Conservation Alliances with Indigenous Peoples of the Amazon

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Abstract: *Ongoing alliances between indigenous peoples and conservation organizations in the Brazilian Amazon have helped achieve the official recognition of ~1 million km² of indigenous lands. The future of Amazonian indigenous reserves is of strategic importance for the fate of biodiversity in the region. We examined the legislation governing resource use on indigenous lands and summarize the history of the Kayapo people's consolidation of their >100,000 km² territory. Like many Amazonian indigenous peoples, the Kayapo have halted the expansion of the agricultural frontier on their lands but allow selective logging and gold mining. Prospects for long-term conservation and sustainability in these lands depend on indigenous peoples' understandings of their resource base and on available economic alternatives. Although forest conservation is not guaranteed by either tenure security or indigenous knowledge, indigenous societies' relatively egalitarian common-property resource management regimes—along with adequate incentives and long-term partnerships with conservation organizations—can achieve this result. Successful initiatives include Conservation International's long-term project with the A'ukre Kayapo village and incipient large-scale territorial monitoring and control in the Kayapo territory, and the Instituto SocioAmbiental (ISA) 15-year partnership with the peoples of the Xingu Indigenous Park, with projects centered on territorial monitoring and control, education, community organization, and economic alternatives. The recent agreement on ecological restoration of the Xingu River headwaters between ranchers and private companies, indigenous peoples, and environmentalists, brokered by ISA, marks the emergence of an indigenous and conservation alliance of sufficient cohesiveness and legitimacy to negotiate effectively at a regional scale.*

Alianzas de Conservación con Indígenas del Amazonas

Resumen: *Las alianzas actuales entre indígenas y organizaciones de conservación en el Amazonas Brasileño han ayudado a obtener el reconocimiento oficial de ~1 millón de km² en áreas indígenas. El futuro del as reservas indígenas amazónicas es de importancia estratégica para el futuro de la biodiversidad en la región. Examinamos la legislación que rige a la utilización de recursos en zonas indígenas y sintetizamos la historia de la consolidación del territorio > 100,000 km² de la etnia Kayapo. Como muchos grupos Amazónicos, los Kayapo han detenido la expansión de la frontera agrícola en sus tierras pero permiten actividades madereras y mineras selectivas. Las perspectivas de conservación y sustentabilidad a largo plazo en estas tierras dependen del entendimiento de su base de recursos y de las alternativas económicas disponibles por parte de los grupos indígenas. A pesar de que ni la seguridad en la posesión ni el conocimiento indígena garantizan la conservación de los bosques, los regímenes indígenas de gestión de recursos de propiedad común relativamente igualitarios en conjunto con incentivos adecuados y asociaciones con organizaciones de conservación pueden obtener este resultado. Iniciativas exitosas incluyen el proyecto a largo plazo de Conservation International con el pueblo A'ukre Kayapo y el incipiente monitoreo y control territorial a gran escala en el territorio Kayapo y la asociación durante 15 años del Instituto Socioambiental (ISA) con habitantes del Parque Indígena Xingu, con proyectos enfocados al monitoreo y control territorial, a la educación, a la organización comunitaria y a alternativas económicas. El reciente acuerdo, negociado por ISA, entre rancheros y compañías privadas, grupos indígenas y ambientalistas para la restauración ecológica del Río Xingu marca el surgimiento de una*

Paper submitted December 21, 2004; revised manuscript accepted February 7, 2005.

alianza indígena y de conservación con la cohesión y legitimidad suficientes para negociar efectivamente a escala regional.

Introduction

Amerindian territories in the Brazilian Amazon comprise more than 1 million km^2, or approximately 21% of the Brazilian Amazon (ISA 2004). The territories reside in 400 legally recognized "indigenous lands" that are inhabited by some 200,000 people, or about 1% of the regional population (ISA 2004). Twenty-nine territories exceed 1 million ha (WCMC 1992). State and federal protected areas comprise about 14% of the Amazon, and 2% (130,000 km^2) of the region consists of protected areas or portions of them that overlap indigenous lands (Ricardo 2001). Indigenous lands encompass a much broader range of ecosystem types than all other protected areas combined (Peres & Terborgh 1995; Fearnside 2003; Nepstad et al. 2005).

