

THE JUNGLE (*A SELVA*) BY FERREIRA DE CASTRO: SCENARIO, DIMENSION, AND SUSTAINABILITY

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Introduction

The book of Ferreira de Castro, now analyzed, presented as a novel and set in the Amazon region, allows us to reflect on the theme of environmental sustainability. Written between the years 1910 and 1920, it portrays an experience lived by the author himself in traditional rubber plantations located in the bosom of the Amazon forest; scenario to observe local practices, which form an intricate network of cultural and social relations. There, the main protagonist, Alberto, lives a unique experience as a man who came from Europe seeking success in the former Portuguese colony. Chaves, Rodrigues and Lira (2007) assert that *A Selva* is an indispensable source of research for all those who wish to take an in-depth look at the Amazon and its population.

The analysis of a literary narrative-context of the recente-past Amazonian biome may help us to better understand both its environmental history and environmental issues that arise today. It is also believed that, at the art (literature) and Science interface, there are elements that can contribute to the solution of environmental problems in the most different contexts and have since been relevant both in the scientific and institutional environment and in the society in general.

According to Barbieri (2011, p. 32), sustainability, “that is, the quality of what is sustainable, incorporates the meaning of *ad eternum* management and conservation of natural resources” in its environmental, social, and economic dimensions, and it is set as a goal for organizations, globally or locally. However, despite this apparent global consensus, the hierarchy between these dimensions, as well as the establishment of priorities, has generated more controversy than unanimity.

In order to perform a sustainability analysis of the scenario described in the present book, the 3-D Sustainability Model is intended to be used, developed by Volker Mauerhofer (2008), which presents us with a new approach to objectively evaluate hierarchies and

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definition of priorities in the relationship between environmental sustainability in natural capital dimension, social dimension, and economic dimension.

The concept of Triple Bottom Line (ELKINGTON, 2012), which describes the interrelationship between economic, social, and environmental dimensions, prevails within the discussion of sustainability. Its vulnerability rests on the absence, in this approach, of a figure that expresses the limitation of the environmental system, since it is generally portrayed by figures that present the three sustainability (economic, social, and environmental) as integrated and equivalent pillars. It is argued that the three dimensions must have the same weight, remaining in balance so that sustainability is fully achieved. Authors who present other dimensions, such as culture, ethics, and politics, also do not approach these dimensions in a hierarchical way (SACHS, 2002; NURSE, 2006; NASCIMENTO, 2012 apud VOLKMER, 2014). For Mauerhofer (2008, p. 496), the 3-D Sustainability Model “introduces and classifies criteria for the evaluation of hierarchies within and between conflicts of interest, social, environmental and economic sustainability (the three dimensions of sustainability)”, stating a more critical and realistic perspective, which is adopted in this work.

The objective of this paper is to analyze the sustainability of the Amazon context of the book *A Selva* from the perspective of 3-D Sustainability Model (MAUERHOFER, 2008). As secondary objective, it is sought to appreciate to what extent the aspects raised in the analysis can help in understanding the Amazon of today and indicate aspects relevant to contemporary management and decision making. For that, the book of Ferreira de Castro, published in 1930, is proposed to be analyzed, which narrative runs between the years 1910 and 1920 in the Amazon jungle, named by Castro (1976) as “green majesty, superb, and enigmatic.” During this period, the rubber cycle was developed, a resource extracted from the forest by workers from different regions of Brazil and the world. Appreciating the scenario described by Castro, in its environmental, social, and economic aspects, some reflections that are considered relevant for the understanding of environmental sustainability can be drawn.

Discussions on environmental degradation and social inequality became part of the agenda of the Conference on Environment and Humanity in Stockholm in 1972. Since then, the term ‘sustainable development’ has been translated over time, especially in the last four decades. According to Camargo (2003, p.14), these discussions about “the relationship between the environment and development went on throughout the 1970s, marked by movements and events that are very significant from the socio-environmental point of view.” However, the theme of sustainable development has only entered the global agenda since the Rio 92 Conference.

