

INDIGENOUS PEOPLES AND FORESTRY MANAGEMENT ALTERNATIVES IN THE BRAZILIAN AMAZON

Report of an experience in progress to develop a management plan for the natural renewable resources in the indigenous area of the Xikrin do Cateté^(*)

(Preliminary Version - October 4th, 1994)

Isabelle Vidal Gianinni^(**)

REPRODUCTION AND/OR PUBLICATION ARE NOT ALLOWED WITHOUT PREVIOUS
AUTHORIZATION BY THE AUTHOR

(*) Case study prepared for the workshop *Traditional Peoples and Biodiversity Conservation in Large Tropical Landscapes*, organized by The Nature Conservancy, Panama City, November 13 to 17, 1994.

(**) Anthropologist and biologist, conducted researches among the Xikrin do Cateté since 1984, currently coordinator of the Xikrin Project at the INSTITUTO SOCIOAMBIENTAL (tel.: 55-11-825-5544; fax: 55-11-825-7861; internet: socioamb.@ax.apc.org.)

"Is it possible to develop local peripheral and balanced structures instead of a global, centralized area, whose impetus is to convert every difference into energy and value?" (Almeida, 1988)

"We, civilizations, now know that we are mortal". (Paul Valéry, Variété I. La crise de l'esprit, 1st letter)

Summary

Introduction

The Xikrin do Cateté and the Kaiapó	06
The Territory and the Indigenous Area	09
Deforestation in the Brazilian Amazon: an overview	11
The Xikrin: current situation and the predatory model	11
Dialogues and alternatives	13
From inventory to the management plan	14
Forecast	15

Explanatory Notes
Sources

Introduction

The important role that traditional communities play in the maintenance and development of biodiversity was recognized during the process that preceded the United Nations Conference on the Environment and Development (UNCED-92) and at the Convention on the Conservation and Sustainable Use of Biological Diversity.

Today's ecological diversity has been preserved largely due to the cultural diversity and different management techniques practiced by traditional populations. There is, however, a lack of dependable investigation on the unknown potential of the interface between the greater cultural diversity and the greater biological diversity. In Brazil, for example, studies concerning indigenous ethnic knowledge and on the way these populations manage and dominate their environment are recent.

There is no doubt, however, as to the contribution and heritage of the indigenous peoples as relates to the countless species of vegetation used in our nutrition or that are part of the global economy.

When dealing with traditional populations and the conservation of biodiversity we must understand that a global policy of environmental protection is based, above all, on strategies for the survival and autonomy of local cultures.

In terms of developing a socio-environmental project, the problem is how can we combine, in practice, the question of the populations and the environment? Countless questions arise from this. Before dealing specifically with the instance of the Xikrin do Cateté indigenous population we will list a few:

- 1 - The vision of independent units between Society and Nature. There are, on one hand, radical views that award privileges to Mankind in detriment of Nature. On the other hand are the views that award privileges to Nature in regard to Mankind.
- 2 - Should activities for conserving biodiversity be submitted to or governed by international paradigms or by local priorities?
- 3 - How can we combine collective rights, the conservation of natural resources and the preservation of cultural heritage?
- 4 - How can we combine the demand of a selective and large-scale consumer market with the conservation of biodiversity and the survival of cultural diversity?
- 5 - How can we combine alternative economic projects and aggressive expansion fronts?

This article describes an experience in progress by an indigenous community and an NGO (the Socioenvironmental Institute) in the Brazilian Amazon to draw up and implement a master plan to manage renewable forestry resources as an alternative to the model of predatory exploitation currently employed in the Southeast of the State of Pará.

From 1990 onwards a team of the CEDI "Indigenous Peoples of Brazil" program (1), with the legal support of the NDI (2), has developed, vis-à-vis the Xikrin do Cateté -- an indigenous community of the Kaiapó peoples living in eastern Amazon -- activities of participative investigation and social mobilization. The objective of these activities is to make an inventory of the existing renewable resources in the 439.150 hectares of the Xikrin land and to develop management alternatives that will ensure three results:

- 1) in the short term, to avert or weaken the possibility of the indigenous community (or of part of the community) renewing its ties to the economic agents of the regional predatory model to exploit forestry resources, especially logging companies interested in obtaining mahogany;
- 2) in the mid-term, generate a regular volume of monetary revenue compatible with the indigenous peoples' demand for goods and services and,

3) in the long term, foster the socio-environmental sustainability of the indigenous area and the diffusion of the model to other indigenous areas, especially to other Kaiapó areas.

The Xikrin do Cateté and the Kaiapó

Before effectively dealing with the report of the experience in progress, conducted by the Socioenvironmental Institute and the Xikrin do Cateté to develop a plan for the sustainable management of forestry resources, it is important to consider some information on the history and social organization of the Kaiapó people in order to create a basic profile of this community.

The Xikrin do Cateté are a subgroup of the Kaiapó. They inhabit a vast area of Central Brazil, comprised between the Tocantins, Araguaia and Xingu rivers in the Southeast of Pará (see map). They speak a language of the Gê macro trunk, similarly to the great majority of the native peoples of Brazil's Central Plateau.

Several designations were used in the historical sources to refer to the Kaiapó-Xikrin (3). The great-grandfather of Bepkaroti -- a Xikrin chief who died in 1971 at the age of approximately eighty-five -- was alive then, and living near the Cateté-Itacaiunas rivers, where these Indians still abide (Vidal, 1977:27). This means that the Xikrin probably already occupied this area around 1810-1820 and they had probably separated from the other Kaiapó prior to that date. In any case, the separation of the Xikrin from the Kaiapó ancestor groups occurred a very long time ago: any estimate or historical reconstruction remains merely speculative, as Xikrin oral history is apparently mute [on the matter] (Vidal 1977: 25-26).

In the recent past, until a short time ago the Xikrin undertook several territorial migrations. Nowadays there are two Xikrin groups: 1) a major group located along the Cateté River, contacted in 1953, numbering little more than 300 persons divided among two villages; 2) a second group, located near the Bacajá river, contacted in 1961 and numbering some 200.

The social organization of the Xikrin do Cateté is a variation of the traditional Kaiapó norm, a society based on political and ritual moieties, divided into hierarchies according to age, with a marked division of labor among the sexes.

