Developing

Community-based Management Systems for The Amazon Floodplain: Lessons we are learning

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Instituto de Pesquisa Ambiental da Amazônia – IPAM

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Foreword

Having been involved from the inception of Varzea Project, it gives us great satisfaction to introduce this document on key lessons learned by the project, in its tireless work to develop a model for community-based management of floodplains in the Amazon, developed from 1994 to 2006.

The goal of development and implementation of a management system for floodplain lakes has fully achieved, and we have no hesitation in confirming that the work carried out by WWF-Brazil and IPAM in Santarem in collaboration with a range of local and national stakeholders has had very profound and long-lasting impacts on how Amazon floodplains are managed, used, lived in and valued. And these impactsare sure to be felt well into the future, given that what the project has done is to put in place the main elements of an approach to management of varzea ecosystems which is truly community-based, and are therefore more likely to be sustained in future. Of course much remains to be consolidated, and WWF and IPAM as well as other organisations and governments will continue to ensure that this happens.

WWF is proud to be associated with this initiative, and will continue to promote its learnings and achievements, because they demonstrate how participatory, community-based approaches that link practical interventions on the ground with policy work at regional and national levels can have positive effects on livelihoods and contribute in practice to sustainable development.

March 2006

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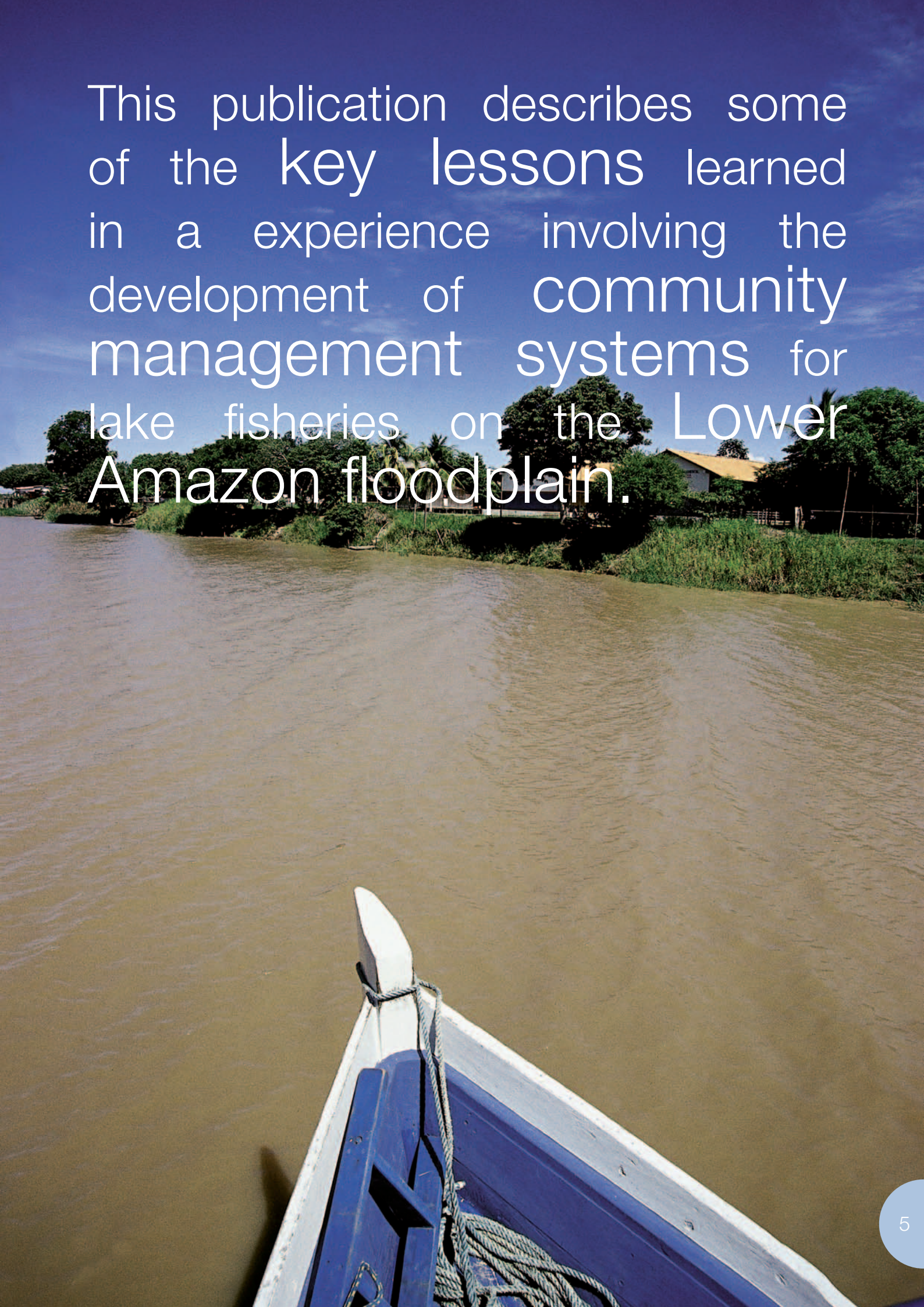
Introduction

Community-based management as a conservation strategy in the Brazilian Amazon grew out of an alliance between grassroots organizations seeking to protect their forests and livelihood from the encroachment of commercial loggers and ranchers and environmental NGOs who saw traditional extractive systems as the basis of a promising approach that reconciled the objectives of forest conservation, social justice and economic development. With the assassination of rubber tapper leader Chico Mendes and the resulting national and international outcry, this alliance quickly achieved a number of important political victories resulting in the creation of a new category of conservation unit, the extractive reserve, and the National Center for Traditional peoples (CNPT), responsible for administering the extractive reserve system. These successes also fueled changes in Brazilian resource management policy leading to greater participation by local stakeholders. Encouraged by these events and the apparent potential of the extractive model, donor organizations invested millions in a wide range of community-based management initiatives.

