

BIODIVERSITY SUPPORT PROGRAM

LESSONS FROM THE FIELD

LINKING THEORY AND PRACTICE IN BIODIVERSITY CONSERVATION

While people and biodiversity are inextricably linked, achieving a balance is not easy. The Biodiversity Support Program (BSP) promotes conservation in many of the world's most biologically diverse areas, including Africa, Asia, Latin America and the Caribbean. *Lessons from the Field* is based on BSP's experiences in integrating biodiversity conservation with social and economic development and research and analysis of conservation approaches. Articles in this series share what we are learning along the way. We hope this series will serve conservation practitioners as a catalyst for further discussion, learning, and action so that more biodiversity is conserved.

Keeping Watch: Experiences from the Field in Community-based Monitoring

Monitoring is a vital tool in the experimental work of conservation-but it hasn't always been the easiest to use. We've interviewed 12 conservation practitioners experienced in community-based monitoring who represent a range of perspectives and places, from community leaders to program directors for Asia, Africa, Latin America and the Caribbean. Their advice and insights are surprisingly consistent. Here's what they had to say.

Conserving biodiversity on Earth makes putting people into outer space seem simple by comparison. It's a tough job. No longer is it enough to be a good manager and scientist; conservation practitioners must also have the sensitivities and skills to work with communities. Helping people meet their economic needs, dealing with local and foreign demands for biological resources, and addressing diverse and conflicting values are all part of a project manager's complex equation. Today, conservation solutions not only must include the people who live in an area -- increasingly, they rely on them.

Solutions to the problems of conserving biodiversity often aren't apparent at the outset. If they appear so, beware. Time could prove you wrong. Because of so many unknowns, conservation activities have an experimental dimension. How can you facilitate the design of a project so that it has the greatest probability of having positive environmental and social impacts? How can you get people on board and keep them involved? Most important of all, how will you know if your interventions are working?

You won't -- unless you monitor the impacts of your activities. Monitoring is the essential link in understanding cause and effect. "Monitoring is about effectiveness. If you want to achieve your conservation goals, you better keep track of what you are doing, and change it if you're not getting the desired results," says Hank Cauley, former Director of BSP's Biodiversity Conservation Network (BCN), which assists community enterprises that support biodiversity conservation. Monitoring what does and doesn't work and responding immediately to new insights are critical because we can't afford to wait until all the data are in.

Increasingly, what is working is monitoring that involves the communities themselves. In the past, monitoring was usually designed by outsiders and implemented by consultants who flew in for a quick orientation, expecting NGOs or community members to miraculously provide data and information. Furthermore, monitoring was typically not a part of the original conservation project design; it was considered only after the fact and often did not focus on the most appropriate data.

Successful monitoring involves simple, effective tools that communities can easily manage and want to use.

In contrast, community-based monitoring is the ongoing collection, analysis, and use of resource management information at the community level, where many of the threats to biodiversity originate and resource-use decisions are made. It usually begins with community members' perception that things aren't what they used to be, that there is a danger of forever losing what they have, and that they better do something about it. The community decides on what to monitor and is responsible, at least in part, for the collection, analysis, and use of the information. The results of monitoring must be integrated into a community decision-making process that allows people to weigh evidence and propose actions.

Finding the common ground to monitor natural resources reaches far beyond the community level. It is a collaborative process that necessarily includes community participants, but may also involve conservation practitioners, NGOs, governments, and a suite of partners with expertise in collecting and using information to facilitate informed decision-making.

Effective monitoring can help a community deal with threats to its future, come up with possible interventions to address the threats, analyze how well actions are working, and provide the insight to know how to modify behavior and management practices. Simple monitoring systems that can be easily managed by local people can raise community awareness and commitment to protecting local biodiversity.

Monitoring can also lead to unexpected insights. In one community in southern Mexico, where farmers were monitoring their efforts to increase yields in impoverished soils, they mulched to add nutrients. "To their surprise," says Meg Symington, former Director of BSP's Latin America and Caribbean Program, "they found that mulching worked -- but not in the way they had anticipated. It turned out that the moisture-retaining properties of mulching were the most important factor in raising yields, but not by directly adding nutrients. Water was the limiting factor. But by mulching the soil, the water retention improved and nutrient levels increased." Monitoring tells you whether your interventions are doing what you think they should, but monitoring will not tell you what to do in the first place.