The methodology used in this research, as well as the research method, makes possible to classify it as a narrative and bibliographical review research (VERGARA, 2003; SARAIVA, 2007). In the bibliographical aspect, a review of the literature was carried out, taking as support of information a review of published works on the conceptual basis; an analysis of the (un) sustainability of economic and social activities was presented, especially considering the environmental capacity of that biome. Through a narrative review, it was possible to relate the criteria of Sustainability 3-D and the book *A Selva* by Castro (1976).

Therefore, the present paper is structured as follows: initially, an analysis of the book of Ferreira de Castro, especially on the socio-environmental issues in the Amazon context is presented. Then, using the Mauerhofer 3-D Sustainability Model, the relationship between the criteria adopted in this model and the highlighted elements of Castro's book, especially with respect to the environmental, social, and economic capital of that region was observed. Subsequently, the conclusions of this study are presented, in the last section of this article, pointing out the limits of environmental capacity and the fragility of the man-Amazon relationship.

Amazon under the eyes of Ferreira de Castro: scenario and the environmental dimension

The proposal of analyzing the book of Ferreira de Castro is related to the interest in portraying the contributions provided by the novel *A Selva*, especially around socio-environmental issues and the dichotomous relation of Man versus Nature. Moreover, as mentioned above, the authenticity and strength of the emerging ideas of the art and science interface is something believed.

The book in question addresses the question of migration in an almost biographical way, through the experience of the main character, Alberto, Portuguese-civilized who, in the exuberant scenery of the Amazon forest, meets *A Selva*, represented as a "living being" because it has its own will and imperiously reign over man (CHAVES; RODRIGUEZ; LIRA, 2007).

For Braga and Silva (2013, p.145), "the novel is considered part of our literature mainly for having nature and natives as the theme," a source for environmental history. The context occurs in the daily extraction of latex and in the rubber production process in the Amazon, depicting the life of rubber tappers, many of them migrants and from the Northeast of Brazil, attracted by the possibility of enrichment and, also, fleeing from the droughts that were ravaging and still ravage the northeastern region of the country (MENEZES NETO, 2011).

For a better understanding, it is worth emphasizing the historical context to which the work Castro refers. The author discusses the period of rubber economy in the Amazon, between 1850 and 1920, when, according to Prado Jr. (1998, p. 236), "Brazil, with the largest world stock of native rubber trees, will see a bigger economic perspective be opened".

In this scenario, the book tells the story of Alberto, a young Portuguese man who is sent to the rubber farmer Paraiso by his uncle Macedo. It portrays the trajectory of this character, since his trip aboard the steamer 'Justo Chermont', occasion in which he met the Northeastern migrants who also traveled to the rubber fields. His trajectory significantly addresses his work as a rubber tapper, and then, in the shed of the Paraiso rubber tree as an overseer.

It is important to remember that the activity of the rubber tappers consists in the work of the extraction of latex, a thick liquid found in the rubber tree (*Hevea brasiliensis* Muell-Arg), raw material of natural rubber. For the extraction of latex, the tree must be-

ed, by slicing and placing on the bleeding a gourd container or bowl to trim the liquid. Then the latex is smoked, to be hardened and turned into balls, which can weigh up to 40 kilograms. Therefore, it is a job considered arduous and strenuous if executed for many hours of labor.

As overseer, his job was more pleasant. To do so, he counted the daily production of the rubber tapping, as well as providing the necessary inputs for the operation of that extractive activity. However, it was up to the 'shed' overseer, to monitor, and manage the checking accounts maintained by the rubber tappers with the 'boss'. As debit, innumerable expenses were released: food, tobacco, cachaça (Brazilian distilled spirit), kerosene for the lamps, boots, among other needs of the workers. In the accounting line referring to the rubber tappers' credits, only their respective wages, which invariably did not cover the debits incurred and generated liabilities that perpetuated the labor relationship in those enterprises (CASTRO, 1976; BARBOZA, 2015).