The current Xikrin village, for example, follows the traditional Kaiapó model. It is circular, composed by houses that shelter large uxirolocal families. In the middle of the village is the Men's House, a male, political, legal and ritual site.

The Kaiapó universe has a clearly structured spatial organization and demonstrates a successful integration of the environment and social organization.

The Xikrin do Kateté do not work for local whites and do not sell the produce of their agriculture, planted only for subsistence. They trade "castanha-do-Pará" or Brazil-nuts (*Bertholletia excelsa*) and are dedicated, on a small scale, to making hand-crafted products, sold in Carajás or in Belém. They allow mahogany extraction on their land.

The Xikrin are aware of three ways to make money, none of which are part of their traditional culture: the sale of timber, gold prospecting and cattle breeding. They never, however, consider themselves as actively participating in these activities, conducted by "white men"; they only benefit from the profit obtained. In other words: these activities do not interfere with the Xikrin's traditional occupation and way of life. They do, however, degrade the land, fauna and flora, and the Xikrin are aware of it.

In spite of the dramatic and rapid changes they are subject to the Xikrin continue to conduct their traditional subsistence activities. They practice slash-and-burn agriculture and grow several types of sweet potatoes, yams, bananas, cassava ("macaxeira") and maize. After inter-ethnic contact their agricultural produce became more diversified.

They define themselves essentially as hunters, in spite of their dependence on agricultural produce. Semi-nomadic, the Xikrin's subsistence activities are cyclic and seasonal. There are times of plenty and times of scarcity. The custom of moving around a large area, in addition to providing a more varied diet, allows the well-planned management of several ecosystems without depleting a single one. Several rituals depend on this moving around, essential to provide food for the ceremonies and other products not found close to the village. For example: calabash trees ("coités") for prepare the ceremonial gourd rattles ("maracás"), only found in the fields at the headwater of the Itacaúnas river, medicinal plants, fibers, beeswax, "almacea" flowers and bird feathers.

Joan Bamberger (1967) suggests that the Xikrin have always occupied transition ecological areas, fields, forests and the "cerrado" (Brazilian savannah) for easier access to a large variety of vegetal and animal species, exploited in a managed way.

For Darrel Posey (1986) the Kaiapó, in addition to rationally exploiting the different ecosystems, developed sophisticated techniques to change the fields and "cerrado" into "forest islands", with semi-domesticated species, or "islands of resources". He also imagines a certain manipulation of the fauna, that is, the semi-domestication of animals.

Personally, I did not observe the practices described by Posey among the Xikrin do Cateté, nor did I obtain any information on this type of management. What I did observe is that the small plantations that are considered as having been abandoned are, in fact, a source of supplies for a long period, providing several products such as, for example, firewood, sweet potatoes, "genipapo" fruit and urucum (used in body painting), babaçu coconuts (for oil) and medicinal plants, species intentionally planted, similarly to certain species found close to the houses and planted from seeds or seedlings obtained during their perambulations in the area. As regards the manipulation or semi-domestication of animals (especially bees), the Xikrin deny this practice, both among themselves and among the Gorotire, and add: "That's something white men do".

The Xikrin have a detailed knowledge of fauna and flora, and can tell several species apart. They recognize not only biological diversity -- the different species of fauna and flora -- but also ecological diversity -- the different ecosystems. The conservation of biological and ecological diversity by the Xikrin society is extremely important for the social continuation of the knowledge and for the pragmatic and symbolic use of the systems to classify biodiversity.

An example: all of the 138 species of trees recently listed by us with the aid of members of the community of the Xikrin do Cateté area have names in the indigenous tongue. 89 of these trees are employed in traditional ways, be it to prepare different devices; as firewood, food, for construction and medicinal purposes, and even for hunting. A specific survey of the avifauna identified 199 species of birds whose nomenclature is divided between onomatopoeia and descriptions, showing, by their names, an auditive, morphological and behavioral knowledge of the species. The Xikrin have a detailed knowledge of their environment. This knowledge is transmitted from one generation to another and goes beyond the pragmatic and symbolic use: they organize and classify the natural environment. In a way, the Xikrin "boast" about this knowledge and feel enormous pleasure in transmitting it.

Its important to make clear, however, that the relations between the Xikrin society and Nature are not determined exclusively by the knowledge of biodiversity or of management techniques. There are complex systems involved in the relationship between the Xikrin society and the different cosmic domains. Systems of relations which become evident in the different fields of social life, like the rituals of naming and initiation, indigenous medicine, Xamanism, the concept of a person, contagion, diseases and taboos about food (Giannini, 1991).

Among the Kaiapó, the simultaneously sedentary and nomadic life, as well as the effective management of the area as a whole, plays an important role in several aspects of social organization. There is a permanent need for the males and the leaders to move around. Formerly, these organized perambulations involved territorial changes, both for

subsistence activities -- collective hunting and fishing -- and for battle expeditions against other ethnic groups to obtain the "riches" that would become part of their own wealth.

This moving around is apparently a vital component of the equilibrium and the dynamics of the Kaiapó society as a political organization. Perhaps it is the most important way to strengthen and reaffirm the political and social solidarity of the male groups. In the past, to offset the female groups (the "Women's Houses"), or to face outside groups. Nowadays, to face Brazilian society. In this sense there is a permanent contradiction between the need to relate to the surrounding society to obtain goods or "wealth" and the constant need to move against this same society, emphasizing the differences between them.

To begin with, contact with non-indigenous peoples was made to obtain goods such as weapons, hammocks, pots and pans. Currently, the list of goods to be obtained has grown more diverse and includes cars, clothes, food products, airplanes, brick houses, clothes, engines, video cameras, dish antennas and others. The achievement of these "riches" has a symbolic significance. It resembles the conquest, through past activities by Kaiapó warriors, of certain goods belonging to other ethnic groups that were reinterpreted and incorporated into the social and ritual life of the Kaiapó. This demand grew and became indispensable: the ownership or control of goods of an external origin has increasingly become, in itself, a symbol and source of status within the community.