Like many other practitioners, BSP-supported partners met serious obstacles when they first attempted monitoring. On the bright side, because we've been monitoring our own efforts, we now know how to deal with them better. Early monitoring programs, especially those measuring ecological impacts, were often poorly focused, too academic to be useful, and not perceived by the communities as their own.

Our experiences have shown that there's no getting around it -- monitoring is a key to conservation. Consequently, designing simple, effective tools that communities will want to use and developing training in those tools have become a primary focus of BSP's conservation work.

To address this need, BSP's Richard Margoluis, Director of the Analysis and Adaptive Management Program, and Nick Salafsky, Senior Program Officer for BCN, developed a practitioner's manual entitled [*Measures of Success: Designing, Managing and Monitoring Conservation and Development Projects*](#). Simplified community-based monitoring methods taught by BSP staff are transforming monitoring and evaluation from a bureaucratic requirement into a functional tool. "Monitoring is being reincarnated--instead of a Frankenstein running around and getting people scared, it's now something really useful," says John Parks, a BCN "trainer of trainers" who teaches community monitoring based on the approach described in [*Measures of Success*](#).

The following summaries and case story highlight what BSP has learned so far in our attempts to facilitate community-based conservation by NGOs, communities, and governments.

Common Obstacles

Talk to anyone about monitoring and they'll either swear by it, or run for cover -- depending on their past experiences. Time and again, people avoid monitoring for what, on the surface, seem like good reasons; but often these are exactly the reasons why they should monitor.

1. **Work Overload**

Historically, many NGOs have done monitoring and evaluation only because it is required by donors as a prerequisite to funding. People working in local, national, and international NGOs and government organizations often view monitoring as an additional burden to their crushing workloads. Project staff may be so swamped with day-to-day operations that they may believe they do not have the time or money to invest in monitoring. BSP-supported practitioners, who are the first to admit they are as overwhelmed by work as anyone, would argue that you can't afford not to monitor. It is a waste of time and resources to continue down paths that aren't working.

2. **Fear of Revealing Failure**

From a community's perspective, people fear that monitoring will reveal problems that the community then has to deal with. From an NGO's perspective, reluctance to monitor often stems from the perception that funding is tied to success, and monitoring can indicate failure. But it's the only way to keep on track, especially since environmental conditions may be constantly changing. Monitoring offers a corrective insight and tells you where your actions are taking you. It provides the necessary information to make optimal decisions about how your activities affect change in whatever condition you are trying to influence. Therefore, embracing the fact that conservation is about learning along the way and adapting to what you've learned are essential. And donor agencies must be educated to share this view.

3. **What to Monitor, Where to Begin?**

A common perception is that monitoring has to be very precise, complicated, and therefore should be left up to scientists or experts. Because people often lack clear, concise guidelines for developing monitoring strategies, they either avoid monitoring altogether or halfheartedly fulfill poorly designed basic requirements, never benefiting from the results that monitoring could bring. From the outset, monitoring has to be integral to a project's overall design. Unless it begins early in the project, any insights it provides will be "too little too late."

4. **Different Agendas**

Different agendas between communities and other stakeholders can lead to disagreement over monitoring indicators. Conservation practitioners have to facilitate monitoring that reflects what the community wants to do or is already doing. The indicators have to reflect the concerns of the community. For example, "scientists might be interested in saving coral reef biodiversity while the community is more interested in maintaining stocks of fish," observes Kath Shurcliff, Director of

BSP's KEMALA (Community-based Conservation Program) in Indonesia. So there may be disagreement about the indicators even though the outcomes are linked. Sometimes scientific and community monitoring can go hand in hand and sometimes they can't.

5. Destabilizing Community Circumstances

The nature of a community can be an obstacle or an advantage to monitoring. In countries like Rwanda, for example, people are moved around by war. In Nepal, illiteracy can be a stumbling block because it limits data collection. And people who are trying to scrape together the day's food may not be able to sustain monitoring activities. Within communities, different groups' conflicting needs come into play. "I believe that, nine times out of ten, the reason projects flounder is due to a lack of understanding and attention to political agendas," says John Parks. "Project managers focus on the obvious, resource use, rather than on how to mitigate conflicting agendas -- what different groups' needs are." If community stability and cohesion are seriously lacking, monitoring is less likely to succeed.