Unfortunately, the rapid political conquests of the alliance were not matched by comparable gains for the communities and it soon became apparent that none of the key members of the alliance was prepared to perform its role within the extractivist proposal. Environmentalists soon realized that while the impact of traditional resource use on forests was far smaller than that of commercial loggers and ranchers, traditional people are not park rangers and many of their practices contributed to the depletion of game species and other forest resources. In addition, while traditional people have a profound knowledge of local natural history, they rarely had coherent management systems for sustainably managing local resources. For their part, communities found that while environmentalist proposals may be effective for conserving biodiversity they were far less effective for for improving incomes or the quality of community life. Furthermore, biodiversity conservation did not provide an adequate basis for designing sustainable management systems.

There were also problems with local organizational capacity. While grassroots leaders were often skilled at mobilizing people to pressure government agencies for concessions, influenced by the preservationist, subsistence orientation of Liberation Theology, they tended to regard markets as a problem to be avoided and not as the vehicle through which groups must realize their economic objectives. Furthermore, community culture and social relationships are often at odds with those required for local organizations to produce efficiently and compete successfully in regional and national markets.

As a result the honeymoon between grassroots organizations and conservation groups was short and the partners in this marriage have struggled along a very rocky road during the last decade as they sought to overcome their individual and collective deficiencies. In the process their initial idealism has given way to a more pragmatic perspective on how to reconcile conservation objectives and community aspirations. While clear-cut successes are still rare and disappointments many, the partners have not given up and have instead learned from their misconceptions and mistakes, gradually developing the collective knowledge and skills needed to translate into reality that original vision of communities sustainably managing their local resources and improving family and community well-being.



This publication describes some of the key lessons learned in a experience involving the development of community management systems for lake fisheries on the Lower Amazon floodplain.

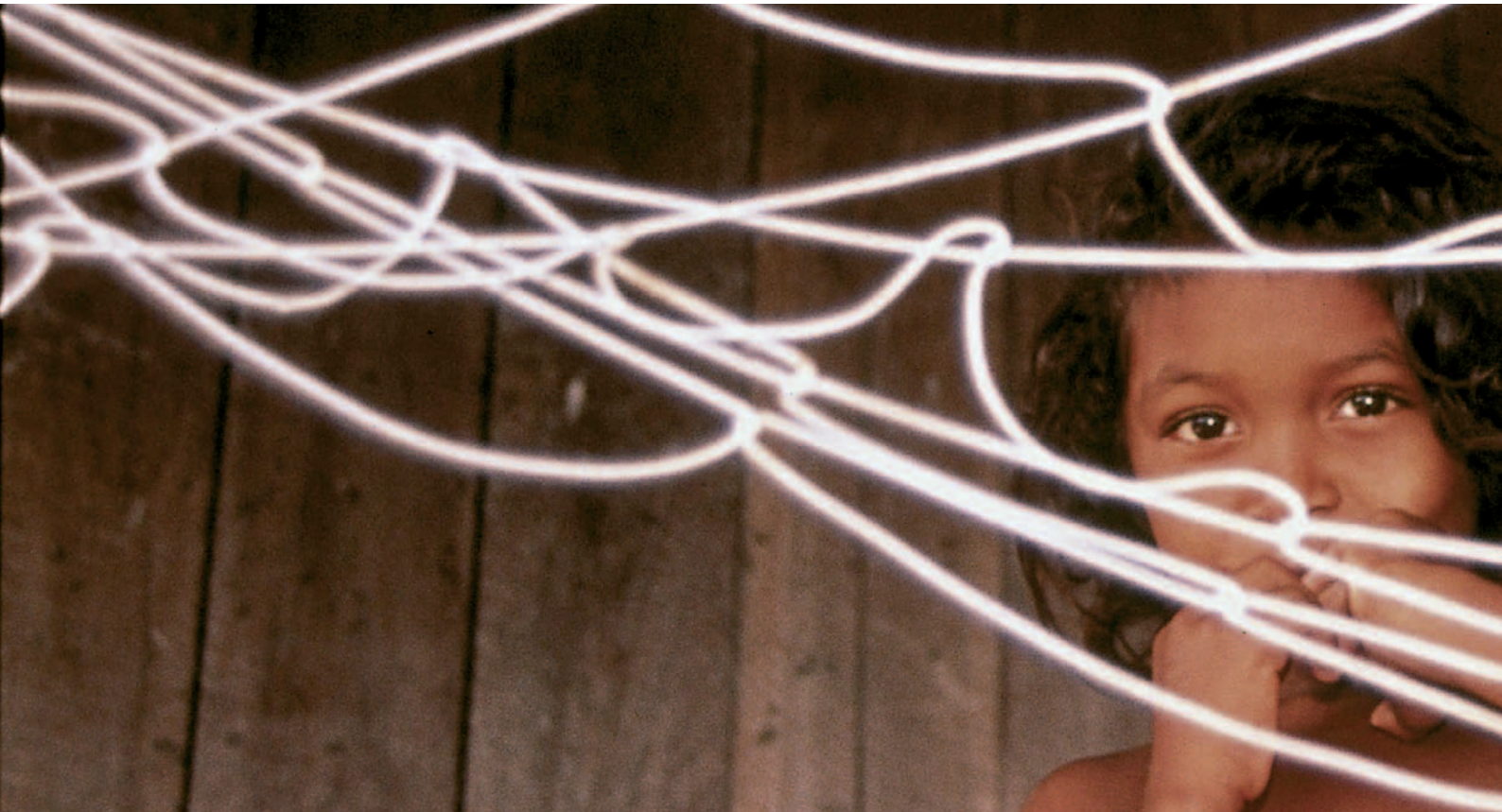
1. Background

The Lower Amazon is a cultural term for a region extending from the confluence of the Madeira and Amazon Rivers in the West to the mouth of the Xingu River in the East. It is one of the oldest and most densely settled areas of the Amazon floodplain in Brazil. Unlike areas up and downstream, the landscape of the Lower Amazon floodplain, or várzea as it is called in Brazil, is dominated by large expanses of seasonally inundated grasslands and wide shallow lakes. Forests tend to be located on the levees bordering the main river channels. Settlement on the floodplain consists of smallholder communities and large ranches with houses strung out along the higher ground of the levees. The main economic activities include fishing in river channels and lakes, farming on levees around houses and ranching on natural grasslands.