The Xikrin do Cateté compete with other Kaiapó groups, the FUNAI (National Indian Foundation), local whites, logging companies and the CVRD (Vale do Rio Doce -- a mining company of mixed private and government capital). There is a specific value which they attribute, by their behavior and the evaluation of different situations -- the *piãym*, a word that can be translated as social distance -- that allows them to identify a group, shame, respect or even honor. The Xikrin, through the conquest of certain goods belonging to the surrounding society, strengthen their identity and recover the notion of Xikrin humanity. In a way they symbolically eliminate the inequality between them and Brazilian society.

The Xikrin recognize the *mêbengokré* language (Kaiapó) as the common element among the different groups known as Kaiapó. Comparisons between the Xikrin and the other Kaiapó groups are made constantly, so that this enhances the nuances that exist among them. Linguistic differences, differences of material culture, beliefs, rituals, even personality. These differences arouse a great interest by groups that constantly exchange information.

In general, the life of the Kaiapó as regards subsistence activities, the socio-political structure and cultural manifestations, is fairly uniform. The differences among the groups are due to the successive divisions, to the diverse ways they adapted to the environment (forest and "cerrado") and to the internal evolution of each group according to specific situations such as the demographic configuration, inter-tribal and inter-ethnic contact.

Historically the Xikrin maintained hostile relations and constant warrior expeditions especially against the Kaiapó-Gorotire group. Part of the training of a young Xikrin warrior was to engage in battles with the Gorotire; winning was considered quite a feat. At present the relations among the two groups have a certain flexibility: sometimes their speech shows the differences and the conflicts between the two groups, at other times it shows an identification among them, a macro-political strategy.

Most of the Kaiapó are speak a single language. Today there are approximately 4.000 people in 15 communities. They are recognized by the Brazilian government, which has allocated approximately 13 million hectares of land to them, divided between seven territories, basically covered by the humid tropical forest (see map 1).

This was the most spectacular instance of territorial recovery and the recognition of an ethnic identity in the public scenario of Brazil's recent history. It awarded the Kaiapó an emblematic recognition in the struggle of indigenous peoples for rights in the process of redemocratization and drawing up the new Federal Constitution approved in October,

1988 and, after the famous Altamira Meeting in 1989 ⁽⁵⁾, an outstanding place in the planetary pantheon of the guardians of the ecological balance.

Paradoxically, the ascension of the Kaiapó people as the symbol of a just cause was simultaneous with the active insertion of almost all of their local communities in allowing the predatory exploitation of their land's natural resources, especially alluvial gold and noble woods, namely mahogany.

The model of "acculturation" and exploitation of natural resources implemented among the Kaiapó after 1981 by the military government through the Cumarú project led thousands of prospectors previously expelled by the indigenous peoples to settle down on Kaiapó territory. The Kaiapó-Gorotire were convinced by the SNI and by the FUNAI, federal government agencies, to allow the prospectors to remain in exchange for royalties and the demarcation of their land. At the same time there began the enticement -- usually with official incentives -- by logging companies. The royalties and profits of these operations generated an oligarchy among the Indians, breaking the traditional rules of succession of leaders among the Kaiapó, increasingly divorced from the desires and the needs of their communities.

Pessimistic and partial estimates believe that the Kaiapó area produced more than 700 cubic meters of mahogany in ten years, between 1983 and 1993 (PIB/CEDI, 1991a; CEDI, 1993), sold by the Indians to the loggers for an average of US\$ 30/40 per cubic meter, while in 1987, for example, the price of the cubic meter of mahogany for export was US\$ 464.34. In Brazil mahogany is currently sold for US\$ 1.000 a cubic meter, and in Europe, US\$ 3.000.

As refers to gold no reliable data has been collected or organized, but according to information obtained in 1989, for a single month of exploitation, 54.879 kg of gold were obtained in an area directly controlled by the Kaiapó-Gorotire community, with a net earning of US\$ 70.000, paid to the Indians by the prospectors and purchasing companies (PIB/CEDI, 1991b).

To understand the situation described in this report, both as refers to timber exploitation and gold exploitation, it is important to emphasize that the Kaiapó participate in the process in their own specific way: they are dedicated exclusively to the activities of surveillance and control, charging cash fees frequently established in contracts signed by native middlemen directly with the companies and groups with interest in the region. And with the facilitation and/or agreement (or not) of the local representatives of the federal authorities. The revenue obtained from these deals is handled directly by the Kaiapó, benefiting the specific interests of the indigenous middlemen but compensating the communities through presents in kind or gifts of live cash to the traditional leaders and warriors.

In view of the amount of resources involved in the deals involving gold and timber and of the strength and speed of Kaiapó macro-politics, based on the direct control of the financial resources and of specific transport (including a fleet of cars and airplanes) and communications (through radio, telephones and video) systems, any alternative proposal for the management of forestry resources in the mid- and long-term, based on the idea of sustainability, sounded somewhat naïve.

The Territory and the Indigenous Area

The history of the changes and the migration of the Xikrin, including a long history of conflicts with other Kaiapó groups, other indigenous peoples and extractive, non-native populations, led to a concept of territory that goes far beyond the current limits of the physical demarcation of the Indigenous Area officially recognized by the Brazilian government during the 1980s. To the East it stretches in the direction of an area held by the Companhia Vale do Rio Doce - CVRD - and, to the South, spreads beyond the PA-279 highway, covering the area today occupied by the town of Tucumã and stretching to

the Araguaia river. To the North it continues to the Bacajá river, south of the town of Altamira.

Today the Kaiapó-Xikrin do Cateté number 506 individuals that live in a village located on the left bank of the Cateté river, in the municipality of Paraupabas, in the state of Pará, in a territory recognized by the Federal Government with an area of 439.150.5 hectares and a perimeter of 372.5 km. Officially called Al Xikrin do Cateté, this area has been physically demarcated since 1981, and was ratified by Presidential decree nr. 384 of December 24, 1991 (6).

The region inhabited by the Xikrin do Cateté is defined as the Low Amazon, with tropical forest ecosystems, a hot and very humid climate and high rainfall rates. It is an ecological transition area, where tall forests and "cerrado" are combined, generating a broad biological diversity.

The results obtained from researches with sample units and phyto-sociological analysis indicate a 3.36 index of diversity for the area in general. This is considered quite high.