In the novel, Alberto is a single young Portuguese who came from Lisbon because of political persecution, to try his luck with his uncle, brother of his mother, who was already established in Belém. In the Portuguese capital, Alberto attended law school and lived a life without deprivation of the European citizen of the beginning of the century. He was a supporter of defeated monarchism and was only able to return to Lisbon at the time of the Republican amnesty. His uncle housed him and supported him for a while, but when he got the chance he sent Alberto and the other migrants who had fled from the Northeastern drought to the rubber plantations in the state of Amazonas. At first, he had a hard life, with the suffering conditions he encountered and his complete lack of dexterity in rubber tapping. His labor mates were illiterate and uncultured, and with them he had to learn the laws of survival in the jungle. Later, he assumed a bureaucratic position in the management of the rubber plantation, so he did not need to make forays through the forest anymore.

In this context, the narrative unquestionably points the environmental exuberance of the Amazon. The author is enthralled by the grandeur of the rivers and the forest. Castro (1976, p.50) highlights, narrating the character's journey along the Amazon River, that "The crossing took a few hours. And always, always, in pupils Alberto, that unmeasurable greatness". However, the stay of the character in the Amazon is a mix of admiration, fear, and even misunderstanding of nature.

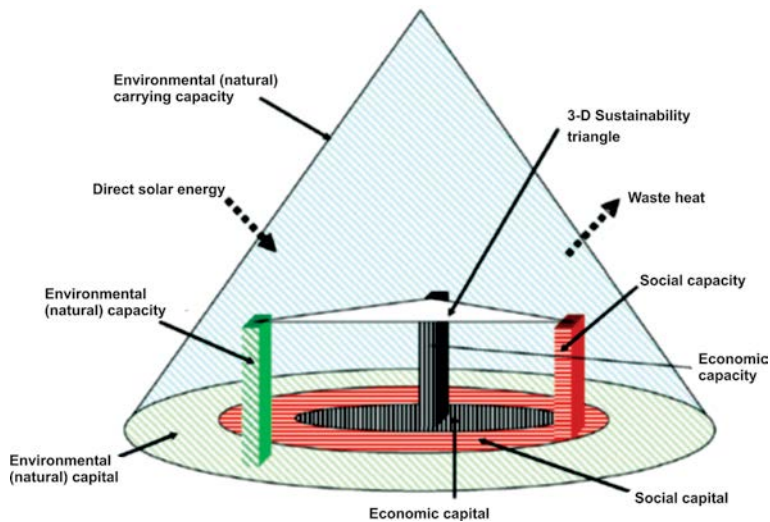
In the following section, the relationship between economic, social, and environmental capital with the capacity of that biome is analyzed, seeking to assess its sustainability in light of the concepts of the 3-D Sustainability Model, developed by Volker Mauerhofer (2008), that objectively makes possible to evaluate hierarchies and definition of priorities in the relationship between their dimensions.

Capital & Environmental, Social, and Economic Capacity: as a proxy for development

The Mauerhofer (2008) 3-D Sustainability Model, represented in Figure 1, seeks to understand sustainability in a complex way, evidencing its conflicts of interest and

relying on the assumption that its dimensions can not be seen in an equitable way and that decisions about environments must be made on the basis of evidence. The main criticism that the author makes of other sustainability models is the lack of consideration of the limits of environmental resources, that is, the lack of a realistic assessment of their capital and their capacities.

Figure 1 - 3-D Sustainability Model



Source: Mauerhofer (2008)

In the 3-D model, economic capital is nested in social capital, and both are inserted in environmental capital, represented in concentric rings. The columns contained in the cone represent environmental, social, and economic capacities. The triangle that rests on them is precisely sustainability, which balance depends on their levels and their interactions.

The column of environmental capacity that rises from the circle of environmental (or natural) capital is the first to find the diagonal lines of the cone, which represent the limits of the environmental system. That is, even with an equivalent and balanced increase of the three columns of capacities, that environmental will reach the limit of the system before the others. In this approach, economic capital is constructed by human beings from natural capital, which, in turn, presents physical limitations during a consistent period of use (MAUERHOFER, 2008).

According to Table 1, it is possible to observe the relationship between 3-D Sustainability criteria of Mauerhofer (2008) and highlighted elements of the book of Castro (1976), which will allow us to approximate the local sustainability of that time.

