

Resolving Land Conflict Along the Border of the Mbaracayú Reserve, Paraguay

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ABSTRACT

A conflict over land use arose along the border of the Mbaracayú Nature Reserve in Paraguay, among the Aché indigenous community of Arroyo Bandera, the colonists of the María Auxiliadora settlement, and the Fundación Moisés Bertoni (the reserve managers). The Aché, who have legally-established rights to hunt within the Reserve, sought access to the Reserve by crossing over newly settled lands at María Auxiliadora. Concerned about illegal poaching and deforestation carried out by colonists, the Fundación Moisés Bertoni intervened to help purchase lands from the colonists and transfer title to the Aché, assisting the colonists to relocate to settlements more adapted to colonist needs. This paper describes the land conflict problem at Mbaracayú, analyzes the problem, addresses the adequacy of the social and decision processes and participants' goals, and makes recommendations for future problem-solving efforts. The selected policy, implemented in 1997-1998, was effective in satisfying many of the participants' interests in this case. However, several possible negative impacts of the policy are examined, including the possible creation of Aché dependency on the Fundación Moisés Bertoni, and the undermining of Aché claims of original rights to all of their former territory.

The Mbaracayú Nature Reserve is a 60,000 hectare protected area in eastern Paraguay managed by the Fundación Moisés Bertoni (FMB), a Paraguayan non-governmental organization. The Reserve is the second largest area protecting the Atlantic Forest of the Interior (or Alto Parana) forest type (Hill *et al.* 1997). About 90% of the species considered rare and endangered in Paraguay are found in the Reserve (FMB 1993), and the Reserve is especially important for the conservation of over 400 bird species, many of them endemic to the forest type (Padwe 1994; Madroño and Esquivel 1995). There are no human inhabitants in the Reserve. However, several human habitations surround the Reserve and pose a concern for the conservation of biodiversity within the protected area boundaries. Human communities include settlements of indigenous Guaraní agriculturalists (Ava Guaraní, Mbyá and Páitavyterá), settlements of the indigenous Aché hunter-gatherer group, and *campesinos* (smallholder farmers) living in colonies established in the process of land distribution by the Paraguayan Land Institute (FMB 1993). This case study describes the conflict over land use which arose between the Aché community of Arroyo Bandera, the *campesinos* of the María Auxiliadora colony, and the FMB managers of the Reserve. At Mbaracayú, the common interest of the three parties was peaceful co-existence.

This paper examines the policy problem which faced the participants. First I describe the policy problem in terms of its context, decision process, and the goals of the participants. Next, I present an analysis of the problem, paying specific attention to the historical trends and conditions which affected the outcome of the process. Finally, the alternatives for resolving the problem are considered, the selected alternative is analyzed, and the paper offers further recommendations for future improvements in decision making.

I was a participant in this case. From 1993 to 1997 I lived in the Aché community of Arroyo Bandera, where I worked as a community development

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extensionist in cooperation with the FMB. In my work, I spoke Aché, Spanish, and some Guaraní (commonly spoken by *campesinos*), and conducted meetings with Aché community members, managers within the FMB, and representatives of the María Auxiliadora community. Living and working at Mbaracayú, I came to understand that conservation problems there are problems among humans, and that resolving them must necessarily involve human values. Furthermore, my own values motivated my actions in attempting to resolve the problem.

As a participant, I came to understand the issues of land conflict at Mbaracayú. My analysis of the policy process at Mbaracayú uses a framework which is problem oriented as opposed to solution oriented. Problem orientation seeks to break problems down into their component parts so that they can be analyzed. A problem-oriented approach asserts that a focus on the nature of *problems* is a sound entry point for understanding how policy is formed in response to the problem, and for identifying solutions and understanding why they work (Clark *et al.* 2000). A solution-oriented approach would, on the other hand, tend to ignore or oversimplify the nature of a problem in the effort to produce “results.” The short-term actions produced when problems are not fully analyzed may ignore underlying forces which give rise to the problem in the first place. If those causes are not addressed, results-oriented approaches, with their focus on visible outcomes, may not solve a problem in the short or long term.

