


## CONTROL AND DISCIPLINE OF WORK IN THE RUBBER COMPANY IN THE AMAZON, 1870-1930

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### SUMMARY

In the rubber company, the rubber tapper commanded the production process. The rubber tapper was a type of worker paid for production, whose engagement and commercial relationships could generate debt. However it was not indebtedness that defined the social relations of production, but rather the administrative forms of quality control and monitoring and discipline of work, aiming at maximizing productivity. The rubber tapper had strategies for dealing with debts. The turnover of the workers in the rubber company was slightly higher than that of the coffee plantation.

**Keywords:** Amazon. Rubber plantation. Labor Relations. Rubber tapper. Rubber.

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## INTRODUCTION

In the rubber company<sup>2</sup>, the direct producer of rubber pellets, the rubber tapper, was a free worker, not a slave<sup>3</sup>, who carried out his work as a labor force subordinated to the direct or indirect command of the rubber tapper.

To deal with the forms of engagement, retention, control, and discipline of the rubber tapper, this article addresses: a) the engagement of the rubber tapper as a worker paid for production; b) the direct and indirect means of controlling and disciplining their work; c) the indirect means of disciplining it through credit/debit control; d) the strategies of rubber tappers to deal with debts; e) bonuses, gratuities and discounts; f) rotation of workers and changes in working conditions.

## THE ENGAGEMENT OF RUBBER TAPPERS IN THE COMPANY

The propaganda of the rubber tappers to attract rubber tappers was that the work in their companies would be a division of profits offered by the employers (BENTES, 1998). This is a distinctive feature of the sharecropper contract. But the rubber tapper did not become a sharecropper, because the work in the rubber plantations was controlled and disciplined by the administrative mechanisms through which the engagement, control, and discipline of the work took place.

The rubber companies employed different categories of workers such as (a) workers paid by the working day - monthly wage earners and day laborers, and (b) workers paid by production, such as rubber tappers.

These different categories of workers were hired to perform different tasks in an enterprise characterized by a clear internal division of labor, in which even the internal supply of grain and firewood was made by specific workers. In the ITU rubber plantation, rubber tappers were the dominant form of workers (202 in 1910, 160 in 1913, and 215 in 1930), even considering that the number of salaried workers had increased over time (from 27 in 1910 to 40 in 1913 and to 52 in 1930).

As far as rubber tappers are concerned, after the 1870s and 1880s, they were engaged in two different ways, differing only in the level of their autonomy in the rubber production-marketing process. In the first form of contract (CHAVES, 1913, p. 8-69), the

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<sup>2</sup> The company specialized in the production of the rubber raw material or in which this was the main economic activity.

<sup>3</sup> Slave is a term used here in the sense '1. That or the one who, deprived of freedom, is subject to the absolute will of a master, to whom he belongs as property' (HOUAISS, 2004, p. 1210)

rubber tappers had to perform the following tasks: (1) clear the paths of rubber trees, a task that, in the case of clearing for the first exploitation by a man, could take from 20 to 25 days; (2) being trained in the method of extracting latex and turning it into rubber by a qualified rubber tapper, which normally took 15 days; (3) When they began to produce rubber regularly, they had to deliver it periodically according to the internal transport scheme offered by the trains, the service of which was administratively planned by the rubber company. The trains received the rubber and left an IOU (*I owe you*), a document that informed the weight of the rubber; (4) The balance sheet was calculated twice a year, in June and December. In this type of contract, the rubber tapper paid 10 to 15% of his production for freight and 10 to 15% of this production for the rental of the rubber tree paths for his placement. That is, 20 to 30% of the value of its rubber production was spent on freight and rental of rubber tree paths.

In the second type of engagement, the rubber tappers were called *aviado*, or *freguês*, which meant rubber tappers who, according to previous agreements, worked on their own. They had autonomy. They paid no rent or freight and they did not have to submit to the pace of production imposed by the internal transport system, as they did not depend on the trains to transport their production. At any time they could deliver the rubber to the owner of the rubber plantation and be paid immediately for this production, at a rate of about 50% of the price prevailing at that time (CHAVES, 1913, p.70).

However, *aviado* was a rare condition. In the ITU rubber plantation, in 1910 and 1913, there was only one case. Almost all of the rubber tappers had been engaged according to the first method of engagement. The boss called them rubber tappers, which means the workers dedicated exclusively to the production of rubber.

The rubber tappers were not self-employed. Rubber production was under the command of the owner of the rubber plantation. The terminology boss was used in the second half of the 19th century and the beginning of the 20th century to refer to the rubber tapper (who owned the rubber tree property and the rubber company), who ran the company<sup>4</sup>. Thus, the regional nomenclature of boss and rubber tapper expresses particular characteristics of social class relations in the rubber plantations. The appreciation of these class relations requires a discussion of how the rubber tapper

<sup>4</sup> The term rubber tapper emerged only in the 1960s, in a context of land conflicts in Acre, when a reasonable proportion of rubber tappers had simply become owners of the rubber plantation, living in the cities and renting or, in some cases, selling their rubber tree properties.

subjugated the work of the rubber tappers. The term rubber tapper will be widely used in this work to unify the meanings of rubber plantation owners and bosses in the rubber company.

## THE INDIRECT AND DIRECT WAYS OF CONTROLLING AND DISCIPLINING WORK

The link between technological issues, quality control, and adequate means of controlling and disciplining work to maximize productivity has shaped the process of installing and running rubber companies. The industry required a particular raw material, according to a quality standard,<sup>5</sup> which was guaranteed by a local quality control system, involving the classification of rubber according to different types, which were formally checked by institutionalized quality controls, located in Belém and Manaus.

In addition, manufacturing rubber pellets involved collecting latex and manufacturing it through the adaptation of indigenous methods of collecting latex and manufacturing rubber artifacts. However indigenous methods were developed from an interaction of convergence and relative harmony with the natural physical environment, aiming at the production of artifacts for common use. Thus, the relatively harmonious interaction with the natural physical environment took on a different dimension in rubber companies, since the use of those artisanal methods aimed to produce the commodity, on a large enough scale to generate profit, to ensure the accumulation of capital.

The consequence of this adaptation to large-scale commodity production was that the effects of the different rhythms and qualities of nature on the time and quantity of production, intrinsic to indigenous methods, had to be minimized to maximize productivity.