Conservation scientists are increasingly convinced that indigenous territories, given their size and protected status, will be a decisive factor in the ultimate fate of Amazonian ecosystems (Peres & Zimmerman 2001; Pimm et al. 2001; Schwartzman et al. 2002; Fearnside 2003). Indigenous lands and other protected areas act as the principal barrier to forest cutting and fires along the "arc of deforestation"—the front line of forest destruction moving north from the south and southeast of the Amazon—where ~ 80% of deforestation is concentrated (Alves 2002; Nepstad et al. 2001; Nepstad et al. 2005). The Kayapó indigenous territories of Pará and Mato Grosso and the Xingu Indigenous Park provide a striking example of this barrier effect and show that the presence of Amerindian peoples has halted an intense wave of deforestation (Fig. 1) for nearly two decades.

Long-term conservation is not guaranteed by either recognizing Amerindian lands or creating protected areas, but strategies for long-term sustainability differ between the two. Projected new infrastructure investments and agricultural expansion in the Amazon are likely to increase deforestation and pressure on indigenous lands and protected areas alike (Nepstad et al. 2001; Laurance et al. 2004). These likely threats will require new strategies and new investments to both types of areas if their ecological integrity is to be guaranteed.

Legislation, Resource Use, and Threats to Amerindian Territories

The Constitution of Brazil of 1988 (Art. 231) assures Amerindian peoples' rights to their social organization, customs, languages, beliefs, and traditions and to the lands they have traditionally occupied. The National Indian Foundation (Fundação Nacional do Indio [FUNAI]) is the federal government agency responsible for upholding indigenous policy in Brazil. Although indigenous lands are property of the federal government, indigenous peoples are accorded permanent occupation and exclusive usufruct rights, except for mineral and water rights, which remain under government control. Lands "traditionally occupied" by indigenous peoples are those "permanently inhabited by them, those used for their productive activities, those indispensable to the environmental resources necessary to their well-being, and those necessary to their physical and cultural reproduction, according to their uses, customs and traditions" (Constituição da Republica Federativa do Brasil, Art. 231, Section 1).

The legal status of resource extraction on indigenous lands remains ambiguous. Although in 1973 FUNAI managed most of the indigenous societies' relations with the outside world, its guardianship has in practice long since been superseded. Indigenous peoples now deal frequently and directly with loggers, miners, local businesses, nongovernmental organizations (NGOs), the media, and state, federal, and municipal agencies and are themselves largely responsible for monitoring and control of access to their territory. Resource extraction in indigenous areas is usually conducted on an unregulated basis, if not flagrantly illegally, and there is currently no institutional means to legalize or regulate it. Although indigenous peoples have won legal recognition of their land rights to substantial territories, legal parameters for resource use on their lands remain vague. In the absence of clear rules or standards, indigenous groups have adopted pragmatic approaches that depend on alliances with regional, national, and international actors.

The Kayapó case illustrates how indigenous peoples in the Amazon have won control of substantial territories. The colonization frontier reached Kayapó lands early in the 1980s, and the government became unable to enforce the laws that protect indigenous lands from invasion, encroachment, and resource extraction by third parties. Ranchers, colonists, loggers, gold miners, and illegal land speculators, supported by road construction that promotes frontier expansion, began to flagrantly violate the integrity of Amerindian lands in southern Pará and Mato Grosso states.

In the late 1970s, the Kayapó numbered around 1300 in seven or eight villages in southern Pará and northern Mato Grosso (Bamberger 1979). The only recognized but then still undemarcated Kayapó land was some 2.8 million ha surrounding the eastern villages (CEDI 1982).

