Nontimber Forest Products and Extractive Activities in the Middle Rio Negro Region, Brazil

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Extraction of nontimber forest products was an important source of income in the Brazilian Amazon up to the last world war (Santos, 1980; Homma, 1989). Currently, this industry is in a state of decline (Lescure and Castro, in press). Markets for things like rubber are depressed due to the commercialization of synthetic substitutes. This was the case of the latex of the Sapotaceae known as balata that was replaced by synthetics used to cover electric cables. Other products previously extracted from the wild like rubber (*Hevea spp.*) or guarana (*Paullinia cupana* var. *sorbilis*) are increasingly produced in plantation. On the regional level, the depopulation of rural areas and the concomitant growth of cities such as Manaus have contributed to the marginalization of extractive activities. Cultural factors such as the desire to relocate to areas where children can attend school has led to a global decline of extractivism. This can be seen clearly from the extractive activities/agriculture yield ratio that ranges from 58.7 percent in 1940 to 3.6 percent in 1990.

Paradoxically over the last five years, scientists and development planners have become increasingly interested in these types of activities. Research in the state of Acre, in collaboration with the rubber tappers' organization, has demonstrated the feasibility of these activities as a sustainable alternative to typical development activities (Allegretti and Schwartzman, 1987, Workshop of Belo Horizonte, May 1989: "Extrativismo na Amazônia: viabilidade econômica e dinâmica populacional"). Model extractive reserves already exist in Acre.

Meanwhile, little is known about the different patterns of extractivism in Amazonia, particularly in the State of Amazonas. The aim of ORSTOM/INPA is to document the extractive activities in this state. This chapter focuses on extractivism in the middle Rio Negro Region and gives some preliminary results.

EXTRACTIVISM IN THE STATE OF AMAZONAS: AN INTRODUCTION

The latest data available from IBGE (Brazilian Institute for Geography and Statistics) show that the value of the extracted nontimber products was slightly over $7 million in 1987.

From an economic point of view, the income from extractivism represents less than 1 percent of state income, mostly due to the $9 billion from the industries of Manaus. Moreover, in terms of productivity, extractivism activities appear to be unproductive: the 570,000 rural inhabitants involved in extractivism produce less than 1 percent of the state income, as opposed to the 99 percent produced in the cities. If those economic data do not make an optimistic case for the future of extractivism, we have to keep in mind that extractivism remains immensely important from a sociological perspective, for it constitutes a big part of rural income.

Few products are in fact involved in those activities; from the total income that appears in the 1987 statistics, 69 percent was due to rubber (borracha, latex of *Hevea.spp.*), 23 percent to Brazil nuts (castanha, seeds of *Bertholletia excelsa*), 4.5 to sorva (latex of *Couma spp.*), 2.1 percent to piassaba (fibers of *Leopoldinia piassaba*), 1.4 percent to copaíba oil (oleoresin of *Copaifera spp.*), and .1 percent to cipó titica (aerial roots of *Heteropsis spp.*). (See Figure 18-1.)

Each of these products shows a distinct trend between 1977 to 1989. Some, such as sorva, borracha, copaíba, and castanha are obviously decreasing. Piassaba seems to be increasing during the last five years.

THE MIDDLE RIO NEGRO REGION

The middle Rio Negro ranges from the mouth of the Rio Branco to the village of São Gabriel. The region is divided between the municipalities of Barcelos, Santa Isabel do Rio Negro and, for a part, São Gabriel da Cachoeira. Between those villages one finds tiny communities along the banks of the main river and its affluents.

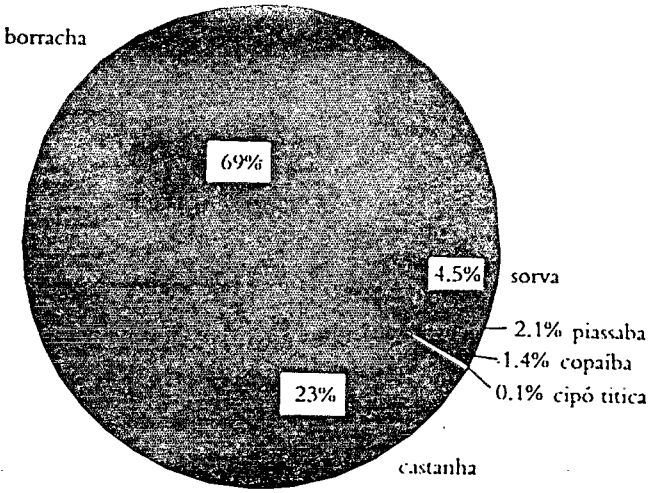

FIGURE 18-1 RELATIVE VALUE OF THE MAIN EXTRACTIVE PRODUCTS IN THE STATE OF AMAZONAS. (1987: TOTAL VALUE U.S.$7,153,492).

Access to the area is difficult and only the last village is linked to Manaus by a daily flight. It takes two days by boat to reach Barcelos and four days to reach Santa Isabel.

Climate is hot and wet. The rainfall ranges from 2,173 millimeters in Barcelos to 2,656 in Santa Isabel and 3,070 in São Gabriel within an east-west gradient. A drier season occurs from July to October but never leads to truly dry conditions. Mean temperature is 25° Celsius.

Included in the population data are Manaus and Novo Airão that are in the low Rio Negro. One can observe the dramatic increase of the Manaus population, currently estimated at 1.5 million. The populations of Barcelos and Santa Isabel are quite stable, while that of São Gabriel has been rapidly decreasing since 1980. Data demonstrate the very low density of the rural population, which is involved in extractive activities in the forest, ranging from .01 to .05 people per square kilometer.