Rubber production was directly influenced by crop cycles, the non-gregarious distribution of elastic gum trees in space, and also by the incidence of different species of elastic gum trees. The harvest season varied in different areas, depending on local ecosystems. In Acre, the harvest began around mid-April and lasted until the end of November (CHAVES, 1913, p. 42). In addition, different species of elastic gum trees supported the production of different types of rubber, which, in turn, received different prices<sup>6</sup>. Together with the influence of the elastic gum tree species, productivity

<sup>5</sup> Rubber should reach the British quality standard, with a constant and uniform degree of moisture ranging from 15 to 20% (COATES, 1987, p.52)

<sup>6</sup> The *Fina hard Pará* type was made from the finest elastic gum species, the interfin of latex from inferior gum species, *sernamby* from unsmoked latex or residues generated during the smoking process, clots left in latex containers, or formed around the cuts of rubber trees during extraction. Finally, *caucho* was made from the latex of *Castillôa Ulei*, a species that required a different method of extracting the latex and making rubber.

depended on the age of the tree, because over time, the productivity of the trees gradually declined.

The *rubber tappers* tried to minimize the influence of these natural conditions on the time and quantity of production, through improvements in production technologies and the rationalization of space. They built rubber tree paths and settlements to standardize and increase productivity: the organization of elastic gum trees according to paths or sections, interconnecting the trees located close to each other in circuits, irregularly and more or less elliptical and parallel to rivers. The whole set, consisting of one to three rubber tree paths, a house or rubber, and a smoker, was called a placement.

Internal streets or paths were built to connect the various settlements with the administrative and commercial infrastructure - which consisted of an office, a warehouse, and a commercial house - which was usually located near the company's port. However, this rationalization of space and the natural physical environment did not fully standardize productivity. He only minimized the differences in productivity levels between the rubber tree paths and the placements.

Normally a path totals 80 to 120 trees. The curve that closes forming almost a circle was made so that the ends were close to each other, so that, once the bowls were nailed<sup>7</sup>, the milk harvest could begin, at the beginning of the road, ending at the foot of the smoker, to shorten the time in the smoking task. The bowls were neatly distributed from three to eight for each tree until the last one, according to the size of the tree, totaling about 500 to 700 bowls.

This rationalization of the natural physical space/environment defined the productivity potential of the paths and settlements, establishing the appropriate conditions for inspection, not only as a quality control procedure but also as a direct control and discipline of work. Quality control was necessary because manufacturing rubber required special skills in collecting latex and manufacturing rubber *pellets*. The direct producer had to be trained under strict supervision to control the method of cutting the trees, necessary to prevent them from being damaged (CHAVES, 1913, p.8.; CASTRO 1955 [1930], p.72).

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In 1912, caucho accounted for 20% of rubber production in the Amazon. And it received prices up to 50% below the price of thin rubber, depending on its level of purity. In 1913, *entrefina* reached a price equivalent to 84% of that of *Fina hard Pará* rubber, while the *sernamby* type reached only 54% (SOUZA, 1914, p.4.). These percentages increased a little in 1914, when they represented 85% and 65% of the price of the fine, respectively (CHAVES, 1913, p. 58-59.).

<sup>7</sup> The bowls were made of tin or zinc, manufactured in Belém; in the past they were made of burnt clay. The shape is a kind of glass with a more or less narrow bottom, in mouth diameter it is 8 cm. And 5cm. In base diameter and 8 cm. deep.

This strict technical supervision was combined with ways of controlling the time and pace of work of the rubber tappers.

The inspection was carried out when new rubber tappers were being trained and, regularly, when the inspectors went to the settlements to examine how the workers were manufacturing the rubber and also to verify that they were working with the intensity required by the company (CASTRO, 1955 [1930], pp.95, 108-110). If they were not, this was reported to the employer, who could use this information to intensify the control of the worker's credit reported in the Commercial House. Workers struggled to justify incapacities for work due to ill health. When rubber prices fell sharply in 1913-15, and rubber tappers tried to work less in rubber production, the owners reacted immediately by introducing daily inspections (CASTRO, 1955 [1930], p. 136).

The rubber tappers, therefore, were compelled to adapt their methods, time, and pace of work to the expectations of the company. Reactions or resistance to these expectations were dealt with in different ways, including dismissal, expulsion, legal action, and others. In the ITU rubber plantation, a rubber tapper was expelled in 1910 due to "bad behavior." Among the legal processes on rubber plantations available at the National Museum of Rio de Janeiro, Code 988, some refer to rubber tappers seeking to remove rubber tappers or avocados from their properties, by legal means.

The control and administrative discipline of work in the rubber plantations is evident when considered as a set of measures that have changed over time. After the 1870s and 1880s, and particularly in the 1910s, one of the strategies adopted by rubber tappers in the face of adverse conjunctures in the rubber economy was the intensification of labor exploitation within rubber companies, which was achieved in various ways.

First, the preference for the individual worker, rather than the family worker, was combined with the specialized work of the rubber producer. Individual work implied the physical impossibility of the individual worker to combine the production of rubber pellets with other economic activities. Other subsidiary activities – such as fishing and subsistence agriculture – were tolerated as long as these activities did not affect the work required in rubber production (CABRAL, 1949; MINISTRY OF AGRICULTURE, INDUSTRY AND COMMERCE, 1913; CASTRO, 1955 [1930], pp. 99 and 108).

The demand for rubber tappers to dedicate themselves entirely to rubber production is confirmed by the results of the analysis of the Diaries of the Seringal ITU



company.<sup>8</sup> In 1910, the monetary income of the rubber tappers originated exclusively from the production of rubber. In the sample of rubber tappers, only one rubber tapper sold firewood and wood to the Commercial House. The only alternative means of earning extra income was to sell personal belongings or work temporarily as a salaried worker in other activities within the company. Only 3% sold belongings, while 11% worked temporarily as day laborers. In 1913, when rubber prices were falling, a reasonable proportion of rubber tappers tended to abandon or reduce rubber production in favor of temporary or permanent wage labor (22%).

Finally, the percentage of income obtained by these workers through these forms of labor increased. While in 1910 this percentage varied from 5 to 26%, in 1913 the variation was from 51 to 100%. There were only a few exceptions: one worker with 14 percent of his total income coming from wage labor, and three workers who had their proportion of income from wage labor increased from 8 to 10 percent in 1910 to 61, 69, and 99 percent in 1913. Moreover, while in 1910, 11% of the sample had part of their income coming from work as a day laborer or as a wage earner, in 1913, 17% did so. Thus, in the ITU rubber plantation, in 1910 and 1913, the rubber tapper remained in the condition of subordinate worker and exclusive rubber producer, who could eventually work as a day laborer or become a salaried worker within the company. The diversification of the rubber company's economic activities, at least until 1913, did not imply the diversification of the rubber tapper's economic activities his engagement as a family worker, or changes in social class relations within the company.