With the decline of jute farming in the late seventies and early eighties, commercial fishing and cattle raising have become the dominant economic activities, taking advantage of the two main common property resources of the floodplain, lake fisheries and natural grasslands. Beginning in the seventies, the intensification of commercial fisheries led to the proliferation of conflicts between communities and outside commercial fishers. In response communities throughout the Amazon floodplain have organized to take control of local lakes and establish collective fishing agreements to control pressure on their fisheries.

These fishing agreements were considered a promising strategy for conserving floodplain fisheries. However, given that lakes are open systems in which fish and water move in and out over the course of the year, the impact of these agreements on local fish populations is not clear. To evaluate the effect of these agreements on lake fisheries, Varzea Project undertook a study of household fishing in three communities with different management regimes. This preliminary study showed that fishing agreements could have a significant positive impact on the productivity of lake fisheries.

While potentially effective in conserving local fisheries, other factors must de addressed before this approach could become the basis of a regional strategy for the conservation of the Amazon floodplain. First, reducing pressure on fisheries will require increasing income from other household activities especially farming. Second, it is not enough to control



fishing pressure, it is also important to mitigate the impacts of activities, such as extensive cattle ranching, which contribute to the degradation of the floodplain habitats that sustain lake fisheries. Third, few communities have the organizational capacity to effectively implement them. Finaly, community agreements were initially considered illegal by the government, so a major priority involved developing policies that defined criteria and procedures for legally recognizing these fishing agreements.

Based on this context, the Várzea Project started operations in July 1994, executed by Ipam with technical and financial support from WWF and has worked with the Santarém Fishers' Union, floodplain communities and government agencies to make these informal fishing agreements the basis for a regional strategy for the sustainable management of the Amazon floodplain. To achieve this objective the project focused on six main objectives:

1. development of community-based management systems for floodplain fisheries,

2. development of economic alternatives to diversify household income sources

3. research on the commercial fisheries sector to understand better the interaction between community managed lakes and the regional fishing economy,

4. formal and non-formal educational programs including environmental education for community schools and management courses for community leaders,

5. development of policies for the participatory management of floodplain fisheries,

6. programs to strengthen local organizational capacity to develop and implement fishing agreements.

In the following pages we present some of the lessons we are learning as we have implemented this program during the last twelve years.

2. Co-management as negotiated process

Communities want more government participation, not less, but they want government support for their rules, which are not necessarily those of government fisheries policy.

Over the last decade, there has been a revolution in natural resource management characterized by a shift from the scientific management model in which government biologists have largely determined rules of access and use of resources to regimes in which resource users have varying degrees of participation in the definition of management rules. In general this shift has been explained as a response to the perceived failure of the scientific management model and the need to integrate users into the decision-making process. While this explanation may be accurate for regions in developed countries with large government agencies dedicated to managing their natural resources, in many parts of the Third World, such as the Amazon, the problem is not so much excessive government control but the absence of it, or rather a combination of highly centralized and authoritarian decision-making with an almost total lack of capacity to carry out management policies in the field. The rise of community management initiatives in these latter cases is not so much in opposition to the government but an attempt to fill the vacuum created by its absence. This distinction is important in designing co-management systems that address local needs. People don't want less government interference. They want more government's support, but they want government to support their initiatives and their interests.

Creating formal co-management system requires not just new policies, but new institutions, new roles and learning new ways for stakeholders to relate to each other.

The tradition of community fishing agreements, well established in the Lower Amazon region by the beginning of the 1990's, provided the basis for development of the proposed co-management system. But to make this transition, a number of problems had to be addressed. First, there was no legal basis for community fishing agreements, so there was no possibility that the government could support them. Second, there was no clear institutional structure for developing and administering the agreements and related to this no systematic process through which all stakeholders could participate in developing such agreements. As a result, the legitimacy of these agreements was often questioned by outsiders and community members who do not agree with their provisions.

Over the course of the 1990's the policies and institutions that provide the basis for the regional co-management system were developed. First, the National Environmental Agency (Ibama) defined criteria and procedures for legal recognition of collective fishing agreements. Next, Regional Fisheries Councils, consisting of representatives of all the communities associated with a given lake system, were created. These Councils are responsible for developing a fishing agreement, submitting it to Ibama for legal recognition and implementing it once it has been approved. Finally, volunteer environmental agents (VEA's) were trained to work with their respective communities and Ibama field agents in monitoring and enforcing agreements.

As the co-management system has been developed, operational and structural problems have emerged. The operational problems result from the difficulty that stakeholders have in taking on their new roles within the evolving co-management system. While the VEAs were supposed to organize community participation in monitoring and enforcing fishing agreements, in practice communities have tended to regard them as solely responsible for enforcement activities together with Ibama. At the same time, Ibama agents, resentful of having to share power with the VEA's, have often ignored their citations, thereby undermining VEA authority in the community. VEA's, isolated within their communities and ignored by Ibama, find themselves largely powerless to enforce agreements, with the result that many have abandoned their positions.