Selection of what to monitor must reflect the concerns of the community.

6. Lack of Resource Tenure

Monitoring is more likely to succeed when you work with a group that has land or resource tenure and traditional ecological knowledge of their natural resources. If communities have tenure, they have a stronger incentive to manage their resources. "If they don't have that long-term security, the tendency is to mine the resources before someone else does," says Judy Oglethorpe, Director of BSP's Africa and Madagascar Program. "You need a well-defined community that has limits and entitlement to benefits. You need a community-based management structure, good organization, and an adequate resource base." These elements are so fundamental that BSP's biodiversity conservation projects often begin by helping communities not recognized as the stewards of their own resources try to establish tenure.

Ingredients for Success

What follows are some of the ingredients that, in BSP's experience, increase the likelihood that community-based monitoring will succeed.

1. Relevance to the Community

Make sure communities know and care why they are monitoring. Community-based conservation projects must have community buy-in and support. Although this may seem obvious, it's amazing how often projects don't have community support. People must be convinced of the importance and relevance of monitoring, or a multitude of reasons not to monitor will get in the way. For community members, "this is not a conservation project-it's their life," says Meg Symington. The people doing the monitoring must clearly understand why information is being collected and how it links to the community's self-interests. Indicators must have value to the community, as well as reflect the goals of the project. For example, how far from a village does a woman go to collect wood? What species did people use in the past that they no longer use? Relevance is the key.

If the designers are the doers, monitoring is more likely to focus on relevant indicators rather than on inappropriate, externally imposed measures.

2. **Designers Must be Doers**

Monitoring is not a matter of identifying a few indicators to be tracked somewhere down the line. Comprehensive monitoring strategies must be developed at the same time that thinking about project goals, objectives, and activities occurs. From clarity of design comes clarity of management strategies and activities. Once you know what you want to achieve and the desired impacts, the monitoring and indicators fall out naturally. The people who are going to use the data must be involved in all phases of design and monitoring and clearly understand the relevance behind the design. If the designers are the doers, the monitoring will focus on cause and effect rather than on unnecessarily elaborate processes imposed by outside donors.

3. **Simple, Focused Design**

BSP has adapted and repackaged its approach to monitoring to make it less overwhelming. "While a lot of people may collect reams of data, few know how to use it," says Nick Salafsky. Design must be targeted, leading to a relatively small subset of data. The new monitoring is much smaller, streamlined, simpler. It has fewer parts. Packaged correctly, people will use it. If the design is onerous, monitoring won't get done. "I always start with the ground rule, It's got to be fun!," says John Parks. "When you are working with local communities, I really believe it is an essential ingredient . . . and can be one of the biggest factors for sustaining monitoring efforts." Another key to sustainability is making monitoring a part of everyday life. Ideally, it should be integrated into something people are already doing, like monitoring water quality when they collect water, or measuring the fish harvested in a specified time (catch/effort). Although community-based monitoring must be kept relatively simple, measurements need to be accurate and carefully documented.

4. **Sensitive Mentoring**

Appropriate expertise is crucial during a project's start-up phase and on a periodic basis to ensure that the monitoring suits the community's needs for information. Outside expertise can facilitate the design of a targeted, culturally appropriate, and simple monitoring plan, and teach simple, accurate monitoring skills. "To do really effective monitoring, you have to help people become creative about solving their own problems," says Nick Salafsky. Without effective training of the local trainers, however, monitoring won't get off the ground. The community has the information. It's the trainer's job to pull the information out in a sensitive way so that design of the project is an entirely participatory process. Some people are sensitive to all the things surrounding a project, while others are more results oriented. You need to find the balance of aptitudes within the village and build on those. The people in charge of monitoring need to be skilled communicators. "Monitoring has to belong to the community," says John Parks. "It has to be fully participatory. If you [the trainer] are given no credit once it's implemented, you've probably done your job well."

