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Original Article

Forest Management

Plant Extractivism Production Disparity Between Northeast Brazil and Brazil

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ABSTRACT

The present study analyzed the disparity in the gross production value of plant extractivism between Northeast Brazil and Brazil from 1994 to 2012. The following location measures were used: location quotient (*LQ*), location coefficient (*LC*), redistribution coefficient (*REDC*) and coefficient of geographic association (*Gac*). The following regional measures were used: specialization coefficient (*SC*) and restructuring coefficient (*Rc*). Based on the location indicators studied, it was concluded that there is no disparity in plant extracted groups between Northeast Brazil and Brazil. Plant extracted groups explored in Northeast Brazil are relevant for Brazil (*LQ*), not concentrated (*LC*), and regionally distributed (*Gac*). *REDC* showed no structural changes. The regional measures (*SC* and *Rc*) showed identical specialization, with no changes in the production structure. However, studies on the disparity in Northeast Brazil at smaller regional scales (state, mesoregion, microregion and municipality) are needed.

Keywords: forest economy, regional measures, location measures.

1. INTRODUCTION

From the beginning of civilization, forests have been used for the well-being and progress of humanity. Throughout the centuries, humanity has learned to use the available forest resources as a source of commodities such as food, drugs, forage, fertilizers, energy, fibers, resin, gum, building materials, and many others (FAO, 2002).

According to the FAO (2016), 75% of earth's biodiversity comes from forests, which supply many products and services that enable the world's economic development. Forest products are divided into timber and non-timber products. Forests are essential for hundreds of millions of people, especially in rural and poorer regions in the world, which are concentrated in tropical areas.

The exploitation of forest resources provides an alternative form of employment and income. Plant extractivism can be defined as the process of exploration of native plant resources, including the collection of products such as wood, latex, seeds, fibers, fruits and roots, either in a rational or in a primitive way (IBGE, 2012).

Plant extractivism has been present in Brazil since colonization and shows characteristics that are related to regional peculiarities. In Northeast Brazil, where Brazil's pockets of poverty are concentrated, plant extractivism is an alternative for the generation of income and employment (Clement, 2006; Santos & Gomes, 2009).

Plant extractivism has become essential to local development in Northeast Brazil. Travassos & Souza (2014) analyzed the social and economic dynamics of plant extractivism in the Cariri region of the state of Paraíba and reported a strong dependence of the low-income population on timber exploitation. Mota et al. (2008) studied the extractivism and consumption of mangaba (*Hancornia speciosa*) in Northeast Brazil and reported "domestication" trends to meet the increasing demand. Plant extractivism is therefore relevant in Northeast Brazil, and understanding its behavior at the regional level relative to the national level is necessary.

The regional economy includes spatial differentiation and interrelations between areas within a national system of regions (Souza, 1981). Besides determining which resources are scarce, their distribution in the space is provided through location and regional measures. Location measures serve to identify patterns of spatial concentration or dispersion of activities for a given period of time or between two periods. Regional measures determine the degree of specialization of regional economies and their dynamics over a given period of time (Haddad, 1989). These indicators were used in the following studies: Lima et al. (2006), for land use in southern Brazil; Piacenti et al. (2008), for the location profile of sectorial employment in Brazil; and Mazur et al. (2013), for a location analysis of production of the main crops in the microregion of Campo Mourão, state of Paraná.

There are therefore no studies on the disparity in plant extractivism between Northeast Brazil and Brazil. The present study analyzed the disparity in the gross production value (GPV) of plant extractivism between Northeast Brazil and Brazil from 1994 to 2012.

2. MATERIALS AND METHODS

2.1. Data used

GPV data for plant extractivism in Northeast Brazil and Brazil between 1994 and 2012 used in the study were retrieved from the Automatic Recovery System (SIDRA) of the Brazilian Institute of Geography and Statistics (IBGE, 2015a).