These operational problems are exacerbated by structural problems that hamstring the co-management system. First, to obtain legal recognition, an

agreement cannot limit who has access to the lake fishery. It can specify rules for how to fish, but it cannot prohibit outsiders from fishing in the lake if they obey the rules. Second, communities cannot charge a fee for fishing in their lakes. These two restrictions are derived from the Brazilian Constitution, so they cannot be overturned. However, they violate a fundamental tenet of common-pool resource management: the right of those who invest in the management system to have more or less exclusive access to the benefits of their labors. As it now stands, one small group is responsible for creating and enforcing the fishing agreement, while virtually anyone has the right to the benefits created through their efforts.

Since these restrictions cannot be changed, we are seeking other ways of making the co-management system more consistent with the requirements of collective action. The Várzea Project is currently pursuing two strategies: development of a licensing system that defines a specific group of fishers with exclusive rights to the fishery and establishment of a wholesale market in Santarém through which it will be possible to charge a marketing fee part of which can be invested in the co-management system. These are just two examples of how it is often necessary to devise alternative strategies when legal constraints limit available options for insuring the economic sustainability of the system.

Two key lessons here are:

1. Development of a co-management system is a continuous process of institutional learning, of constant adjustments to resolve problems created by the different expectations of stakeholders and the legal and institutional constraints on the range of possible options, and

2. That government participation is inherently unreliable, so it is essential to devise systems that are self-sustaining. Government participation is welcome, but the system cannot depend on it to function.

3. Building effective community management organizations.

The central problems of community management are organizational rather than technical and have to do with creating the conditions under which individuals can work together to achieve common objectives.

The 1990's witnessed a rapid transition from early optimism with regard to the potential of community management to disillusionment and even cynicism. Early optimistic views tended to be based on romantic notions of community solidarity. In contrast, critics of community management often emphasize the individualistic and opportunistic nature of traditional Amazonian society, which they see as a major barrier to development of effective collective management initiatives.

The problem of developing strong community management organizations is even more complicated in the case of lake fisheries because fish are mobile and hidden under the water. This makes it difficult to monitor the status of populations and measure progress in achieving management objectives, while the costs in terms of time and money spent in meetings and patrols are very concrete. Furthermore, there is a great incentive for poaching and free-riding, exacerbating uncertainty about compliance with rules and the likelihood of achieving management objectives.

The central dilemma for community management of lake fisheries, then, is as follows. Individual action has no effect, since those who do not respect the rules reap the benefits of those who do. The cost of compliance can be quite high in the beginning, as it usually requires reducing catch or eliminating more productive gear. Finally, people lack confidence that free riding or poaching will be controlled, so there is considerable uncertainty whether future benefits from management will in fact be achieved. Under these conditions, successful community management systems are something of a miracle.

Pirarucu Management

After several false starts, Varzea Project began working with community groups to develop management systems for the pirarucu (Arapaima gigas), one of the largest freshwater fish species in the world. It is a highly valued commercial species that is also of great cultural importance. Traditionally caught by harpoon, successful pirarucu fishers are highly respected for their skill. The pirarucu has several other characteristics that make it a promising species for community management: it surfaces regularly to gulp air, is largely sedentary, spawns in floodplain lakes and forms couples to care for offspring.

A method for estimating lake pirarucu populations based on wildlife census techniques has been developed at the Mamirauá Sustainable Development Reserve. This method takes advantage of the biological characteristics of pirarucu and the pirarucu fisher's skill in distinguishing adults from juveniles when they rise to the surface. A group of pirarucu fishers from Santarém traveled to Mamirauá to learn the technique. On returning they formed a management team and developed management systems for community lakes based on the participatory census technique. In addition to the census, fishers monitor couples with young during the breeding season. Teams also monitor the pirarucu catch in community lakes, including those that are not part of the management system.

Whereas before fishers could say only that a lake had more or less pirarucu than another, now the management team can make a reliable estimate of the number of adult and juvenile pirarucu in managed lakes, the size of the breeding population and the size distribution of the pirarucu catch. Teams can now estimate how many pirarucus can be caught each year without threatening the sustainability of the system, monitor progress in rebuilding lake pirarucu populations and periodically revise management rules as deemed necessary.

Harvesting strategies differ from community to community, but the most effective method in terms of effort, selectivity and distribution of benefits is a collective harvest using large nets and harpoons. The management team organizes one or more collective harvests, usually at maximum low water when fish are concentrated in smaller water bodies, to catch the entire annual quota. Income from the sale of fish is divided among participants according to how much they contributed to management activities with a proportion of the total going to a community fund.

This system also reinforces community organizational capacity. It revolves around a participatory census methodology in which results depend on the ability of team members to work together. Successive annual estimates of lake populations enable the team to measure progress in achieving management objectives and provide strong positive feedback in support of management efforts. The collective harvesting system reinforces the fact that the fishery is a community resource and the size of the total catch provides concrete evidence of the value of the fishery to the community. The contribution to the community fund underscores the colllective benefit provided by the fishery, while the division of income among participants insures that rewards are in proportion to each fishermans contribution to the management system. Finally, the system contributes to the self-esteem of participants and the community. Monitoring techniques depend on the skills of pirarucu fishers and teams develop a strong esprit de corps. Communities also take considerable pride in the success of management efforts and the size and rate of growth of their pirarucu fisheries.

Through this approach it has been possible to reduce uncertainty with regard to the effectiveness of community management of the pirarucu fishery. As pirarucu management comes to be seen as competitive with cattle ranching in terms of income and reliability, the incentive to bring cattle grazing on grasslands under stricter controls is increasing, thereby reducing damage to floodplain habitat and increasing the overall productivity of the management system.

What are the key lessons here?