In the 1910s, in addition to the engagement of an individual producer dedicated exclusively to the production of rubber, the company intensified the exploitation of labor in two ways: (a) by increasing the number of elastic gum trees, composing a path of rubber trees, from 100 trees to 120, 150 and 180 (CHAVES, 1913, p. 32) and (b) by reducing the number of rubber tappers in the company. The ITU Rubber Plantation had 400 rubber tree paths. The number of rubber tappers was reduced from 202 in 1910 to 160 in 1913, so each rubber tapper either began to explore a greater number of paths or a smaller number of paths, but with a greater number of trees to be worked.

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<sup>8</sup> The rubber company's accounting consisted of: Current Account Book; Diário do Seringal (daily record of commercial transactions, payment of salaries and any and all administrative and financial movements of the firm); Annual General Balance Sheet Book; Cash book (financial movement in cash); and blots (notebooks containing invoices or receipts, list of goods, quantity, dates, prices, etc.) In this work, the accounting of the complete ITU rubber plantation was used, with the exception of the blots that were not located.

This circumstance becomes even more evident when one takes into account that in 1930, the number of rubber tappers had increased to 215, 26% more than in 1913. The highest level of labor exploitation in this year is indicated by the fact that, in 1913, the trend towards diversification of the rubber tapper's economic activities, which was evident in 1930, was still very tenuous. In 1913, only 3% of the sample of rubber tappers obtained extra monetary income from the sale of cereals and small plantations of cereals (and tools) to pay off debts to leave the rubber plantation.

### **INDIRECT MEANS OF CONTROLLING RUBBER TAPPERS THROUGH CREDIT/DEBIT MONITORING**

The condition of the rubber tapper to be an individual producer specialized in the production of rubber is an important element for understanding the meaning of the strict control of debit/credit in the company's internal commercial house, as a tool for retention, control and discipline of work.

As an individual producer dedicated exclusively to rubber production, rubber tappers depended on the Market for food. And the circumstances under which they carried out commercial transactions favored the formation of debt. This was so, first of all, because they worked and lived in a company located far from the markets so they became dependent on the company's trading house to acquire everything they needed and could not produce by themselves.

Table 1 shows that, in 1910, 32% of the sample made purchases above the average, and 28% according to the average (ten times a year). This means that 60% bought at or above the average purchase frequency. In addition, the proportion of those who bought eight times or more a year reached 89%. Thus, the vast majority of rubber tappers depended entirely or largely on the commercial house inside the company where they worked, for the acquisition of subsistence products.



table 1 Purchases of Rubber Tappers - Rubber Plantation ITU 1910, 1913, in Réis						
statistic	year		month		Purchase Frequency	
	1910	1913	1910	1913	1910	1913
<i>Average</i>	75\$501	50\$629	6\$825	5\$290	10	9
<i>Median</i>	69\$238	50\$867	6\$267	5\$258	10	10
<i>Max</i>	186\$750	157\$401	15\$562	15\$740	12	11
<i>Min</i>	7\$605	1\$525	2\$427	0\$689	2	1
<i>Stdev</i>	34\$107	35\$980	2\$817	1\$119	2	3
<i>Avedev</i>	26\$210	27\$841	2\$176	2\$322	1	2

Source: ITU Seringal *Diaries* of 1910 and 1913.

Table 01 also shows that, possibly, this dependence was slightly lower in 1913, since the average value of purchases (50\$629) was considerably lower than that of 1910 (75\$758). And the maximum annual purchase value (157\$401) in 1913 was about 16% lower than that of 1910 (186\$750). These values may also reflect changes in the prices of the goods purchased.

This circumstance becomes even clearer when the distribution of purchase frequency is considered. First of all, in 1913, the average frequency of purchases was 9, which is lower than in 1910. In addition, no rubber tappers were bought every month. And the percentage of those buying eight or more times fell from 89 percent in 1910 to 64 percent in 1913. More importantly, 21% of the sample made no purchases at all in 1913.

There is a clear trend toward a lower dependence on the rubber tapper in the commercial house inside the ITU rubber plantation in 1913, compared to 1910. Nevertheless, the rubber tappers still depended on purchases within the company, considering that the average frequency of purchases reached 9 times a year, 53% of the sample bought above the average (10 or 11 times a year), and the average annual value of purchases reached 50.62 contos réis. The downward trend in dependence on purchases within the company is confirmed only in a long-term perspective, as will be discussed later, while before 1913, the rubber tappers depended entirely on the company's commercial house to buy food.

Food was expensive in the company's trading house due to historical circumstances; such as the high cost of transport. The District of Rio Acre was mainly supplied by commercial houses in Belém. In 1913, goods were 64% more expensive due exclusively to transportation expenses from Belém, and 57% more expensive simply because of the payment of freight, as illustrated in Table 02.

Table 02 Expenses for transportation of goods, 1913

Expense	Value (Réis)	% of the value of the merchandise
Goods (1,007\$842)		
Ship transportation + official registration	8\$235	
Export tax	20\$865	
Freight	579\$094	57%
Insurance and others	37\$790	
<b>Total</b>	<b>645\$985</b>	<b>64%</b>

Source: Chaves, 1913, pp. 71-2

Considering that the commercial house inside the rubber plantation must have made a profit from the business, the final price to the rubber tapper must have been high, compared to the prices practiced in Belém and Manaus. The legislation provided that, if the profit of the rubber tapper from the sale of products in the commercial house internal to his company exceeded 140% above their average price in Belém and Manaus, consumers could file a complaint with the court.<sup>9</sup> However, the rubber tappers could easily become outdated with the prices of products in Belém and Manaus, due to the great distance in which they were about these markets and the low frequency of shipments, even considering that they had access to radios and many rubber companies had telegraph service.

However, the dependence on the company's internal commercial house and the high cost of goods do not explain the debt itself. It is necessary to discuss the circumstances under which the rubber tappers were engaged and paid by the company.

The rubber tappers were engaged in the rubber company as indebted workers. The source of this debt was the financing made by the rubber tappers for their travel from Belém or the Brazilian Northeast to their companies. This financing took the form of initial capital and the initial debt of the rubber tapper was to be paid with 20% interest. In the sample of rubber tappers for 1910 and 1913, 36% were newcomers in 1910. The average initial debt, including 20% interest, reached \$29.245. The initial debt includes items such as a ticket from Belém to the ITU rubber plantation, which, in April 1910, cost 6\$396 for 3rd class and 25\$346 for 1st class, money for expenses during the trip. The cash advance, along with the ticket, accounted for the largest percentage of the initial debit. Considering the actual expenses, without interest, the price of the ticket represented an average of about 45% and the money in advance, 41% of the initial debt.