FOREST PRODUCTS OF THE RIO NEGRO

Extractive activities focus mostly on sorva and piassaba. Both are exploited during the wet season, when the water level of the streams allows the transport of the products from the forest to the Rio Negro. During the dry season, people turn to rubber tapping, because the main local species, *Hevea spruceana*, grows on the flooded islands of the river.

The gathering of *Bertholletia excelsa* seeds occurs in May to June and is a casual activity.

Other products also occur in the region. *Astrocaryum jauari* is used in some parts of the Amazon to make hammocks. The oil of copaíba from the lower Rio Negro is consumed locally, as is the oil of andiroba, extracted from the seeds of *Carapa guianensis*.

Almost all of the piassaba comes from the Rio Negro as well as 40 percent of the sorva. For the other products, the importance of the region is little.

HOW THE MAIN PRODUCTS ARE COLLECTED AND PROCESSED

The Sorva

The method of collecting sorva depends on the species. *Couma macrocarpa* is always felled. A first ring is quickly made on the top of the log; informants say that it is done to impede the latex from flowing to the branches. Then rings are regularly made all along the trunk and the latex is collected below. Such a tree can give from 5 to 20 liters of sorva. This way of working is depleting the populations and the species is becoming rare.

The two species of *Couma, utilis* and *catingae*, as well as trees that belong to the genera *Parahancornia* and *Mucoa*, are tapped all along the trunk from the base to the top, while the worker climbs up. The latex is collected in a tin and transported to the camp where it is deposited in a hole (or *deposito*).

When enough latex is collected it is mixed with water in equal proportion in a 50-gallon tank. The mixture is heated until it coagulates. Another method mixes 80 liters of latex with 20 liters of water and 1 kilogram of salt; this way the latex coagulates without heat.

The coagulated latex is then cut into 10-by-10-centimeter blocks, and heated once more to make them hard. They are then deposited in a basket that will stay in the water before the embarkment of the product. One person can collect 20 to 50 kilograms of latex per day.

The Borracha

Tapping the *Hevea* trees (seringueiras) to extract the rubber (borracha) is a dry season activity, when the islands and the igapó are no longer flooded. Each collector alternatively works two footpaths called *estradas* that can have as many as 200 trees each. The trunk is incised slightly once or twice. Latex is then collected in a small tin, either bought in the city or made in the forest with spadice of *Euterpe catinga*.

Smoking the borracha to coagulate it is an abandoned technology. People now prefer to mix the latex with cassava juice (*tucupi*) in the proportion of 10 to 1. Coagulation takes place in just 1 to 2 hours. The coagulated latex is then cut into blocks and pressed to take the water out. The final product is called *sernamby virgem prensado* (SVP). One person can collect 10 to 20 liters of latex per day, which yields 4 to 9 kilograms of SVP.

The Piassaba

Piassaba collection is a rainy season activity, done when the water level is high enough to permit river access to the remote populations and easy transport of the product.

If the palm has never been worked, the first step consists of beating the trunk to make the dangerous animals (like poisonous snakes) fall off, and to free the fibers from one another. The collector then cuts the leaves to permit better access to the fibers, but leaves the 4 or 5 youngest ones so as not to kill the tree. A handful of fiber is then cut from the leaves that are younger than 5 years (the older are said to be brittle). The leaves are deposited on the ground between four stakes. When the pile is big enough to constitute a *fardo* (a cylindrical way to lash fibers), it is lashed with aerial roots of Araceae and transported to the camp. There, the *fardo* is opened and the impurities are taken out. The fibers are then lashed again. A person can collect 30 to 40 kilograms per day.

SOCIAL AND COMMERCIAL PATTERN OF EXTRACTIVISM

The usual pattern of relationships that exist between the different actors of extractivism is called *aviamento*. The basic scheme has three players: the extractor, the patrão, and the exporter. The extractor depends on a local dealer who also has the legal or historical extractive concession in the forest. This person, called the *patrão*, has a commercial relationship with exporters in Manaus.

The exporter lends a certain amount of money, in cash or in goods, to the *patrão*. This is then advanced to the extractor. This loan is known as the *rancho*. In turn the extractor, called the *freguês*, has to pay the *patrão* with his own production. Usually, the economic balance of the *freguês*

is forever negative and the dependency of the *freguês* on the *patrão* cannot be broken. This makes the extractive activity unattractive for the forest people.

Prices also increase during the commercial process. Between the extractor and the export FOB price in Manaus, the value of sorva is mutiplied by 14.6, piassaba by 7.8, and castanha by 2.3. For the borracha the situation is different because the prices paid to the collector are controlled by the government.

The results of this pattern are that the extractors do not try to produce more. They prefer to become farmers to gain independence from the *patrão*. Through the cultivation of cassava and cassava flour production they will be able to eat all year and sell or barter the excess on the local market.

The second choice is to mix agricultural and extractive activities. However, during extraction time, the extractors will eat their own cassava flour, saving then a big part of the *rancho*, and they will spend a lot of time hunting and/or fishing.

CONCLUSION

In the middle Rio Negro, the main part of extractive activities appears to be sustainable from a biological point of view. The only destructive use is that of *Couma macrocarpa*. The dependency of the collector on the *patrão* seems to be the main factor contributing to the decline of extractive activities. The future of extractivism in this region will depend on socioeconomic solutions.

Acknowledgments

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