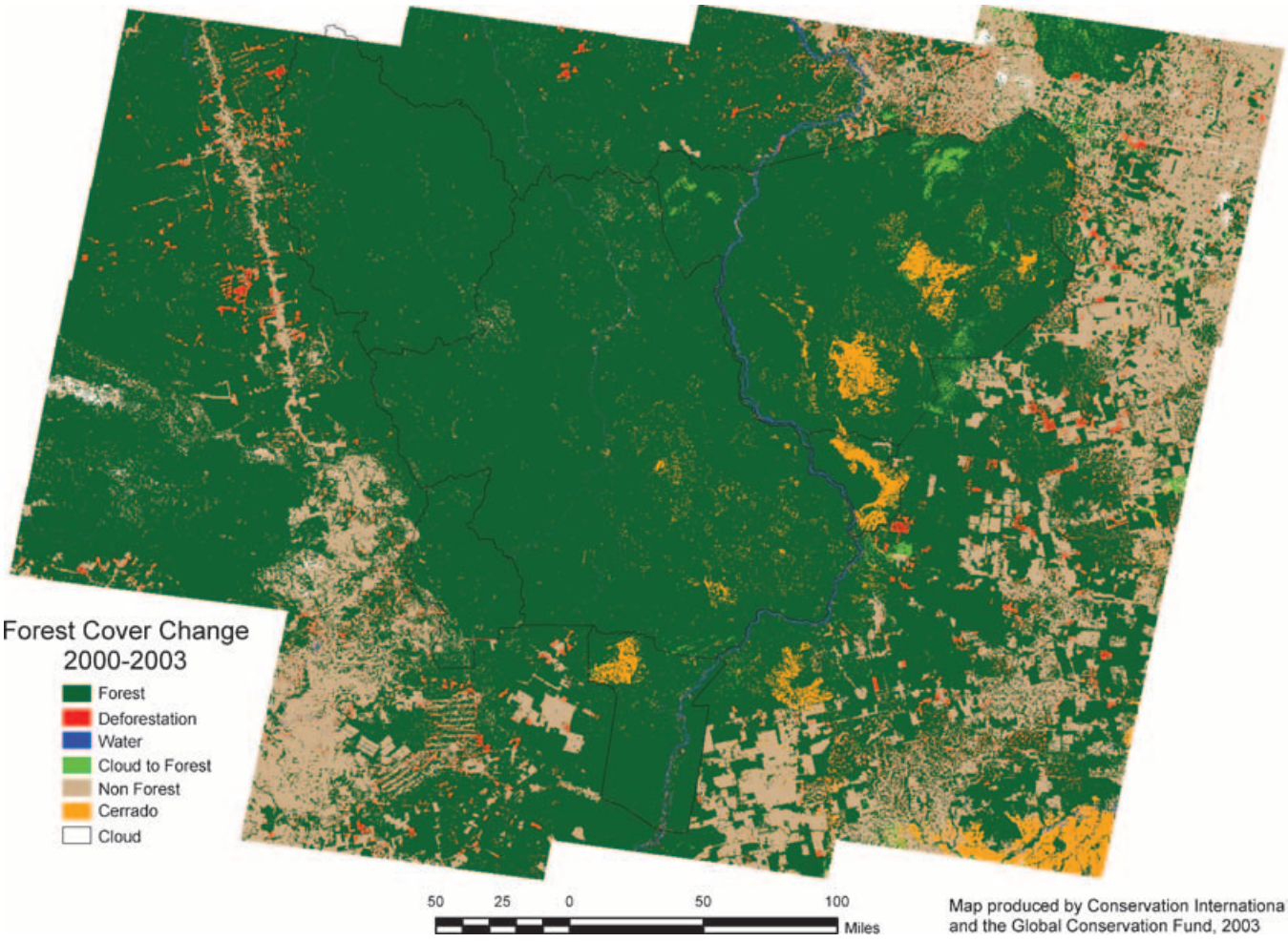

Figure 1. Forest-cover change in the region of Kayapo and Panara indigenous territories between 2000 and 2003. Black lines delimit one Panara and four Kayapo ratified indigenous territories (D. Juhn, M. Steininger, T. Christie, and L. Miller, Conservation International).