<sup>9</sup> This served as a defense argument in a 1904 lawsuit in which the plaintiff won the case (Arquivo Nacional do Rio de Janeiro - Historical Section, doc. Code 988, vol.3, docs. 17-18).

In 1910, 61% of the newcomers asked for money in advance in Bethlehem, probably to buy food and work tools in that city, at cheaper prices. The ITU Seringal diaries do not provide the prices of each commodity, but considering that only 15% of the newcomers made purchases in the first month at the commercial house, in 1910, it is almost certain that most of them made purchases in Belém, where prices were lower than those of the company's commercial house.

In 1913, the expenses of the rubber tappers with tools reached the amount of 280\$000 or 315\$000 in the ITU rubber plantation. Although prices in Belém were lower, they were still expensive for rubber tappers, as they had to pay with borrowed money at 20% interest.

The official policy of encouraging rubber production during the deepest rubber price crisis, which began in 1911-12, considered tool expenditure to be one of the main reasons for the high cost of labor. The Rubber Defense Plan of 1912<sup>10</sup> provided that in the official accommodation for immigrant workers tools should be made available to be sold at cost price. Chaves (1913, p.80) emphasizes that the prices of work tools did not represent the largest proportion of the workers' initial debt, although they were quite expensive. It was the cost of transportation that was one of the most important items in the initial debit. This is confirmed, as it represented 45% of the initial debt, as mentioned earlier.

The engagement of rubber tappers as indebted workers persisted at least until the 1910s. But changes have occurred. The 1913 ITU Rubber Plantation Journal records the engagement of rubber tappers with no initial debt and there are no records of managers traveling to Belém or the Northeast region of Brazil to recruit workers. In the 1930 Diary, there is no record of investment in the recruitment of workers at all, there was no engagement of indebted workers. In addition, some workers had families living in Rio Branco, the capital of Acre, or in small neighboring towns, instead of living in the Northeast region of Brazil as in the past.

This information confirms the emergence of an internal labor market in Acre, more markedly after the 1910s. It also confirms the existence of spontaneous immigration of workers.

These changes lead to the disappearance of the initial debt. However, indebtedness in labor relations persists. The rubber tapper's indebtedness originated in

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<sup>10</sup> Federal Law No. 2,534A of January 1912 and its respective regulation in May of the same year.

the form of his payment: by production, not by working hours, under particular circumstances. Remuneration for production meant uncertain income, depending not only on the result of the work - quantity and good quality of rubber produced - but also on the price of the rubber to the direct producer, who sold it under special circumstances.

Rubber prices varied daily, in the markets of Belém and Manaus and, in fact, several times a day. Nevertheless, the rubber tapper could not benefit from these price variations, since he sold his rubber inside the rubber plantation at the prices internal to the company and in the time defined by the administrative working conditions.

At the ITU rubber plantation, the rubber tappers delivered the rubber produced in the time defined by the calendar followed by the internal transport system. However, when received by the company, the rubber was weighed, checked, and stored. Prices were only assigned when ships coming from Belém arrived to pick up the production. This happened four times in 1910. In 1913, this process happened more than twice, just as there are records of rubber sales to Bolivia. In addition, the rubber tappers sold rubber on these occasions not at the prices that prevailed in Belém, but according to the prices prevalent within the Seringal ITU company, which were about 40 to 50% cheaper than those.<sup>11</sup> Finally, the total value of the rubber sale was deducted from the rental value of the placement and freight of each of the rubber tappers, as already mentioned.

In addition, the rubber tappers bought food at high prices, as previously mentioned. More importantly, they produced rubber for eight months a year. In the off-season, from late November to late March or mid-April, about four months, they neither produced nor sold rubber. They only consumed subsistence products. This situation applied to everyone, including those who went home in the off-season. Thus, the conditions under which rubber tappers were paid and were inserted in labor relations ended up favoring indebtedness.

Such conditions made it possible to use the strict accounting control of the rubber tapper's credit in the commercial house of the rubber plantation as a means of indirect administrative control of the work, to retain and constrain him to heavy work. The rubber tappers bought goods on credit (spun) to be paid for with their future rubber production. However, in these commercial relations, the rubber tappers were not autonomous sellers and buyers. They were forced to sell the rubber they produced to the rubber tapper, who

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<sup>11</sup> This information on rubber prices in the ITU rubber plantation confirms estimates made by Chaves (1913, p. 70) and information from Castro (1955 [1930], pp. 74, 112-114).

assumed the role of buyer (commercial capital) and owner-administrator of the company, commander of the production process (productive capital). In these roles, the rubber tapper exercised direct control of the work of the rubber tappers, while at the same time acting as a creditor through the commercial house internal to his company, defining the level of loans (usurious capital) and purchases on credit. According to Castro (1955 [1930], pp. 71 and 74), the rule in this matter was: "He who does not produce do not consume". The manager always reduced the rubber tappers' demand for goods when they had high debt. Nothing was sold to them above the level of their production.

In the ITU rubber plantation, however, even heavily indebted rubber tappers continued to have credit, as long as they continued to produce rubber. The rubber tapper had difficulty in fully controlling the rubber tapper's work. Complaints about non-payment of debt could be made, according to the Commercial Code. The creditor could ask for *resto*, which was the confiscation of belongings and property under the mediation of authorities. The rubber tappers had no valuable belongings or property that could be confiscated and their arrest could mean non-payment of debts anyway. Therefore, the usual way to recover debts was to keep the debtor working in the company.

The debtors, in turn, had to remain in the company until the entire debt was settled. This could force them to stay on the rubber plantation for longer than they had planned. In this way, the debit also worked as a means of retaining the workers in the company.

However, the efficiency of all this was relatively limited. The rubber tappers had unequal levels of productivity/consumption. Consequently, they had different levels of remuneration, which drew different levels of income about the subsistence level. When they were able to match their remuneration with their expenses in the commercial house, they had a subsistence-level remuneration, which was expressed in their current accounts through the absence of debit or credit. Debt, in turn, could indicate earnings below the subsistence level as a temporary or permanent condition.

In the ITU rubber plantation, in December 1910, 70% of the rubber tappers who made up the sample analyzed had debts. In December 1913, only 49 rubber tappers, or 76% of the 1910 sample, remained in the rubber plantation, and 77% of these showed a negative balance. This high percentage of indebtedness expresses the particularity of those who formed the sample. They were selected from among those who remained in the ITU Seringal in early February 1910 and early March 1913, when the accounting year

began. After March 1913, 21% of the sample left the rubber plantation. Despite the existence of a considerable proportion of rubber tappers who remained in the Seringal for years even though they had a positive balance, most of those who remained for long periods had a negative balance.