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THE LAND CONFLICT PROBLEM

Problems exist where there are differences between demands and reality, or expectations about reality (Dery 1984; Wallace and Clark 1999). At Mbaracayú, there existed a common interest in peaceful co-existence among each of the participants in the land-use conflict. However, where participants' individual goals were irreconcilable with this shared interest, a problem arose. Briefly, the goal of the FMB was to manage the Mbaracayú Reserve for the conservation of biodiversity, the *campesinos* of María Auxiliadora sought to improve their economic well-being through extractive activities and agriculture, and the Aché of Arroyo Bandera sought to maintain access to the Mbaracayú Reserve along customary routes through *campesino* territory, in order to exercise their legal right to hunt and gather in the Reserve using traditional methods. *Campesino* poaching within the Reserve, Aché destruction of *campesino* property, and resentment of both local communities towards Reserve management activities indicated the existence of a policy problem. The policy problem the participants were faced with was how to reconcile the divergent goals and practices of the three groups of participants.

Several alternatives existed to resolve this problem. One possible alternative was to ignore the problem and live with the consequences. A second was to seek an agreement over rights of travel across *campesino* land, coupled with stricter enforcement of Reserve rules regarding poaching by *campesinos*. A third

alternative, which was adopted, was proposed by the FMB: purchase the colonists' land, transfer title to the Aché, and relocate the colonists to better properties closer to roads and hospitals (Padwe and Weary 1997). The selected alternative satisfied most of the goals of the participants, and adequately resolved the problem.

The problem which faced the three participants in the conflict over land at Mbaracayú can in part be understood through the examination of social context, the decision process, and the goals of the participants.

KEY PARTICIPANTS AT MBARACAYÚ: SOCIAL CONTEXT

Social process mapping is a tool used to understand the contextual nature of problems, focusing on individual participants and their interactions (Clark 2000). Clark and Wallace (1998) discuss a framework for mapping human social process, which relies on identifying participants, their perspectives and their base values, assessing strategies, and determining outcomes and effects of participant actions. Social process categories useful for contextualizing participant interaction at Mbaracayú have been applied to the three key participants in this case study (Table 1). The following discussion highlights elements most relevant to solving the problem.

The Aché

The Aché are an indigenous group of formerly nomadic hunter-gatherers, of uncertain ethnic affiliation but speaking a Tupi-Guarani derived language (Susnik and Chase-Sardi 1995). The Aché made contact with Paraguayan society over the past 50 years as the Paraguayan state expanded the national economy, in the form of roads and settlements, eastward through what was formerly a vast forested area. The Aché traditionally inhabited roughly 18,500 km² of the Paraguayan interior (Hill and Hurtado 1996). As their territory eroded they were forced to make contact and incorporate themselves into Paraguayan society, although they still maintain hunting and gathering as an important means of survival. The Aché of Arroyo Bandera became involved in a series of increasingly violent encounters with the Paraguayan settlers of the María Auxiliadora colony after the establishment of that settlement by the Paraguayan Land Institute (Instituto de Bienestar Rural—IBR) in 1990. A new settlement of over 100 lots was made available for claims by landless rural people in what had once been publicly owned forest. The settlement was contiguous to the Mbaracayú Nature Reserve where the Aché maintain the legal right to hunt and gather using traditional bow and arrow methods. This right is outlined in Paraguayan Law 112/91, ratified by the Paraguayan legislature in 1991 (FMB 1993).