1. First start with a core group of committed individuals with a clear idea of their overall objective, rather than seeking to convince an entire community to participate. If successful, others will join the initiative later.

2. Second, emphasize concise actions that generate visible returns and build confidence in the group's capacity to work together to accomplish common objectives. These returns do not need to be economic, but do need to show that objectives are being achieved, such as a high level of participation and increases in the populations of managed species.

3. Third, eventually the initiative must generate economic returns, directly or indirectly, that are clearly related to success in achieving management objectives.

4. Fourth benefits must be distributed in proportion to each individual's contribution to the total effort.

4. Environmental education: tools to evaluate

Environmental education is often regarded as the key to changing behavior that contributes to the degradation of local resources. A common assumption is that people are unaware of how their actions contribute to the environmental problems they face and that by helping them to become aware of the environmental consequences of their actions they will change their behavior.

The experience of Varzea Project, on the other hand, suggests that people are generally acutely aware of how their actions contribute to local environmental problems. Often two factors are responsible for their continuing to engage in environmentally destructive behavior. First, immediate economic needs and the lack of short term alternatives may force them to continue overexploiting resources despite the longer term consequences of such activities. Second, and more relevant to the present situation, where unilateral individual actions have little effect and individuals do not trust local organizations to control cheating, there is little likelihood that individuals will cooperate to solve their environmental problems.

This is just the predicament that floodplain smallholders face in dealing with the overexploitation of floodplain grasslands and lake fisheries. Here, environmental education is most effective when it helps individuals to better understand the social and environmental dynamics contributing to the situation. However, this understanding, without the kind of step-by-step process of organizational development described in the previous section, is unlikely to lead to successful collective initiatives to change the destructive dynamics.

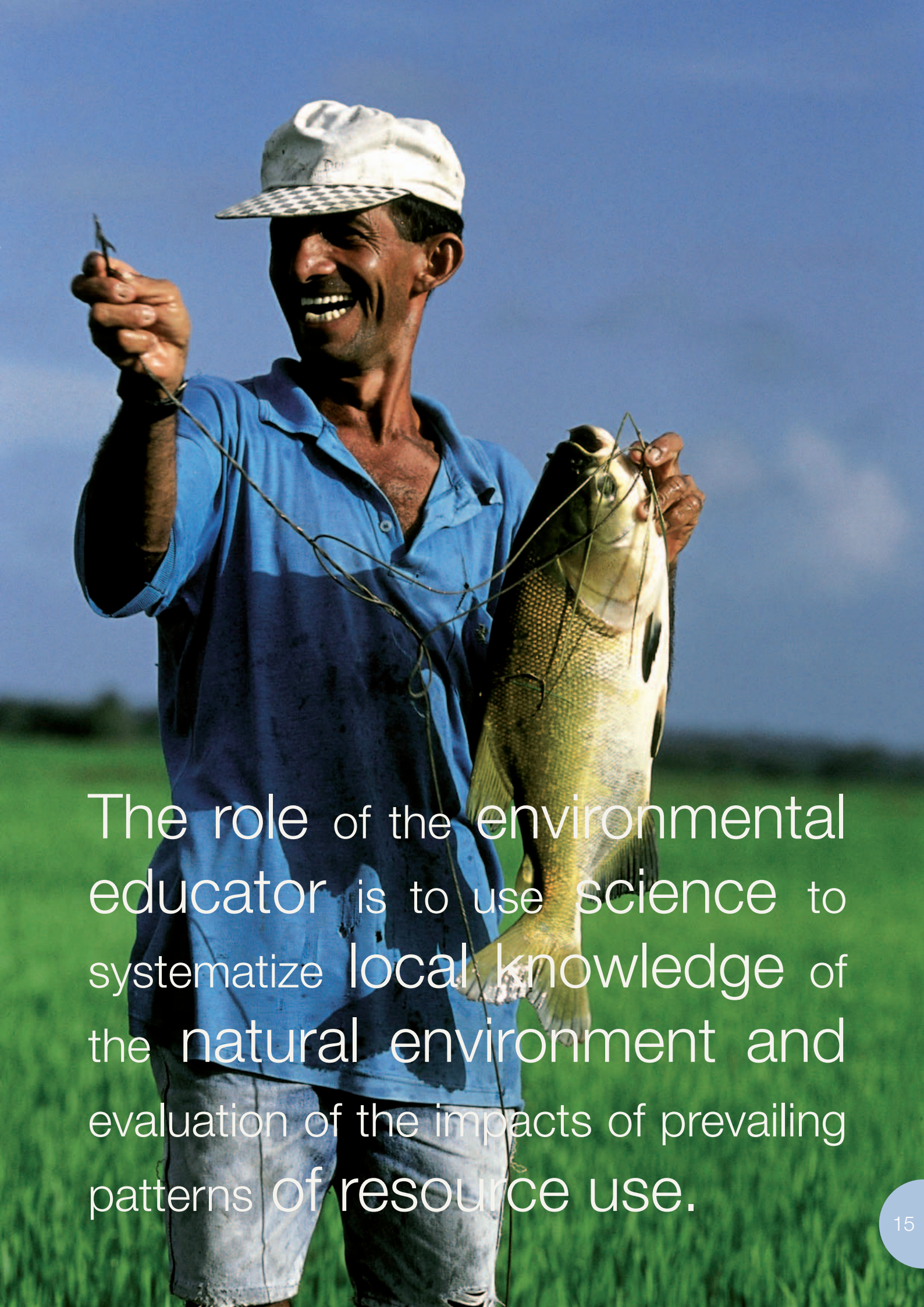
A basic element of Varzea Project´s approach involves presenting information and analyzing problems in ways that build on and thereby enhance participants' understanding of the world they live in. A second element involves developing a quantitative a model of the system so that people can better visualize natural processes and the absolute quantities involved in local patterns of resource use. Our aim here is not to help people understand that one approach is good and the other bad, but rather to help them acquire the conceptual and practical tools they need to evaluate resource use alternatives and make choices that more fully take into account the short and long term costs and benefits of these alternatives.