Based on a map of the forestry covering obtained through satellite images and a field survey, checked by the GPS, a preliminary classification of the forestry covering of the indigenous area was made. This was grouped into four categories:

1 - forest, characterized by tall tree (more than 25 m high) with a clean sub-forest; typical primary natural vegetation, with the presence of a large number of emerging trees.

2 - the "cerrado", or Brazilian savannah, characterized by low trees (approximately 20 m), completely covered by woody lianas in the more rugged terrain.

3 - forests that have suffered human intervention and the presence of species that characterize a secondary forest, with the typical vegetation of the successive phases.

4 - Unnamed forest (scrubland or "campo sujo"), characterized by low vegetation, covered with lianas, with the presence of short and some large trees. A large amount of palm trees, especially açai (*Euterpe oleracea*). The region is apparently humid.

As regards soil studies, the area can be considered homogeneous, with a few variations of the red and yellow podzolic soil. There is a predominance of not very fertile soil with a sandy superficial layer and an average and silty subsurface, with a few rocks and stones. Overall, no direct relation was observed between the vegetation and the soil from the morphological, physical and chemical standpoint, especially as refers to the visual aspect of the "cerrado" and the forest. The most consistent relations are in the Brazil nut groves, where the soil tends to be less fertile with an average and silty texture, and in the açai groves, always associated to hydromorphic (drenched) soil.

The classification of the vegetation and of the soil must be considered as preliminary, due to the extension of the area which hinders a precise classification of the existing vegetation and types of soil. We are certain to obtain further information when more intense field work is conducted. This information will allow us to gradually improve the mapping of the area.

The topography of the area varies between 200 and 850 meters, most of it flat, with a certain concentration of higher surfaces every once in a while. There is a considerable network of rivers, formed by perennial rivers of average size and countless "igarapés".

Deforestation in the Brazilian Amazon: an overview

Brazil and India produce more than half of all the tropical sawn timber. In both cases the production is used to meet domestic needs, substituting timber for construction that would otherwise have to be imported (Dennis Dykstrat and Rudolf Heinrich).

In the specific case of Brazil, the expansion of the Amazon frontier began 25 years ago with the construction of roads and highways, followed by the arrival of small farmers and, subsequently, cattle breeders. Both faced poor soil, pests, diseases and poorly adapted forage vegetation. In spite of government incentives such as subsidized credit the expansion did not attain economic success (Christopher Uhl et alii, 1990).

The depletion of the stocks of timber in the South of Brazil led to the expansion of this activity to the Amazon region. Just to illustrate the point, from 1976 to 1988, the total production of timber logs in the Northern region increased from 6.7 to 24.6 million cubic meters (54% of Brazil's total). At the same time, the early depletion of the stocks of Asiatic timber, responsible for the larger part of the supply of timber to the international market (Nectoux and Kuroda, 1989; Bee, 1990) led to the opening of new markets for the timber of the Amazon. Brazil, with almost one third of the world's tropical forests, detains the trade of tropical wood in the 21st century. Most (87%) of the production of logs in the North of Brazil occurs in the state of Pará (IBGE, 1988 and Adalberto Veríssimo et alii).

Unfortunately, one of the characteristics of predatory exploitation is to provoke the commercial extinction of the noble woods, such as mahogany, in the areas where it occurs. In the past mahogany became extinct in the Valley of the Tocantins. In recent years, the species has been gradually disappearing from the right bank of the Xingu river and, at present, its exploitation is concentrated on the left bank of the same river.

In truth, this is the result of a colonialist extraction mentality rooted for some centuries in the timber industry. This model led to the extinction of "pau Brasil" in the south of the country, as well as other species.

Timber extraction activities, during the exploitation of the Amazon, went beyond the authorized areas and did not spare government-protected forest areas or areas belonging to third parties. It has thus even affected areas under strict legal protection, including environmental conservation areas and the indigenous lands.

In Brazil, the so-called Legal Amazon extends for 500.681.680 hectares, covering nine states, with approximately 160 indigenous peoples already contacted. There are 358 indigenous areas in a total of 91.704.613 hectares, that is, 18.31% of the land in the Brazilian Amazon. This data includes 66 areas about which nothing has been done, 30 identified areas, 08 closed areas, 85 delimited areas and 169 areas ratified by the government. In 1993 the CEDI prepared a dossier on the situation of timber exploitation in the indigenous areas in the Amazon. Although the data collected at the time was qualitatively heterogeneous and quantitatively partial, giving only a partial view of the 254 delimited and officially ratified indigenous areas in the Brazilian Amazon, at least 23 were being illegally exploited by logging companies.

The Xikrin: current situation and the predatory model

Until a short time ago, the Xikrin society lived in isolation. The surrounding area was practically unoccupied until the mid-1970s. This isolation, however, ended in 1979, with the construction of the PA-279 federal highway that links the towns of São Félix do Xingu to Redenção, in the state of Pará.

The main objective of this highway, built as part of the Polo-Amazônia program, was to help implement the Grande Carajás program, for which the mixed capital company Vale

do Rio Doce (CVRD) was responsible. Northwards and eastwards the project stretches to the frontier of the indigenous Xikrin area.

Along the northern limit, Al Xikrin do Cateté is limited by the National Forest of Tapirapé/Aquiri, where the CVRD intends to implement the Salobo project for copper exploitation. To the east runs the Itacaiúnas river, a natural frontier with the CVRD-owned area, where a mega-project to exploit iron ore is in progress (directly linked to the foreign market by a railway to the port of Itaquí, in Maranhão), as well as a gold extraction project. On the south the frontier runs parallel to the PA-279 highway, approximately eight kilometers south. To the west there is a dry line that excludes the headwater of the Bekware and Bepkamrikti, both tributaries of the Cateté river. Both the southern and the western limits are highly vulnerable and have suffered pressure by the logging companies present in the region.

In the case of the Al Xikrin do Cateté, differently from what occurred after the 1980s in other Kaiapó areas, there was no gold exploitation. However, from 1976 to 1985, there were invasions by logging companies, to which the Xikrin reacted, sometimes aggressively (Vidal & Giannini, 1991).

