



# **Indigenous Peoples and Conservation Organizations**

*Experiences in Collaboration*

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## CHAPTER 4

# Lessons in Collaboration: The Xavante/WWF Wildlife Management Project in Central Brazil

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### I. Introduction

In 1990, WWF and the Xavante community of Etéñiritipa<sup>2</sup> embarked on an innovative project to protect the integrity and traditional resource base of the Pimentel Barbosa Reserve in the state of Mato Grosso, Brazil. The project was one of the first attempts to integrate indigenous hunters' and Western biologists' understandings of nature in order to collaboratively construct a game management plan and prevent overhunting (Fragoso and Silvius 1997). The stakes were high for everyone. During the past half century, the Xavante had come under increasing external and internal pressure that had begun to erode the ecosystems of the land they used and threaten the sustainability of their way of life. Conservationists saw that the reserve comprised the largest relatively intact piece of cerrado environment remaining in South America (Leeuwenberg and Robinson 1998), and offered the opportunity

to empower the people who lived there to husband its resources.

The project to promote sustainable hunting did not originate in isolation. It was conceptually linked to a broader effort called Project Jaburu that was conceived by an alliance of members from Brazil's Union of Indigenous Nations (UNI), pro-Indian activists from mainstream society, and a Xavante culture broker from the Etéñiritipa community. Beginning in the late 1980s, these parties began to design projects that would match local needs with the agendas of national and international funders. The goal was to help the Xavante become more economically self-sufficient by building on rather than sacrificing their cultural heritage and natural resource base. The hub of Project Jaburu was the Indian Research Center—a short-lived collaboration, with lead funding from the Ford Foundation, among UNI, a university, and the national agricul-

tural research agency. One ambitious project spawned by Jaburu would use funding from the Inter-American Foundation (IAF) to build on subsistence traditions by planting, harvesting, and processing native fruits to generate income and protect habitat. Another concentrated on upgrading reserve infrastructure, including better access to profitable fishing sites. WWF was asked by UNI to support a project to breed and raise game that the Xavante normally hunted. The game management project that eventually evolved with WWF did not officially fall under the purview of Jaburu, but the idea originated there.

WWF representatives who vetted the initial request were receptive for three principal reasons. First, the project was located in the highly endangered cerrado environment. Second, the WWF–Brazil program, prompted by staff member John Butler, was looking for proposals from indigenous peoples that focused on the nuts and bolts of resource management and that appeared to offer potential for real engagement with communities on issues of conservation and sustainable development. The program at that time was periodically being asked to support other types of projects from indigenous peoples (e.g., for land titling or leadership travel) that did not directly support WWF’s interests in sustainable management of natural resources. The Xavante project was one of the first proposals for indigenous management that seemed to offer a close fit.<sup>3</sup> Third, the project appeared to have originated within the community itself. WWF committed funds for a three-year endeavor of research, planning, and implementation that seemed straightforward.

As this case study will show, much was not as it first seemed. The route traveled has been longer and more circuitous than expected. The project teetered on the brink of disaster, but survived the unraveling of Jaburu because WWF was flexible enough to allow the project to evolve and because the Xavante, who disagreed among themselves on many things, would not let it die. It began with ideas for captive and semicaptive breeding of white-lipped and banded peccaries. These plans—envisioned by well-intentioned activists who had little understanding of Xavante attitudes toward animals, animal husbandry, or hunting—were quickly abandoned when community members became more directly involved. It soon

became clear that game management was a pipe dream without a clearer understanding of wildlife population distribution in the area and how contemporary Xavante hunting practices affect species populations. Research to answer those questions consequently assumed center stage.

Eventually a tripartite program for wildlife study and management evolved. Phase I focused on wildlife population surveys to determine if there was overhunting; Phase II on refinement of the data, including density estimates, to help design a management plan; and Phase III on implementation of the plan the Xavante accepted.<sup>4</sup> As of mid 1998, some eight years after WWF’s initial commitment, communities in the reserve had finally approved a wildlife management plan and implementation was about to begin (Fragoso et al. 1998).

Some of the challenges this project has faced and survived can be attributed to the cultural uniqueness of the Xavante; some of the challenges might be expected to arise in work with most indigenous peoples. To better understand what happened, this case study begins with a discussion of Xavante social life and the community’s history of interactions with outsiders while under the thumb of state agencies. It then looks at the rise of a new generation of leaders able to adapt to new opportunities when they arose, and the false starts that were made. This is followed by a look at the role of hunting in Xavante society and what made the wildlife management project different than the failed projects around it. It concludes with suggestions about what might have been done better and offers a brief glimpse of the challenges ahead.

## II. The Central Brazilian Context

### 2.1 *People and Land*

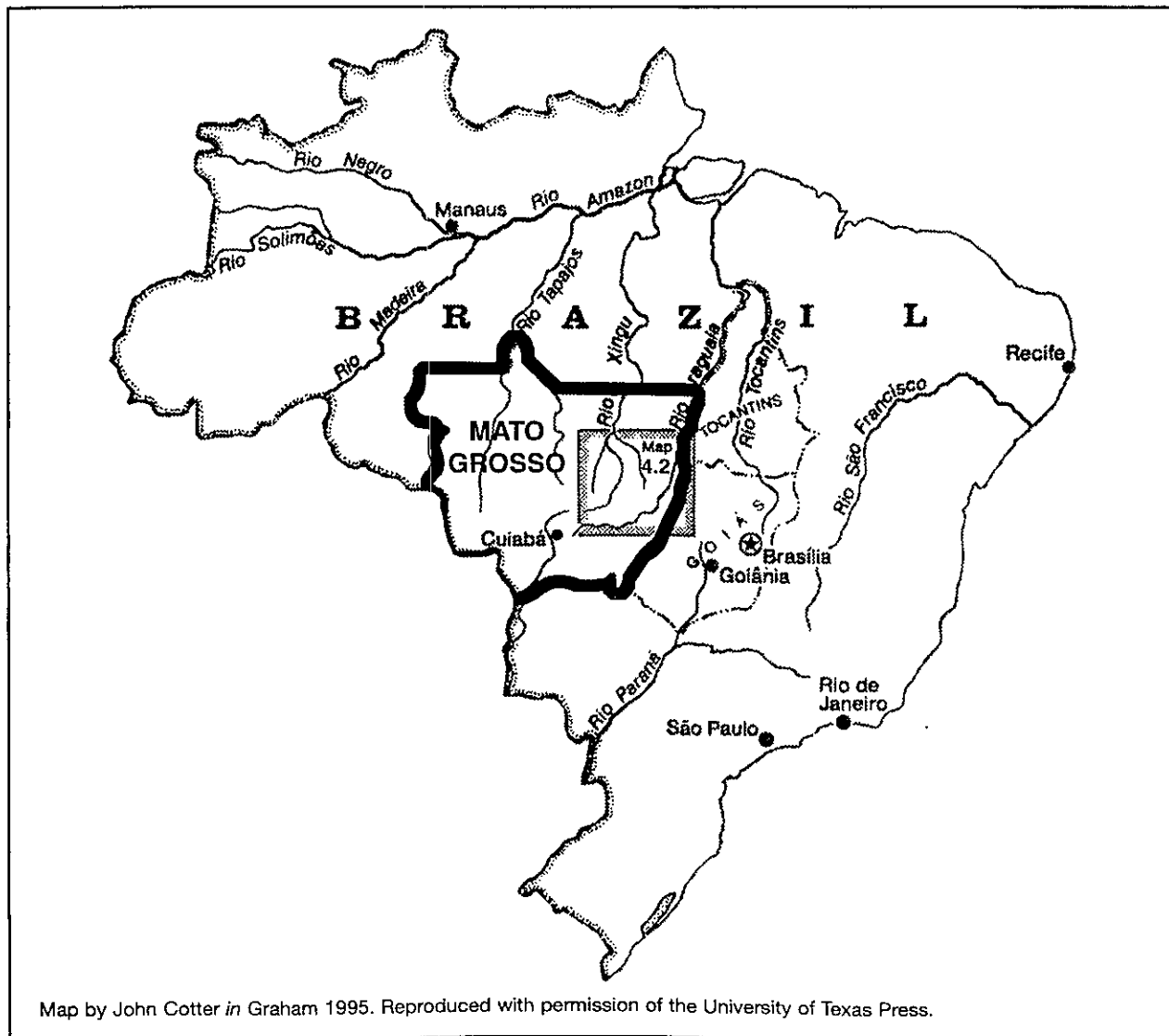
The Xavante, together with the closely related Xerente, form the central branch of the Gê linguistic family, one of four major Amazonian linguistic families.<sup>5</sup> Gê groups span a large area, stretching from the Brazilian states of Maranhão and Pará in the north to the southern state of Santa Catarina.