Finally, the percentage of the sample earning above the subsistence level was not low. Of the total sample, 17% had a positive balance in December 1910 and 22% in December 1913 (this percentage refers to those who remained in the Seringal throughout 1913, which means a total of 21% lower than the sample in March of that same year when the accounting year began). In addition, as already mentioned, of the total of 202 *rubber tappers* in the ITU rubber plantation in February 1910, about 55% worked for a period of three to four years, while 11% left the property in just two years.

It is necessary, therefore, to relativize the belief in the literature that labor relations in the rubber plantations were characterized by absolute immobilization and the flight of labor. The next step in this direction is the discussion of workers' strategies for dealing with indebtedness, as well as ensuring job turnover.

## **STRATEGIES OF RUBBER TAPPERS TO DEAL WITH DEBTS**

The rubber tappers had different forms of resistance to the employer's use of debt as a means of controlling, retaining, and disciplining the workforce. In the accounting documents of the ITU rubber plantation for 1910, 1913, and 1930, there is an abundance of evidence of the strategies of the rubber tappers to cope with indebtedness. Most cases indicate collective forms of resistance and mutual aid. Rubber tappers and salaried workers with a positive balance in their checking accounts at the Seringal's internal trading house used to lend money to their indebted colleagues, without charging interest. The indebted, therefore, did not need to obtain loans in the commercial house at 20% interest; and they could buy goods with cash. This possibility was crucial for those who were highly indebted and therefore had their credit controlled by accountants, running the risk of having their credit to buy spun food cut off completely.

In 1910, 25% of the rubber tappers in the sample borrowed money from 27 fellow creditors, whose transactions reached the amount of 112\$896 contos de réis. In 1913, 19% did so, with 27 being the number of fellow creditors. Although the number of workers who borrowed from colleagues was lower in 1913 than in 1910, the total amount involved was more than 153\$381 contos de réis.



In addition, the workers of the ITU rubber plantation also used to lend goods to their peers. They authorized the commercial house to sell goods to indebted colleagues and to record the resulting debt in its current accounts. The payment of these commodity loans was made by authorizing a deposit in the creditor's checking account, usually at the end of the year, when the annual balances were calculated.

Especially when they wanted to leave the property, rubber tappers used to sell their belongings, including tools, to pay off debt. In 1910, 3% of the rubber tappers in the sample sold belongings. Finally, they carried out work within the rubber plantations as day laborers, as already mentioned.

This trend also reveals how rubber tappers used various strategies to deal with the fall in rubber prices in 1913 (BENTES, 1998). In this scenario, rubber tappers were directly affected because they not only sold rubber at lower prices than those practiced in Belém and Manaus but also bought expensive subsistence products. Under such conditions, wage labor became a good strategy. Wage workers had clear advantages. They earned fixed salaries or wages, and most of them had free meals. Considering a sample composed of the income of 8 salaried workers, earning 120\$000, 150\$000, and 200\$000 contos de réis, it was found that their average annual income was 1:077\$400 contos de réis in 1910. As such, it was higher than the average annual income of the rubber tapper that year, which was 1:017\$160 contos de réis.

More importantly, salaried workers spent less in the in-house trading house. Its annual average purchases were only 28\$330 contos de réis in 1910 and 20\$310 contos de réis in 1913, while the annual average purchase of rubber tappers reached 74\$750 contos de réis in 1910 and 50\$620 contos de réis in 1913. In the selection of a sample of salaried labor, an attempt was made to maintain the criterion of permanence in the ITU Rubber Plantation in early February 1910 and early March 1913, but the turnover among salaried workers was higher compared to that of the rubber tappers. As a result, in 1910 the sample of salaried workers refers to 7 salaried workers, since the account of one of the eight considered did not move in 1910, but it did in 1913, and of the eight who made up the sample, only two remained in the rubber plantation throughout 1913, due to one of them having become a rubber tapper in that year and five were no longer working in this rubber plantation.

In addition, salaried workers tended to have positive balances. Of the sample of salaried labor from the point of view of the final situation, 75% left the rubber plantation with a positive balance.

On the other hand, the workers at the top of the management of the rubber tree company have always had positive balances. The accountant received a salary of 700\$000 contos de reis in 1910, and 1:000\$000 contos de reis in 1913, which was equivalent to that of the accountant of the São Paulo Institute for the Permanent Defense of Coffee. The accountant had a positive balance of 25.61 contos de réis in December 1910, and 777\$069 in December 1913, leaving the rubber plantation in June 1914 with high savings. Another administrative worker was hired in 1910 with an annual salary of 10:000\$000 contos de reis. There is a record that he lent a lot of money to the rubber tappers, without charging interest.

Alongside the reasonable tendency towards wage labor, the rubber tappers had to intensify the extraction and manufacture of rubber, since the owner reduced the number of rubber tappers from 202 in 1910 to 160 in 1913, as mentioned earlier.

Finally, rubber tappers faced the steady fall in rubber prices in 1913, through the increase in the sale of rubber by consignment. In the sample, only 2% sold some of the rubber produced on consignment in 1910, while 44% did so in 1913. This allowed them to obtain better prices compared to what they could obtain at the end of the year when the final balance of their production was made, considering the trend towards permanent reduction in rubber prices. However, because they were not avid, they could not sell the total of the rubber they produced in that way.

The material presented allows us to question the interpretations of labor relations in the rubber plantations centered on indebtedness and escape. Calixto (1993, p. 97-99) states that the rubber tappers must have been violent and arbitrary. The statement is based on Cabral's (1949, p.71) description of the murder of a fugitive in debt by a rubber tapper in Acre. The author criticizes Castro (1955 [1930]) and Potyguara (1942), who, according to him, tend to see the aviator houses or commercial and financial capital as the cause of low pay and "arbitrary labor relations" in the rubber plantations. However, Castro (1955 [1930]) refers to this as the rubber tapper's justification for the low remuneration of indebted rubber tappers. In addition, what this literature indicates is the existence of different attitudes towards indebtedness and escape, even by the same rubber tapper. This author describes two different attitudes of his boss in 1914. He

forgave a rubber tapper's debt, but had a violent reaction to a runaway incident, in which three escaped rubber tappers were captured. In reaction to the capture, a former slave who lived in that Seringal set fire to the owner's residence, killing him (CASTRO, 1955 [1930], pp. 287; 199-211 and 215-218).

This is an important element in the novel "The Jungle". Being a novel, this work contains a lot of imagination from the author, often to accentuate aspects of his experience on which he wants to reflect or draw attention. It expresses the repugnance, particularly of workers and former slaves, in the face of the capture of indebted workers, in a post-slavery conjuncture in which the freedom of the worker was considered a precious principle.