According to the IBGE (2015b), plant extracted products are classified into the following groups: food; aromatics, medicinals, toxins and dyes; rubbers; waxes; fibers; non-elastic gums; charcoal; firewood; roundwood; oleaginous products; and tanning products. These groups can be decomposed as follows: **1. Food** – açai (fruit) (*Euterpe* ssp.), cashew nut (*Anacardium occidentale* L.), Brazil nut (*Bertholletia excelsa* Bonpl.), yerba mate "cancheada" (dried and coarsely ground) (*Ilex* ssp.), mangaba (fruit) (*Hancornia speciosa* Gomes), heart of palm (juçara heart of palm – *Euterpe* ssp.), pine nut [*Araucaria angustifólia* (Bertol.) Kuntze], umbu (fruit) (*Spondias tuberosa* Arruda), and others; **2. Aromatics, Medicinals, Toxins and Dyes** – ipecacuanha [*Carapichea ipecacuanha* (Brot.) L.Andersson], jaborandi (leaf) (*Policarpus* ssp.), achiote (seed) (*Bixa orellana* L.), and others; **3. Rubbers** - hevea (coagulated latex) (*Hevea* ssp.) and hevea (liquid latex) (*Hevea* ssp.); **4. Waxes** - carnauba (wax) [*Copernicia prunifera* (Mill.) H. E. Moore], carnauba (powder)

[*Copernicia prunifera* (Mill.) H. E. Moore], and others; **5. Fibers** – buriti (*Mauritia flexuosa* L.f.), carnauba [*Copernicia prunifera* (Mill.) H. E. Moore], piassava (*Attalea funifera* Mart.), and others; **6. Non-elastic gums** – sorva (*Couma* spp.); **7. Charcoal; 8. Firewood; 9. Roundwood; 10. Oleaginous products** - babaçu (kernel) (*Attalea* ssp.), copaíba (oil) (*Copaifera* ssp.), cumaru (kernel) (*Dipteryx* ssp.), licuri (fruit) (*Syagrus* ssp.), oiticica (seed) (*Licania rígida* Benth.), pequi (kernel) (*Caryocar* ssp.), tucum (kernel) (*Bactris* ssp.), and others; and **11. Tanning products** - angico (bark) (*Anadenanthera* ssp.), barbatimão (bark) [*Abarema cochliacarpos* (Gomes) Barneby & J. W. Grimes], and others.

The GPV of plant extracted groups for Northeast Brazil and Brazil were deflated for a comparative analysis of different periods. The real GPV of plant extractivism was calculated using the following equation: $L_r = \frac{P_n}{Index} * 100$, where P_r = real GPV, P_n = nominal or current GPV, and *Index* = an economic indicator. The Brazilian economic indicator used was the General Price Index – Internal Availability (In Portuguese *Indice Geral de Preço - Disponibilidae Interna* – IGP-DI), base year 2012 = 100 (IPEA, 2015).

2.2. Location and regional measures

The following location measures were used: location quotient, location coefficient, coefficient of geographic association and redistribution coefficient. The following regional measures were used: specialization coefficient and restructuring coefficient. These location and regional measures are complementary and were calculated as follows:

2.2.1. Location measures

The location quotient (*LQ*) compares the relative size of a given sector and/or production segment for a given region with a reference region (Mazur et al., 2013). *LQ* is calculated as $LQ = \frac{E_{ij} / \sum_j E_{ij}}{\sum_i E_{ij} / \sum_i \sum_j E_{ij}}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil; $\sum_j E_{ij}$ = GPV of plant extracted group *i* for Brazil; $\sum_i E_{ij}$ = GPV of plant extractivism for Northeast Brazil; and $\sum_i \sum_j E_{ij}$ = GPV of plant extractivism for Brazil. An *LQ* higher than 1 indicates that the activity analyzed is relevant for the studied region.

The location coefficient (*LC*) compares the GPV percentage distribution for a given product and region with a reference region (Lima et al., 2006). *LC* is calculated as $LC_i = \frac{\sum_j \left| (E_{ij} / \sum_j E_{ij}) - (\sum_i E_{ij} / \sum_i \sum_j E_{ij}) \right|}{2}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil; $\sum_j E_{ij}$ = GPV of plant extracted group *i* for Brazil; $\sum_i E_{ij}$ = GPV of plant extractivism for Northeast Brazil; and $\sum_i \sum_j E_{ij}$ = GPV of plant extractivism for Brazil.

An *LC* of 0 means that the regional distribution of the GPV of plant extracted group *i* is the same for Northeast Brazil and for Brazil, whereas an *LC* of 1 means that the regional concentration of GPV is higher for Northeast Brazil than for the whole reference region.