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Social Process Category	Aché	Colonists	FMB
Participant	<p>Traditional culture</p> <p>No tradition of private property</p> <p>Traditional enemies of colonists</p> <p>Awarded exclusive rights to hunt in Reserve (i.e. Reserve animals are Aché domain)</p>	<p>"Landless" peasants settled in colony by IBR (land institute)</p> <p>Well organized social group</p> <p>They are participants in a "land-rush"</p> <p>Deforesting in area, for agriculture</p>	<p>NGO responsible for management of the Reserve</p> <p>A point of first reference for disputants (a closer source of authority than government, court, etc.)</p>
Perspectives: expectations	<p>Expect free access to the Reserve</p> <p>Expect to rely on Reserve for hunting, gathering activities</p>	<p>Profit from speculation on their land allotments</p> <p>Practice agriculture</p> <p>Expect better social services from IBR</p>	<p>To continue to manage the Reserve without violent threats</p>
Perspectives: myths	<p>Tupi-Guarani derived world view</p> <p>Tension between self-image as poor and weak vs. image of hunter who can provide food</p> <p>Idealization of pre-contact period when Aché were all strong and lived well</p> <p>History of conquest</p>	<p>Frontier myth: the colonist as "civilizer" who must make the land productive</p> <p>Poverty justifies resource use</p> <p>Tradition of hunting "la marisca"</p>	<p>Conservation and sustainable development myth</p> <p>Mandate (from international donors) to bring progress to region but also to conserve biodiversity</p> <p>Myth embodied in mission statement</p>
Base values	<p>Well-being: the resources of the Reserve are important for the Aché to be able to nourish themselves</p> <p>Respect: the conflict with colonists over land-use is an iteration of Aché identity and a form of positioning vis a vis their neighbors</p>	<p>Not motivated as much by well-being in their poaching in the Reserve; rather, it is an expression of their dissatisfaction with their position relative to Aché in terms of Reserve use</p> <p>Respect: seek a strong position within social relations of the area</p>	<p>Rectitude: FMB agents suffer ills of countryside to do altruistic job</p> <p>Power: by intervening in conflict FMB legitimates its own power in the region—useful in future political issues</p>
Strategies	<p>Claim "original right" as lands are part of traditional homeland</p> <p>Invoke legal right to hunt vs. colonist poaching</p> <p>Threaten to "pull out" of cooperative role with FMB</p>	<p>Settle the area quickly by deforesting, planting and other "improvements" to the colony</p> <p>Complain to IBR regarding lack of social services</p> <p>Harass Aché who threaten security</p>	<p>Remove source of conflict by relocating colonists</p> <p>Secure funds by resorting to international donors</p> <p>Assert Aché desire for biodiversity</p> <p>Conservation as justification for titling land to Aché</p>

Table 1 The social context in the Mbaracayú Reserve.

The Aché saw the new settlement as an infringement on the forest where they had traditional rights to hunt and fish. Most important for them was the strip of land containing thirty new lots which separated the Arroyo Bandera reservation area and the Mbaracayú Reserve (see map, Figure 1). This strip was the site of Aché trails that led to the Reserve. After the creation of María Auxiliadora, the Aché continued to use these trails, passing over what was now colonist territory.

The Aché sought to maintain legally granted rights to hunt and fish in the Mbaracayú Reserve, and customary rights to pass over the colonists' property. Their traditional culture, associated with Tupi-Guarani cosmology and described in detail by Clastres (1986), can largely be understood as the myth, in the sense of "guiding belief" (Lasswell and Holmberg 1992), governing their interaction with other stakeholders. It is important to note that the concept of

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Figure 1 A map of Paraguay showing the Mbaracayú Reserve.

land rights embedded in private property regimes is new to the Aché and contested by them. This tension explains in part their complaint against the colonists. For the Aché, the most important value involved was their well-being, both in terms of food resources and cultural survival. Also important was maintaining a powerful position as a community with respect to other actors in the area.

María Auxiliadora colonists

The colonists in the María Auxiliadora community had been settled there by the IBR, and thus felt that they had a legitimate claim to the land based on government authority. The predominant myth guiding their practices was that of the expanding frontier. Colonists on the frontier have strong beliefs in the importance of their role in bringing civilization and development to the region. To fulfill this role, they must make the lands “productive” by removing timber and converting the land to agriculture. A second myth operating on the colonists was a claim to entitlement justified by poverty. Poverty and deprivation is at the root of colonists’ requests to the government for assistance (their remoteness from social services such as schools and hospitals spurred their desire to leave the María Auxiliadora settlement), and also justified their appropriation of Reserve resources. Poaching thus had a symbolic importance for the colonists. Poaching was, in part, an attempt to improve economic well-being. It was also, however, an expression of their resistance to FMB’s centralized authority over the resources of the Reserve, and a claim of power relative to other participants.

In their conflict with the Aché who sought to cross their territory, the colonists sought respect for their private property rights. They also sought respect in distinguishing the superiority of their settlement over the Aché, whom they considered savages (as they recounted to me on various occasions). The colonists took exception to the Achés’ use of the old paths out of fear of an infringement on their own newly awarded property rights. They were also upset with Aché conduct on their land. The Aché using the trail system cut down palm trees for their fruits and for fibers for weaving baskets. For colonists, however, palm trees are the only trees left standing when land is cleared for farming and later for cattle, so this particular infringement, born again of an Aché refusal to accept (or perhaps to understand) private property claims, was particularly irksome.