In dramatic confrontations in the 1980s, the Kayapó reinvaded ranches, took hostages, seized river crossings, and expelled thousands of gold miners from their territory. These actions reinvented their warrior tradition as part of a political and public relations campaign that proved effective in winning land struggles. During the late 1980s and 1990s, Kayapó chiefs began to selectively allow mahogany logging or gold-mining concessions in exchange for cash, but they were largely able to prevent outsiders from occupying their lands. Ironically, the illegal logging of mahogany contributed to the persistence of forest in the southeastern Amazon—the Kayapó invested part of the returns in protecting their lands.

The Kayapó now number more than 5,000, and their officially ratified territories cover some 11 million ha of continuous forest in Pará and Mato Grosso. For more than 20 years, the Kayapó have almost single-handedly protected their territories from invasion (Fig. 1). But the Kayapó lack the resources for surveillance and enforcement to deal with a second wave of deforestation and invasion spreading out from the Cuiabá-Santarém Highway. Most logging in that region is illegal and undertaken without the required management plans (Verissimo et al. 1992, 1995, 2002). Loggers reenter forests several times to remove timber as markets develop, roads improve, and transportation costs decrease. These logged forests become degraded, are prone to fire, become infested with vines and weeds, and lose up to half of their canopy cover (Uhl & Vieira 1989; Verissimo et al. 1992; Cochrane et al. 1999).

Unlike agriculture, logging and gold mining pose a more insidious threat to Amerindian lands and cultures because these activities do not necessarily result in loss of territory. As a result, Amerindian groups may view these activities as economic opportunity rather than invasion. Although gold-mining activity on Kayapó lands tapered off in the 1990s with declining gold prices, mahogany logging continued until international pressure led to government action in 2002. Kayapó lands were once rich in mahogany (*Swietenia macrophylla* King), the most

valuable timber species on Earth, but after more than a decade of uncontrolled logging, mahogany is scarce. Inevitably, prices for other timber species will rise in the absence of mahogany as transportation costs decrease with better roads, as regional timber stocks outside Kayapó lands are depleted, and as Kayapó communities are again pressured to sell timber. Although the light intensity of mahogany logging (<1 tree extracted/ha) did not seriously compromise forest ecology, a higher intensity, multispecies harvest would be permanently damaging (Zimmerman et al. 2001). A recent study by the Amazon Institute of People and the Environment (IMAZON; Lentini et al. 2004) shows that approximately 25% of Kayapó lands in Pará and Mato Grosso are vulnerable to logging of a suite of high-value timber species under the present road network.

Conservation of Indigenous Societies and Their Lands

Although necessary, tenure security for indigenous peoples is not tantamount to sustainable management. Typically, indigenous peoples will need new institutions to manage resources (Brandon 1996). But control of access to resources in frontier no-man's-land is the sine qua non of any strategy for sustainability in large tropical landscapes, and Amerindian peoples have largely achieved this thus far (ISA 2004). The conservation issue in the Amazon needs to be addressed next.

Amerindians in the Amazon generally see animals, plants, rivers, and forests as the basis for reproduction of their societies, although they may have no cultural restriction against resource extraction (at times to the point of exhaustion of a particular resource; Turner 2000). Conservationists have sometimes oversimplified traditional knowledge and resource management as benign conservation strategies and externally induced change as detrimental to sustainable practices (Brandon 1996; Berkes 2004). Social and cultural change may not always compromise long-term sustainability, however, whereas what is considered traditional knowledge may be neither traditional in the sense of ancient and unchanging nor necessarily beneficial for the resource base. Both traditional indigenous institutions and recent social and cultural innovations have at times enabled environmental gains and at other times have jeopardized the sustainability of the territories currently protected.