By tradition the Xavante are seminomadic hunter–gatherers who once exploited a large territory. Today approximately 9,000 Xavante live between the Araguaia and Batovi rivers (the latter

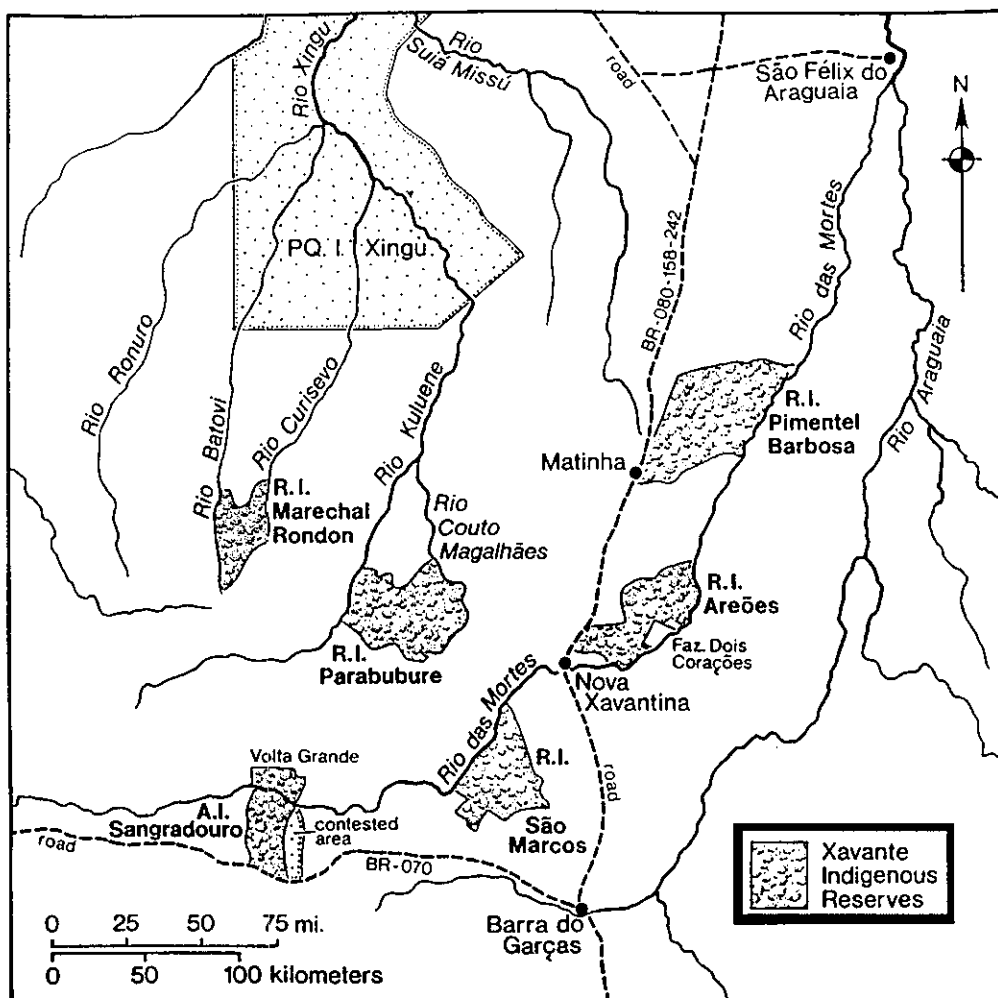
a tributary of the Xingu) in the eastern part of Mato Grosso State on six reserves (see maps 4.1 and 4.2): Areões, São Marcos, Sangradouro, Parabubure, Marechal Rondon, and Pimentel Barbosa. With 329,000 hectares, Pimentel Barbosa is the largest of the six reserves and currently encompasses five communities (see map 4.3). Etēñiritépa (also known as Pimentel Barbosa and Posto Indígena Rio das Mortes in official government communications), is the original settlement from which Caçula, Tangure, and Pe'adzarupré have splintered since the 1980s. The residents of Agua Branca are refugees waiting to recoup their former territory in the area of the Suiá Missú River to the north, which will become a seventh reserve known as Marawaitsede.

The landscape is cerrado: savanna, with gallery forest along riverbanks. Elevation is between 300 and 400 meters. There is a relatively short dry season from May to August, and a rainy season with average precipitation of 1,750 millimeters. Fluctuations may be considerable, however, with yearly rainfall ranging 15–20 percent from the norm and short dry spells that unpredictably punctuate the rainy season (Flowers 1983). Most cerrado soils are moderately to highly acidic; low in nutrients; and high in aluminum, toxic to most crops. To make the soil arable requires considerable addition of fertilizer and lime. The Xavante's former seminomadic, hunter-gatherer lifestyle was well adapted to this environment.

Map 4.1 Location of Xavante Reserves in Mato Grosso State



Map 4.2 Xavante Reserves in Eastern Mato Grosso State



Map by John Cotter in Graham 1995. Reproduced with permission of the University of Texas Press.

It is best to think of the Xavante as a more or less integral group of politically autonomous communities whose members share similar cultural and linguistic patterns. Factionalism is pervasive within and between communities. Agreements therefore can be precarious, and village fissioning is characteristic of the political system (Maybury-Lewis 1974, 165–213). As their history of interactions with outsiders demonstrates, distinct Xavante groups act independently. Cooperation between communities can be achieved to advance perceived common goals, but as the next section shows, the potential for disaggregation and conflict is ever present.

### 2.2 The Quest for Autonomy and Territory

Xavante are known for their fierce desire for autonomy and self-determination. For more than two centuries they moved steadily westward, in

retreat from the advancing frontier of Brazilian colonization. The first historical documents<sup>6</sup> to mention the Xavante date from the late eighteenth century and locate them in what is now the Brazilian state of Tocantins, in territory occupied either contiguously or in common with the Xerente, from whom they were probably indistinguishable. Some time in the second half of the nineteenth century, a number of disparate Xavante factions united to put distance between themselves and the advancing frontier by pushing across the Araguaia River into new territory. They settled in the Rio das Mortes region, in a village known as Tsõrepré. By the 1930s this coalescence had begun to fracture, and various groups splintered off from Tsõrepré to populate a broad area in what is now eastern Mato Grosso. These groups still shared a common aversion toward outsiders and any attempt to establish

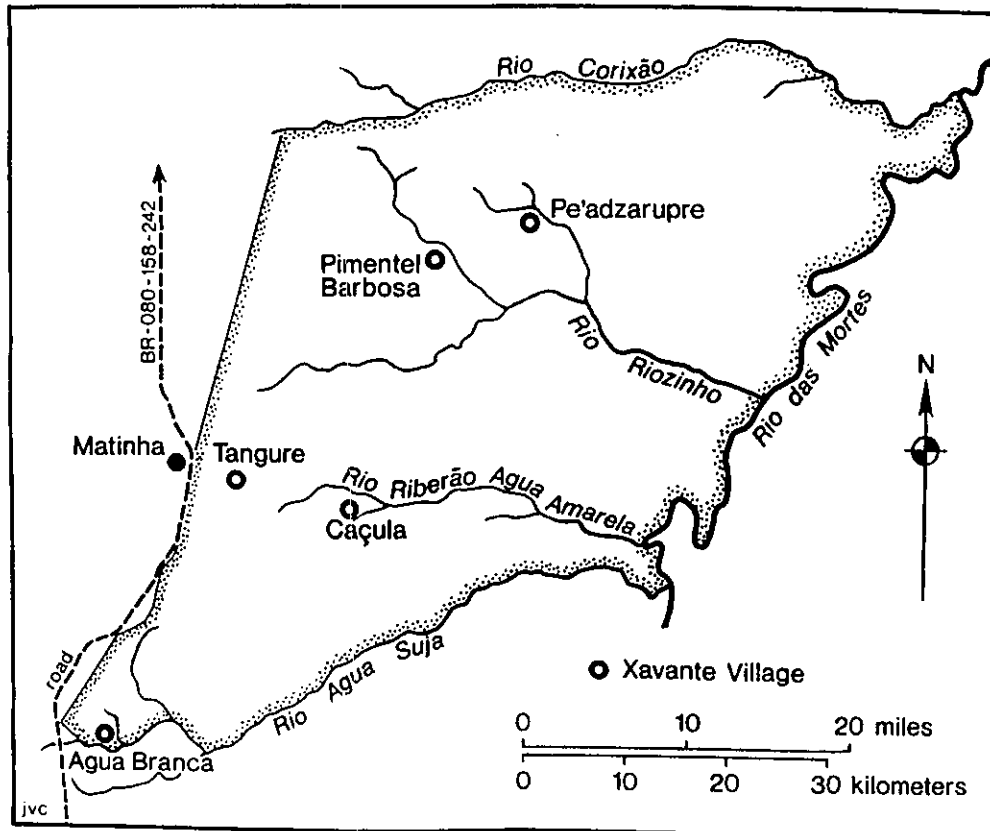
peaceful contact. By the mid-1940s, however, the Xavante faced other indigenous peoples who were firmly settled to the west while the expanding Brazilian frontier had caught up on the east. The Xavante had run out of room for further flight.

During the 1940s the Brazilian government stepped up efforts to colonize the area for commercial use. The Xavante became famous for their bellicosity in resisting these efforts. In 1946, after two disastrous government attempts to “pacify” the Xavantes, representatives of the government’s Indian Protection Service (SPI) made the first peaceful contact.<sup>7</sup> The renowned leader Apöwe, whose descendants now reside in the Pimentel Barbosa Reserve, led the Xavante group initiating this contact. By the mid-1960s, all Xavante groups had established relations with outsiders.<sup>8</sup> The population, devastated by disease and violence, had shrunk to at least half its pre-contact size, and now numbered between 1,500 and 2,500 people.

Pacification, then, was not to be confused with submission or peace. During the 1960s and 1970s, there were frequent clashes with Brazilians over territorial claims. Settlers, *garimpeiros* (mineral prospectors), and ranchers flooded into territory the Xavante occupied, in response to government fiscal incentives. Government fraud ceded large portions of Xavante land to colonists and to corporations (Garfield 1996). SPI was replaced by the National Indian Foundation (FUNAI) in 1967, large-scale monoculture (primarily upland rice) was soon introduced, and extensive tracts of savanna forest were cleared for cattle pasture. What is today the Pimentel Barbosa Reserve became splotted with large ranches and small squatter homesteads.

After sometimes violent campaigns (Lopes da Silva 1986; Graham 1995, 37–42), different Xavante groups in Central Brazil convinced the government to recognize their territorial claims. By the end of 1980 all squatters and commercial

Map 4.3 Communities in the Xavante Indigenous Reserve of Pimentel Barbosa



Map by John Cotter in Graham 1995. Reproduced with permission of the University of Texas Press.

ranches were removed from areas formally recognized as Xavante reserves. Land disputes, however, persisted. As previously noted, people in the community of Agua Branca have won claim to a reserve of some 165,000 hectares, but FUNAI has yet to demarcate the boundaries and squatters have not been evicted. The Etéñiritipa Xavante are still pressing claim both to their ancestral village of Tsõrepre that lies within a ranch north of the Pimentel Barbosa Reserve's current boundary, and to 80,000 hectares on the east bank of the Rio das Mortes where they had been forcibly resettled by the government following first contact.