The Fundación Moisés Bertoni

The Fundación Moisés Bertoni, the third principal actor in this conflict, is the non-governmental organization responsible for managing the Mbaracayú Nature Reserve. The FMB’s myth and goal are evidenced in its mission statement: “to conserve biodiversity in harmony with the sustainable development of Paraguay’s people” (FMB 1996:3). To accomplish this, it was the stated

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strategy of Reserve managers to work outside the boundaries of the Reserve, involving local people in the conservation of resources. FMB involved itself in the dispute because of its concern over the deforestation caused by the colonists, their illegal poaching within the Reserve, and the growing climate of unrest among stakeholders whom the FMB sought to involve in conservation.

The importance to FMB of maintaining good relations with neighboring communities may be understood partially by questioning how FMB raises money for its operations. International donors from whom FMB seeks donations are increasingly interested in how FMB works in the field. Site visits by prospective donors are a principal tool for FMB fundraising. If FMB programs are unsuccessful in local communities, and if relations with those communities sour, it is unlikely that FMB will be able to attract future donors to its cause.

To some extent, the FMB's altruistic intentions are evident in their efforts at "helping" in the Paraguayan countryside. As well, respect and power were invoked via FMB involvement: by negotiating a settlement, FMB legitimized the nature of its authority in the region, gaining respect which could be used in other disputes with neighbors which impinged on Reserve management.

Social process mapping in the Mbaracayú case helps to explain how the problem that developed around land use was constructed by each group. For instance, the colonist adherence to Western conceptions of private property directly conflicts not only with the traditional Aché understanding of human/land interactions (and the absence of a concept of property), but also with Aché extensive resource use practices. Where *campesinos* leave only palm trees standing in cleared fields (to provide palm fruit and leaves for livestock), those same palm trees are the first species which Aché fell when moving across territory (in order to harvest fruit, fibers, pulp, and insect larvae). The importance of the palm tree for members of each group was different, but where those uses conflicted, problems developed. Attempts to resolve the problem without taking into consideration the cultural and social processes from which the problem arises are likely to prove unsuccessful.

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TOWARDS A SOLUTION: DECISION PROCESS

The social context, as characterized above, is reflected in the behavior of the actors in the process. How these participants interact in the formation of a problem, and in efforts to resolve it, determines the outcome of the policy process. Brewer (1983) identifies six phases of decision process through which problems pass, from their origins to resolutions. At Mbaracayú, these phases are discernable as described below.

Initiation

The formation of the Mbaracayú Reserve, the institutionalization of Aché use-rights within the Reserve, and the allotment of the María Auxiliadora colony occurred between 1989 and 1991, setting the stage for the problem to arise. It was at this point that colonists began to establish themselves in the area between

the Aché reservation and the Reserve, and this was also the point during which the FMB began to enforce regulations governing poaching and legal hunting. The policy problem was identified variously by the different participants, and formally voiced during the participatory meeting held in 1992 to draft the 1993-1996 management plan for the Reserve (FMB 1993).

Estimation

Estimation includes the range of activities used to understand the extent and implications of a problem. At Mbaracayú, participatory meetings and long-term studies of Aché social organization and hunting, in conjunction with a study begun in 1993 to assess the impact of hunting on the Reserve, identified trends in exploitation of the Reserve's natural resources (Hill *et al.* 1997). In addition, aerial photographs available in 1992 demonstrated the extent of new deforestation along the María Auxiliadora road. Finally, the importance of the land issue (interpreted by the colonists as Aché trespass, and by the Aché as unfair appropriation of traditional Aché territory by colonists) was made evident at participatory rural appraisal meetings held by FMB staff in both María Auxiliadora and Arroyo Bandera during 1995. In 1996 I began discussing options for resolving the problem with Aché and *campesino* leaders. The idea that FMB might raise funds to buy *campesino* lands and transfer title to the Aché was broached during these meetings.