For example, Kayapó social organization was characterized recently by intense, often violent factionalism and chiefly competition based on leadership in warfare (Verswijver 1992). The wide geographic distribution of Kayapó villages in the 1970s—the basis of subsequent successful land claims—is largely a result of this process. But chiefly rivalry, transposed from warfare and ritual wealth, led to internal competition for logging and mining deals and the apparent windfall of goods they provided. For the Xicrin Kayapó people, the historical process of contact with frontier society, which began in the early decades of the twentieth century, was at least as much driven by Xicrin strategies to access the wealth of outsiders for their own social and cultural motivations as it was by an externally induced process (Gordon 2003). In the Xingu Park, in contrast, traditional knowledge has preserved a wealth of indigenous cultigens while impeding the assimilation of the concept of finite natural resources (Ricardo 2001). In sum, traditional or indigenous knowledge may be more hybrid and less static than is often recognized and more dynamic and adaptive than indigenous peoples' own representations may lead us to believe (Dove 2002; Schwartzman 2005).

Indigenous societies do nevertheless generally conform to the criteria that sociologists have identified as requisite for successful common-property resource management regimes (Ostrom 1990; Becker & Ostrom 1995; Morrow & Hull 1996; Gibson et al. 2000): (1) clear definition of the resource and its users and the ability of users to sustain legal claims to or effectively defend the resource from outsiders; (2) clear criteria for membership as an eligible user; (3) rapid access to low-cost, internally adaptive mechanisms of conflict resolution; (4) fair decision-making rights and use rights among users (as in egalitarian Amerindian society); (5) no challenge to or undermining of institutions created and defined by users by any other authorities; and (6) user communities are accustomed to negotiating and cooperating with each other.

Although Amerindian societies possess these attributes associated with successful common-property regimes, development and predatory resource exploitation from outside will exert high levels of pressure. For the long-term preservation of forest ecosystems, Amerindians need economic alternatives—congruent with their cultural norms—that they can control. Conservation and development projects with Amerindian communities, therefore, must be designed around normative indigenous values of equity, cooperation, and reciprocity that are expressed in terms of local authority achieved by consensus and common-property access, rather than relying on western normative values of competition, exclusive rights to resources, and centralized management authority (Chapeskie 1995).

Examples of Conservation Alliances with Indigenous Societies

Kayapó and Conservation International

The Kayapó have drawn on their social institutions and collective organization to forge their own forms of resistance and accommodation to Brazilian society. Unlike other politically active Amazonian groups, they have neither joined nor cooperated with any interethnic

organization. Historically, Kayapó leadership was validated by securing resources from beyond the village boundaries (e.g., leading long hunting treks or raiding the villages of other Kayapó or Brazilians). With contact, the requisites of leadership changed. Fluency in Portuguese, basic literacy and arithmetic skills, and familiarity with Brazilian administrative and economic institutions became essential assets. During the years of mahogany logging that introduced foreign concepts to the Kayapó society, the collective organization of Kayapó communities remained strong. In several villages that had allowed extraction of mahogany and gold, communal control was eventually asserted over the younger leaders who had parlayed their skills as intercultural mediators into political and economic dominance in the community. This control meant either that communities stopped extraction activities altogether on their land or made their leaders share the profits.

Conservation International do Brasil (CI–Brasil) began working with the Kayapó of a single community, A'Ukre, in 1992, with the objective of giving this community an economic alternative to selling mahogany logs. The A'Ukre conservation enterprise is an ecological research station and biological reserve that attracts researchers because it is ecologically intact with a full complement of timber tree species. The site is protected from logging and hunting and is embedded within a much larger wilderness area—itself protected from deforestation. Ecological research generates direct benefits for the community in the form of user fees for communal use, employment, training, and administrative and technical support in the outside world. Recognizing the benefits from their growing research station enterprise, this community chose to maintain an 8000-ha mahogany and ecological research reserve in lieu of continuing to sell mahogany for short-term gain (Zimmerman et al. 2001).