Despite considerable Xavante success in laying claim to land, there are other problems. Controlling resources and maintaining the political and social autonomy of the reserves are ongoing challenges. Mineral prospectors, cattle ranchers, and sportsmen continue to trespass. The proposed massive Hidrovia Araguaia-Tocantins project and the increased water traffic and pollution it would bring to the region pose a large-scale threat (Graham 1999). If completed, the waterway would skirt the borders of the two largest Xavante reserves (Areões and Pimentel Barbosa), and disrupt their environment and social life. In June 1997, lawyers from the Brazilian NGO Instituto Socioambiental successfully obtained a federal court injunction on behalf of the two reserves and brought the Rio das Mortes part of the Hidrovia to a halt. That left the problem of policing the current borders. In 1998, as part of the game management project's phase III implementation, WWF supplied the communities of Etéñiritipa and Tangure with aluminum motor boats that could be used for fishing and antipoaching work. The communities of Caçula and Pe'adzarupe received boats from FUNAI.

### **2.3 FUNAI and the Game of State Funding**

As we have seen, relations between the state and the Xavante have been thorny at best. If the Xavante have been forced into a dialogue whose terms others set, they have struggled persistently to redefine those terms to fit their own cultural matrix and meet their own ends. In the mid-1970s, FUNAI launched "Project Xavante," a colossal effort to mechanize rice farming in the reserve area.<sup>9</sup> The project seemed to respond to Xavante needs by justifying their claims to large territories that would be used to aid the national

economy. The project also was intended eventually to make the Xavante economically self-sufficient since the traditional hunter-gatherer system no longer sufficed. On one level, it can be argued that the attempt to fold the Xavante into the region's cash-based market economy was a continuation of the pacification policy by other means. But pacification now had a literal as well as a figurative dimension. FUNAI was attempting to placate Xavante leaders, such as the politically astute Mario Juruna from São Marcos, who were gaining national notoriety by spotlighting the government's neglect of indigenous affairs and were exerting public pressure to reclaim their lands.<sup>10</sup>

From the late 1970s to the mid-1980s, the government poured money and energy into Xavante rice cultivation. During the 1981-1982 growing season in Etéñiritipa, FUNAI budgeted \$19,159 for a single 110-hectare plantation. Communities in what is now part of the Parabubure Reserve received \$35,447. Budgets covered expenses for growing and harvesting the rice; maintaining motor vehicles; and paying salaries to caciques or chiefs, vice-caciques or "secretaries," teachers' aides, and motorized equipment drivers.

The salary figures considerably understate what was actually spent on personnel costs. For example, FUNAI instituted a policy of giving leaders financial "supplements" when they visited administrative offices in Barra do Garças or Brasília. In June 1987 these supplements averaged around \$1,300, but varied according to a leader's status and the degree of pressure he exerted on FUNAI administrators. The Xavante earned the status of being the most expensive and exasperating Indians in Brazil.

For Xavante leaders, who aspired to the ranchers' model of agribusiness and material signs of prosperity such as trucks and tractors, having a project conferred considerable prestige, and sometimes wealth. By the early 1980s the possibility of being given leadership of a project began to fuel rivalry among the Xavante and spark divisions in the village. A community leader who obtained a project could supply material goods to members of his faction and salaried positions to a select group. For example, the second major split from Etéñiritipa occurred in 1983 when Sõrupredu departed to establish his own village, Tangure, that would have its own project resources and cattle herd.



Between 1974 and 1984, the number of Xavante villages mushroomed from 7 to 35—a fivefold increase. By 1987, over 50 independent communities had formed, some comprising only a single family. Again, as in the 1970s, when the struggle was to control land, the tendency toward factionalism was aligned with pragmatic goals. In the 1980s the objective became access to the material goods and associated prestige that controlling a project conferred (Graham 1987).

Growing extremely aggressive in their relations with FUNAI administrators, Xavante leaders made increasingly unrealistic demands for attention, equipment, and supplements. Scores of Xavante leaders regularly trekked to Brasília, and some established semipermanent residency in the capital and insisted that FUNAI cover their expenses (Graham 1995, 55–59). Their constant pressure on FUNAI and outrageous financial claims became onerous for the underfunded agency. Eventually FUNAI's tap began to run dry, and in 1988 the agency abandoned the project. Xavante who had become accustomed to their favored status and were financially dependent on FUNAI felt abandoned. Without an SPI or FUNAI to pay heed to the needs that had developed in the 40 years since contact, leadership found itself in a novel position. New ways to meet their financial needs became a pressing issue.

### III. The Rise of Cultural Brokers and Project Jaburu

FUNAI's sudden withdrawal of support left the Xavante without means to acquire the Western goods to which they had grown accustomed. Two factors made it possible for Xavante leaders to look beyond the Brazilian government for economic and other support (see Graham 1995, 61–63).

First and foremost were political changes at the national level that reshaped the landscape for all of Brazil's indigenous peoples. The military dictatorship, in power since the coup of 1964, ended in 1986 after a thaw in repression during the early 1980s known as the *abertura*.<sup>11</sup> In the civic space opened during the *abertura*, pro-Indian groups flowered (see Urban 1985) and UNI, the first independent organization of Brazilian indigenous peoples, was founded (see Graham 1995, 453).

Return to civilian rule led to the drafting of a new national Constitution that included wider legal and economic independence for indigenous peoples. The 1988 Constitution enabled indigenous peoples to establish their own legal associations that could deal directly with outside funding agencies and NGOs. Among other things, that meant foreign funding would no longer have to be funneled through FUNAI, which had a history of expropriating money for its own purposes so that often only a trickle reached indigenous communities. Now money could be sent directly to indigenous associations. In 1988, the Xavante of Etéñiritipa established their own legal entity, the Associação dos Xavante de Pimentel Barbosa (AXPB). By its very name, AXPB may have confused outsiders. Although the association represented the largest community in the reserve, it did not speak for every Xavante community, much less every Xavante.

In fact, it was led by a new kind of cultural broker who kept only one foot tentatively in the community, and without whom the hunt for funding would have been vastly more difficult. The need for a new kind of leadership had been anticipated by Xavante elders for more than a generation, but its arrival would see old problems resurface inside the new opportunities. The ability or inability to account for the changes in context would have important consequences for both Project Jaburu and the wildlife management project.

#### 3.1 The Role of Cultural Brokers

In the years following initial contact with SPI, elders from what is now the community of Etéñiritipa began to see that coexistence with Brazilian national society would require new leadership skills. To prepare a new generation of leaders to mediate relations with outsiders, a plan was developed to send a number of young boys into mainstream society to learn Portuguese and the ways of the whites.<sup>12</sup> They were to learn the new terrain on which battles would be fought to preserve Xavante autonomy and well-being. The elders hoped that these boys would be community guides into the new era.

In the late 1970s several boys were sent to cities to live with Brazilian families and attend school. Six went to Riberão Preto in São Paulo State. After only two years or so, four returned. One, Paulo, remained longer and worked in a shoe

factory before returning to the community in 1984. Another, Zezinho (the son of Milton, leader of a major faction), lived with a relatively well-to-do family and stayed long enough to finish high school. Following their sojourns all returned to marry in their communities, have families, and become active leaders in Xavante social life. Of those who now reside in Etéñiritipa, Suptó is cacique, Paulo is vice-cacique, and Jé Paulo is the current president of AXPB.

Two other boys, Cipassé and Jurandir, were sent to Goiânia. They stayed longer than the boys who went to Riberão Preto, with the exception of Zezinho, partially because scholarships from FUNAI made it possible. Jurandir completed his secondary education in 1988, married a white woman, and chose to live in São Paulo. His ties with the community are irregular. In 1988, Cipassé married Severiá, an acculturated Karajá woman active in the urban Indian politics of Goiânia. While maintaining their primary residence in the city (at first in Goiânia, more recently in Nova Xavantina), they also kept a house in the reserve (initially in Etéñiritipa, most recently in the newly established community of Pe'adzarupré) for periodic visits.

While in high school, Cipassé became interested in indigenous politics beyond community affairs in Etéñiritipa. His family had controlled Etéñiritipa leadership before contact with SPI, although men from other families also played important community roles.<sup>13</sup> Cipassé's uncle,<sup>14</sup> Warodi, became cacique during the 1970s and continued until being displaced by Milton in 1985. Support for Milton was not unanimous, however, and members of Warodi's faction aspired to regain their former prominence. Warodi and his brothers had groomed Cipassé to be a cacique. During their visits to Goiânia and when Cipassé visited the community, they discussed community politics with him and taught him what they knew (Graham 1995, 61–62). By 1987 Cipassé's role began to change in these family meetings.<sup>15</sup> He began to articulate ideas he was developing through conversations with UNI's inspirational Ailton Krenak, pro-Indian activists, and eventually NGO representatives, ideas concerning projects that would enable the Xavante to maintain economic and cultural autonomy while living side by side with

Brazilians. The ideas and the contacts Cipassé was developing persuaded the elders that he had found the pathway for their recently deposed faction to regain its authority.

The senior members of his faction enthusiastically embraced Cipassé's course and the possibility for new types of projects, which were perceived as markers of status and prowess. As his ideas were transmitted to the community, Cipassé earned substantial prestige and his faction began to regain some of its former status even though he did not live in the community. When the Etéñiritipa Xavante established AXPB in 1988 with the help of outside advisors, Cipassé was elected president. As support for Cipassé grew, support for Milton weakened. In May 1991, Milton departed with the members of his faction to join the group in Caçula after charges that goods purchased from sale of the community's cattle had unduly benefited his kin (see Aparicio Gabara 1994, 24). A leadership crisis ensued but did not result in Cipassé's becoming cacique. Nevertheless his outside contacts continued to lend him considerable community support and respect.

In his role as a bicultural broker, Cipassé fit the classic portrait of an indigenous mediator who is an "uncomfortable bridge" between two worlds (Karttunen 1994). Outsiders tended to recognize him as the authentic "chief" and often overlooked other important players. Meanwhile community members increasingly regarded him with suspicion. Like other Xavante leaders who have found themselves in positions to control material goods and outside contacts, Cipassé became a lightning rod for factional disputes. His control over access to outside donors exacerbated tensions internally and would play a role in Project Jaburu's unraveling. Closely guarding the source of his influence, Cipassé tightly controlled information flows. Donors were kept at arm's length from each other so that they lost opportunities to coordinate their efforts by sharing knowledge of what had worked and what had not. According to WWF's John Butler, a great opportunity to deepen future collaboration among donor agencies was lost.

