong Pilipino (PANLIPI)

Dr. Delfin J. Ganapin, Jr., Undersecretary for Environmental Program and  
Development, Department of Environment and Natural Resources (DENR)

## List of Persons Met by the Team in India

### DELHI

Mr. D. R. Arora  
USAID India

Mr. Sanjeev Gupta  
Mr. Hanumant Rawat  
EDA Rural Systems

Mr. Jeffery Cambell  
Ford Foundation

Mr. Sharma  
G. B. Pant Himalayan Institute

### AT THE TERI SITE

Mr. Balachandra Ganesan  
Mr. Sharad Lele  
Mr. K. S. Murali  
Ms. Aditi Sinha  
Dr. Sudarshan  
Mr. Chandrashekhar  
Mr. Rawal

## List of Persons Met by the Team in Nepal

Dr. Uday R.Sharma  
Former DG DNPWC

Mr. Amrit L. Joshi  
Chief Planning Division

Mr. Jim Gingrich  
USIAD

Mr. Mingma N. Sherpa  
WWF

Mr. Madhup Dhungana  
Dr. Nirmal Bhattarai  
Mr. Chakka B. Lama  
ANSAB

Ms. Lisa Chougyl  
TIGER TOPS

Dr. Chandra Gurung  
Former Secretary KMTNC

Mr. Top B. Khatri  
Mr. Arun Rijal  
NCRTC/KMTNC  
Eleven Members of the Stakeholders Committee

Mr. Ram P. Yadav  
Chief Warden, CHITWAN

H.R.H. Prince Gyanendra B. B. Shah  
Chairman KMTNC

Mr. Basant R. Misra  
TIGER MOUNTAIN

Dr. Malcolm Odell  
MBCP

Dr. David Sowerwine  
SAVE THE CHILDREN FUND

Dr. Kamal Baskota  
Mr. Bikash Sharma  
CREST

ANNEX 4

PEER GROUP REVIEW MEETINGS AND MEMBERS

DATE	IMPLEMENTATION GRANT RECIPIENT
9/27/93	Conservation International (Regional) Kalahari Education Foundation King Mahendra Trust for Nature Conservation
4/8/94	WWF/Asia Pacific Program, Palawan project University of South Pacific (planning grant, decided didn't have to go through formal peer review for IG)
8/18/94	University of Massachusetts, Teri ATI, Nepal WWF, Indonesia TNC, Solomon Islands
2/28/95	Manila Observatory Research and Conservation Foundation TNC, Indonesia CI, PNG ATI, India Pacific Heritage Foundation BScC YDT
6/20/95	The Mountain Institute Harvard University, Indonesia
n/a	Hualopu Foundation (proposal came in after last peer review meeting)

## PEER REVIEW GROUP PARTICIPANTS

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Resources Program  
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## ANNEX 5

## LIST OF GRANTS AND AMOUNTS

LIST OF BIODIVERSITY CONSERVATION NETWORK PLANNING AND  
IMPLEMENTATION GRANTS

As of January 22, 1996

IMPLEMENTATION GRANT (U.S. dollars)

<u>NUMBER</u>	<u>RECIPIENT</u>	<u>AMOUNT</u>
NI01	Conservation International (Regional)	899,940
NI02	Kalahan Education Foundation (Philippines)	321,190
NI03	King Mahendra Trust for Nature Conservation/World Wildlife Fund (Nepal)	636,607
NI04	University of Massachusetts (India)	610,404
MOU #4	WWF Asia/Pacific Program (Philippines)	627,698
NI05	Appropriate Technology International (Nepal)	549,995
NI06	World Wildlife Fund, Indonesia	179,632
NI07	Manila Observatory (Philippines)	426,798
NI08	Research and Conservation	498,107
NI09	Foundation of Papua New Guinea The Nature Conservancy (Indonesia)	584,892
NI10	Conservation International (Papua New Guinea)	355,487
NI11	Appropriate Technology International (India)	571,201

NI12	The Nature Conservancy (Solomon Islands)	545,372
NI13	The Mountain Institute (India)	449,465
NI14	University of the South Pacific (Fiji)	348,045 <sup>8</sup>
NI15	Pacific Heritage Foundation (PNG)	451,738
NI16	Biological Science for the Community (Indonesia)	448,430
NI17	Harvard University (Indonesia)	547,560
NI18	Yayasan Dian Tama (Indonesia)	49
NI19	Hualopu Foundation (Indonesia)	903 <sup>9</sup>
<b>TOTAL</b>		<b>\$9,819,713</b>

#### PLANNING GRANTS

MOU	World Wildlife Fund/Philippines Palawan (Philippines)	50,000
MOU	World Wildlife Fund/Indonesia Arfak (Indonesia)	49,600
NP01	Partners with Melanesians (#1) (Papua New Guinea)	50,000
NP02	Institute of the Biodiversity of Nepal (Nepal)	39,500
NP03	Appropriate Technology International (Nepal)	49,898
NP05	Partners with Melanesians (#2) (Papua New Guinea)	50,000

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<sup>8</sup> Awarded only \$69,150 for six months. The remainder is contingent upon development of an equitable sharing agreement.

<sup>9</sup> Contract not yet signed.