In summary, environmental education programs can be most effective when they seek to achieve three basic objectives:

1. systematize local knowledge of floodplain natural history through the basic concepts and theories of biology, ecology and physical geography,

2. develop an understanding of collective patterns of resource use at the community and regional scales and how they interact with the regional ecosystem, and

3. analyze the interaction between individual and collective interests that lies at the core of most common pool resource problems.



The role of the environmental educator is to use science to systematize local knowledge of the natural environment and evaluation of the impacts of prevailing patterns of resource use.

Understanding how the world works

The first step in this process involves developing a common understanding of how the natural world works that integrates local knowledge of the surrounding environment into basic scientific concepts and theories. People of the floodplain, be they farmers, fishers, hunters, gatherers or ranchers, must be careful observers of their natural environment if they are to be reasonably successful at making a living. Consequently, they tend to have a profound understanding of the biology of key species and of local ecological processes. What they often lack are the overarching concepts and theories of modern science through which to systematize and integrate that knowledge into a coherent framework for managing local resources.

Towards this end, the environmental education program developed a text consisting of some eleven themes, progressing from the physical geography of the floodplain through basic concepts of ecology, biology and human ecology each of which focuses on the corresponding aspects of the floodplain ecosystem. In each section teachers presented the basic concepts and principals and students then drew on their knowledge of local natural history to present examples that illustrated the categories, relationships, life strategies and ecological processes under discussion. This approach has two important consequences. It values local knowledge and demystifies science by making scientific concepts and theories understandable in terms of participants' everyday experience of the natural world.

Individual and Collective Patterns of Resource Use

A second objective of environmental education is to draw on local experience of individual or household resource use to develop and explore the implications of community and regional resource use patterns. Again, individuals have a very good idea of what they do and the approximate quantities of resources that they exploit and consume, but they rarely scale up to community or regional levels to understand the larger scale patterns of resource use and how they interact with the local environment. For example, what is the total community catch from local lakes? What is the total catch from these lakes when all the communities using the fishery are considered? What is the economic value of the fishery?

This kind of collective pattern is important in helping people to get a sense of the value of local resources and also for measuring changes over time. A second element of this approach involves estimating the costs and benefits of using different resources where these uses are in conflict, as is the case with fish and cattle.

The dynamics of Common Pool Resources

The independent variable in most environmental problems is human beings, the environment is the dependent variable.

The third element of environmental education focuses on the dynamics of common pool resource management, especially the interaction between individual and collective interests. This is in many ways the core of environmental education just as it is the core issue in most environmental problems. As mentioned in the previous section, the central issue is invariably organizational not technical, consequently, it is critical that environmental education programs focus on the organizational dynamics of resource use, especially on the potential conflicts between individual and collective interests and the conditions which contribute to either opportunistic short term resource use strategies or cooperative long term strategies. Common property theory is very useful in this context because it provides a theoretical framework for analyzing resource use problems which is based on a logic that floodplain smallholders intuitively understand.

In this context, the tragedy of the commons parable is an effective starting point for exploring natural resource use problems, as it expresses what is often the central dynamic driving resource degradation in fisheries and grazing. It provides a framework for analyzing local resource use problems, understanding the rationale behind different strategies, identifying factors which inhibit cooperative actions and facilitate opportunistic behavior, as well as, the conditions under which local actors might be more likely to cooperate. This kind of analysis helps move beyond moralistic judgments to understanding the motivations behind different strategies and how these strategies are influenced by different collective conditions.

In summary, perhaps the most important contribution of this approach to environmental education is that it builds on participants' knowledge of the local environment, local management practices and economic strategies and also local understanding of the dynamics of individual and community interests in resource use issues. In so doing, it provides an overall framework for understanding what is going on, provides tools for analyzing alternative courses of action and points to ways in which participants/members can design more effective management organizations that better address their long term interests, without resorting to moralistic admonitions of good and bad, right and wrong. In so doing it is an approach that treats people as adults, respects their knowledge and provides them with the tools they need to make informed choices regarding the use of their natural resources.

Schools as Centers of Community Change

A related issue is the role of schools in changing prevailing attitudes and behaviors with regard to the environment. We often have romantic notions about the potential role of schools as centers for stimulating change in the community, but this may not always be the case. Many teachers have little interest in community affairs. They may be from the city, have little or no relationship with the people in the community, and prefer to go home on weekends. Furthermore, relations between parents and schools are often complicated. Parents may make excessive demands on teachers and resent activities that are not part of the formal school curriculum.

Project educators should be aware of these issues and take them into account in designing projects and programs for community schools. For example, Varzea Project usually hold teacher-training workshops in community schools. These workshops usually involve an evening event, such as a "cultural night", to which the entire community is invited. These kinds of activities can help to improve not just Project relations with the community, but also relations between teachers and their community.

5. Community-NGO relations

Community-based conservation projects generally develop through partnerships between an non-governmental organization or comparable organization and one or more communities. This partnership is the core of the project and is often highly problematic. How the partnership develops is critical to the project's success in achieving its long term objectives, especially those that depend on the sustainability of project initiatives once NGO´s funding and technical support have ended.

The core problem has to do with community expectations of the project and of the partner NGO. Most communities in the Amazon and elsewhere are part of paternalistic or clientelistic social systems, and community leaders are often adept at manipulating relationships with outside elites to obtain benefits for their families and communities. They tend to see projects, not so much for their conservation or development objectives, but for the intermediate benefits they can provide, be they donations or income earning opportunities. It is tempting for NGO staff to fall into the trap of providing these kinds of short term benefits, because it often seems like the easiest way of obtaining community support for the project. Some of this is necessary and unavoidable. However, if the relationship is not properly managed, expectations with regard to these benefits may make the NGO-community relationship untenable and lead to the failure of the project.