The lack of full information also eroded trust within the community. Many members became distrustful of any project Cipassé promoted. Rumors that he used the community's name to

achieve personal goals and wealth were widespread. They gathered force in the vacuum of hard facts and were made more plausible by his failure to open accounting books or to facilitate contacts between community representatives and outsiders. AXPB increasingly acted independently of the community and its *warã*, the central decision-making forum. Eventually, Cipassé's support dwindled to his core faction, which in 1995 left Etéñiritipa to start a new village, Pe'adzarupré, 15 kilometers away. In 1997, when the association reorganized, Cipassé was not reelected president.

Many of the problems with Cipassé's leadership are not unique to him personally. Assuming the position of a bicultural mediator in contemporary Amazonia is fraught with pitfalls, as scholars have noted.<sup>16</sup> Cipassé is a charismatic figure among his generation. His vision broke new ground, ushering in an era of interaction with outsiders in which the Xavante would play a more decisive role. He established a precedent for project collaboration in which Xavante representatives would design and implement activities. He set a precedent for community members to assume administrative responsibilities such as grant writing, budgeting, and accounting. Without him, Project Jaburu would likely never have occurred. However, in the process of building it up, Cipassé acquired more power than the society sanctioned.<sup>17</sup> This led to his eventual downfall and perhaps to the lack of community support that helped undermine Jaburu itself.

### 3.2 The Unsustainable Life Cycle of Jaburu

The Jaburu is a stork with extensive range in the Amazon region. Its common name comes from the Tupi/Guarani peoples much farther south, and it is known as Jaburu in Portuguese. For Xavante, the bird has powerful mythological associations as a creator figure and is featured in several ceremonies. So when elders bestowed the name on the project, they signaled its importance as a turning point in Xavante relations with outsiders. It was, after all, the first endeavor the people of Etéñiritipa undertook independent of FUNAI's heavy hand, and they wanted it to fly. Unlike government projects that were ordained from the top down with little indigenous input, Xavante actors played a major role in Jaburu's design and implementation. Most of the projects associated

with Jaburu eventually unraveled, with the exception of the WWF Wildlife Management Project. This section will explore what happened and why.

As previously noted, Jaburu was a complex of projects initiated as independent endeavors. Most Xavante, however, conceptualized it as a whole, with two distinct phases (Aparicio Gabara 1994, 127). The first phase, from 1988 to 1991, consisted of economic improvements to the Pimentel Barbosa Reserve, funded by the Denmark-based International Work Group for Indigenous Affairs (IWGIA). Cipassé and his wife opened an office in Goiânia and hired an engineering firm to manage infrastructure improvements to the reserve. A bridge was built to provide the Xavante with access by motor vehicle to fishing areas near the Rio das Mortes that were previously accessible only by foot. Salt magazines and water troughs were installed for Etéñiritipa's cattle herd, and a vaccination program and other veterinary services were started.

The second phase of Jaburu revolved around Xavante participation in the Centro de Pesquisa Indígena (CPI), or Indian Research Center. CPI was founded in 1987 as a collaborative experiment between Ailton Krenak's UNI, several indigenous groups, the Catholic University of Goiás (UCG), and the state agricultural agency Embrapa. With financial support from the Ford Foundation, the European Economic Community, GAIA Foundation, NORAD, and the Rainforest Action Network, a research center was built on a site provided by the government on the outskirts of Goiânia, and staffed by professional biologists, agronomists, foresters, activists, and other consultants. Among the program ideas they churned out were the seeds for the Xavante Wildlife Management Project and the Native Fruit Processing Project.

A primary CPI objective was to provide Brazil's indigenous peoples with Western knowledge and skills in applied biological sciences so that they could use new technologies in their reserves. Between 1989 and 1992, CPI and the Catholic University offered a training program tailored to indigenous students. Five students were allowed to bypass the *vestibular*, an admissions exam that effectively reinforces class and racial divisions in Brazil's post-secondary schools, and were admitted to UCG's four-year undergraduate law program.<sup>18</sup>

Seven students from diverse indigenous groups, including Kaingang, Krenak, Surui, Tikuna, Terena, Yanomami, and one young Xavante man from Etéñiritipa, Jaimiro, participated to receive training in wildlife management.

The natural resource program, primarily funded by \$190,000 from the Ford Foundation, focused on five areas. Wildlife management included topics such as population surveys of target species and husbandry in captivity and semicapitivity. Freshwater ecosystem development included aquaculture of native fishes and shrimps. The third involved conservation and cultivation of native plants. The fourth would develop technologies for collecting, processing, and marketing native fruits and plant essences. Finally, regenerative agriculture encompassed techniques for soil recuperation, organic fertilization, and planting (Aparicio Gabara 1994, 128).

The natural resource program encountered many challenges. Some observers believed that it fell short of its objectives because, among other things, training was inadequate and participants had difficulty coping with the new demands they faced.<sup>19</sup> According to Ailton Krenak, however, the program was a success. It was the first initiative of its sort and offered an unprecedented opportunity for indigenous participants to learn about wildlife management from Western experts. All the students had the chance to learn Portuguese, and acquired important skills from the experience of interacting with members of other indigenous groups and Brazilian national society. The Xavante student, Jaimiro, for a time applied what he learned as a research assistant to the WWF-sponsored wildlife management effort in Etéñiritipa. Eventually he chose to become a health care provider. The Goiânia facility itself closed at the end of 1992 when the CPI decentralized in order to implement programs in reserves along the Upper Jurua River in Acre, among the Krenak of the Rio Doce Valley in Minas Gerais, and among the Tukano of the Rio Negro in Amazonas.<sup>20</sup>

Perhaps the biggest disappointment associated with Jaburu, however, is what might be called the "Native Fruit [Misad]Venture." In 1991 AXPB headquarters moved to the Brazilian town of Nova Xavantina, some 250 kilometers from the Pimentel Barbosa Reserve, to be closer to the community

yet remain in a commercial center. It was at this time that IAF and WWF initiated support for two programs perceived to be complementary. IAF directed funding toward developing activities related to native fruits. WWF pursued the wildlife management endeavor. As we will see, the outcomes for the two efforts were markedly different.

The idea for the native fruit venture grew out of CPI's brainstorming. It seemed a viable way for the community to earn high profits with relatively low production levels from a renewable cerrado resource. Cipassé flew to Europe to assess the prime target markets and found interest in fruits processed and sold by Brazilian Indians was much greater than anticipated (Aparicio Gabara 1994, 129). IAF funds were used in 1993 to turn an abandoned ranch near Etéñiritipa into a fruit-processing plant. The facility was a white elephant and never operated, for reasons that will be discussed below.

Using European Community (EC) funds totaling \$100,000, a state-of-the-art processing plant was built in Nova Xavantina the next year. The switch was justified by the fact that harvests from the reserve were low and, to operate the plant economically, at least 70 percent of the fruit would have to be procured locally (Aparicio Gabara 1994, 131). The town's larger population would also provide a larger pool of labor. Perhaps this was a clue that something was wrong with the idea, that it had failed to enlist enthusiastic support in Etéñiritipa itself. EC funds were also used to remodel AXPB's headquarters, including a cultural center and guest-house so community members would have a place to stay in town. The fact that funds were spent on infrastructure rather than pressing needs such as training, for example, may also have been a warning that something was awry.

The enterprise was to process a number of cerrado fruits, including baru, jatoba, murici, araticum, buriti, macauba, and piqui. Like the low-tech plant in the reserve, however, this facility, too, never became operational. An independent evaluation in early 1995 would show that no economic feasibility study had been carried out to justify the investment in the factory. And it became obvious that members of AXPB and the CPI staff lacked the training to properly process, package, or market the fruits.

With Xavante unable to manage processing and packaging or even to provide adequate raw materials and labor, there can be no doubt that the fruit-processing venture was a failure. Several factors help explain this and provide contrast for what eventually happened in the wildlife management project. One reason the effort never took off was the failure to root the project in the cultural dynamics of the community. It was a basic flaw in project design that no one wondered what impact the gender division of labor in Xavante society would have on the enterprise. The fruit project placed an unreasonable burden on women, the collectors and processors of food in this society. Xavante women have the least free time yet were expected to bear the brunt of this new labor. Many later problems might have been anticipated if women, who were to be principal actors in implementing the project, had been asked to participate in designing the project.

Although women were enthusiastic at first about the money they would generate, their enthusiasm declined in tandem with the failure of cash flows to materialize quickly (Aparicio Gabara 1994, 129). No one explained beforehand that the market economy demands major start-up costs and labor investments before a profit can be realized. The women also expected other immediate rewards for their labor, such as clothing. As motivation waned, it became clear that workers were not maintaining the sanitary requirements for handling fruits such as pequi. They were also not collecting sufficient surplus to gear production to scale. The fruit shortage was exacerbated because few of the trees that were supposed to be planted for harvesting were in fact planted. All of this implies that the women and the community itself never felt the project belonged to them.

Another problem was that the project rapidly became hooked on relatively high levels of technology without concomitant technical support. One observer noted that no one involved in the enterprise had experience in operating such a facility. Rather than slowly developing processing and marketing skills at a level commensurate with what could be produced by community members with the available resources, project designers separated ends from means. They too quickly aspired to acquire the elaborate infrastructure for success without having a clue about how to attain or sus-

tain it. Echoing what had happened in FUNAI's rice projects, once again acquisition of material goods as a sign of status, in this case the fruit-processing factory, became an end in itself.

After 1994, the IAF and the EC withdrew support for the project. The processing plant remains unused, a monument to an appetite for material goods and to overwhelming ambition. The problems that undermined the fruit project stem from lack of consistent monitoring by funders, technical support, background information, and dialogue among all the parties involved.