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Selection

In part because *campesinos* were eager to sell their land (and in fact approached the Aché individually urging this course of action), in 1996 I developed a proposal to purchase 30 lots in María Auxiliadora and transfer title to the Aché of Arroyo Bandera. This policy option was not immediately embraced by FMB. The eventual adoption of the policy by FMB came about in part because Aché leaders repeatedly requested that FMB help them gain title to colonist lands, and at one point made this request to a donor who was visiting Arroyo Bandera on a tour with FMB representatives. I also enlisted the members of María Auxiliadora colony to petition the Paraguayan Land Institute (IBR) to allow the settlers to relocate. The petition gave FMB some assurance that the proposed policy was reasonable and could be successful.

Implementation

FMB found a donor willing to invest in the proposed policy, and received a grant to implement the proposal. From 1997 to 1998 FMB staff purchased colonist properties at María Auxiliadora and assisted the colonists in relocating to other IBR settlement areas. Prices were set for the properties based on a standardized and agreed upon protocol which was used to evaluate each property's value. The protocol was based on extent of deforestation, the number and productivity of fruit trees and other perennial plants, condition

and extent of fencing on the property, and other factors. The FMB also assisted the Aché in completing the necessary paperwork to assume title of the properties.

Evaluation

The process was subject to a continual series of dialogues between FMB staff and the parties involved, forming a kind of continual feedback loop throughout the process. FMB internal documents and progress reports to donors also served as evaluation.

Termination

The “problem” ended when the last colonist had been relocated to new property. At this point the local situation was completely changed: one of the principal actors in the problem no longer existed as a presence in the region. The resulting political landscape was completely different from what it had been when the problem arose.

TRENDS, CONDITIONS, AND PROJECTIONS

Problem orientation, the effort to fully identify the component parts of problems, requires an understanding of trends and conditions which influence the policy process and the likely outcome. Five specific trends are of importance to the problem at Mbaracayú, and each has been shaped by conditioning factors dependent on local history, custom, and the participants’ involvement based on their myth, values and perspectives. The first, and most pressing trend in this conflict, was that of violence. Between 1991 and 1997, tensions mounted between the newly arrived settlers and the Aché. In conversations at Arroyo Bandera, the Aché spoke of killing colonists they found poaching in the forest. Likewise, *campesino* representatives complained to FMB workers that if the Aché continued to cut down palm trees on their property, “someone would get hurt.” In 1997, a group of Aché returning from a foraging trip in the forest reported that poachers had fired shots over their encampment at night.

The trend towards violence between the two groups is bounded by the condition of historical violence between the Aché and colonists in Eastern Paraguay. Hill and Hurtado (1996) describe the Aché “contact period,” in which the Aché group emerged from relative isolation into increased contact with Paraguayan society, as a period of warfare between colonists and the indigenous group. As settlements expanded into Aché territory, up through the 1970’s, the Aché engaged in raids on small farms, carrying away metal tools, manioc, and other items. In retaliation, colonists sent raiding parties to attack the nomadic bands in the forest, often killing members of the Aché groups. These experiences remain fresh in the minds of *campesinos* and Aché alike, and the increasingly tense interaction between *campesinos* and Aché in the land conflict problem at Mbaracayú seemed to follow directly from those earlier

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times. Projecting this trend out into the future, it was apparent that if the problem was not addressed, there would be a violent encounter between members of the two groups.

The shots fired over the Aché camp were indicative of a second trend at Mbaracayú, namely, that of illegal poaching in the Reserve. Anecdotal evidence—local gossip, the sounds of shotguns and dogs in the Reserve, and the appearance of game meat at local markets—pointed to an increase in poaching following the creation of the María Auxiliadora settlement. Whereas the Aché are granted the right to hunt and gather in the Reserve, the colonists, as relative newcomers to the area, do not have this right. Colonists hunt illegally with shotguns, and are much more effective at taking large-packet game such as tapirs (*Tapirus terrestris*) and peccaries (*Tayassu pecari*) than are the Aché with bows and arrows. A 1997 study (Hill *et al.* 1997) showed the impact of colonist hunting to be of much greater concern for the long-term viability of these species. Poaching, therefore, is a source of conflict and disagreement between the Ache and the colonists, who are competing for game, and also between FMB and the colonists, as FMB is charged with protecting those species. Conflict between Reserve management and poachers has, in recent years, resulted in exchanges of gunfire between park guards and poachers, and several poachers have been arrested.