In 1989, however, Xikrin leaders contacted the Bannach and Perachi companies for the selective exploitation of "more or less" 20.000 cubic meters of mahogany during a five-year period. It is estimated that, in spite of the contract, more than 5.000 cubic meter a year were exploited. Also, a large number of mahogany trees were, sawn, damaged and abandoned on site.

In 1992 the Xikrin eliminated the logging companies from their area. As in the other Kaiapó communities, the Xikrin were never directly involved in the work of extraction, reserving for themselves the right to monitor it, appropriating the monetary resources and the benefits that resulted from direct contracts, with no external advice on forestry techniques, economic or legal assistance.

It is important to have an idea of the harmful effect of the timber exploitation on the indigenous peoples. An analysis of the "control forms" of the Exportadora Perachi timber company (7), shows that the company "helped" with the Indians by paying for several of their needs, allowing a constant flow of money that effectively kept them completely dependent. For example: it is possible to observe, in a period of only six months in 1991, that US\$ 566.193,00 was spent with the payment of these needs. We do not, however, know if the Xikrin were aware of the amounts declared. Not to mention the fact that at no time was any credit declared on behalf of the Xikrin for the removal of the timber from their land, thus turning them into eternal debtors.

The predatory exploitation of the indigenous area, over which the Xikrin are almost unable to exert any type of control, the degradation of their environmental heritage and social destruction are the sad portrait of the end result of this operation.

The model of selective extraction is highly predatory, as, although it awards priority to removing the most valuable trees from the commercial standpoint -- in this case mahogany -- it also has an incalculable potential for destruction (direct and indirect) as regards the forest as a whole.

An example: a study (Viana, Gianinni and Pavan, 1991) on the impact of illegal exploitation of 2.761.39 cubic meters of mahogany in the southern area of the indigenous Xikrin reservation, conducted by the Bannach timber company (8), concluded that the percentage of the area exploited that suffered a direct impact due to the suppression of the vegetation was approximately 26% of the total area. This data, although only underestimated, shows the destructive potential of the model of predatory selection employed by the logging companies. In spite of there not being any specific evaluation of the action of the logging companies on the Al Xikrin do Cateté, we can have an idea of the damage caused by mahogany exploitation during a four-year period.

The crossing of existing satellite image information on June 22, 1992, with geo-referenced field information allowed the confirmation of the existence of illegal roads opened by the logging companies, crisscrossing all the Indigenous Xikrin Area and creating a veritable web in a partial area of 390 kilometers (see map 2). The logging companies did not even spare the Brazil nuts groves and, as the Xikrin say, "wherever you build a road only paxiuba (caryota rufflepalm - *Aiphanes caryotaefolia*) and brambles grow; you can't walk there". Or as elderly leader Benoti says: "I learned to walk in the forest with my father, I learned to know the paths; now I don't know them any more".

Dialogues and alternatives

The exploitation of mahogany by logging companies led to an internal division among the Xikrin do Cateté. The discontented sought a dialogue with an anthropologist they knew who spoke the Kaiapó tongue, Isabelle Gianinni, who, in turn, counted on the institutional support of both the PIB/CEDI and the NDI as of 1990.

The older leaders were discontented with the lack of control over the process triggered by younger leaders acting as intermediaries of the relations with the logging companies, reproducing the model that prevailed in the other Kaiapó groups. In spite of the insistence of the elderly in maintaining this critical dialogue, at several formal conversations held at the Men's House in the center of the village there was no effective creation of any opportunities for suggesting an alternative to the predatory model. On the contrary, there were many obstacles, and the dialogue did not develop smoothly.

During the rainy season of 1990, with the support of NDI lawyers, the Xikrin formally canceled the existing contracts with the logging company, renewed shortly afterwards, at the start of the dry season.

Conversations moved to an attempt to show the Xikrin the low earnings obtained by the existing agreements, the damaging environmental effects and the non-sustainability, in the long term, of the model of the logging exploitation model. It was shortly discovered that these arguments, although they sounded interesting to the Xikrin, were not accompanied by solutions as attractive as the easy profit of the logging period (May/October) and to the gifts annually offered by the logging companies during the "enticement" period (March/April). In fact, according to this dynamic, it was observed that the period preferred by the Kaiapó in general and the Xikrin in particular for conversations with NGOs searching for "alternatives" was precisely the period when the logging was not cut (November to February), a time of low revenues.

During the rainy season of the following year -- 1991 -- the discussions with the community continued. In July a series of joint forestry investigation activities were conducted by a technical team recruited and coordinated by the PIB/CEDI (9) These intended to draw up a master plan for the management of the renewable natural resources of the AI Xikrin do Cateté. The steps already undertaken are summed up further ahead.

The continuous dialogue with the Xikrin during this period also allowed an advance in the comprehension of the political significance of the mahogany exploitation activity. Until then, the explanation given to Xikrin involvement (and that of the Kaiapó in general) in logging exploitation had a clear functionalistic nature, with an echo in the speeches by FUNAI employees, anthropologists and even the Indigenous leaders themselves, who attributed the fact simply to the need for basic goods and services that the State, although legally responsible, was unable to provide.

In the case of the Xikrin do Cateté this excuse more obviously didn't apply, as, differently from the other Kaiapó groups, they enjoyed, since 1982, a special basic assistance service (health, education and infrastructure) for an unspecified time funded by the Companhia Vale do Rio Doce (CVRD) through an agreement signed with FUNAI. This agreement ensures them a monthly sum of, beginning in 1991, to be managed by FUNAI(10).

There are other relevant aspects that help understand the Kaiapó's participation in the predatory regional model: the first, and most obvious, is that this model is the only one with which they have interacted so far, thus becoming "natural" to the eyes of the Natives, in addition to the constant pressure that the coalition of interests behind logging exploitation exerts on the Kaiapó leaders. Other values are involved, also from the Kaiapó's standpoint, such as the affirmation of their ethnic identity vis-à-vis non-indigenous peoples, the direct control of the monetary resources and benefits without going through the FUNAI and, very important, the political competition and fight for prestige among the leaders of the different communities -- and, within each one, among the factions that traditionally constitute its social organization.