#### **IV. The Wildlife Management Project**

Whereas IAF and EC funds supported implementation of technological innovations and infrastructure, WWF funding primarily supported research. This began in 1991 when Frans Leeuwenberg, a wildlife biologist contracted by the CPI, initiated fieldwork designed to uncover why the reserve's game populations seemed to be declining.<sup>21</sup> Early on, the Xavante had made it very clear that they were not interested in raising animals in captivity, so Leeuwenberg's work focused on understanding the current natural resource base and how this aspect of it could be improved and managed by the Xavante.

##### **4.1 The Role of Game Hunting in Xavante Society**

To understand the dynamics of Xavante game hunting, one must first appreciate how central wildlife has been and is to Xavante life. Following "peaceful" contact, the SPI had tried to transform the Xavante into sedentary farmers (see Flowers 1983, 218–225; Maybury-Lewis 1974). The Xavante, however, abhorred intensive agriculture. The few crops they did plant—principally maize, beans, and squash—played a minor role as "bonus" foods used in celebrations (Maybury-Lewis 1974, 48), and could be sown and left untended while the group took off on trek. Wild roots, nuts, fruits, and vegetables formed the core diet, and fresh game, smoked meats, and fish were the most coveted foods. Game was and still is a centerpiece for many ritual occasions.

Meeting these subsistence and cultural needs has taken several forms. First is dzö mori, or trekking. Traditionally Xavante treks were hunting and

gathering expeditions that radiated out from a semipermanent base village and lasted from six weeks to three months. Treks took place in the rainy as well as the dry season (Maybury-Lewis 1974, 52–59). Trekking bands included entire extended families; women focused on collecting fruits and plants while men focused primarily on hunting and fishing.<sup>22</sup> The elders planned these treks so that the community might cover certain terrain and exploit certain resources. The area that a group was able to cover during a year's wanderings was considered to be its territory (Maybury-Lewis 1974, 53). Each community held proprietary rights in common over the area and its products, but did not recognize specific boundaries between its own territory and that of other groups. "[Xavante] felt free to wander out of 'their own' territory if they were prepared to risk a clash with other [Xavante] groups, who might resent the intrusion" (Maybury-Lewis 1974, 53).

Of central Brazilian groups in the 1950s, the Xavante were probably among the most nomadic (Flowers 1983, 53). The Pimentel Barbosa group followed in this case study spent as much as eight months of the year on trek (Maybury-Lewis 1974, 44–45). Around 1970, they began to shift from trekking to intensified rice and manioc production (Flowers 1983, 226). Families continued, however, to take short treks of up to three weeks or so until the 1990s. Leeuwenberg (1994, 11) thought family hunts seemed to increase between 1991 and 1993, while individual hunting declined. This was apparently a blip since family hunts stopped after 1994 (Leeuwenberg, personal communication). Today the trekking pattern has all but disappeared because of the significant reduction of available lands and the growing importance of consumer goods. In the smaller Xavante reserves, such as São Marcos and Sangradouro, trekking diminished even earlier.

Despite the decline in trekking, hunting continues to be very important in the diet and essential to social life. Hunting is fundamental to Xavante identity, particularly for males. Men think of themselves as hunters. Little boys are encouraged to play at hunting, preparing for their future role. Fathers craft small bows and arrows for their sons, who tote them around for target practice on small lizards, rodents, and inanimate

objects. Boys begin their career as serious hunters by shooting birds with sling shots. In the bachelors' hut, boys between the ages of 10 and 15 accompany the older men on organized hunting trips. By watching their seniors, they learn how to stalk particular kinds of animals, and to butcher, smoke, and carry the kill. While older men have probably always been more proficient than the young, today's youth know much less than before about habitat and tracking, and elders openly voice concern that knowledge needed to carry on hunting traditions is being lost (Leeuwenberg 1994, 37).

Today most men hunt with .22 rifles, which were introduced during the pacification. Some 15 to 20 percent of hunters still use bows and arrows (Leeuwenberg 1994, 32). In his research Leeuwenberg notes that, contrary to speculations by some conservationists, introduction of rifles did not stimulate overhunting by the Xavante. Nevertheless he observes that 20 to 25 percent of animal kills from .22 rifles are not used. These are principally large animals such as tapirs, deer, and peccaries that are wounded but escape to die later in the bush. A man ceases hunting and returns to the village when he has obtained the maximum weight that he can carry; if he is not far from the village, he may leave his kill and fetch help.

Meat provides a significant part of the diet in all Xavante communities, and game is, without doubt, the most desired food. In fact, the Xavante language has two ways to express hunger. One concerns food in general (*mram di*); the other specifies meat or fish (*toro di*). According to Leeuwenberg (1994, 16), hunted game in 1993 provided approximately 85 to 90 percent of the animal protein in the diet; domesticated chickens, fish, turtle, and turtle eggs supplied the remainder. In the years 1991–1993, Xavante adults consumed 144–255 grams of meat per day (Leeuwenberg 1994, 18).

Xavante use 65 percent of the gross weight of a hunted animal; only claws, bones, and the contents of the stomach and intestines are not eaten (Leeuwenberg 1994, 17). The brain is considered a delicacy appropriate for elder women. When a man returns from a hunt, he gives his share of the kill to his wife or mother (if he is unmarried), who then distributes it to kin and

affines to whom she is obliged to share meat.<sup>23</sup> The practice known as *da-niwari* entails asking for meat or fish from women whose husbands and sons have returned from a successful hunt.

Time allocation studies conducted in 1976–1977 show that Xavante men spent an average of 1.06 hours per day hunting (Flowers 1983; 231, 233).<sup>24</sup> This accounted for 14 percent of the time they devoted to subsistence activities. Data from 1994 indicate that men spend *more* time hunting now, some 25.7 percent of their subsistence activity (Santos, Flowers, Coimbra, and Gugelmin 1997, 553, especially table II). When hunting and fishing are combined, the change is even more striking. In 1976, men hunted or fished for 30 percent of the time they devoted to subsistence activities. In 1994 it was 60 percent.

With the decline of trekking, other forms of hunting have expanded. Individual hunting is the most common, although not the most productive (Flowers 1983, 231). Xavante men always carry their guns and are alert to signs of game when going to and from their gardens, on any sort of errand, and even while riding in motorized vehicles. In 1976, Flowers found that only 21 percent of hunts involving up to three men were successful (meaning some game was bagged), and the average share of dressed meat per hunter was 1.7 kilograms.<sup>25</sup>

Collective hunts may include as few as four men, and often include many more, sometimes nearly the entire adult male population of a community. Xavante maintain that collective hunting is more productive than individual hunting, and the study by Flowers (1983, 232) showed this has been the case. The documented success rate of collective hunting in 1976 was 67 percent, and the average share for each hunter was 4.7 kilograms of dressed meat per day. The higher figures may be attributed to the fact that among the most commonly taken game animals are white-lipped and banded peccaries that run in large herds of 15 to 40 in the cerrado. An individual is lucky to shoot one or two, but a large number of hunters can often head off the herd and give more men the chance to shoot. On the other hand it is also true that a group can fail to encounter any peccaries, and everyone returns empty-handed (Flowers 1983, 232–233). Elders from the patrilineage known as the “peccary lineage” (*uhö* and *uhöre*)

recall that lineage leaders once had the power to summon peccary herds (Giaccaria and Heide 1972, 111–112; Flowers 1983, 236). This knowledge may have been lost, although several elders suspect that some individuals still possess certain powers.

Flowers observes that collective hunting may be most efficient when there is high dependence on herd game in relatively open country like the cerrado, where visibility extends a considerable distance (1983, 235). Leeuwenberg’s recent data partly supports this proposition (1994, 17; also Leeuwenberg and Robinson 1998). He finds that the two kinds of peccary—white lipped and white collared—constituted 48.39 percent of game kills between 1991 and 1993. Nonherd species accounted for a substantially lower proportion: anteater (*tamandua bandeira*), 19.96 percent; deer (*cervo do pantanal*, *veado cameiro*, *veado mateiro*, *veado catingueiro*), 14.21 percent; armadillo (*tatu canastra*, *tatu peba*), 10.86 percent; tapir, 4.29 percent; unspecified, 2.29 percent. However when percentages are calculated for volume or biomass, Leeuwenberg (1994, 17; 1997a, 1997b) finds that the ratios reverse dramatically. Nonherding species—mostly deer (28.81 percent), anteater (18.65 percent), and tapir (18.05 percent)—account for 76 percent of the total volume of game meat, while peccaries account for only 30.27 percent. This is a more accurate picture of the relative importance of species the Xavante rely on. It also reflects Xavante food taboos. Capybara, anaconda, and savanna fox (which was consumed in the past) are not eaten despite being readily available in the area.

Men enthusiastically engage in collective hunting trips, some of which form the backbone of important ceremonials. For example prior to the *adaba*, or wedding ceremony, the groom’s male kin depart on a hunt known as *da-batsa* that lasts up to three weeks. The hunt ends when family leaders deem that game in sufficient variety and quantity has been obtained to make an honorable offering to the bride’s mother.<sup>26</sup> When the hunters return to the village, the groom, decorated with ceremonial body paint, carries a huge basket piled high with as much as 150 kilos of smoked meat across the plaza to his bride’s household. In one ceremony, the net weight of

game hunted over an eight-day period was 487 kilograms (Leeuwenberg, personal communication). An alternative to the da-batsa is the *tsérére*, a one-day communal wedding hunt involving all adult males in which the meat exchanged is raw rather than smoked.<sup>27</sup> The da-batsa is much preferred, but the *tsérére* can occur in special circumstances and, in recent years, is increasingly common (Leeuwenberg, personal communication). Game must also be supplied during the extended *wai'a* ceremony that places adult men in contact with the spirit world from which they derive power (see Valadão nd; Aparicio Gabara 1994, 36–38).

Because large amounts of game are needed in these ceremonials, hunting parties sometimes trespass onto privately held lands. Xavante men consider lands on the eastern side of the Rio das Mortes, where some 80,000 hectares are in dispute, to be good hunting territory. In some cases this has led to hostilities with landowners.