The trend of colonist poaching in the Reserve is conditioned on the legal status of the two groups in the law which establishes the Reserve and gives hunting rights only to the Aché (FMB 1993: 78-85). The trend is further bounded by the geographical distribution of colonists and Aché in specific sites along the border of the Reserve, the result of settlement policy instituted by the Land Institute (IBR). The projection of the poaching trend into the future, and the elimination or severe reduction of game species in the Reserve which would result, alarmed both Reserve managers and the Aché.

A third element of concern for the parties involved was the deforestation caused by the activities of the colonists along the María Auxiliadora road. The *campesinos* were gradually clearing their property of all trees as they extended the planting of manioc and other crops from the road back to the rear limits of their properties. Furthermore, the timber on these properties (which were fully forested in 1990) was the principal value which rewarded the colonists' land speculation in its early phase.

Deforestation on colonist land is largely conditioned on the timber economy which drives rural Paraguay. There is a large black market (untaxed and unregulated) export of timber to Brazil, and local timber travels from the Mbaracayú area to the Brazilian border 25 km away. Timber provides needed cash to smallholder farmers who face low market prices for cash crops, due to high transportation costs.¹ The deforestation taking place, and the projection of that trend into a future in which the properties would be completely deforested, was of concern to FMB. The organization is charged with the "sustainable development" of the area surrounding the Reserve. To comply

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¹ Interestingly, the colonists complained that the lack of a viable trucking road made the removal of timber less profitable than they wanted, and slowed the removal of timber.

with this mandate, FMB has traditionally employed extension practices to teach agro-forestry and other economic alternatives that will leave forest standing on private property surrounding the Reserve. Like FMB, the Aché, who, it should be noted, also sell timber from their own property, were also concerned with deforestation by the colonists. The Aché predicted that it would inhibit the migration of game from the Reserve into their own reservation, which is already largely over-hunted.

A fourth trend which influenced and was evidenced in the problem was the lack of infrastructure, social services and extension in the María Auxiliadora colony. Land Institute (IBR) settlements are largely given out by the government as concessions to demands voiced by organized rural groups. Often they are thereafter ignored by the government, or given inadequate support. This was the case at María Auxiliadora.

The trend is in part a function of the low population density of the area, a condition that arises because of the colony's proximity to the large, uninhabited Reserve, and to the relatively sparsely settled indigenous reservations (which are generally low priorities for the government anyway). The lack of population density, and the geographic limits to road building, meant that government investments in social services and infrastructure were not justifiable. Projecting this trend forward, it was highly unlikely that the disputed, isolated section of the María Auxiliadora colony would accommodate a viable community; the residents would likely be poorer and have a lower quality of living than settlers elsewhere.

The final trend bearing on the problem was the gradual calcification of property regimes in the area over the course of the last ten years. The boundaries drawn up by the government during this period, the result of expropriations and land sales, divided the region into smaller discrete units with enforceable property rights, where before there had been only a few larger, unsettled units of land. The trend is rooted in the historical condition of the settling of the Paraguayan frontier. The series of events which formed the modern incarnation of the settlement pattern included the establishment of the María Auxiliadora colony in 1990, including the thirty lots in question in this land conflict, the legal titling of the Arroyo Bandera reservation (settled in 1980, but legally owned by German missionaries until recently), and the establishment of the Mbaracayú Reserve in 1991. This trend led to the gradual erosion of the Aché claim of a right to access the Reserve on trails which crossed *campesino* land. As the mapped boundaries became more entrenched, they defined differing land use, creating a mosaic of forested and deforested, settled and abandoned areas visible from the air and using satellite imagery.

ALTERNATIVES AND RECOMMENDATIONS TO SOLVE THE PROBLEM

At Mbaracayú, the common interest of the three parties was peaceful co-existence. Tensions which threatened this interest resulted where individual

At Mbaracayú, the common interest of the three parties was peaceful co-existence. Tensions which threatened this interest resulted where individual goals of participants came into conflict with those of other participants. Aché at Arroyo Bandera sought to maintain traditional resource use rights. Colonists at María Auxiliadora sought to earn their livelihoods from the process of colonization (a process traditionally involving selling timber, engaging in agriculture, and hunting) and to protect their newly claimed properties.