The coefficient of geographic association (*Gac*) indicates the geographic association between two products (*i* and *k*) and varies between 0 and 1. Values close to 0 indicate that the regional distributions of GPV are equal between plant extracted group *i* and group *k*, showing that the location patterns of the two products are geographically associated. Values close to 1 indicate no association (Piacenti et al., 2008). *Gac* is calculated as $Gac = \frac{\sum_j \left| \overbrace{(E_{ij} / \sum_i E_{ij})}^{i} - \overbrace{(E_{ij} / \sum_i E_{ij})}^{k} \right|}{2}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil and $\sum_i E_{ij}$ = GPV of plant extractivism for Northeast Brazil.

The redistribution coefficient (*REDC*) compares the percentage distribution of the GPV of a plant extracted group for Northeast Brazil and Brazil in two periods of time, thereby detecting patterns of spatial concentration or dispersion in GPV for a given plant extracted group over time (Piacenti et al., 2008). *REDC* varies between 0 and 1. Values close to 0 indicate no significant differences in the spatial location pattern for plant extractivism GPV between Northeast Brazil and Brazil, whereas the opposite is true for values close to 1. *REDC* is calculated as $REDC = \frac{\sum_j \left| \overbrace{(E_{ij} / \sum_j E_{ij})}^{t0} - \overbrace{(E_{ij} / \sum_j E_{ij})}^{t1} \right|}{2}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil and $\sum_j E_{ij}$ = GPV of plant extracted group *i* for Brazil. The following periods were observed: 1994 to 2000, 1994 to 2006, and 1994 to 2012.

2.2.2. Regional measures

The specialization coefficient (*SC*) is a regional measure that compares the economy of a given region with a reference region. An *SC* value of 0 means that the composition is equal between the studied and the reference region, whereas values close or equal to 1 indicate a high degree of specialization associated with a given product (Lima et al., 2006). *SC* is calculated as $SC = \frac{\sum_i \left|(E_{ij}/\sum_i E_{ij}) - (\sum_j E_{ij}/\sum_i \sum_j E_{ij})\right|}{2}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil; $\sum_j E_{ij}$ = GPV of plant extracted group *i* for Brazil; $\sum_i E_{ij}$ = GPV of plant extractivism for Northeast Brazil; and $\sum_i \sum_j E_{ij}$ = GPV of plant extractivism for Brazil.

The restructuring coefficient (*Rc*) compares the production structure of a given region between two periods, determining the differences in the degree of specialization of the production. An *RC* of 0 indicates no changes to the production structure of a given product for the region, and an *RC* of 1 indicates significant restructuring (Piacenti et al., 2008). *RC* is calculated as $Rc = \frac{\sum_i \left|\overbrace{(E_{ij}/\sum_i E_{ij})}^{t0} - \overbrace{(E_{ij}/\sum_i E_{ij})}^{t1}\right|}{2}$, where E_{ij} = GPV of plant extracted group *i* for Northeast Brazil and $\sum_i E_{ij}$ = GPV of plant extractivism for Northeast Brazil. The following periods were observed: 1994 to 2000, 1994 to 2006, and 1994 to 2012.

3. RESULTS AND DISCUSSION

The evolution of the GPV of different plant extracted groups for Northeast Brazil and Brazil between 1994 and 2012, corrected by the IGP-DI (base year 2012 = 100), is presented in Table 1. Plant extractivism GPV decreased less for Northeast Brazil (-3.08% p.a.) than for Brazil (-6.53% p.a.) in the analyzed period.

In the period between 1994 and 2012, the greatest decrease in GPV was observed for food products for Brazil (-1.19% p.a.), whereas an increase of 0.92% p.a. was seen for Northeast Brazil. As for aromatics, medicinals, toxins and dyes, the GPV tended to decrease, both in Brazil and in Northeast Brazil, with a decrease of 10.58% p.a. for Brazil. This decrease was explained by a decrease in the quantity produced, with achiote (seed) being the main responsible for this drop. Northeast Brazil is the main national producer of waxes and fibers. Charcoal GPV decreased 2.13% p.a. for Brazil, whereas increased 3.34% p.a. for Northeast Brazil. Firewood GPV decreased 4.04% p.a. for Brazil and 3.82% p.a. for Northeast Brazil.

The evolution of the location quotient (*LQ*) and location coefficient (*LC*) for plant extractivism GPV for Northeast Brazil compared to Brazil in the period between 1994 and 2012 is presented in Figure 1. The evolution of the *LQ* for plant extracted products for Northeast Brazil compared to Brazil (1994 to 2012) is presented in Figure 1a. Except for food and roundwood, the GPV of the different plant extracted groups was relevant for the economy of Northeast Brazil, compared to Brazil, for the period between 1994 and 2012.