Another type of collective hunt, known as *du*, occurs during the dry season. Men set fire to the parched grass and undergrowth to drive out game. The hunt usually lasts one day and involves most of the adult and adolescent men, and sometimes boys who reside in the bachelors' hut. Prior to departing in the morning, participants decorate themselves with body paint and assemble in the *warã*, or central plaza, to sing a special song known as *du'u ño're*. The "owner of the hunt" (*aba tede 'wa*) articulates the plan for the day in a formal speech. Men depart together in a fever pitch, either by foot or in trucks. Once the hunters reach the designated starting point, they assemble to hear the "owner of the hunt" reiterate the plan. Two designated seniors, one from each marriage group, or moiety, set off at a trot carrying torches in opposite directions. They periodically pause to set the grass afire in a large arc that is fanned by arid breezes. The assembled hunters then pursue the fleeing game that head to damp areas and watering holes for safety. Men use distinctive calls to notify others of their kill and to summon help. Women often follow behind the flames, collecting forest products such as palm hearts from the charred open fields.

In recent years Xavante became overly reliant on these game drives, using them throughout the dry season rather than at the end as traditional knowl-

edge prescribes. Food supplies and animal habitats consequently have suffered (Leeuwenberg 1994, 32, 41). One result of the wildlife management plan the Xavante would eventually draft would be to return to the elders' methods of determining appropriate times for fire drives.

#### 4.2 Threats to the Game Supply

Paying attention to elders' knowledge is crucial for replenishing wildlife because changes throughout the Rio das Mortes region have significantly affected game populations. A study by the government rural extension agency Empresa de Assistencia Tecnica e Extensao Rural (EMATER) paints a dismal picture of the region's habitat. Farms larger than 100 hectares account for more than half of nearby land. Those 100–500 hectares in size account for 32.25 percent of land in the two districts that contain or adjoin Pimentel Barbosa, and farms larger than 500 hectares account for another 16 percent (EMATER 1989).

Eighty to 85 percent of the surrounding lands have been deforested. Ranchers cleared large areas for pasture or for monocropping soybeans or upland rice. They also introduced several exotic feed-grasses—such as *Brachiaria* spp., *Rhynchelytrum repens*, *Andropogon* ssp., and *Panicum maximum*—that are extremely aggressive and are displacing natural flora (Leeuwenberg 1994, 4). In addition to commercial activities adjacent to the reserve, intrusions for timber or mineral extraction or for poaching have also seriously disrupted game populations within Xavante territory.

The Xavante's increased sedentariness and changed hunting patterns have also affected the game supply. Reliance on subsistence crops that require constant attention and on Western medicine and other consumer goods have made the Xavante reluctant to leave their villages for prolonged periods. Treks have given way to intensive hunting in areas close to villages and have led to overexploitation there.

During phase one of the project, data collection focused on identification of hunting ranges and the number of each species taken. By extrapolating information from several kinds of data, estimates were made about productivity rates that could be used to measure harvest sustainability. For



1991–1993, Leeuwenberg found that the Etéñiritipa Xavante hunted only some 65,000 of the reserve's 329,000 hectares. He reports that "from February to October [1991], the Xavante had 82 hunting days, of which 85 percent [took place] in an area" within 25 kilometers of the village (Leeuwenberg 1994, 7). This badly disturbed animal populations, and several species basic to the diet risk local extinction.<sup>28</sup> Corollary to the overhunting near settlements is the underuse of large portions of the reserve, which has political consequences. Trekking parties once helped police the reserve's borders, which are now left more unguarded and open to invasion by squatters.

Cattle ranching might seem to offer the Xavante a potential alternative to hunting, and indeed it was government policy for more than 30 years to encourage such a shift. Xavante, however, have little interest in the care of domestic animals. Each community has its own cattle but seems to prefer to hire Brazilians to care for the herds.<sup>29</sup> Xavante think of their cattle as assets that can be converted to cash to repair a truck or buy some durable good, and as an emergency food reserve, rather than as a permanent source of animal protein. Senior men are minimally involved in animal husbandry. When game is scarce and the community "is hungry for meat," they kill and butcher cattle as needed. But cattle are not used to substitute for hunted game in ceremonies. Unfortunately this cultural resistance to cattle does not mean that the reserve has escaped from the ravages of ranching unscathed. Leeuwenberg (1992, 5) reports that approximately 10 percent of the reserve's natural habitat has been severely degraded by cattle since the 1970s.

#### 4.3 Taking Ownership of the Wildlife Management Project<sup>30</sup>

When the project began in 1991, WWF funds, most of which were supporting Leeuwenberg's salary, were routed through CPI. When CPI's Goiânia facility shut down, WWF funds went directly to AXPB. From this point on, WWF's interactions with AXPB were not mediated. The Xavante became more involved in the project as they began to administer its funds and as they worked alongside the field researcher.

Establishing baseline data to determine the sustainability of animal harvests proved to be a complex undertaking. Believing that the project had

originated inside the community and that the community would wish to continue monitoring once his work was complete, Leeuwenberg trained community members in appropriate data-gathering methods. This ensured that the accumulated knowledge of experienced hunters, who were also phenomenal trackers, would be tapped, but it also limited what kinds of methods could be used. Trained observers would monitor hunts, record the sex and number of kills and where they occurred, and collect the lower jaws to determine age through tooth wear. All animals brought into the village were recorded, but not all skulls were described since the Xavante break open the cranium to remove the brain. Each of these measurements contained hidden assumptions. For instance, the sex ratio would show how much of the population was female and producing offspring, while the age structure would allow one to refine the projection since the likelihood of reproduction and survival varies with age. A preponderance of young animals in long-lived species would support the likelihood of overhunting. The problem was that not enough is known about the life cycle of some species to have reliable baseline data for drawing conclusions. This was complicated by gaps in new data. In addition to the incomplete skull samples, the Xavante did not save the uterus of killed females so that a valuable clue to reproductive history was lost.<sup>31</sup>

Establishing population densities per square kilometer and comparing them to game taken over the three years of the study would have negated some of these difficulties. WWF and the Wildlife Conservation Society (WCS), which contributed some funds, were highly interested in obtaining density data, and in 1993 Leeuwenberg tried to comply, plotting out transects of known lengths in four different habitats in order to obtain census data. Three problems surfaced. The number of encounters with game per transect was too low to be statistically significant; several transects flooded during the rainy season and could not be sampled; and finally, the Xavante sampling the trails had no cultural precedent for tracking game without shooting it. Ultimately, the Xavante found that censusing was not, for them, a viable method of data collection.

Most studies of this kind in fact have difficulty in obtaining a productivity estimate at the site that matches the accuracy of data for harvested ani-

mals. Because of such difficulties, J. Robinson and K. Redford developed a model (the R&R model) to fill the void (Silvius 1998). They “abstracted all reliable values on density and reproductive parameters from the literature for the principal Neotropical game species, calculating a maximum average potential production for each species and estimating the proportion of production that could be taken to maintain sustainability.” Using the R&R model for a baseline to compare data the community gathered, Leeuwenberg concluded that marsh and pampas deer, tapirs, and anteaters were being overhunted.

In part because of internal community factionalism, WWF received no proposal for the 1994–1995 period. Instead the community requested time to think about the project. Funding was suspended and WWF conducted an interim evaluation. This evaluation kept the project on the table and provided a way to get it restarted in the event that the community expressed interest, which it did. Funding resumed the next year.

Based on the interim evaluation, conducted by wildlife biologist José Fragoso, the original proposal was revised to test for the existence and sustainability of a source–sink system of game supply. In a reserve the size of Pimentel Barbosa in which large areas were un hunted, game populations might be depleted around the home village but be periodically renewed by animals moving in from undisturbed areas of higher population and production. If this scenario is operating, population density should increase with distance from the village, and sex- and age-distribution ratios should stabilize. If population densities and ratios for a particular species are higher near the village, then one can presume that the species is undesirable to hunters or that gardens or some other feature of the local habitat (such as removal of a predator) have enhanced its fitness. If populations are low or sex and age ratios are skewed everywhere, one can presume that the species is being overhunted.

A second research phase was proposed, which would culminate in the drafting of a wildlife management plan. Leeuwenberg’s data and input from the community would be analyzed more rigorously to see whether the expected skewing of age structure and sex ratio occurred

as hunting moved away from the village. Additionally, a more sustained effort would be made to assess relative population densities. Equal numbers of transects would be set at three distances from the community and sampled for game tracks to measure seasonal variation. Although there might be gaps in any one set of data, comparing sex and age ratios and densities to look for convergent trends would offer a more accurate picture of what was actually going on. A second research biologist, Manrique Prada, was hired under Fragoso’s supervision to manage field tracking.

The incorporation of new personnel and perspectives made it essential for the community to feel that continuity was maintained and that local control of the project had not been lost to the scientists and NGO. Leeuwenberg’s ongoing participation and his skill as a facilitator would prove to be particularly valuable. Early on, he had established the precedent of reporting regularly to the *warã*, or men’s council, and was especially adept in translating Western scientific knowledge into language that the Xavante could understand. Xavante men became engaged in an ongoing dialogue over hunting and resource management, which would over time lead to the revitalization of conservation practices that were in danger of being forgotten.

This task, however, was about to become even more complicated. The interruption of WWF funding during 1994–1995 coincided with growing turmoil in the community concerning Cipassé’s leadership, so the Xavantes were distracted from the project. This leadership crisis made it difficult for WWF to negotiate with AXPB about how to proceed. WWF recognized that Cipassé no longer had full community support, yet was bound to negotiate with him because he was still president of the association. Community members, who wanted the project to continue, faced a dilemma as well. They either had to remove Cipassé from office or form a new association. WWF had made considerable investment in the husband-and-wife team of Cipassé and Severia as community leaders and project mediators. It had, for example, funded their participation in training seminars in project planning and management. Yet at this point the WWF representative recognized that other com-

munity members would need to acquire administrative skills if the project was to move forward.