Table 1 - Relationship between the 3-D Sustainability criteria of Mauerhofer (2008) and the book *A Selva* by Castro (1976)

Criteria		Perceptions Extracted From The Book <i>The Jungle</i>
Capital	Environmental	<ul style="list-style-type: none"> • Extensive natural richness: an account of the magnitude of the flora (extensive and diverse) and fauna (fish, jaguars, snakes, peccaries, dark, pardos, and honey color animals, tapirs, capybaras, deer, and pacas, among others); • abundance of land; and • abundant water resources (rivers and streams);
	Social	<ul style="list-style-type: none"> • Rubber tappers (mate of "cut", mateiro, and camboieiros); • Local people (caboclo); • Native Brazilians; • immigrants (Northeast people, Japanese, etc.); and • entrepreneurs.
	Economic	<ul style="list-style-type: none"> • Extractive activity, fishing, and agriculture; • river transport; • employment in the rubber; • fall in profits (oscillation of the price of rubber).
Capacity	Environmental	<ul style="list-style-type: none"> • Latex (limitation); • wood.
	Social	<ul style="list-style-type: none"> • Social relations in the rubber plantation: labor exploitation; • strong hierarchy (owners of rubber plantations and aviators); • gender in the rubber plantations: man (absence of families); • subjection: debts of rubber tappers; • change of customs and habits; • diversity of cultures and ethnicities; and • little supply of labor: importation of social capital (northeasterners, etc.).
	Economic	<ul style="list-style-type: none"> • Amazon: large producer of richness (economic extraction system of latex, wood, others); great job offer; • debts obtained from the boss to work as a rubber tapper; • low salary; • river: large fleet of cages (transport); • crops in the rubber plantations: cassava, cane, and corn; and • potential: valuation of orchids; • maximizing profits.
Sustainability Analysis		<ul style="list-style-type: none"> • Reevaluate human actions about the environment; • need for management and preservation of rubber trees, being against the predatory extraction of latex; • impact of introduction of species such as maize and cane; and • preservation of fauna, flora, rivers and streams.

Source: Prepared by the authors

The Environmental, Social, and Economic Capital

a) The Environmental Capital of the Jungle

In the environmental dimension, Castro (1976) demonstrates a true conflict of opinion, ranging from enchantment to fear, unease about the danger of the vastness of the forest. Among the reports perceived as environmental capital are the perception of natural wealth with the diversity of the existing fauna and flora, the greatness of water resources, and the vast extent of available land. The author Ferreira de Castro feels in his skin the power of the Amazonian biome and, above all, the lack of preparation for such context; thus, he shares it with his character, who also had a level of formal education superior to that of his co-workers in the rubber plantations and even to his bosses. Undoubtedly, both Castro and Alberto were out of their environment, they came from the city. In the presentation of his story, he reveals us his disappointment and desire to escape: "I was, then, sixteen years old, and of the four years that I had been there, there was not a single day when I did not wish to escape into the city, take me out of the jungle, take a boat and run away, run away in any way, just run away!" (CASTRO, 1976, p. 19).

With regard to the supply of these resources for the development of goods without previous planning, this entails serious environmental damages, in the context of the narrative that distances itself from sustainability, promoting the creation of a tragically anthropized landscape of the Amazon. The composition of the perceived landscape describes a forest with plenty of wood, fruits, and animals. Castro (1976) reports that no hunter outside the Amazon could imagine the existence of the enormous amount and diversity of animals. For those who exploited of the forest and the workers, both the nature and the availability of cheap labor seemed inexhaustible.

Amazon, both in the described period and in the present context, has many natural resources desirable by the economic sector to be exploited, however, its sustainable use must be analyzed with great caution so that permanent imbalances do not occur. The unprecedented use of flora, fauna, soil, and water resources has impacts on the environment, such as contamination of soil and water, extinction of animals and plants, and landscape change. Not to mention the change in the way of life of local traditional communities, which see their culture threatened to use restrained and respectful endangered natural resources.

Rubber was one of the resources explored intensely by man during the period that Castro was in the Amazon, however, due to predatory extraction and low prices of latex, many forests were degraded by exhaustive extraction and inadequate management of the species.