Regarding forest wood products, firewood (with a higher *LQ*) was more representative than charcoal until

Table 1. Evolution of the plant extractivism real gross production value (R$ 1000.00) for Northeast Brazil and Brazil between 1994 and 2012 (IGP-DI base year 2012 = 100).

Products	1994		2000		2006		2012	
	BR	NE	BR	NE	BR	NE	BR	NE
Food	754.37	27.37	498.39	23.01	382.37	24.69	608.05	32.31
Arom., Med., Tox. and Dyes*	12.58	8.15	7.42	5.55	5.34	2.11	1.68	1.21
Rubbers	40.44	-	19.06	-	11.90	0.01	6.68	0.06
Waxes	118.27	118.27	70.79	70.78	91.040	91.03	113.60	113.60
Fibers	258.18	254.84	259.52	231.79	133.56	111.14	114.12	109.79
Non-elastic gum	0.16	-	0.19	-	0.21	-	0.01	-
Charcoal	851.64	164.23	540.48	143.58	1,119.40	365.86	577.79	297.10
Firewood	1,432.53	593.25	732.47	305.89	742.06	296.70	681.64	294.09
Roundwood	10,708.86	658.63	2,363.22	303.47	2,809.57	604.86	2,006.51	139.49
Oleaginous products	152.59	143.48	136.17	129.02	167.95	158.96	139.10	132.99
Tanning products	0.36	0.31	0.240	0.23	0.14	0.13	0.16	0.14
Total	14,329.99	1,968.53	4,627.94	1,213.32	5,463.55	1,655.48	4,249.33	1,120.77

*Aromatics, Medicinals, Toxins and Dyes. Source: IBGE (2015a).

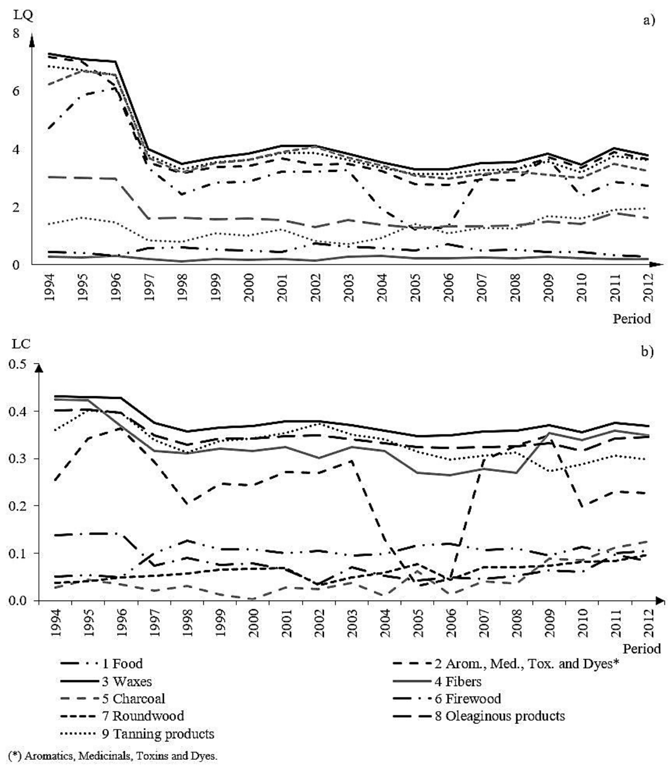

Figure 1. Evolution of the (a) location quotient (LQ) and (b) location coefficient (LC) for the gross production value of plant extractivism for Northeast Brazil compared to Brazil in the period between 1994 and 2012.

2008. Between 2009 and 2012, charcoal became more representative than firewood, as indicated by the *LQ*.

According to the IBGE (2008), the states of Maranhão and Piauí stood out due to an expansion of agricultural borders and increased demand for native charcoal by steel industries in the region, and were responsible for 23.9% and 7.6% of the national extractivist production, respectively. According to the IBGE (2010), forest inspections were intensified because of abuses of illegal deforestation in Northeast Brazil, which resulted in the replacement of firewood with liquefied petroleum gas (LPG). However, this difference between the *LQ* for charcoal and for firewood was not significant after 2008, as both presented *LQ* values of the same magnitude for Northeast Brazil.