5. **Leadership**

Successful monitoring is directly related to leadership. "You have to identify and involve leaders within the community because they will be able to sustain monitoring activities," says Laurent

Somé, Senior Program Officer for Africa and Madagascar. It is important to focus early project efforts on either coordinating efforts with existing leaders or providing incentives to motivated people in the community to become tomorrow's leaders. Trainers can identify individuals with the aptitude for monitoring record-keeping and encourage their leadership. "You have to work with communities at a social level, not just at a scientific level," says Vance Russell of BSP's Analysis and Adaptive Management Program. Building trust between the people who will be doing the monitoring and the team that teaches monitoring is essential. At the very least, you have to understand the structure of leadership.

6. Working within the Community's Structure.

The dynamics within a community -- gender issues, generational issues, power structure -- are always relevant. Some are egalitarian, some are hierarchical. Every village is different. "You shouldn't forget the human component; in fact, you should work with it," says Laurent Somé. Describing his experiences working in a village of Burkina Faso as part of BSP's BIOME (Biodiversity Monitoring and Evaluation) Project, Somé recalls: "We were undecided about how to involve the chief of the village. Community members expressed a strong willingness to be involved, but wouldn't feel comfortable speaking as a group without the chief's endorsement. So we finally decided to involve the chief. It turned out he was very open-minded, gave good advice, and facilitated cross discussion. Because the chief was modern, he knew that we wanted cross discussion. This was an innovation that the chief facilitated."

7. Involving All Stakeholders

As difficult as it may be, it is important to try to involve both those most affected by the lack of conservation and those who may represent the greatest threats. "Involve all levels of the community, including those most affected by the activities that are supposed to be monitored and those who can influence the outcome," says Kath Shurcliff. "Government officials' involvement is critical -- they can monitor the monitoring and, as a result, set the rules, hopefully in a cooperative fashion." A government's involvement can lead to policy reform and greater impacts. You want as broad participation as possible. If it is in the hands of only a few, it will be harder to convince people. "Decision makers may not have the time to participate, but they have to buy in," says Rod Taylor, former Senior Program Officer for Asia and the Pacific. The key to involving powerbrokers is demonstrating the relevance to them. There has to be a high degree of stakeholder analysis. Think about the layers of stakeholders and their roles in terms of interest and influence. You need to look at the stakeholders repeatedly and see if they've changed. This is typically done once and never again re-evaluated. Community members must participate in this process and need to decide who else should.

8. Respecting Rhythms of Community Life

Describing the need for project managers to adapt to the socioeconomic rhythms of the community, Laurent Somé says, "You should know when to cancel a meeting. For example, don't conflict with farming activities. If it rains and people need to get out to work their fields, don't put them in the awkward situation of feeling obligated towards you. Keep a balance between what you are asking community members to do and what they are getting in return. If people have the

impression they are not getting very much from you, you cannot keep bothering them with meetings and other demands on their time." BSP's Diane Russell recommends integrating monitoring into church or village meetings, where community members usually get together. These are good opportunities for community discussions.

9. Being Open to Unexpected Results

"I think it should be assumed that we don't know what all the best actions are to achieve the desired results," says Kath Shurcliff. "I've heard quite a few scientists say we know what the solutions are; it's just getting people to do it. I've seen too many scientists in coral reef studies assume they know what the answers are. Then they argue when new information comes up that runs counter to them, and make up excuses as to why that's happening rather than thinking, 'yeah, maybe we haven't got it right.'"

Conclusion

No matter how well you plan your project, it will never go exactly as you intended. That's exactly why monitoring is essential. In many ways, the most interesting results -- the findings that lead to true advances in understanding -- are the ones you never expected to get! You will only benefit from these unexpected results, however, if you are ready to look for them, learn from them, and act on them. Being genuinely curious and willing to learn from both success and failure will ultimately strengthen your skills as a project manager and help you achieve your goals. If you have monitored along the way and you do achieve your goals, others will be able to replicate your success.

Monitoring along the way makes it possible for other communities to replicate a project's success.

The ever-changing interplay of biological, cultural, socioeconomic, and political factors requires constant vigilance. Therefore, monitoring must be ongoing and integrated into all aspects of project management. Perhaps most important is constant self-monitoring -- reflecting on whether you are "tuned in" to both people and the environment. As John Parks likes to put it, "You don't just turn a radio on and necessarily get the information you want. You turn it on and you get static. You have to tune in to the key information you need. Monitoring tunes in to signals."