Once gold mining and mahogany logging on Kayapó lands was interrupted, the Kayapó began organizing associations to access support for community needs. Conservation International do Brasil provides substantial technical, administrative, and financial support and related project implementation needs for the two main Kayapó NGOs: Associação Floresta Protegida (AFP) in Pará state and Instituto Raoní (IR) of Mato Grosso state. Both organizations are implementing territorial surveillance and conservation and development projects (research station, Brazil-nut extraction, and piqui fruit harvest, among others) with funding obtained principally by CI–Brasil and in partnership with FUNAI. The FUNAI does not have nearly enough resources to uphold its constitutional obligation of protecting indigenous peoples and their lands. The NGOs can help fill this gap under the partnership model used by the AFP and by the IR. The role of the AFP, IR, and FUNAI is to support Kayapó surveillance and development initiatives as long as they act to preserve social and environmental integrity. The AFP, IR, Kayapó leaders, and FUNAI design and help coordinate surveillance strategy among guard posts and communities; the AFP and IR support administration, infrastructure, and training for implementing the strategy; the Kayapó perform the ground surveillance and occupation of their territory; and FUNAI provides legal authority, coordination, and administration of field activities and involvement of other federal authorities.

In addition to ongoing support for the local Kayapó NGOs, CI–Brasil provides the means for the Kayapó leadership, dispersed across a vast expense of territory, to meet annually. These meetings serve as a collective forum for achieving consensus, an important principle of Kayapó society, and unite leadership and reinforce traditional Kayapó political institutions. Fortified by their institutions, the Kayapó have been among the most politically successful and strongest defenders of indigenous rights of all peoples of the Brazilian Amazon.

Xingu Indigenous Park and Instituto SocioAmbiental

Unlike the Kayapó, the various societies in the Xingu Indigenous Park have not permitted logging or gold mining on their territory. The Xingu Park, about 2.6 million ha in northern Mato Grosso, was created in 1961, largely through the efforts of the renowned indigenists, the Villas Boas brothers. This area is now inhabited by some 3700 people of 16 distinct ethnicities and has been continuously inhabited for at least 800 years (Heckenberger et al. 2003). The Xingu tribes (Xinguanos) have repeatedly turned back illegal loggers, held and seized the equipment of intruders hunting and fishing in the park, and defended the boundaries of the area from surrounding ranchers throughout the 1980s and 1990s, despite expansion of the agricultural frontier around the park. A paternalistic regime of "presents" was instituted by the Villas Boas and continued by FUNAI, whereby chiefs' allegiance to park authorities was ensured by "gifts" of trade goods. As the Indians' need for outside goods grew, this system of presents collapsed and opportunities to generate income, outside of a handful of FUNAI jobs and the sale of handicrafts and artwork, were extremely limited.

In the 1980s it was also becoming clear that the original design of the park, leaving the headwaters of the major tributaries of the Xingu River unprotected, was flawed. Water quality began to deteriorate, with increased siltation and turbidity (Ricardo 2001). Starting in 1990, one of Brazil's principal indigenous rights and environmental organizations, the Instituto SocioAmbiental (ISA), set up a project in the Xingu Park and helped the Xingu peoples organize the Xingu Lands Indigenous Association (ATIX), in an effort to achieve greater political and economic autonomy. ISA and ATIX undertook a territorial monitoring and control project, building and manning control posts, patrolling borders, and maintaining the demarcation of park boundaries. ISA further obtained support for and

instituted a bilingual education program, concentrating on the training of indigenous teachers and, with ATIX, mapping resource use and studying economic alternatives.