From inventory to the management plan

In 1991 an inventory of the forest ⁽¹¹⁾ was begun on the Southern part of the Xikrin do Cateté area with the participation of the Xikrin community, which designated a few of its members to actively participate in the entire project ⁽¹²⁾. Atoro, Kangore, Kauire and Kaikure gave valuable contributions to the identification and classification of the species listed. This strengthened the interest and the greater comprehension by the entire community about the possible consequences of the project. In addition, the Xikrin community allowed the research team to use their airplane and another ground vehicle.

In 1992, after several internal discussions, the Xikrin eliminated all the logging companies from their land and signed a power-of-attorney authorizing the NDI to begin proceedings for environmental damages against the Perachi and Bannach companies. Proceedings began on May 31, 1993, and a preliminary injunction was awarded on April 5, 1994, forbidding logging exploitation by third parties.

In 1993 two teams consisting of forestry engineers, pedologists, an anthropologist and a "mateiro", with the participation of a few Xikrin, continued the inventory of the logging and non-logging resources and of the potential of the Brazil nuts groves in the area ⁽¹³⁾. In 1993 the Xikrin resisted pressure by the logging companies and there was no logging exploitation in the area.

During that year, answering a request by the PIB/CEDI, experts from the NGO Ecotec, with headquarters in Recife, North of Brazil, conducted a study of economic feasibility for the exploitation of Brazil nuts ⁽¹⁴⁾. In December four Xikrin natives, accompanied by the anthropologist, visited the Brazil nuts processing cooperative of the rubber tappers of the Chico Mendes Extractivist Reserve, in Acre.

To date the following researches and analyses have been conducted as part of a future master management plan of renewable forestry resources in the area:

1 - a physical characterization that includes, through the analysis of satellite images and field survey, a description of the soils and vegetation;

2 - preliminary mapping of the forestry covering ;

3 - preliminary mapping of the soil;

4 - a hydrology and topography map;

5 - preliminary definitions of zones that define an area of permanent preservation and refuge for the fauna, an area of deeper forest and monitoring, a subsistence and village area, an area for the exploitation of Brazil nuts and an area for manageable exploitation of logging and forestry resources;

6 - an economic feasibility study of the potential of Brazil nuts;

7 - the definition of the current and future logging potential, and

8 - the definition of the size of the current cutting unit (1.000 hectares), of the management cycle (50 years) and of the species to be used, as well as of the minimum diameter of the trees to be cut.

A study of future commercial and potential products is being conducted by an expert forestry engineer ⁽¹⁵⁾. Mapping of the forestry covering, the topography and the hydrology of the Xikrin area was executed and funded by the PIB/CEDI ⁽¹⁶⁾.

In 1994 the following are in progress:

1 - a complete inventory of the 1.000 hectares units, including the total census and permanent areas for post-exploratory monitoring;

2 - a division of the area into micro-zones defining topography, marking the mother-trees, the paths to be opened and the protection areas (rivers, sources, varying topography);

3 - a follow-up, by video, of the field surveys, evidencing the methodology employed and the discussions with the indigenous peoples, and

4 - the study of the logging market on the regional, national and international levels.

These studies intend to complete the Master Plan for the Management of the Forest Assets of the Indigenous Xikrin do Cateté Area, including the possibility of exploiting the logging resources and the technical and administrative support for the exploitation of Brazil nuts in 1995.

Forecast

What is currently sought with the development and creation of an alternative project is the sustainability of more a just and honorable relationship between the Xikrin society and the current Brazilian society. In the context of building a project with the Xikrin we observed that different relations in family nuclei, with specific objectives categories by age groups or "moieties" with indigenous leaders were multiplying. It is extremely important to understand that these are mechanisms of the Xikrin society. The knowledge of these different levels of groups, mobility, mediation and regulating mechanisms of the different social and political spheres is extremely important.

The project we are developing does not intend to privilege a single group but the Xikrin society as a whole, respecting the institutions and structure of the group's social organization.

In other words: the knowledge of the social organization leads us to think and discuss with the indigenous peoples in the form of an association, an institution that is exogenous to the group but that includes the different institutions, leaders and regulating mechanisms for conflicts endogenous to the Xikrin society.

There is currently a discussion underway with the Xikrin about an association, a key point for the self-management of the project, that can adopt the traditional Xikrin institutions, its leaders and the mechanisms for regulating conflicts. To involve, in a council, both the older leaders of the village, who have the role of counselors and *par excellence* pacifiers of disputes, and younger leaders, who represent the system of moieties and, finally, the leaders of different age categories. The association will manage all the requirements that come from the society as a whole, what we can call "community property", and should also meet the needs of the "houses" or extensive families.

The rights of the indigenous peoples do not result from their supposed natural condition as "guardians" of the secrets of the forests but of their specific condition as a different people. What we must understand is that, in a way, there is no possible mutual cooperation among environmentalists and indigenous societies, unless we are able to

answer or focus our activities to the different development and autonomy of these peoples.

As refers to the Xikrin, our support will be focused on the following points:

- 1 - The search for legal approval and legal support for the execution of the project;
- 2 - The creation of the Xikrin Association and the definition of the types of financial and institutional support;
- 3 - To submit guidelines for the sustained production of logging and Brazil nuts;
- 4 - To submit guidelines for the conservation and study of the biodiversity and maintenance of hydric resources;
- 5 - To seek conditions or characteristics (de aproveitamento florestal) for the "green market";
- 6 - To control and monitor the exploitation of the forest to be conducted in the next five years;
- 7 - To establish rules for the sustained use of forest products;
- 8 - To establish a methodology to evaluate the impact of forest exploitation, allowing an improvement of the work and defining the pilot area to be managed;
- 9 - Definition of the forestry and monitoring criteria;
- 10 - To comparatively survey the area of exploitation with forestry management and the area of selective exploitation;
- 11 - To select and qualify the field team in techniques of cutting and dragging, rules of sustained use and forest ecology;
- 12 - To study the ecology of the most important and most abundant species in the area;
- 13 - To study the ethno-botany and traditional knowledge of the species and their use by the Xikrin;
- 14 - To define a management model for the area, with the information generated by and during the development of the project;
- 15 - To promote and conduct, in the mid-term, the vertical integration of the project, increasing the added value of the products to be exploited, and
- 16 - To follow the methodology employed in the field work and the discussions with the Xikrin by video.