"Community-based monitoring is about getting to the point where we are keeping watch over our own patch of natural surroundings in which we exist," Parks says. Keeping watch -- over where you are going, what you are doing, and why you are doing it -- and using this information to make better resource management decisions.

Fiji Case Story: Accounting for Success in Community-based Monitoring

Since January 1996, BSP and its partners (University of the South Pacific, Rainforest Alliance, South Pacific Action Committee for Human Ecology and Environment, WWF-South Pacific, and the Fiji Department of Environment) have been working with community members in the county of Verata Tikina, Fiji to monitor their marine resources. So far, it seems to be working. Many of the ingredients discussed above might help explain why.

For centuries, Fijians have relied on marine ecosystems for their food and livelihoods. Today, however, community members in Verata Tikina, a county of seven villages, are worried about threats to their

marine resources caused by overharvesting and siltation. They want to control overharvesting and, at the same time, find alternative sources of income.

Fiji's biologically diverse coral reefs are attracting global attention as potential sources of novel chemicals that may hold cures for cancer, AIDS, and drug resistant bacteria. BSP and its partners have been working with community members to monitor their resources and to enhance their economic returns by developing a biological prospecting agreement between local communities and pharmaceutical companies. Together they are working to establish new policies that will allow the benefits paid from the chemical screening of the marine organisms and possible drug development to go directly to local communities, instead of exclusively to national coffers.

In Fiji, marine resource tenure is community based. "Communities know the reefs like we know our backyards," says trainer John Parks, who facilitated the communities' design of a nearshore marine resources monitoring program. Fijians live in highly structured, tight communities and possess strong traditional ecological knowledge of their ecosystems. Villagers take a highly communal approach to decision-making and have close contacts with their government officials.

In 1996, the Verata communities participated in resource assessments that prioritized their villages' needs. Community members mapped their villages, identified perceived problems, and discussed how to solve them. Then, in April 1997, a two-week workshop in participatory biological monitoring was held in Verata. Representatives from all seven communities participated and numbers swelled as more villagers, intrigued by the goings-on, joined in. Participants identified local marine resource-management problems, developed action plans to meet the challenges, and designed monitoring plans to judge the success of the interventions. Two *tabu* sites (no-take zones) were identified and approved by villagers to allow comparison of the levels of organisms in harvested and nonharvested sites, to study recovery rates, and to conserve biodiversity.*

At the end of the workshop, the villagers invited 40 government managers on a field trip to view the monitoring in action. "The government officials saw that the village residents were perfectly capable of doing a fairly sophisticated level of quantitative monitoring and that such efforts could clearly complement policy level actions," says Parks. "They were amazed at the ability of the Verata people to monitor their resources and explain the importance of the results. Some admitted they thought such skills could only be developed through formal university education."

In fact, the government representatives were so impressed that they asked for a training workshop to be held for their own government departments and also brought in NGOs. At this workshop, held in July 1997, 30 more participants learned the techniques and theory of participatory biological monitoring methods and assisted the Verata people in their monitoring exercises.

Through their participation in BSP's monitoring workshops, Tomitiani (Tomu) Boginavalu and Pio Radikedike, the administrative chiefs (mayors) of two Fijian villages in Verata, have developed a passionate commitment to monitoring and sustainable resource use. They are seeing, for example, that controlled harvesting is allowing the recovery of the saltwater cockle, known as "kaikoso," in the no-take areas. Kaikoso was chosen by the community as an impact indicator. It is easy to count and measure, and it is a resource that the community values. Tomu recently presented his concerns about coral harvesting at a Verata council meeting. The council endorsed his concerns and presented a motion to ban coral harvesting to the Tailevu Provincial Council. Strong local leadership seems to be critical to working with the larger community and involving the appropriate stakeholders.

Pio and Tomu believe their villages' unity is a key to successful monitoring. "A Fijian traditional village has a cooperative spirit," explains Pio. "In social settings like this, their advice is, 'Do the training in each village because then the people see what the training is all about. Don't just send one or two people somewhere because, if there is just one voice, it won't be heard . . . more people reinforcing and emphasizing -- that really works.