How does one avoid falling into this trap?

Work with communities that are already fairly well organized

Working with communities that do not have an established democratic organizational structure is very complicated, because they do not have the basic elements needed for sustained collective action. They literally do not know what they want as a community. They tend to agree with anything reasonable that is proposed, but that agreement does not translate into action. One cannot trust decisions that are made, as they are unlikely to represent a consensus of the community, and so do not provide a reliable basis for action. A variant on this type of community is one in which there is one dynamic leader who does everything. This kind of community is often superficially attractive to projects because the leader makes and keeps agreements and gets things done. However, there is little effective participation in decision-making or even in project activities. Furthermore, leadership is skin deep. If this person steps down for one reason or another there is no one to take his or her place. This leader is also likely to concentrate economic benefits in his or her family undermining the legitimacy of the project.

It is also important not to confuse experience in other projects with an organized community. In many cases just the opposite is true. Communities that have participated in previous projects have often become accustomed to paternalistic relationships. They expect donations and to be carried along by the NGO and do not assume ownership and responsibility for the project. Because of these problems, it is usually best to start with communities that have little or no previous project experience.

The first step is to work with the community leaders to develop a functional and reliable democratic organizational structure. Developing such a structure generally requires that there be some objective driving the process. This effort should focus on the most significant and realistically achievable priority identified by the community. The conservation project can be initiated once the community has been organized, achieved its initial objectives and gained some confidence in its ability to work collectively.

Difficulty to underestimate the amount of discussion time needed for community members to understand a project and be ready to participate

First, it often takes people a long time to really understand and assimilate a new proposal/idea, even if it originated in a proposal made by the community. Consequently, much time must be dedicated to going over and over the same ground until it is clear that people really understand and have assimilated the idea. Second, the cultural tendency in dealing with outsiders is to want to please by agreeing to whatever is proposed, thereby avoiding conflict. This should not be confused with agreement. Often people will seem to agree and after the meeting go right on with whatever they were doing before. Not because they did not understand, but because they do not agree and do not want to say so.

To avoid these situations, staff should take a facilitative role, exploring possibilities rather than advocating a specific position. They should start by drawing out how participants see the situation. Community members need to feel that their views are understood and respected.

Formal agreements for the partnership

Once consensus has been reached on project objectives and activities and each partner's role, the next step is to formalize the agreement in a written contract. The agreement should spell out each partner's responsibilities, including specific tasks and resources each will contribute. It should also present a timetable for project activities identifying specific objectives to be achieved by the end of each period and criteria for evaluating performance. Regular evaluation meetings should be scheduled where representatives of each partner review project activities and results and make whatever adjustments seem necessary. As in any agreement, it should include criteria and procedures for termination if one or both parties decide not to continue.

Counterpart Contributions

A critical rule for these partnerships is that there should be an appropriate degree of reciprocity in each partner's contribution to the project. As much as possible, outright gifts to the community should be avoided. These are what Richard Smith calls "the gift that wounds". Outright donations for which the community cannot reciprocate create a physical and moral debt that damages the community's sense of autonomy and self-respect and creates a dependency that reinforces paternalistic relationships. From the start, the contributions of each partner should be of an appropriate scale and more or less in balance. The more the community contributes, the greater is its sense of ownership and investment in the project's goals and the more the project contributes to strengthening the community's collective capacity.

Group control over their share of project budget

One major source of dependence is NGO control of budget and payments for project activities. Whenever appropriate, group leaders should take responsibility for managing their share of the budget. Budget allocations should be defined as part of designing the project and be specified in the contract. Those responsible for administering the budget should receive training in accounting procedures and reporting methods. Budget reports should be presented in public evaluation meetings so there is a maximum of transparency regarding the quantities involved and the way they are spent.

6. Multi-level approach

Community management projects are embedded in a network of social, economic, ecological, institutional and legal relations. Consequently, it is not enough to concentrate on developing community management systems, because existing institutions and policies are simply unable to provide a reliable framework for such systems. Rather, development of sustainable participatory management systems requires strategic action in different and complementary areas. Many of these activities must occur more or less simultaneously so actions in each area reinforce each other.

In designing an overall strategy for developing a community management system, it is important to step back and examine the larger context within which the project is being developed. What are the linkages to individual households? How do other activities effect the resources to be managed? Are community organizations prepared to participate in the project and to manage the system? Will local markets compensate the additional effort in managing the resource? Do existing policies provide an adequate legal basis for collective management, protecting community rights to the resource and to the benefits that are generated? Project staff and community leaders must explore these and other questions and develop an overall strategy that adequately addresses the critical points identified through this process.

The Varzea Project in Santarém, for example, started by studying different community management systems to learn how resources were used and to evaluate to what extent the nature of the management regime seemed to have an effect on the productivity of the fishery. This work led to the conclusion that community management could have a significant effect on the productivity of lake fisheries, but that to do so would require a broad based approach. More productive fisheries depended on development of alternative income sources so fishers could reduce their dependence on lake fisheries.

In addition, fisheries policies needed to be modified to provide an effective legal basis for community management. New institutions also had to be created to implement these policies, while Ibama and other government agencies had to retool to be able to work within a participatory management model. Finally, community members, grassroots leaders, and government field agents needed to learn their new roles within the evolving management system. Lack of progress in any one of these areas would sooner or later have led to problems that could halt progress in development of the system, potentially jeopardizing its long-term sustainability.