Explanatory Notes

(1) The *Programa Povos Indígenas no Brasil* (Indigenous Peoples in Brazil program) -- PIB was created by the Centro Ecumênico de Documentação e Informação -- CEDI -- in 1978. With the process of "closing with multiplication" of the CEDI (1993/94) the PIB and its special projects, including the Xikrin do Cateté Project, progressively migrated to the Socioenvironmental Institute, created in March, 1994.

(2) The *Núcleo de Direitos Indígenas* (Nucleus of Indigenous Rights) -- NDI -- created in 1989, with headquarters in Brasília, will close its activities as such at the end of 1994 and will be incorporated into the Socioenvironmental Institute.

(3) See Verswijwer, G. (1992). Coudreau (1897:204) mentioned two groups living north of the Irã âmranh-re and called them Chicris (Xikrin) and Purucarus (Purukarwyt or Putkarôt). Later two more names were used: Djor-re and Porekry (Porekrô). In the 1940s and 1950s the two subgroups mentioned by Coudreau were commonly referred to as Xikrin and Djo-re.

In the literature, four designations thus appeared, whereas only two sub-groups seemed to exist. It was years before this confusing situation was cleared up. Fuerst (1967:19) first reported that Xikrin and Djo-re were not two different groups but one and the same subgroup. A few years later, Vidal (1977:25-42) gave a detailed survey of the Xikrin history. In a way she confirmed Fuerst's observation, but added that the ancestral groups called Porekry or Porekrô split up into two groups: one called Kôkôre, which separated into two villages (Mebumtire and Xikrin/Djo-re, both of which became extinct by the beginning of this century); and another called Purukarwyt, the ancestral group from which the contemporary Kaiapo groups in the area of the Itacaiunas and Bacajá rivers are descendants.

In addition, Versijver's reconstruction of the Kayapo history revealed that other Kaiapo groups used the terms Djo-re and Porekry (Porekrô) to refer to the Xikrin and Purukarwyt, respectively. The original version as proposed by Coudreau seems to be, therefore, very accurate, despite the early details of his observations. Thus, in fact only the Purukarwyt still survive. [But the name] Xikrin is still in common use in ethnographic literature and current reports.

(4) For a general and detailed description of the Kaiapó society see monographs by VIDAL, 1977; TURNER, 1966; LEA, 1986 and VERSWIJVER, 1992.

(5) The meeting, organized by the Kaiapó leaders of the various communities with the support of PIB/CEDI, lasted a week and was held in the Amazon town of Altamira, in the mid-course of the Xingu river, state of Pará, assembling approximately 450 Kaiapó and another 150 representatives of other indigenous groups in the Brazilian Amazon, to protest against a mega-project by the federal Brazilian government that planned to build a hydropower complex on the Xingu river, with a major social and environmental impact. By chance the Altamira meeting took place two months after the murder of rubber tapper leader Chico Mendes, and became a Brazilian and worldwide occasion in defense of the indigenous peoples and of the Amazon and a meeting of environmentalists, indigenous peoples and their support organizations, rousing intense interest and diffusion by the local and international media.

(6) In Brazil, when one talks about the demarcation of indigenous areas, this means, first of all, a legal definition materialized in the Federal Constitution in force, approved in 1988, and in the specific legislation.

As refers to the Federal Constitution, article 231, the indigenous peoples are recognized as having an original claim to the land they have traditionally occupied, destined to their permanent tenure, and they have the exclusive right to enjoy the fruit of the soil, rivers and lakes existing therein. There has been an expansion of the rights of the indigenous peoples and the recognition of their social organizations, habits, customs, religions, tongues and beliefs. The constitutional concept of indigenous land includes not only land

necessary for habitation but also for production, conservation of the environment and the land necessary for physical and cultural reproduction. The Constitution also admits the existence of collective right, be it recognizing the indigenous social organization, or attributing to the community rights such as that of having an opinion on the use of natural resources -- especially mineral resources --, for which the previous agreement of the National Congress is required. It also forbids the removal of indigenous groups and gives the National Congress the possibility of studying eventual and established exceptions. The Constitution also has innovative concepts, abandoning an assimilationistic view that sees the indigenous peoples as a purely transitory category, destined to disappear with time, and establishes the commitment of the Public Ministry to the defense of the rights and interests of the indigenous peoples.

As refers to specific legislation, the project of the new Statute of the Indigenous Societies, approved on June 28, 1994 by the Special Committee of the House of Representatives -- still to be submitted to the Federal Senate and to the later phases of the legislative process -- crystallizes a few concepts, such as:

1 - the rights and collective property of the indigenous societies and communities will be protected;

2 - indigenous production and knowledge liable to be used for commercial purposes by third parties are protected by the law, in detail; this includes patenting.

3 - it establishes that the general rules for protection of the environment are applicable to indigenous land;

4 - it also protects the bio-energetic resources existing on indigenous lands from pressure by third parties who wish to use them for commercial or industrial ends;

5 - mining activities in indigenous lands are subordinated to the conditions established by the Federal Constitution and by mining and environmental legislation. Gold prospecting is reserved to the indigenous peoples. Mining companies may qualify for survey and mining if they comply with a series of conditions and procedures determined by the Statute;

6 - the exploitation of logging in natural forests existing on indigenous land can only be done through activities coordinated by the local indigenous populations according to a strict set of technical, environmental and surveillance criteria and the use of the investments obtained.

(7) Analysis prepared for a civil public suit filed by the Nucleus of Native Rights - NDI.

(8) Calculations made based on the report on the survey of the damages caused to the area of Xikrin do Cateté by logging exploitation. Document of the Ministry of the Hinterland/National Indian Foundation (FNI) - January, 1990.

(9) Team constituted by forestry engineer Virgílio Viana/ESALQ-USP (advised on the field work), forestry engineer Sandra Pavan/ESALQ-USP (field work), forestry engineers Hilton Thadeu do Couto, Carlos Vetorazzi and Vinicius Castro Souza, all from ESALQ/USP (field data analysis) and anthropologist Isabelle Giannini (project coordinator).