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Seeking a solution to the problem, all three participants hoped for an outcome that would allow them to stay as true to their original goals as possible. There were several alternatives available. In understanding how a policy solution emerges, it is important to realize that policy is not simply conceived of by a “policy maker” (i.e., a government body invested with authority) and then implemented. According to Lindblom (1980), implementation invariably shapes or changes policy to some extent. Nevertheless, proposed alternatives often originate from powerful players within the policy process, such as a government regulating body charged with this duty by law. The policy maker in this case study could be considered to be the Fundación Moisés Bertoni, since the FMB had access to money, and had a government-backed mandate to administer the Reserve and to involve itself in sustainable development in areas surrounding the Reserve. The FMB, then, was well positioned to select and promote certain policy alternatives over others to resolve the problem.

One alternative available to FMB was to ignore the problem, or to delay addressing the problem. Where policies result in pronounced winners and losers, policy makers often prefer to ignore problems rather than to face losing the support of those disadvantaged by their policies. However, in the case of Mbaracayú, it is possible that the severity of the problem forced the issue. Extension agents working for FMB, myself included, played an important role in making the directors of the organization aware of the gravity of the situation. Violence in the region could attract the attention of the Paraguayan press, and resulting news articles would erode public confidence in the NGO. Furthermore, studies of poaching impact on the Reserve’s wildlife would eventually be published in scientific journals. These articles would form part of the criteria on which FMB’s performance in the region would be judged by donors and others. By taking steps to eliminate problems, the FMB would avoid much criticism; an approach which simply maintained the status quo would be unsatisfactory to those judging FMB’s behavior.

A second alternative was to seek an agreement between the Aché and the colonists, stipulating where the Ache could cross colonist land, and what their conduct would be during that crossing. In exchange, colonists could perhaps be persuaded to cease illegal hunting in the Reserve. Such a proposal, however, suffers from several shortcomings. Significantly, it fails to identify the under-

Seeking a solution to the problem, all three participants hoped for an outcome that would allow them to stay as true to their original goals as possible. There were several alternatives available. In understanding how a policy solution emerges, it is important to realize that policy is not simply conceived of by a “policy maker” (i.e., a government body invested with authority) and then implemented. According to Lindblom (1980), implementation invariably shapes or changes policy to some extent.

lying social processes guiding participant actions. For instance, the alternative is complex—it is a further refinement of use-rights which were already established in the Reserve area, and which were part of the reason a problem had arisen in the first place. Both the original use-rights definition and the proposed alternative suffer from unenforceability, an element of the complexity of the solution. Lack of funds for patrols, fear of armed conflict on the part of on-the-ground managers, and the sheer size of the Reserve all conspire to make such rules largely unenforceable. The “use-rules” alternative also would require colonists to admit that they participate in illegal activities within the Reserve. Although this was widely acknowledged to be true, obtaining such concessions was probably unrealistic. Also unrealistic would be an assumption that after such an agreement the colonists would be able to curtail their own poaching—there is little evidence that colonist communities are able to manage their own activities for conservation in this way. The “use-rules” alternative is also defective in that it fails to acknowledge the Aché claim to original and customary possession of the land settled by María Auxiliadora colonists. Finally, an agreement stating rights and conduct of each party would fail to address the deforestation carried out legally by peasants on their own properties, an issue of great concern to both Aché and Reserve managers because of its impact on species migration in and out of the Reserve.

As mentioned already, the selected alternative was an “integrated” solution, a plan proposing that the FMB purchase, and deed to the Aché, the properties of the María Auxiliadora colonists (Padwe and Weary 1997). In effect, this proposal sought to “undo” a poor policy which had been implemented by the IBR in 1990 when the Institute parceled out these lots to landless peasants. The corrective policy was readily endorsed by both the Aché and the colonists—an indication of the policy’s ability to address the problem—and was acceptable to the FMB.

For FMB, the policy appealed both because it eliminated the possibility of future aggressions between the Aché and the colonists, and because FMB’s goal of protecting biodiversity was furthered by the removal of many of the illegal poachers from the area. Additionally, by influencing the outcome of the problem, the FMB satisfied its desire to gain more respect for itself as a policy maker in the region. The cost to the NGO was relatively small—the entire project cost \$70,000 and funders were supportive of the approach.