Wood was and still is explored in that biome of quite intense form; the naked soil is described by the text passage of Castro (1976, p. 77): "Found free land that was cleaned with iron and fire by the human arm, in its first contact with the dominating jungle."

b) Social Capital

As indicated in Table 1, in the scenario presented in the book under study, the presence of caboclo and of native Brazilians adapted to the reported biome, who showed no interest in the mercantilist issue of that time, although they were tragically dragged into the rubber cycle, however, as labor they did not meet the purpose of rubber extraction.

In the exploitation of natural resources, especially latex, it was necessary to seek labor in other geographical areas of Brazil and in other countries, by encouraging migration for rubber production purposes, since the number of inhabitants was insufficient for developmental action. Among the immigrants, the ones that were most present in the process were the Northeast people, who performed actions of latex extraction (rubber cutting mate, mateiro and cambóieiro), and Japanese, who appear at the time of the decline of rubber to grow maize, cassava, and cane.

Undoubtedly, the Brazilian literature was abundant in discoursing about the Brazilian northeasterners who leave their land behind. In this line, some authors are highlighted, such as: Graciliano Ramos, Rachel de Queiroz, José Lins do Rego, among others, who, in a real and also playful way, drew this profile, which, succinctly, can be represented by the verses of Daniel Fiúza:

Squalid man, suffered, thin and fallen
 Northeasterner, Brazilian, thirsty and hardworking
 Without possessions, without water, without grief and forgotten
 Taciturn, head down, absorbed in pain.
 Face marked by suffering in the arid regions
 No frill or border, you have to leave.
 Only one vote, remembered in the election
 Silent man, do not cry and do not cry
 (FIÚZA, 2017, s.p.).

c) Economic Capital

Economic capital in the 3-D Sustainability model of Mauerhofer (2008, p.499) is used in a "... similar sense to that of 'man-made capital', that is, the means of production produced as machinery, equipment, and structures, but also infrastructures related to non-production, non-tangible assets, and financial assets [...]" In this model, the economic capital presented in the center of the figure does not mean any predominance in importance, on the contrary, it demonstrates that it is made by human beings from natural capital. According to the same author, "[...] Social and natural capital, therefore, are preconditions for economic capital" (MAUERHOFER, 2008, p 499).

In this sense, in the book of Ferreira de Castro stand out as economic capital the activities carried out by man, in the condition of entrepreneur or worker, such as: river transport, vegetable extractivism, fishing, agriculture and, eventually, livestock. Narratives by Castro (1976, p. 53), such as: "[...] Cut the big fish into blanket filets, dried in stick

table and sold in the nearest small town, those that remained over daily overeating, the caboclo acquired salt, flour, and cachaça [...] “, acquire prominence to present the economic capital of that region, as a tangle of activities that depend directly on natural capital.

Another specific way of distinguishing economic capital, which had a relative importance, especially in the social and cultural question, concerns the sheds, head office of the rubber plantations, implanted in man-made scars in the dense Amazonian forest. In this way, Castro (1976, p. 83) points out: “The rubber plantation was now completely unveiled: in a straight line three tents were erected, then two wooden and tile houses ... [...] By size, shape and paintings, indicated the residence of master and headquarters of the exploitation of the rubber tree.

This environment is formed by natural and artificial elements, in which man, individually and socially, enters in a process of interaction that attends to the development of human activities (CAMARGO, 2003); the economic capital, based intensely on the work of the caboclo and, especially, of the Northeastern migrants supports the extractive activity of latex, permeating the entire rubber cycle that was experienced in the Amazon region at that time.

Environmental, Social and Economic Capacity

Following the graphic representation of the 3-D Sustainability Model of Mauerhofer (2008), the concept of sustainability can be represented by a cone, and the capacity of the environment, social capacity, and economic capacity can be represented by three vertical columns, which are **fed from bottom to top** in different forms by economic, social, and natural capital. Concomitantly, it is **influenced from the top down** by the different factors within the 3-D Sustainability triangle, **balancing** and **re-influencing** the Sustainability 3-D triangle.

Therefore, the model presented here points to the limits of the environmental system, that is, the environmental load capacity through the graphic representation of the diagonal sides of the cone. It is emphasized that the column based on the external circle, which represents the environmental capacity, will reach the limits of the environmental system, even with the continuous and balanced growth of the columns (MAUERHOFER, 2008, p. 497-498).