In fact, these situations constituted a dramatic expression of the condition of the rubber tappers of subordinate labor, in a historical circumstance of weak labor legislation in Brazil, which allowed the existence of different standards of treatment towards workers by the capitalists. Commercial transactions in the rubber plantations were regulated by the Commercial Code, which was the first legislation to be improved after Brazil's independence from Portugal. As for labor legislation, however, there were sparse laws on particular aspects in a conjuncture in which even urban strikers were treated as police cases. Brazilian Labor Legislation was promoted as a set of laws only in 1930.

At the beginning of the twentieth century, Cunha (1946) was one of the first to question the living conditions of rubber tappers. Emphasizing the treatment given to the worker as a matter of the boss's character and overemphasizing the cases of abuse of power by certain employers, he refers to the rubber plantations as "the most criminal of labor organizations." He also denounces the absence of official assistance in terms of health and education, which were installed in the countryside only as part of the 1912 Rubber Defense Plan.

However, this author's comments have been used by the literature in an uncritical way. The cases of interference of the subjectivity and individual character of the rubber tappers in labor relations have been interpreted through the perspective of neoclassical economics, according to which economic processes are not social phenomena, but rather rational phenomena, free from the contamination of elements of subjectivity. And also based on the Western meaning of civilization that believes that capitalist industrial society is a symbol of a higher stage of human development. From this stems the idealization of capitalism as synonymous with 'rationality', 'civilization', "well-being", "progress" and

"absence of violence" in labor relations, as opposed to relations considered non-capitalist or pre-capitalist, which would represent "backwardness", "non-development", "savagery".

These views have shaped biased interpretations of labor relations in rubber companies in the Brazilian Amazon and have placed obstacles to a more consistent debate on the subject. For example, the fragile condition of the rubber tappers in relation to the rubber tappers has been treated as if it were a unique situation. But this was not a singular labor situation.

On the contrary, the fragility of the working class in relation to the capitalists was a general characteristic of capitalism in the period of this research. According to Russell (1991, pp.9-10; 17-18; 21, 27), in British industry, the treatment given to the worker depended on the character of the employer. Incentives and bonuses were distributed selectively; Favours were granted to those whose conduct and attitudes were judged worthy of merit and special privilege, and this was intended to encourage envy and competition in others. In fact, for farm laborers, any real progress began only after 1924, and in Scotland only after 1937. Moreover, it was not common practice for employers to continue paying wages to manual workers during periods of absence from work due to illness, and in many firms, retirement pensions for salaried workers were at the discretion of the employer and were selectively awarded to those "deserving" individuals who had qualified for length of service and good character.

Segatto (1987, p. 22) shows that, in Brazil, until 1930, working time depended on the will and need of the bosses. In many urban industries, the working day extended to 12, 14, and even 15 hours a day, and workers were not entitled to paid weekends or any health insurance. In addition, he said, the urban proletariat was often engaged in the company and verbally dismissed, without a formal contract (SEGATTO, 1987). Finally, according to this author, the urban proletariat worked under a strict system of coercion and discipline to ensure maximum productivity, which could even involve physical constraints, threats, and other types of coercion.

The changes were not readily realized or intrinsic to capitalism, but were built on complex and violent class struggles.

The system of work to which rubber tappers in "Peninsular Malaysia", held up as a symbol of the Western triumphalist view of civilization, particularly after 1909, was classified by Barlow (1978) as an "evil system".

Like the vast majority of rubber tappers who worked in the rubber plantations of Acre, the rubber producers of the rubber plantations in the British colonies were immigrants, whose work contracts involved debts. They were inserted into the company without a formal contract, also as a way to prevent them from leaving the property to work in another company. In addition, earnings and other advantages were recovered by the bosses through deductions made in their pay. Employees were not kept properly informed about the status of their accounts, extra sums were often debited and interest was charged by contractors; immigrants were not allowed to leave until all debts were paid; This sometimes took a long time, because expenses were often exaggerated and bloated with interest charges. Debts were also increased by the contractors' practice of charging high food prices, selling *opium*, and managing betting establishments (BARLOW, 1978, p.46).

This author also reports that the bosses of *the rubber plantations* in Malaysia used to pay wages one or two months in arrears, as a means of discouraging escapes. As a result of these practices, many immigrants were permanently without money. Sometimes they were forced to buy food and other products, and this inevitably caused a vicious circle of more poverty and greater debt (BARLOW, 1978, p. 42). Even the categories of hired workers could have their debts increased with transportation and subsistence expenses, along with commissions paid to contractors. (BARLOW, 1978, p.46).

Finally, the uncritical reproduction of Cunha's (1946) reports on labor relations in a rubber plantation has ignored two important points. First, the rubber tappers were not passive but had strategies to deal with the various issues in their living and working conditions. Second, the rubber tappers were dealing with a relatively low labor reserve. These conditions imposed certain commitments on employers, expressed not only in the use of passive tactics to convince workers to accept to work in rubber plantations in a distant location (BENTES, 1998). They also had to use different types of incentives for workers.

## **BONUSES, GRATUITIES AND DISCOUNTS**

The work of the rubber tappers was controlled and disciplined not only by inspection and strict control of credit/debt. The diaries of the ITU rubber plantation show that the rubber tapper also used different motivation strategies and ways of retaining work, such as offering school education to the few who, over time, were able to have their

children in the rubber plantation or neighboring villages (NEVES, 1985), bringing priests to give religious assistance to the workers, providing loans to those who needed health treatment in nearby cities or rural villages, offering temporary salaried work to those who were highly indebted or to their young children, or even to their wives, who could perform domestic services at the owner's residence or in cleaning the administrative premises of the rubber plantation. In addition, rubber tappers were also motivated by incentives and rewards in the form of bonuses, bonuses, or discounts.

Incentives and rewards were offered, certainly, selectively, to individuals considered "deserving", who qualified by their length of service, good character, and appropriate behavior. The incentives were given to indebted and non-indebted workers. In 1910, only a small majority of those who received incentives had a positive balance (56%), while most of the rest were in debt, albeit at low levels. However, in 1913, almost all the winners had, in the Commercial House, debts instead of credit, and two of the three cases that had a positive balance were former rubber tappers who had become salaried workers. In addition, the rewards were often disproportionate to the winners' balances. In 1913, only three rubber tappers received a discount of 50% or more of their balance, and only four received bonuses. Considering this and that, in 1910, a rubber tapper was fired due to "bad behavior", it can be deduced that there were different standards of labor treatment by the boss.