Everything is done communally so everyone in the community needs to be aware. There will be more discussion about it, more questions asked, more issues coming up. It helps the whole process. Even when we have a bowl of grog, then we can explain to the rest of the communities what monitoring will bring to the future of our children."

As a result of having seen the training done in the village, many people are interested in the monitoring. "We have to explain at the village meetings what the monitoring team has done and what is being learned," says Tomu. "The community has learned from the training that, although everyone has an opinion, if you have information, *that* is not just an opinion. Then people accept what the information is telling them."

"From the start," recalls Parks, "nobody told the Verata community what they should monitor. It was their decision entirely. All you can do [as a trainer] is facilitate a process. Monitoring has to belong to the community. It has to be fully participatory. If at any stage it becomes yours [the outsiders], you've lost it."

BSP Conservation Practitioners and Partners Interviewed for This Issue

Tomitiani Boginavalu, Administrative Chief and Local Monitoring Trainer, Verata, Fiji

Hank Cauley, former Director, BCN

Judy Ogleshorpe, Director, Africa and Madagascar Program

John Parks, Program Officer, BCN

Pio Radikedike, Administrative Chief and Local Monitoring Trainer, Verata, Fiji

Diane Russell, Senior Program Officer, BCN, Fiji

Vance Russell, Program Officer, Analysis and Adaptive Management Program

Nick Salafsky, Senior Program Officer, BCN

Kath Shurcliff, Director, KEMALA Program, Indonesia

Laurent Somé, Senior Program Officer, Africa and Madagascar Program

Meg Symington, former Director, Latin America and Caribbean Program

Rod Taylor, former Senior Program Officer, Asia and the Pacific Program

Recommended Resources in Community-based Monitoring

Larson, Patricia and Dian Seslar Svendsen. 1996. *Participatory Monitoring and Evaluation: A Practical Guide to Successful ICDPs*. Washington, D.C.: World Wildlife Fund.

Margoluis, Richard and Nick Salafsky. 1998. *Measures of Success: Designing, Managing and Monitoring Conservation and Development Projects*. Washington, D.C.: Island Press.

Peters, Charles M. 1994. *Sustainable Harvest of Non-Timber Plant Resources in Tropical Moist Forest: An Ecological Primer*. Washington, D.C.: Biodiversity Support Program. (also available in Spanish, French, and Bahasa Indonesia)

Salafsky, N. and R. Margoluis, with K. Redford, B. Dugelby, and J. Adams. In press. *Adaptive Management: A Primer on Its Use and Application to Conservation and Development Projects*. Arlington, Virginia: The Nature Conservancy.

What Do You Think?

We'd like your feedback on this first issue of *Lessons from the Field*. Please take a minute to tell us what you like or don't like about this article and ways we could make it more useful. If you want to send any comments or suggestions [please click here](#).

About This Publication

BSP's *Lessons from the Field* features topics that shed light on the conditions for conservation success, based on what BSP is learning from our partners in the field.

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About BSP

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

BSP's mission is to promote conservation of the world's biological diversity and to maximize the impact of U.S. government resources directed toward international biodiversity conservation.

We believe that a healthy and secure living resource base is essential to meet the needs and aspirations of present and future generations.

To accomplish our mission, we support local communities, NGOs, and governments to establish:

- clear conservation priorities, goals, and objectives;
- democratic social processes, dialogue, and partnerships;
- incentives for ethical valuation of nature;
- favorable policies; and
- enhanced awareness and knowledge.

Featured Writer

Nancy Baron is a consultant in biodiversity communications with expertise in communicating environmental messages targeted to specific audiences. An educator, writer, and biologist, she has pioneered many innovative public education initiatives and award-winning public awareness programs. She has extensive experience implementing outreach and media strategies and is a regular columnist for the *Vancouver Sun* newspaper, as well as a magazine feature writer. She is the recipient of a 1997 Canadian Sciences Writers award. In 1995, she received the British Columbia Science Council's top award for science communications. An expert field naturalist, she is the author of the recently published field guide, *Birds of the Pacific Northwest*.

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*Monitoring of these tabu areas is already showing some recovery of marine organisms, much to the excitement of the villagers.