Based on the Table 1, previously presented, which lists the criteria of the 3-D Sustainability of Mauerhofer (2008), and the book *A Selva* by Castro (1976) presents, next, the environmental, social, and economic capacity vis-à-vis to economic, social, and environmental sustainability.

a) Environmental Capacity

The Amazonian scenario described by Castro (1976) is composed of dense and feared forest, abundance of animals, greatness of rivers and constant presence of igarapés (Amazonian streams). The forest presented itself to men as disastrous, ruthless, or even inhuman, but rich in diversity and, despite what was thought, exhibited some limitations.

The author reports relievedly when he is able to free himself from that torment (forest) and demonstrates the need for reflection on the relation of humanity to nature. It is clearly perceived the relation of dominion of the nature on the man, altering the actions of this as a way to try to live and to adapt to the means. Castro (1976, p. 78) describes the situation experienced by many: “the virgin jungle seemed to want to punish anyone who had dared to violate its mystery.”

The limits of natural resources, that is, of natural capital, can be exemplified when it was thought that latex would be a permanent product, inexhaustible, since it was thought that the useful life of rubber trees was long. On the personal scale, like of the protagonist, it seems unthinkable that the resources of the forest, such as rubber, would be depleted. There was always more forest to be explored. However, today it is known how destructive is the implementation of economic, agrarian, and extractive activities in the Amazon. Problems such as depletion and erosion of soil contributed to the change and decrease of the forest area.

Considering the presence of large agricultural enterprises in the Amazon region today, actions that can mitigate the environmental impacts of these activities become imperative for the environmental sustainability of the Amazonian biome.

b) Social Capacity

Considering that, according to Mauerhofer (2008, p. 500), social capacity “... includes population size, lifestyle, health, education, age, tolerance, and participation”, it can be seen that social relations in rubber plantations were not at all friendly, since the exploitation of labor with the characteristics of slavery was clear. The owners of the rubber plantations and the airmen had a very strong hierarchical dominion over the other social actors, who kept them subdued and submissive through debt and severe punishment.

The oppression suffered by the northeasterners, refugees from the drought, and by the blacks, recently freed from slavery, subjected to punishment, deprivation, financial subjection, and living in inhumane conditions was clear. These actions were carried out with the objective of feeding the rubber production chain composed of exporting companies that maintained the international market supplied with the product. Moreover, Castro’s narrative reveals the change in the customs and habits of said social capital and the pursuit of profit at any cost by the owners of the rubber plantations.

In the productive process and in the social organization, the presence of the family did not exist, because story of Castro indicated that the rubber-tapper would work more without it, therefore, increasing their productivity. The women, when present in this scenario, were generally prostitutes who came to satiate the appetites of those men who lived solitary or in small groups. Thus, like alcohol, women were pleasures that aided in overcoming that inhospitable and solitary environment.

Regarding to social capacity, the fragility was represented by the need to import social capital from other localities, beyond the borders of the Amazon and, even from Brazil, because the local population did not represent a potential reserve of labor for the actions destined to rubber production.

Due to the immigration destined to the production, the social environment was formed by diverse cultures and ethnic groups. However, the mixture of distinct cultures was characterized by the substitution of a traditional subsistence management by the logic of production, aiming at the profit and the export of resources; among them, the rubber.

c) Economic Capacity

The economic capital in the 3-D Sustainability Model of Mauerhofer (2008) is presented in the equivalent sense of 'man-made capital'. Examples include capital goods such as: machinery, equipment, tools, facilities, and structures; but also infrastructures related to non-production, non-tangible assets and financial assets, which differs from the concept of economic capacity, which includes, according to the same author, "factors such as profits, productivity, employment rate, performance potential, and portfolio impact [...]".

Caio Prado Junior (1998, p. 237), in his book *Economic History of Brazil*, states: "The exploitation of rubber will always be done through the most rudimentary processes. It will typically be a tropical forest industry, not only in its technical aspects but also in the economic and social aspects". This leads to low economic productivity and also to the exploitation of the man, rude and illiterate, both caboclo and northeastern migrants.