However, it should be noted that the incentives were also given according to strictly profitable criteria. In 1910, 10% of the sample of rubber tappers received incentives, and 31% in 1913. This was done twice a year, at the end of June and at the end of December.

Except for three cases in 1910 and four cases in 1913, incentives and rewards were given to those who had high productivity and a relatively high level of consumption in the commercial house. Tables 03 and 04 show that in 1910, the average value of rubber production of the recipients of incentives was almost double (98\$936) the value of the non-winners (54\$647). The trend towards higher levels of rubber production among the incentive winners is confirmed by the distribution of data, in which, in 1910, 30% had production well above the average of 98.93 contos de réis and about 65% slightly below the average. In contrast, the data distribution of non-incentive earners expresses lower levels of rubber production, with 41% below and far below the average value and only 20% above.



In 1913, the winners and non-winners of bonuses, incentives, and rebates had higher average rubber production values compared to 1910. However, the numbers are quite similar. The average value of rubber production of the winners is 106\$782 contos de réis, with distribution showing 15% well above the average, 65% close to the average, and only 20% below. The data on non-winners show an unequal distribution, tending to values well below the average in 1913, with 31% above the average and 86% below or very below.

A similar trend was found concerning annual purchases, although in a lighter proportion. The annual purchase frequency of the winners of bonuses, bonuses, and discounts was higher than that of the non-winners. The average frequency of purchases of the winners was 10 in 1910 and 9 in 1913, while the average frequency of purchases of the non-winners was 9 in 1910 and 6 in 1913.

In addition, the vast majority bought at or above the average annual purchase frequency, and the few exceptions bought more than eight times a year.

In addition, the winners tended to have higher levels of consumption in the indoor commercial house. In 1910 the annual purchases of the winners were 79\$086, while the annual purchases of the non-winners reached 73\$764 *contos de réis*. In 1913, the difference was greater. The average annual purchases of the winners reached 60\$418 *contos de réis* and of the non-winners only 43\$288 *contos de réis*, as can be seen in tables 03 and 04.

Table 03 Gratuity Received - Value of production and purchases, 1910, 1913 (in Réis) <i>statistics</i>	<i>year</i>		<i>Rubber production</i>	
	<i>1910</i>	<i>1913</i>	<i>1910</i>	<i>1913</i>
<b>Average</b>	79\$086	60\$418	98\$936	107\$843
<b>Median</b>	69\$720	62\$940	86\$595	100\$719
<b>Max</b>	139\$831	157\$401	187\$275	202\$438
<b>Min</b>	29\$127	4\$827	28\$201	29\$931
<b>Stdev</b>	38\$278	39\$181		
<b>Avedev</b>	32\$667	28\$414		

**Source:** ITU Rubber Plantation Diary of 1910 and 1913

table 04: Non-Recipients -Production and Purchasing 1910,1 1913 (em réis)

STATISTIC	YEAR		RUBBER PRODUCTION	
	1910	1913	1910	1913
<i>HIGH MEDIU</i>	69\$142	45\$113	49\$823	79\$782
<i>MEDIUM</i>	67\$606	38\$863	41\$153	63\$237
<i>Max</i>	154\$167	134\$762	174\$346	211\$442
<i>Min</i>	7\$605	1\$525	4\$339	0\$927
<i>Stdev</i>	30\$739	34\$238	35\$367	53\$236
<i>Avedev</i>	22\$276	26\$675	26\$157	44\$176

**Source:** ITU Rubber Plantation Journal of 1910 and 1913.

Rubber tapper-rubber tapper labor relations also involved debt negotiation and changes over time, as discussed below.

## CHANGES AND JOB TURNOVER

From the last decades of the 19th century and particularly after the 1910s, the rubber tappers responded to the constant and profound fluctuations in rubber prices by diversifying economic activities on the property (BENTES 1998; REIS 1953, p.107-108; OLIVEIRA 1985, pp.25-26; PAULA 1980). Along with agriculture and cattle ranching, Brazil nuts increasingly became an important export product of the Amazon, particularly after the 1920s (EMMI 1988).

In 1920, in the District of Rio Acre, the rubber plantations that diversified the production of goods reached 33%, and **about 6% of them also produced Brazil nuts. However, 67% of rubber farms continued to produce only rubber. In them, the diversification of economic activities occurred around the production of cereals for domestic consumption, aiming to reduce dependence on the market for food acquisition.**

This trend towards the diversification of economic activities affected the working conditions of rubber tappers from a long-term perspective. In the ITU rubber plantation, in the 1930 rubber tapper sample, representing 30% of the 215 rubber tappers working on the property, 12% combined rubber production with the collection of Brazil nuts during the year, one case also sold corn, and 5% also worked, temporarily, as salaried labor.

The diversification of the economic activity of the rubber tappers allowed them to develop a certain degree of autonomy about the internal commercial house. This is expressed in the trend towards a lower level of purchases in 1930, compared to 1910 and 1913. In the 1930 sample of rubber tappers, 12% did not make purchases during the

year, and 53% made purchases only three times. In addition, 75% bought less than 5 times during the year.

Table 5 illustrates that the average value of annual purchases in 1930 fell dramatically. It represents 56% of the average annual purchases in 1913 and 44% of this value in 1910. Thus, unlike their colleagues in the other two years considered, in 1930 the rubber tappers diversified their sources of monetary income and means of subsistence, to make fewer purchases in the commercial house inside the ITU rubber plantation.

Table 05: Purchases by Rubber Tappers: 1930

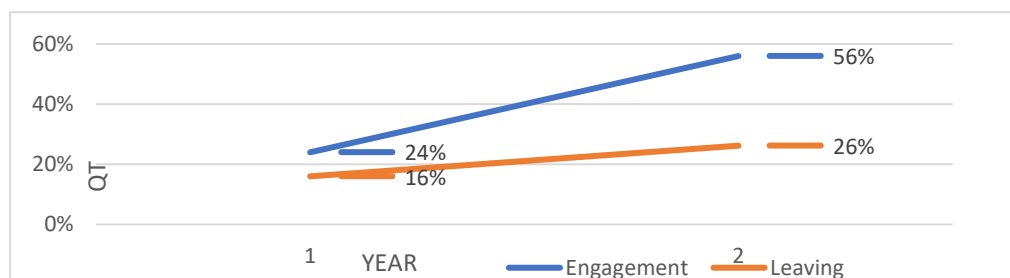
<i>STATISTIC</i>	<i>YEAR</i>	<i>MONTH</i>	<i>Purchase Frequency</i>
<b>Average</b>	99\$778	8\$821	3
<b>Median</b>	69\$669	5\$932	3
<b>Max</b>	450\$509	40\$954	11
<b>Min</b>	13\$603	1\$236	1
<b>Stdev</b>	91\$358	8\$190	2
<b>Avedev</b>	67\$392	6\$094	1