The fact that the Xingu groups did not permit logging or gold mining on their territory may in part result from the absence of mahogany in the area but is also undoubtedly owing to ISA's long-term partnership and investments in economic alternatives. After nearly a decade of dialogue, research, and pilot initiatives, 28 villages in the northern and middle Xingu are producing certified organic honey—1.8 tons in 2003. The ATIX cooperative has a contract with one of Brazil's largest supermarket chains, which currently buys the entire output.

The ISA–ATIX partnership has developed into an important example of frontier governance (Nepstad et al. 2002). In 2003 the organizations conducted a field survey of environmental conditions of the upper headwaters of the Xingu and found that about one-third of the original vegetation cover had been cleared. They identified soil erosion and water supply as major problems within and outside the park. Ranchers, soybean farmers, and colonists had, to a greater or lesser extent, ignored stipulations of the forestry code requiring each property to maintain 20% of its original forest cover, especially along rivers and streams.

The team found ample evidence of pesticide pollution of watercourses. Based on this survey, ISA organized a series of meetings with local landowners, businesses, ranchers' unions, and state and federal producer's organizations, including the powerful National Confederation of Agriculture, seeking avenues for dialogue on addressing environmental degradation of the headwaters. Staff from ISA identified the restoration and protection of riparian forest as one issue on which dialogue was feasible and organized a meeting of ranchers, business, colonists, environmentalists, and indigenous peoples in Canarana, Mato Grosso, in 2004. Participants reached an unprecedented agreement in favor of restoring and protecting riparian forests. In essence, ranchers, soy producers, environmentalists, and indigenous peoples agreed to seek subsidized official credit for landowners to restore and protect riparian forest in the Xingu headwaters. The novelty of this meeting was the emergence of sufficiently organized and representative stakeholders to allow a negotiation capable of changing regional-level processes.

Conclusion

Both the Kayapó and the Xingu groups (Xinguanos) emerged in the 1980s and 1990s as cohesive, regional-level actors with significant effects on the extent and direction of frontier expansion in places of great conservation value. The Xinguanos' defense of their territory and the Kayapó's successful reincorporation of a large part of their undemarcated lands resulted in a continuous north–south corridor of some 14 million ha of protected forest. With the Brazilian government's creation of 5 million ha of new protected areas in the adjacent Terra do Meio region, in the wake of the tragic assassination of Sister Dorothy Stang, there is now a 22 million ha corridor of protected forest areas in the Xingu River basin—the largest in the world.

Social and cultural changes in the Xingu and among the Kayapó have demonstrably resulted in increased pressure on natural resources and losses of traditional knowledge. But they have also resulted in dynamic new strategies with enormous positive conservation value. The innovative negotiation brokered by ISA and ATIX with regional and national agribusiness promises to achieve a precedent-setting, regional-level resource management process. Although it could be said that the Xingu groups have adopted a more "sustainable" resource-use strategy than the Kayapó, the same aggressive independence and warrior tradition that led the Kayapó to broker their own deals with regional economic interests also motivated their strategy of territorial consolidation. Their profits from logging and mining partially funded these gains and the protection of their territory. The Kayapó's financial independence, costly though it has been in terms of resources lost to the communities, allowed the group to make critical interventions in key moments for national policy, such as the Constituent Assembly of 1988. What may prove most important to conservationists is that in relation to outsiders, both Kayapó and Xinguanos are organized and cohesive enough that with adequate support they can control access to their lands and negotiate with other social and economic actors on a regional scale.

More than enough knowledge and experience of frontier expansion, Amerindian societies, and the functioning of successful common property regimes exists for conservation NGOs to forge further wide-reaching, long-term alliances with Amerindian tribes for the conservation of Amazonian ecosystems. Investments in territorial control and economic alternatives for Amerindian peoples form the basis of long-term conservationist and indigenous alliances that can affect frontier expansion and forest protection at a significant scale. The challenge is to devise long-term investment strategies that remunerate indigenous peoples for the ecosystem services of the lands they protect, directly linking development benefits with conservation.

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