Passages of the book of Castro (1976) describe the economic capacity of this region, during the analyzed period,

Even in its decadence, it was still the rubber that moved all that, the ships of different sizes and the tugboats of high-pitched hisses; the cranes with long arms, and the wagons on the polished carriages along the quays, with a constant shuttling of the stevedores between the water's edge and the line of 'sheds', vast warehouses; and the rubber began to feel Alberto also incorporated (CASTRO, 1976, p. 39).

Within this scenario, the forms of economic and social relations established in the Amazon, in the period between 1910 and 1920, presented by Castro (1976), fixed their bases in the export of rubber. It was a native product of the region, in which the activity was based on the extraction of latex and the preparation for commercialization, excluding that region of processing through rubber industrialization. This technology was preponderantly dominated by North Americans.

It was up to the Portuguese, mostly, to migrate to Amazon, where they set up the so-called aviadoras houses (an enterprise for commercialization of rubber and appropriation of the extraordinary profit earned by these intermediaries), literally giving shape to the local rubber market, as Castro (1976, p. 86) asserts, "[...] seriously, only what interested them: the news, vehemently expected, of the last price of rubber."

However, for labor in the rubber plantations, specifically in the collection of latex, it was incumbent on the Northeasterner to contribute to the revenue of maximizing the profits of their owners, providing cheap and resigned labor with that situation of penury and semi-slavery. The economic relation was hanging on to the owners of the rubber

plantations, who hired Northeastern people with the promise of enrichment and, in fact, collaborated with the perpetuation of their situation as miserable migrants. In particular, they enhanced this inequity by providing the necessary supplies for the performance of their extractive activity, as well as for their subsistence. However, they neglected to warn the unwary that the prices practiced in the rubber sheds were often depreciated.

Thus, economic capacity, in this context, requires reflection to analyze the (un)sustainability of this region. It is worth mentioning that, currently, there is still this economic and social dynamic in the Amazon, as well as in other regions of Brazil; it just has to be pointed out by means of statistical surveys the occurrences of slave labor, with the same characteristics practiced and portrayed in the novel *A Selva*, at the beginning of the last century (THÉRY et al., 2009). According to Pena (2017, p.1), it is estimated that “200,000 workers in the country live in slavery conditions, according to the Global Slavery Index, performed by NGOs linked to the International Labor Organization (ILO) “.

Currently, to mitigate environmental impacts, the Amazon region has several areas of environmental protection. The Socio-Environmental Institute (ISA) (2017) accounts for 327 Conservation Units (CU) in the legal Amazon, of which 143 are federal and 184 are of the state. In the case of federal CU, although the categories of full protection are considerably smaller than those of sustainable use, they are more representative in terms of extension, representing a little over 6% of the Legal Amazon. The categories with the highest number of CUs are Extractive Reserve (RESEX), National Forest (FLONA), and the National Parks (PARNA), respectively, with 44, 34 and 26 CUs.

The period narrated by Castro is based on the rubber economy, after the apogee lived in the year 1912, when the exports of this product represented 40% of the total export of the country; thereafter, its decline begins. According to Prado Jr. (1998, p.239), “Brazilian rubber, exploited under the conditions we have seen, will not resist competition from the eastern product, which in a few years will replace it almost entirely in world markets.” The same author asserts: “The drama of Brazilian rubber is more a matter of romance novel than of economic history” (PRADO JR., 1998, p. 241), but without a doubt, an important period to infer the economic, social, and environmental issues of that time, and it is also basis for current reflections.

Conclusions

A Selva by Castro (1976) represents a relevant contribution in the process of formation of socioeconomic and also environmental thinking in the Amazon. It stands out as the mark of our literature, not only for the exuberance of its novel, but, mainly, for the richness of details captured by the author during his passage by the region. Therefore, this book can be studied from the point of view of the three pillars of sustainability: economic, social, and environmental.