NP06	Tata Energy Research Institute (India)	49,850
NP07	The Nature Conservancy, Arnavon (Solomon Islands)	49,776
NP08	Department of Land, Surveys, and the Environment (Western Samoa)	27,300
NP09	Rainforest Alliance	6,700
NP10	Wildlife Conservation Society (Papua New Guinea)	50,000
NP11	University of Rhode Island <sup>10</sup> (Philippines)	26,097
NP12	Haribon Foundation (Philippines)	23,875
NP13	Program for Appropriate Technology in Health (Thailand)	49,916
NP14	Yayasan Dian Tama Indonesia (Indonesia)	49,948
NP15	Lembaga Alam Tropika (Indonesia)	47,550
NP16	Save the Children Federation (Thailand)	49,932
NP17	Yayasan Biological Science for the Community (Indonesia)	47,950
NP19	Harvard Institute for International Development (Sri Lanka)	49,913
NP20	Conservation International (Papua New Guinea)	49,962
NP21	Pacific Heritage Foundation (Papua New Guinea)	48,064
NP22	Manila Observatory, Environmental Research Division (Philippines)	49,960

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<sup>10</sup> NP11 and NP12 constitute one grant.

NP23	Appropriate Technology Intl. (India)	49,993
NP24	Harvard University (Indonesia) <sup>11</sup>	37,264
NP25	Cassia Lestari (Indonesia)	12,192
NP26	University of South Pacific (Fiji)	49,774
NP27	The Nature Conservancy (Indonesia)	79,992
NP28	Wildlife Fund Thailand (Thailand)	50,000
NP29	Save the Children (Nepal)	48,541
NP30	Milne Bay Ecoforestry Association (PNG)	47,360
NP31	International Institute for Rural Reconstruction (Philippines)	50,000
NP32	Woodlands Mountain Institute (India)	50,000
NP33	Academy for Mountain Environics (India)	27,600
NP34	Kerala Forest Research Institute (India)	37,130
NP35	Kasetsart University (Thailand)	46,865
NP36	Yayasan Hualopu Foundation (Indonesia)	49,768
NP37	The Nature Conservancy (Solomon Islands #2)	49,300
	<b>TOTAL</b>	<b>\$1,651,570</b>

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<sup>11</sup> NP24 and NP25 constitute one grant.

Small Grants

<u>Number</u>	<u>Date</u>	<u>Recipient</u>	<u>Amount</u>
NG01	1-25-96	RECOTFC	\$ 4,350
NG02	4-16-95	Philippine Business for Social Progress	\$22,890
NG03	6-16-95	Gaston A. Ortigas Peace Institute	\$ 5,990
NG04	9-22-95	International Marine Alliance	\$25,000
NG06	9-27-95	RECOFTC	\$11,220
NO16	11-9-95	World Resources	\$24,867
		<b>TOTAL</b>	<b>\$94,317</b>
		<b>GRAND TOTAL</b>	<b>\$11,565,600</b>

## ANNEX 6

### TEAM-MEMBERS

#### SANDRA BERTOLI-MINOR

Sandra Bertoli-Minor holds graduate degrees in Development Sociology from Cornell University and has more than 15 years of experience working with integrated rural development, environmental health, and natural resource management projects. She has expertise in applied social science research and information systems for development project needs assessment, baseline studies, project implementation monitoring and impact evaluation. She has designed and carried out in-service training in data collection design, information processing, and statistical analysis with special emphasis on data interpretation and utilization. She has worked with NGO to develop organizational capacity in support of participatory grass roots decision making. In addition, she has experience in comparative social science research at the community and local organizational levels to measure change over time.

#### SOHAIL MALIK

Sohail Malik has had extensive experience with evaluation of rural, community based organizations as Advisor to the Prime Minister of Pakistan's Committee for Research and Analysis, with special reference to community organizations. He is a specialist on rural credit programs for grass roots community and private enterprise activities with over twenty years experience in the area. He has been chairman of the Government of Pakistan's 8th Five Year Plan Committee on Access to Rural Credit. He was previously employed by the International Food Policy Research Institute, where among his other responsibilities, he was in charge of a large USAID Mission, Pakistan and the Ministry of Food and Agriculture of the Government of Pakistan on evaluations of projects and participated in the launching of the national conservation strategy for Pakistan. He has taught Project Appraisal Techniques at the Pakistan Institute of Development Economics. His Ph.D. dissertation is on an esoteric aspect of project appraisal. He has published widely on aspects of development economics.

#### JOHN W. MELLOR

John W. Mellor is President of John Mellor Associates, Inc. Previously he was Director of the International Food Policy Research Institute for 14 years. Before that he was Chief Economist of the Agency for International Development and for many years served on the faculty of Cornell University in the Departments of Agricultural Economics, Economics, and Asian Studies. He was the recipient of the Wihuri Prize (Finland) and the Presidential Award (United States) for "his contributions to the reduction of hunger." He is a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Agricultural Economics Association. He is the author of The Economics of Agricultural Development, for which he received a professional award for excellence in research. He has written regularly for Environment and has served on its editorial board for many years. He has led numerous missions dealing with environmental as well as development issues more broadly.

## CHARLES M. PETERS

Charles M. Peters studied forestry at the University of Arkansas and received his Masters and Ph.D. from the Yale School of Forestry and Environmental Studies. He has been investigating the ecology, use, and management of tropical forest resources for more than 15 years. His fieldwork has taken him to two of the largest and least explored tropical regions of the world, lowland Amazonia and the island of Borneo, as well as to the managed forests of Mayan Mexico. He is the author of numerous scholarly papers and articles and has recently published a silviculture textbook entitled Introduction to the Ecology and Management of Non-timber Tropical Forest Resources. He is the Kate E. Tode Curator of Botany at the Institute of Economic Botany of the New York Botanical Garden.

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