Project scientists and consultants were also caught in the crossfire of factional pressures. The recently arrived Prada was in a precarious position because Cipassé had hired him and controlled the issuing of his paychecks. Leeuwenberg's situation was somewhat better since CPI had hired him with WWF funding. He had also spent enough time working alongside the Xavante to develop strong relationships with a broad cross-section of the community. Nonetheless conflicts with AXPB and its leadership would cause him to leave the project for a time, between January and August of 1997.

In navigating this turmoil, the team of biologists confronted the fact that scientific method and practice could not be ends in themselves but had to be adapted to the social context in which they were being applied. Some methodological rigor had to be sacrificed to ensure the Xavante's participation in the study so they could take ownership of it. The community wanted to know why particular methods were being used so they could evaluate the validity of the findings.

During the second phase of data collection, communication about the science was sometimes unclear and community support more lukewarm, which only intensified the dispute around Cipassé's stewardship.

When the community split in 1996 and Cipassé's family left to establish a new village, the project's future was clouded. It had been envisioned and funded as a collaborative endeavor between WWF and Etéñiritipa. Now WWF found itself in the awkward situation of having to deal with the leader of the community organization authorized to handle funds who was no longer part of the community. Cipassé had so tightly controlled AXPB that other leaders had little or no familiarity with the legal requirements and even the routine administrative affairs of the organization. Only Cipassé knew, for example, with which legal office the association and its officers had been formally registered.

At this point, WWF asked an anthropologist who had worked in the community since 1981 to conduct an ethnographic evaluation of the situation and assess the Xavante's perspectives on the project to see if it could be revived and set on course. The 1996 evaluation clarified the need

for AXPB's reorganization and suggested ways to involve the community in the development of a management plan. The evaluation process also brought outsiders with different project roles into contact and created a dialogue across areas of expertise. This helped improve communication among all participants and furthered community understanding. Better coordination earlier might have avoided or diffused some of the difficulties the project had encountered. The WWF project director left the Brazil program in January 1996 but continued to monitor the project until his replacement took over in the fall.

As Phase II data collection neared completion, it became clear that reorganization of AXPB would be essential to drafting and implementing an effective wildlife management plan. Assisting community members to meet the legal obligations involved became a major priority. New leaders, such as Suptó, Paulo, and Jé Paulo, needed training in how to meet the legal requirements for holding a valid election, and in the administrative and financial skills to manage the association and the project.

In March 1997 new elections were held.

Organizational control passed into the hands of leaders from Etéñiritipa, and Jé Paulo was elected president. Although Cipassé no longer retained an influential position, he agreed to collaborate in the WWF project, with the understanding that his community would share in its benefits.

In July 1997 WWF proposed that the team of biologists led by Fragozo would draft a management proposal. While this proposal would be based on scientific data and analysis, the team agreed that fundamental ideas for the plan must originate from within the community if they were to be implemented effectively.

Following an August 1997 meeting between the biologists and community members in Etéñiritipa, Leeuwenberg held follow-up sessions to clarify the scientific data and research conclusions with the Xavante. The data indicated that the anteater, armadillo, and marsh and pampas deer were at risk, while the tapir was "vulnerable." Tracking data suggested possible source areas for some of the species. Because the natural history was unclear or the supply source was outside the reserve for the anteater and the armadillo, it was recommended that they not be hunted until more

was known or the populations grew. A ban was also proposed for pampas deer because their numbers seemed unusually low. Marsh deer, tapir, and white-lipped peccaries could be hunted in distant source areas only, allowing their numbers to recover in depleted areas. This would shift the source-sink system from one based on distance from the village to a rotational system that utilized the whole reserve. Finally, collared peccary, brocket deer, and smaller species could be hunted everywhere because they were in abundance. The draft plan also recommended constant monitoring in open and banned areas to control for natural declines in populations and to shift hunting when tracking data indicated numbers were in marked decline. There would be no need to determine and set sustainable harvest levels because hunting would shift before populations were depleted.

The Xavante discussed these proposals for several months and began to think, in their own ways, about how to diminish hunting's impact on game populations and how to recover the threatened populations. In November, the hunters offered their plan. Rather than general hunting bans for any species, they proposed that specific areas be designated as temporary wildlife refuges, perhaps because this model fit in with the traditional system of rotation inherent in trekking. They also proposed to intensify fishing during the dry season, and underlined the need to monitor reserve borders against intruders.

At a two-day meeting held in Brasília in December 1997, representatives from Tangure and Caçula met with the leaders from Pe'adzarupré and Etéñiritipa. All four communities agreed to participate in the management plan and to designate three refuges totaling more than 100,000 hectares. They also agreed to intensify dry-season fishing, reinstate traditional burning patterns at the end of dry seasons to limit collateral damage, and collaborate on border monitoring.

Intervillage rivalries resurfaced, however, when the time for formal ratification came. The three research scientists—Fragoso, Leeuwenberg, and Prada—traveled to the reserve in May 1998 with the new WWF representative to present a written plan and an agreement to be signed by representatives of the four communities. Representatives from Caçula and Pe'adzarupré did not attend, perhaps to register their objec-

tions to the meeting's location in Etéñiritipa (Leeuwenberg, personal communication). After holding a meeting with the leaders from Etéñiritipa and Tangure, the three scientists traveled to Caçula and met its leaders. In June, a leader from Caçula contacted WWF and proposed that representatives of his community would travel to Brasília to sign the agreement.

The project is likely to continue being buffeted by intervillage rivalries and the politics of power and influence within the reserve, although the issues in dispute may change as plan implementation evolves. Given Xavante factionalism such a situation is not surprising; indeed, the challenge of forging a consensus among all of the reserve's communities has been present from the beginning (Graham 1992). Factionalism makes implementation difficult but it does not preclude the majority of the reserve's residents from participating in moving things forward. As in past endeavors, collaboration is likely insofar as members of the different communities perceive the plan to be in their interests.

## V. Conclusions

WWF's involvement with Etéñiritipa coincided with two turning points in the community's history. First was the termination of FUNAI's rice project and the withdrawal of most of the agency's ancillary support. Taking advantage of changes in national law affecting indigenous peoples, the Xavante turned to new sources of outside support such as NGOs. WWF was among the first private entities to collaborate with the Xavante.

The second event was the Xavante's mounting concern about the dwindling supply of game in the Pimentel Barbosa Reserve. Alternative ways to provide dietary protein had either been unsuccessful (cattle ranching) or were rejected (raising animals in captivity). The Xavante wished to discover ways to manage game supplies within the reserve so that they could maintain the hunting practices fundamental to their identity. Their contacts with indigenous activists at the national level, via Cipassé, enabled them to explore ways to do this by collaborating with new entities such as WWF.

The wildlife management project had two advantages over other collaborations with donors that emerged under the auspices of Project Jaburu.

First, the idea resonated powerfully within the community and was rooted in community experience and expertise. And second, there was no rush to implement a plan by importing an elaborate theoretical framework or building physical infrastructure that no one knew how to operate. The project began with a period of joint research that over time allowed WWF to better understand its partner as well as what had to be done. The fruit-processing effort rushed to open a factory and never gave funders the opportunity to meet the community firsthand.

Rather than imposing an outside agenda, the wildlife project respected and tried to build on the foundation of the Xavante's knowledge of natural resource management. In doing so, it reinforced the cultural recovery that was under way and stirred thinking about what was at stake. The danger was not simply that wildlife would vanish, but that an important dimension of Xavante identity would perish with it. This was reflected in elders' growing fear that youth were uninformed and uninterested, and that essential knowledge was being lost. Now there are animated discussions about the habits of various animals and how they are to be hunted. This process has also inverted the conventional wisdom that hunting cultures are dysfunctional under environmental stress. In realizing how close they are to the animals they hunt, the Xavante have found a powerful cultural reason to sustain the resource and the motivation to find the means for doing so.

Thus, Xavante involvement in project data collection and decision making has been very productive. The Xavante have begun to understand how their lifestyle changes have affected the territory around them. There is greater recognition of the reserve's unique resources, and protecting them has become a priority.

A number of secondary benefits unrelated to wildlife management or natural resource conservation also have been achieved. The first sustained collaboration between the community and an NGO has helped the Xavante gain important skills that are essential to their ability to manage future dealings with outside entities. These skills, which can be thought of as the social infrastructure for any kind of project success, include such things as how to negotiate with

NGO representatives, devise project ideas and write grant proposals, prepare progress reports, keep accounting records, and gain management experience. In founding the association and learning how to make it work, they have been doing nothing less than inventing a new kind of social tool for themselves.

Yet anyone who presumes that there is some magic formula for working with indigenous peoples only needs to look at the problems that surfaced and at times threatened to undermine the collaboration. Many of these were unavoidable since they were deeply embedded in the culture or a result of a long and troubled history with outsiders. The point is not that all collaborations will face these particular obstacles, but that a clear understanding of the cultural matrix in each project is vital to *its* success. A better understanding of the factional nature of Xavante society and of the complexity of forming transparent partnerships might have enabled WWF to anticipate and avoid some of the pitfalls that nearly swallowed the project.

Not all problems, however, are what they seem. Some not only cannot be avoided, they must be welcomed. In this case, factionalism needs to be put into perspective. What would often be a sign of decay or disorganization in other societies is an indicator of cultural intactness among the Xavante. Posturing and politicizing are fundamental to Xavante social life, and individuals enjoy engaging in political disputes and displays. While politicization of nearly every imaginable aspect of the project may seem paralyzing to outsiders, it can also be interpreted as a sign of how deeply the Xavante are engaged, a sign that they are assuming project ownership on their own terms, at their own pace. Comparing the wildlife management experience with the failed fruit-processing component of Project Jaburu makes this more apparent. Fruit processing foundered quietly, without public acrimony, because the community had been excluded from decision making and had decided not to participate. The lack of "noise" in that case was a warning sign that things were not going well. In contrast, the current intercommunity factionalism may be a positive sign that the process of taking project ownership is extending beyond Etéñiritipa to other autonomous communities in the reserve.