The Amazon rainforest, one of the most biodiverse areas of the planet, serves as an object of study for many researchers, yet it is still seen by many as a mysterious place, with its myths and legends, hitherto, not completely demystified by man. In this context, through the perception of the adopted model, the system demonstrated clear limits of its

environmental capacity, reason why it became necessary to reevaluate the human actions on that environment. In addition to changes in management practices and preservation of rubber trees, there is also a need to emphasize the preservation of fauna, flora, rivers, and Amazonian streams (Igarapés).

It is inferred from the reflections developed here that it is necessary to valorize the work carried out by the rubber tappers in the productive process, with the consequent transformation of social relations developed in the environment of the Amazonian forest. Another important aspect within the context of Ferreira de Castro's work concerns economic sustainability; in this case, it is necessary to look for alternatives of production and better coexistence with the environment, without the occurrence of severe anthropization processes. In this way, better results would be achieved in the sustainability of this environment.

In the narrative developed in this work, it is necessary to identify the *sui generis* forms of social and cultural organization of traditional populations, formed and built by the caboclo, riverine, and native Brazilians population and many other peoples and ethnic groups that compose and live in the Amazon. Through the research of narrative and bibliographical review, based on the extractive activity developed within the Amazon forest and its relationship, especially, with the Northeastern migrants, it was possible to verify the fragility of the man-Amazon relationship when the economic dynamics, social, and environmental aspects of this biome is observed.

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Original Article

THE JUNGLE (*A SELVA*) BY FERREIRA DE CASTRO: SCENARIO, DIMENSION, AND SUSTAINABILITY

Abstract: This paper proposes to analyze the work of Ferreira de Castro, *A Selva* (The Jungle), published in 1930, under the perspective of sustainability. For that, the 3-D Sustainability Model was used, which presents a new approach to objectively evaluate hierarchies and the definition of priorities in the relationship between economic, social, and environmental sustainability. The methodology used in this research is classified as narrative and bibliographic review research. The limits of environmental capacity were observed, and it is necessary to re-evaluate human actions on the Amazonian environment. There is a need for greater emphasis on the preservation of fauna, flora, rivers and streams, as well as changes in management practices and preservation of the rubber tree. The complexity of the man-Amazon relationship is clear when the economic, social, and environmental dynamics is observed.

Keywords: Amazon. Culture. Rubber Tapper. Environment. Sustainability.

Resumo: Este *paper* propõe analisar a obra de Ferreira de Castro, *A Selva*, publicada em 1930, sob a ótica da sustentabilidade. Para tanto, foi utilizado o Modelo de Sustentabilidade 3-D, que apresenta uma nova abordagem para avaliar objetivamente as hierarquias e a definição de prioridades na relação entre sustentabilidade econômica, social e ambiental. A metodologia utilizada nesta pesquisa é classificada como pesquisa de revisão narrativa e bibliográfica. Observaram-se os limites da capacidade ambiental, e se tornou necessário reavaliar as ações humanas sobre o ambiente amazônico. Necessita-se de maior ênfase na preservação da fauna, flora, rios e igarapés, além de mudanças nas práticas de manejo e de preservação do seringueiro. É nítida a complexidade da relação homem-Amazônia quando se observa a dinâmica econômica, social e ambiental.

Palavras-chave: Amazônia. Cultura. Seringueiro. Meio Ambiente. Sustentabilidade.

Resumen: Este trabajo propone analizar la obra de Ferreira de Castro, *La Selva*, publicada en 1930, bajo la óptica de la sostenibilidad. Para ello, se utilizó el Modelo de Sostenibilidad 3-D, que presenta un nuevo enfoque para evaluar objetivamente las jerarquías y la definición de prioridades en la relación entre sostenibilidad económica, social y ambiental. La metodología utilizada en esta investigación se clasifica como investigación de revisión narrativa y bibliográfica. Se observaron los límites de la capacidad ambiental, se hizo necesario reevaluar las acciones humanas relativas al ambiente amazónico. Se hace necesario dar un

mayor énfasis en la preservación de la fauna, flora, ríos e igarapés, además de cambiar las prácticas de manejo y de preservación de los árboles del caucho. Al observar la dinámica económica, social y ambiental queda nítida la complejidad de la relación hombre-Amazonia.

Palabras clave: Amazonia. Cultura. Cauchero. Medio Ambiente. Sostenibilidad.