7. Institutional framework for conservation and sustainable management

A key element of this kind of multi-dimensional approach is the formation of strategic partnerships between organizations responsible for different elements of the system. Here there is often confusion between the roles of governmental and non-governmental organizations, and also among different kinds of NGO's, such as community associations, rural labor and fishers' unions and other grassroots organizations. First, governmental organizations have responsibilities in the areas of policy formulation and implementation and law enforcement that are simply not transferable to other kinds of institutions. Either government agencies are equipped and willing to do these things or they wont happen. Second, it is important to distinguish between organizations like rural labor and fisher unions, that perform established, long term social and economic functions in local affairs and others like most kinds of NGO's, whose roles are essentially ephemeral, depending on continued access to outside funds and which have no established formal functions within the regional management system. A fourth type of organization includes those that perform economic functions and whose sustainability comes from being able to generate funds to cover the costs of their activities, such as community management associations and cooperatives and businesses that market the products of management systems. The long-term sustainability of conservation and management initiatives depends on strengthening collaborations between these three kinds of permanent organizations so as to create a self-sustaining institutional framework for conservation and participatory management.

8. Visits and exchanges between groups

Another important element of the approach taken here involves exchanges between groups dealing with similar kinds of problems. At various moments over the course of the last twelve years, groups of fishers and farmers have visited other groups elsewhere in the Amazon to exchange experiences and learn new approaches for farming the floodplain and managing its resources. For example, the participatory census technique for pirarucu was brought to Santarém by a group of fishers who participated in a training course in Mamirauá. These fishers have since trained some 50 other fishers in the Santarém region, as well as other groups in the Peruvian and Brazilian Amazon.

The Varzea Project confirmed that these horizontal exchanges between different groups have proven to be a powerful learning instrument for both community groups and project staff. It is one thing when outside specialists tell local leaders that a management technique works, quite another when a group of other fishers describes their successful experience. These exchanges also value local knowledge and highlight local achievements, building a sense of pride in the group's skills and accomplishments.

Participation in workshops and training programs has proved equally valuable for project staff. WWF-Brazil, for example, has sponsored a number of such opportunities for staffmembers working in fisheries management, environmental education, and project monitoring and evaluation. Through these meetings, staff not only learn new techniques and approaches but also establish relationships with colleagues working in other projects helping to create a network of management initiatives that fosters future collaborations.

9. Never underestimate how much time it takes to develop successful management systems

Two critical ingredients for developing self-sustaining community-based management systems are time and financial resources. Developing successful and sustainable management initiatives takes a great deal of time, usually far more than most donors are willing to invest. It takes time for people and institutions to develop the knowledge and organizational capacity they need to make changes. This is especially true when these changes involve government institutions and policies. In contrast, donors often see their role as one of developing new initiatives, assuming that after a couple of years of support they should be able to stand on their own. Sometimes this is the case, but all too often it is not, and good projects with great potential are abandoned just when they are beginning to have an impact.

There is also a trend to project funding, with NGOs and donors all competing to fund the newest approach or to invest their funds in the same region. When funding for a project ends, donors don't want to fund a second phase of the same approach, they want something new, regardless of whether or not the original objectives have been achieved and whether they continue to be important for conservation.

Fortunately, WWF-Brazil and Dfid do understand the need for a long-term approach based on a strategic vision of what the Varzea Project wants to achieve and what is likely to be the most effective approach to achieve that vision. Continuous support over twelve years has made it possible to build on the project's own accomplishments as well as those of other institutions and to begin to make a difference. Even after twelve years it is not clear to what degree the institutions and management systems that have been created are capable of standing on their own. As this document has tried to show, much still remains to be done to insure the sustainability of the system. But the important thing is that Varzea Project have had the support needed to not only set up the system but also to work with local leaders to improve its performance.

Thus far the Varzea Project had focused activities in one small portion of the Lower Amazon. A much greater effort is needed if we are to build on what we have learned here and seek to disseminate these approaches to other regions of the Amazon floodplain. Yet if this larger and longer term effort is not made, the overall objective of conserving the Amazon floodplain will not be achieved, and even gains made in areas where projects like the Varzea Project had worked may be lost. The challenge is enormous, but it is not beyond reach. It does require though that donor organizations understand the magnitude of the challenge and work to develop funding strategies that are of comparable magnitude.

Conclusions

If there is a central theme running through this text, it is that the key to this community-based approach to conservation is the quality of the partnership between the NGO and the community/grassroots organization. This partnership, in turn, depends on how those involved relate to each other. The critical point of departure in the Varzea Project is the understanding that local people know far more than we outsiders do about what it takes to conduct their lives. We must respect the capacity of our partners to make the decisions they think best serve their interests. We work with them as equals, each of us responsible for the choices we make, as we develop alternatives that better conserve local resources and improve local livelihoods.

A second point following from the first is that scientific researches cannot make change happen. It is not the NGO staff that will implement a management system and maintain it indefinitely. Change will only happen when the people responsible for local resources understand why they are investing in a project and begin to implement the decisions they made in order to achieve the goals they have set for themselves. The role of project team is to help create the conditions for change by working with our partners to help them understand the problem and strengthen their confidence in their ability to devise and implement collective solutions for sustainable resource use.

The lessons learned over the past 12 years from the Várzea Program may help adjust this model for the co-management of floodplain resources to other areas of the Amazon, as well as develop a nascent concept in the Amazon – management of water resources. Some challenges facing implementation of water resource management are the geographical spread of the Amazon river basin, social and environmental diversity of its population and the institutional capacity of local government authorities. Initiatives such as fishing agreements, however, can certainly provide inputs regarding participatory processes and adaptive management approaches, which consider traditional knowledge as a key component for conservation.

There is no road map and there is nothing easy or straightforward about the process. As one community leader said, “working with people is the worst work there is.” Fortunately, it can also be one of the most rewarding.

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