Because funders and outside actors did not easily grasp the intricacies of Xavante society, they also misread the importance of the cultural mediator at the heart of a cluster of community projects. Too much was invested in a single individual who was presumed to speak for the community. Although he enjoyed wide acceptance at the beginning of the project, this changed over time as he began to use access to outside resources to leverage internal influence. Funders need to understand that their mere presence, and the access to resources that they offer, can alter the playing field of community dynamics even if there is no overt attempt on their part to do so.

One can also argue that some problems that hindered the wildlife management effort might have been ameliorated had representatives of other factions been more actively involved in the management of the Xavante association. (Although WWF made several attempts to include other factions of the village, including the chief, it was never clear to the organization how much they should push on this issue.) This is not just a question about politics and diplomacy. It also involves a question about what kind of information is needed to make a project viable. Western science can provide tools to help the Xavante confirm in detail what they already suspect, that game is growing scarce, but the best scientific solution will not work if the Xavante do not understand it and are unwilling to support it.

A process of hunting culture recovery was already under way, but things might have moved more smoothly in the project if ethnographic monitoring had occurred in tandem with biological data gathering. An anthropologist or outsider with in-depth knowledge of the culture working in rapport with the technical staff from the outset might have realized sooner that the project time frame had to be longer. Such a person could also have helped build a conceptual framework that would minimize disruptions from staff turnover that are inevitable in any long-term project. More importantly, difficult concepts might have been easier to translate into terms that the Xavante could understand. And such an individual might in turn have facilitated scientists' understanding of Xavante concerns. A conscious process might have been engaged that would have helped the Xavante to look sooner at

what aspects of their hunting culture and newly sedentary lifestyle were contributing to game depletion and what hidden resources were dormant within the culture as possible solutions.

Fortunately the first research biologist understood the need to work closely with the Xavante in his fieldwork and had the rare interpersonal skills to do so. But the informational net might have been cast more widely since hunting cannot be separated from questions about Xavante lifestyle in general. Women, whose role in community affairs must not be underestimated, had very little understanding of the project. The need for them to do so may not have been obvious since men are the principal hunters, and the biologists were unlikely to think about women's relationship to the project since they relied on the *warã* as the venue for communications. Although the *warã* is the arena for public decision making and discussion, in fact most important matters are discussed and decided upon in meetings that take place outside its sphere (Graham 1993). Had outsiders more actively sought to communicate in these forums, women might have had a greater chance of indirect participation and more opportunities to gain understanding and make their voices heard (see Graham 1992, 1995). Xavante male leaders did not welcome such overtures and actively sought to discourage them. However, closer ethnographic monitoring from the beginning might have helped open doors and provided access to new information and a wider perspective on project means and goals. It might also have helped funders identify the roots of emerging problems and begin a dialogue with one another and with the Xavante to resolve them.

Important decisions lie ahead for the Xavante. Establishing refuges is provisional, pending the results of ongoing monitoring. Since 1991 the Xavante have been encouraged to hunt away from their home village. With hunters driving to distant zones, it is likely that pressure on game has actually increased throughout the reserve. The system of refuges may suffice for a while, although additional species may have to be protected. If source areas are encroached upon, which may occur as Xavante population increases, some species may dwindle dangerously. Fortunately, as their history shows, Xavante are expert at adapting to new situations.

There are indications that they have shifted their hunting preferences from species to species in the past, depending on availability. The practice of informally hunting in gardens can be more systematically exploited in order to reduce pressure on larger game populations.

It is too early to say how the Xavante will fare in the future, but they are determined to pursue their objectives and are prepared to meet challenges head on. They are a fiercely independent people who understand that their autonomy depends on how well they protect their land. Once, that meant guarding against all outsiders. Now it means working with those who work with them to protect their land, its resources, and their identity.

## Endnotes

1. The author would like to thank John Butler, Nancy Flowers, Ailton Krenak, Frans Leeuwenberg, Rosa Lemos, and Kirsten Silvius for their thoughtful comments about this case study. Thanks also are extended to the Instituto Socioambiental for answering questions about the legal status of Xavante reserves.
2. This case study uses the form that literate members of the community have adopted in designating this community to outsiders, and in distinguishing it from others within the Pimentel Barbosa Reserve. Variant spellings are recorded as Etéñitepa, Etenhiritipá, and Tenipá.
3. The Kaxinawa of the Rio Jordão in Acre had received several grants that focused on issues important to WWF. These involved the marketing of renewable forest resources, including natural fiber handicrafts and improved rubber processing. The mayor of Rio Branco, the state capital, donated land and WWF covered building costs for a small shop on the main plaza in which the Kaxinawa could sell crafts and promote their culture.
4. Allocations ran approximately \$25,000 to \$30,000 per year during phases I and II for research and planning. Budgets for implementation ran higher. For example, WWF-Brazil requested approximately \$100,000 for FY 1998 to cover the cost of scientists' salaries, two aluminum boats, motors, and fuel, and to install radio towers so that the reserve's separate communities would be able to communicate. Approximately \$70,000 was received, primarily from WWF-Sweden, to cover all expenses except for the radio communication system.
5. The other major Amazonian language families are Arawak, Carib, and Tupi. Other members of the Gê language family include the Kayapó, Krahó, Suyá and Timbira (Northern Gê) and the Kaingang and Xokleng (Southern Gê). Gê languages are closely related and their speakers share many cultural features.
6. The background material presented here summarizes information from several major works on the Xavante. Lopes da Silva (1992) provides an excellent historical overview. Other important sources are Chaim (1983), Flowers (1983), Graham (1995), Maybury-Lewis (1974), and

Ravagnani (1978). Garfield (1996) is important for the period 1937–1988.

7. “Pacification” is the term used by SPI and its successor FUNAI to describe government efforts to establish peaceful relations with indigenous peoples confronted by outside economic and colonial expansion. Under the directorship of General Rondon, the SPI developed a unique strategy for convincing hostile Indians that government agents were different than *bandeirante* slave hunters and settlers who were moving into Brazil’s interior.

The policy called for teams of unarmed SPI agents to introduce contact by leaving gifts of beads, machetes, mirrors, and clothing in areas frequented by members of a targeted group.

8. Other Xavante groups entered into peaceful relations with outsiders during the late 1940s and the 1950s. Some groups sought refuge from disease and hostilities with Salesian missionaries.

Their descendants now reside in the São Marcos (188,478 ha) and Sangradouro (100,280 ha) reserves. Other groups, which had moved much further west, were considerably influenced by Protestant missionaries from the South American Indian Mission and the Summer Institute of Linguistics (Wycliff Bible Translators). These groups now reside in the Parabubure (224,447 ha) and Marechal Rondon (98,500 ha) reserves.

9. The mechanized rice-cultivation project was part of the integrated development plan for the Xavante Nation, a grand strategy that grafted indigenous policy and efforts to improve health and education onto the economic development ideology of the post-1964 military government (Lopes da Silva 1986, 103–105).

10. For further discussion of the Xavante project see Graham (1995, 44–61) and Garfield (1996, 477–548).

11. For an excellent discussion of indigenous rights and legislation prior to the 1988 Constitution, see Carneiro da Cunha (1987).

12. Xavante use the Portuguese term *branco*, or *white*, to refer to non-Indians.

13. For more information on this family’s leadership, see Maybury-Lewis (1974).

14. Warodi is the brother of Cipassé’s biological father; within the Xavante kinship system he is classified as a father to Cipassé.

15. I attended several of these meetings in Goiânia and Pimentel Barbosa.

16. Scholars have noted similar patterns for bicultural mediators elsewhere in native Amazonia. See Jackson (1991, 1995), Brown (1993), Ramos (1994a, 1994b), and Conklin and Graham (1995).

17. Graham (1995) discusses the tension between individual prominence and collective identity.

18. A new UCG rector would reverse this admissions policy after the students were enrolled for over a year.

19. Quickly learning enough Portuguese to follow university courses was a severe challenge, and adapting to life in Goiânia was hard for many students, especially the Yanomami, Surui, and Tikuna, whose homelands are very different from a cerrado environment.

20. There is some disagreement about the reasons for closing the facility. According to Frans Leeuwenberg, who worked as a consultant for the CPI, operations shut down because the Ford Foundation and the EC withdrew funding. Ailton Krenak maintains that funding was not an issue, and moving research to local communities was the next logical step for the program to take.

21. Leeuwenberg had been associated with the CPI and had already initiated some preliminary studies.

22. Women also hunt small animals, but never as an end in itself. They take opportunities as they arise, for instance when a woman en route to her garden comes across an armadillo.

23. Women give a portion of their meat to the families of their sons’ brides-to-be who reciprocate with garden produce and collected food.

24. Flowers cautions that individual hunting may be underestimated since men take guns with them everywhere and serendipitous kills may not be reported as hunting.

25. Flowers cautions that low-priced game not shared between households may have been underreported.

26. This meat is then distributed to the entire community and everyone but the groom’s family partakes. The bride’s family reciprocates with large ceremonial corn cakes to the groom’s family. This exchange models the contributions to the diet that husband and wife will make in their marriage.



27. One such hunt, which bagged a tapir and a deer, took place in 1991 for my wedding. Tsérére was appropriate because time was short (my husband would be in the community for less than two weeks) and because he was not accustomed to the strenuous conditions of Xavante extended-hunting excursions.
28. The hunting range area increased to 85,000 in 1992 and 115,000 in 1993, which created a rotation total of some 200,000 hectares (Silvius 1998). These increases coincide with Leeuwenberg's presence, and the wildlife biologist's efforts to explain the effects of overhunting in finite areas may have led the Xavante to expand their hunting ranges.
29. I know of only one Xavante who cares for his community's herd, in the Parabubure area.
30. This section draws extensively on technical material in "Development of a Wildlife Management Plan for the Rio das Mortes Xavante Reserve," an unpublished 1998 report prepared by Kirsten M. Silvius for WWF.
31. According to Leeuwenberg (personal communication), the Xavante, when there is no embryo, roast and eat this small organ along with the connective tissue at the site of the kill. When there is an embryo, the uterus is cut out and discarded. Leeuwenberg accompanied some hunts, and none of the small number of uteruses he was able to observe had placental scars, which indicate the number of embryos the female was carrying.

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