**Source:** ITU Rubber Plantation Diary of 1930

The diversification of economic activities resulted in a higher level of labor turnover on the property. The idea of absolute immobilization of labor characterizing labor relations in rubber plantations is not supported by the results of this investigation. Many rubber tappers with a positive balance remained in the ITU rubber plantation for years, contrary to the dogma that suggests that only the indebted worker did so. In December 1910, 17% of the sample of rubber tappers had positive balances and all of them remained in the ITU rubber plantation until 1914 or mid-1916. In addition, only one of the 20% that had a positive balance in December 1913, left in February 1914, while the majority remained for many more years. In 1930, 5% of the total of 215 rubber tappers remained in the rubber plantation, even though there was a positive balance. Moreover, as mentioned earlier, some rubber tappers left the property and returned to it the following year. Finally, many indebted rubber tappers left the property through different forms of negotiation, as mentioned earlier.

In addition, there was a growing turnover of labor in the ITU Rubber Plantation. Graph 1 illustrates that the engagement of rubber tappers increased from 24% in 1910 to 56% in 1913. At the same time, the percentage of rubber tappers *leaving*.

**Graph 01 - Rotation of Rubber Tappers ITU Rubber Plantation – 1910, 1913.**



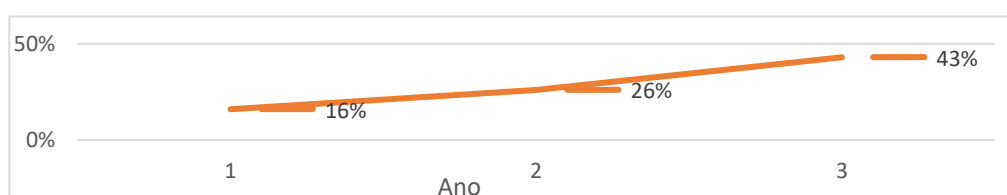
**Source:** ITU Seringal Diaries of 1910 and 1913.

Graph 02 shows a steady trend towards an increasing percentage of rubber tappers leaving the property when the three years (1910, 1913, and 1930) are considered. Considering that in 1930 the total number of rubber tappers on the property reached 215, 26% more than the total in 1913, in addition to a higher percentage of output, there was an intensification in the hiring of labor. In other words, there was a growing turnover of labor in the ITU Rubber Plantation.

Finally, changes were found in the way the rubber tappers left the property. In 1910, two rubber tappers died, one was fired due to "bad behavior," and 30 left their jobs. Among those who left their jobs, only 13% had a positive balance and 3% had their debt paid off. The others represented 53% who moved to a neighboring rubber plantation, having their debts taken over by the new boss and 31% of indebted rubber tappers who left the ITU rubber plantation through negotiations. Some of them had their debts taken over by other rubber tappers, while others had half of their debts taken over by other rubber tappers and the other half by the landowner.

In 1910, the number of rubber tappers' debts transferred to the Profits & Losses account reached 4,982,680 contos de reis, including the debts of the two rubber tappers who had died. In 1930, 43% left the property at the end of the year and 81% of them had a positive balance.

**Graph 02 – Rubber tappers leaving the ITU rubber plantation - 1910, 1913, 1930**



**Source:** ITU Rubber Plantation Diaries of 1910, 1913 and 1930

## CONCLUSION

The rubber tappers commanded the rubber production process, contrary to what is popularly suggested by the literature. In addition, labor relations in rubber plantations were not defined by indebtedness. Although the rubber tappers were hired as indebted immigrant labor and the circumstances in which they carried out commercial relations within the rubber plantations favored indebtedness or the perpetuation of initial debts, what defined labor relations was how labor was administratively subjugated by the employer.

In the rubber plantations, as in any capitalist enterprise, the will of the capitalist took the form of administrative procedures for the retention, control, and discipline of work. The search for technological improvements, efficient quality control systems, and adequate ways of controlling and disciplining work, to maximize productivity, shaped the process of creating and operating rubber plantations. The organization and rationalization of the space/nature in which the rubber trees were organized according to paths and placements, which were linked to the administration by internal paths, reduced the production time and defined the potential productivity of the work, in addition to facilitating inspection.

Inspection was a mechanism of quality control and direct control over the work of rubber tappers, which was part of a set of administrative procedures. The rubber tappers controlled the level of labor exploitation by increasing or decreasing the number of rubber tappers hired, changing the number of rubber paths to be exploited by each of them, and also increasing the number of elastic gum trees that made up each rubber tree path.

In addition, the rubber tappers used indirect control and discipline procedures. First, as a result of circumstances such as the rubber tappers' dependence on the internal trading house for food, insofar as they were exclusively rubber producers in a company situated far from the markets, the rigid control over their credit was transformed into an indirect form of retention and control of their labor. Secondly, incentives such as bonuses, discounts, and bonuses were given, which were certainly offered selectively to "deserving" individuals, who qualified not only by the length of service, good character, and expected behavior but also according to criteria of profitability for the rubber tapper. For example, high productivity combined with a high level of consumption in the internal commercial house.

In this way, the work of the rubber tappers was subjected to the will and objective of the capitalists to produce rubber as a commodity, aiming at generating profit, to guarantee the accumulation of capital. Rubber tappers were not autonomous in the production

process, but were workers paid for production. The subordination of their work to the interests of the capitalist manifested itself not only through administrative measures of retention, control, and discipline of their work. It was also manifested in the administrative requirement that the delivery of the rubber produced to the owner take place by pre-established internal rules. As a result, the rubber tapper's remuneration was defined not only by the quantity and quality of the rubber produced but also by the working conditions under which he produced the rubber and administrative conditions under which he had to market this product - predetermined administrative rules of quality control and according to the frequency of shipments.

These forms of labor control and discipline subjugated the work of the rubber tappers to the interests of the rubber tapper, indicating class relations in which the boss and employee personified different social conditions. The rubber tapper personified several roles: 1. Owner or tenant<sup>12</sup> of the rubber plantation land and rubber entrepreneur; 2. Merchant; 3. Commander of the social relations of production and administrator of the rubber tree company directly, or indirectly through managers and administrators; 4. Usurer capitalist. These characters reveal a more complex reality than the supposed absence of rubber tappers in rubber production.

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<sup>12</sup> At the height of rubber exports, it was foreigners who rented the most rubber plantations; But the rental of rubber plantations became more common, including among Brazilians, from the 1920s onwards.



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