For colonists at María Auxiliadora, the policy in some ways rewarded their initial participation in the IBR settlement scheme. The FMB was able to pay colonists an amount they felt was commensurate with the value of the property. The colonists had not been established for a long time in their properties, and they had already reaped the initial rewards of the colonization process (i.e., sale of the easily removable timber and high agricultural yields from initial soil fertility after burning). As well, the policy facilitated their desire to move on to other areas where roads, hospitals and schools existed close enough to give them support—moving to a new area where these were available was more

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feasible than attempting to influence the Paraguayan government to bring those services to the María Auxiliadora area.

For the Arroyo Bandera Aché, the policy resulted in an increase in the size of their land holdings from 500 to 800 hectares. After the policy, they had secured a shared border with the Mbaracayú Reserve, insuring access to productive hunting areas. The threat of violence from *campesinos* was also greatly diminished, both within the Reserve (from poachers) and along traditional access routes which formerly crossed the María Auxiliadora colony. Competition between the Aché and the colonists for status in the region no longer involves the María Auxiliadora colonists, although the Aché still have strained relations with other neighbors.

SOME SHORTCOMINGS OF THE RELOCATION POLICY

The selected alternative thus has gone a long way towards satisfying the participants involved in the problem. It is worthwhile to take a moment to look at some implications of the policy which may be less than optimal. The new conditions which resulted from the policy process will have a bearing on future problems in the region.

It should be noted, for instance, that in agreeing that the colonist lands must be purchased, the Aché claim to “original ownership” of those lands is undermined. Human rights organizations campaigning for rights of indigenous peoples have been wary of pursuing a strategy of “buying back” indigenous properties from governments for just this reason (Rothschild, Amazon Alliance, personal communication).

Furthermore, the precedent set by the FMB in interceding on behalf of the Aché, if not handled properly, may set the stage for a future paternalistic relationship between the NGO and the community it hopes to serve. Similarly, the series of events described here further institutionalized the role of the FMB in the region. In the future, local communities may find that their interests are not congruent with those of the NGO, and may find it more difficult to argue against FMB’s policies as the NGO gains power.

It is also important to note that FMB’s concern over colonist deforestation on the María Auxiliadora tract may not have been resolved by the selected policy. Although the Aché currently state that their goal of hunting motivates them to maintain forest on the properties, they are subject to many of the same social and economic constraints which faced the colonists. In the future Aché goals may change, they may desire more agricultural lands or money from timber sales, and deforestation may be the result. For the past two years, however, the rate of deforestation on these lands has decreased (Hill, personal communication).

Finally, relocation schemes enacted in the name of conservation have been widely criticized in Latin America and elsewhere. Current efforts to involve communities in conservation around the world have emerged out of the policies to exclude people from protected areas which resulted in displacement

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of human populations and much suffering by those people. In the current case, these negative results were mitigated by the relatively small number of families involved (fewer than thirty), the relatively short tenure of those families on these lands before the policy was adopted, and the satisfactory compensation of the inhabitants.

CONCLUSION

Land conflict along the Mbaracayú Reserve border was the direct result of competing interests of colonists, Aché, and Reserve managers. Where the colonists sought to develop their recently allotted land for agriculture, in order to improve property values and see a return on their investment of labor and effort in obtaining the land, the Aché sought to maintain access to the Reserve over a long-established trail network across colonist property. FMB, dedicated to protecting biodiversity both through conservation of the Reserve and through development work in the buffer-zone surrounding the Reserve, sought to decrease the impact of colonist deforestation and poaching, and to maintain good relations with all stakeholders in the conservation program. These goals and practices were not easily compatible, leading to the problem as this paper has defined it. As the case of land dispute at Mbaracayú illustrates, participants in policy problems operate in accordance with their own expectations, operative myths, and base values, and are constrained by historical trends and conditions which affect their actions. Understanding these elements is crucial to developing a problem-oriented approach to problem solving, and to success in this case.

As the case of land dispute at Mbaracayú illustrates, participants in policy problems operate in accordance with their own expectations, operative myths, and base values, and are constrained by historical trends and conditions which affect their actions. Understanding these elements is crucial to developing a problem-oriented approach to problem solving, and to success in this case.

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