(10) Xikrin/CVRD/FUNAI agreement nr. 453/89, whose objective is to meet the obligations taken on by the CVRD in letter "e" of article 3 of Resolution 331/86 of the Federal Senate, which is to support the indigenous populations existing in the area of 411.984.87 hectares in the Mineral de Carajás province, in the municipality of Parauapebas (PA).

(11) The first phase of the work, of preliminary recognition of the area and dialogue with the Xikrin society about what should be done and how to do it, was conducted in 1991 and funded with resources from the project "Study for ecological zoning in the Indigenous Xikrin do Cateté area" submitted by the PIB/CEDI and approved by the National Environmental Fund/Seman.

(12) With the team of forestry engineers of ESALQ/USP.

(13) The second phase of the forestry inventory for the production of Brazil nuts and logging products was conducted during 1993 and funded directly by the Xikrin/CVRD/FUNAI agreement. This phase also included the soil study conducted by pedologists of ESALQ/USP.

(14) The economic feasibility study of the Brazil nuts production by Ecotec was also funded by a PIB/CEDI project for the National Environmental Fund/Seman.

(15) Forestry engineer Igor Mousaskilcoshvily Jr.

(16) Remote Sensing and Geographic Information laboratory - PIB/CEDI.

Sources

ALMEIDA, M.W.B. Dilemas da Razão Prática: Simbolismo, Tecnologia e Ecologia na Floresta Amazônica. In Anuário Antropológico, Brasília, UnB/Tempo Brasileiro, 1986.

ANDERSON, A.: MOUSASTICOSHVILY, I and MACEDO, D. Impactos Ecológicos e Sócio-Econômicos da Exploração da Virola no Estuário Amazônico. WWF, 1994.

BAMBERGER, J. Environment and cultural classification: a study of the Northern Cayapó. Tese mimeografada de doutoramento. Cambridge, Mass.

CEDI. O "Ouro Verde" das Terras dos Índios. Exploração empresarial da madeira de lei em áreas indígenas da Amazônia brasileira. São Paulo, CEDI, 3r. edition, revised, 1993. (There is a translation into English of the second version published in March, 1993).

COUDREAU, H.: Voyage au Tocantins-Araguaya. Paris, 1897.

ECOTEC. Estudo para implantação de projeto de processamento descentralizado de castanha do pará - Reserva Indígena Xikrin do Cateté. 1994. Unpublished document.

GIANNINI, I. A ave resgatada: a impossibilidade da leveza do ser. Department of Anthropology/FFLC/USP, 1991. MSc dissertation.

GIANNINI, I. Os Índios e suas Relações com a Natureza. In: Índios no Brasil (Luis Donisete B. Grupioni, org). São Paulo, SMC, 1992.

GIANNINI, I. Sociedade e Meio Ambiente: um estudo de caso. In: Sociedades indígenas e transformações ambientais. Série Universidade e Meio Ambiente, 6/UFPA, 1993.

GIANNINI, I. Relatório de acompanhamento do Projeto Xikrin. São Paulo, CEDI, 1993.

LEA, V. Nomes e Nekrets Kaiapó: uma concepção de riqueza. Rio de Janeiro, Museu Nacional, 1986. Unpublished PhD thesis.

NDI. Informativo NDI (5), Jan/Apr 1994.

NDI. Informativo NDI (6), May/June 1994.

PAVAN, S. Subsídios para a elaboração de um plano de manejo em regime de rendimento sustentado do patrimônio florestal dos índios Xikrin do Cateté (2a. fase): relatório de atividades de diagnóstico e inventário florestal. São Paulo, CEDI, 1994. Unpublished document.

PIB/CEDI. O mogno Kaiapó. In Aconteceu Povos Indígenas no Brasil 87/90. São Paulo, CEDI, 1991a. p. 312-315.

PIB/CEDI. "Operação Ouro-Gorotire" financia assistência e consumo em estilo Kaiapó. In Aconteceu Povos Indígenas no Brasil 87/90. São Paulo, CEDI, p. 310-311.

POSEY, D. Manejo de floresta secundária, capoeiras, campos e cerrados (kaiapó). In Suma Etnológica Brasileira - Etnobiologia, Berta Ribeiro (org.). Ed. Vozes/Finep, 1986.

----- - Etnoentomologia de tribos indígenas na Amazônia. In Suma Etnológica Brasileira - Etnobiologia, Berta Ribeiro (org.). Ed Vozes/Finep, 1986.

SANTILLI, M. O Sábio, os índios e a miséria. Manuscript, 1994.

TEIXEIRA, C.S. Avaliação dos danos causados pela exploração madeireira nas Áreas Indígenas Araweté/Igarapé Ipixuna, Apyterewa e Trincheira-Bacajá (Pará). São Paulo, CEDI/FUnai, 1993. Unpublished report.

TURNER, T. Social structure and political organization among the Northern Cayapo. Harvard University, 1966. Unpublished PhD thesis.

UHL, C. et alii. Impactos sociais, econômicos e ecológicos da exploração seletiva de madeiras numa região de fronteira na Amazônia oriental: o caso da Tailândia. 1990. Manuscript.

UHL, C. et alii. Uma avaliação preliminar da suscetibilidade das espécies madeireiras aos impactos da exploração na região Amazônica. Manuscript.

VIANA, V.; GIANNINI, I. & PAVAN, S. Subsídios para a elaboração de um plano de manejo em regime de rendimento sustentado do patrimônio florestal dos índios Xikrin do Cateté-Pará. São Paulo, CEDI, 1991. Unpublished document.

VIDAL, L. Morte e vida de uma sociedade indígena brasileira: os Kaiapó-Xikrin do rio Cateté. In *Aconteceu Povos Indígenas no Brasil 87/90*. São Paulo, CEDI, 1991. p. 315-318.

VERÍSSIMO, A. et alii. Impactos da atividade madeireira e perspectivas para o manejo sustentável da floresta numa velha fronteira da Amazônia: o caso de Paragominas. Instituto do Homem e o Meio Ambiente da Amazônia/EMBRAPA. Manuscript.

VERSWIJVER, G. *The Club-Fighters of the Amazon. Warfare among the Kaiapo Indians of Central Brazil*. Gent, Rijksuniversiteit, 1992.