The evolution of *LC* for plant extracted products for Northeast Brazil compared to Brazil (1994 to 2012) is presented in Figure 1b. Plant extractivism showed similar distributions for Northeast Brazil and Brazil. All plant extracted groups showed an *LC* lower than 1, indicating that the concentration was not higher for Northeast Brazil than for Brazil. The GPV of waxes stood out among the plant extracted groups. Carnauba wax was one of the main products in Piauí's list of exported products (IBGE, 2010). In 2010, for example, Piauí was responsible for the production of 12982 tons of carnauba powder from a total (Northeast) of 18802 tons, whereas Ceará was responsible for 5267 tons, Maranhão for 506 tons, and Rio Grande do Norte for 46 tons. In 2010, the municipalities with greater production of carnauba were located in Piauí (13), Ceará (6) and Maranhão (1). Together, these municipalities accounted for 55% of the national production.

The *Gac* for plant extracted products for Northeast Brazil between 1994 and 2012 are presented in Table 2. The *Gac* indicated that all plant extracted groups for Northeast Brazil were geographically associated for the period between 1994 and 2012 (Table 2). The *Gac* values were close to 0, i.e., there was no regional disparity between groups for Northeast Brazil.

In 1994, no regional disparity was observed for the following associations between plant extracted groups

Table 2. Coefficient of geographic association for plant extracted groups for Northeast Brazil between 1994 and 2012.

Products	1994	2000	2006	2012
Food and Charcoal	0.0348	0.0499	0.1030	0.1181
Food and Firewood	0.1437	0.1166	0.0821	0.1169
Food and Roundwood	0.1603	0.1156	0.1752	0.0478
Charcoal and Firewood	0.1090	0.0669	0.0209	0.0013
Charcoal and Roundwood	0.1256	0.0659	0.0729	0.0703
Charcoal and Oleaginous products	0.0053	0.0060	0.0629	0.0732
Charcoal and Tanning products	0.0416	0.0591	0.1105	0.1325
Firewood and Roundwood	0.0166	0.0010	0.0931	0.0690
Firewood and Oleaginous products	0.1142	0.0729	0.0416	0.0719
Firewood and Tanning products	0.1506	0.1260	0.0896	0.1311
Roundwood and Oleaginous products	0.1308	0.0719	0.1347	0.0029
Roundwood and Tanning products	0.1672	0.1250	0.1826	0.0621

for Northeast Brazil, as indicated by *Gac*: charcoal and oleaginous products (0.0053), firewood and roundwood (0.0166), and foods and charcoal (0.0348). The group with lower distribution was roundwood and tanning products (0.1672). The temporal dynamics between 1994 and 2000 showed that firewood and roundwood (0.0010) had higher geographical association than the other groups. Food and charcoal groups showed an increase in *Gac* of 0.0499. The associations with the lowest regional distribution, as indicated by higher *Gac* values, were found between firewood and tanning products (0.1260), roundwood and tanning products (0.1250), and foods and firewood (0.1166).

In 2006, the products with higher values of geographical association (lower *Gac*) were charcoal and firewood (0.0209), firewood and oleaginous products (0.0416), and charcoal and oleaginous products (0.0629). Compared to the previous years, there was an increase in *Gac*, indicating a decrease in geographical association, for the following groups: foods and charcoal (0.1030), foods and roundwood (0.1752), charcoal and oleaginous products (0.0629), charcoal and tanning products (0.1105), firewood and roundwood (0.0931), roundwood and oleaginous products (0.1347), and roundwood and tanning products (0.1826). Between 2006 and 2012, *Gac* increased for the following groups: foods and charcoal (0.1181), foods and firewood (0.1169), charcoal and oleaginous products (0.0732), charcoal and tanning products (0.1325), firewood and oleaginous products (0.0719), and firewood and tanning products (0.1311).

The redistribution coefficients (*REDC*) for different plant extracted groups for Northeast Brazil compared to Brazil for the period between 1994 and 2012 are presented in Table 3. *REDC* values for plant extracted groups were close to 0, showing no relevant differences in the spatial pattern of location between 1994 and 2000, 1994 and 2006, and 1994 and 2012.

Between 1994 and 2000, the most significant *REDC* values (significant changes in the spatial pattern of location) for the studied plant extracted groups were observed for aromatics, medicinals, toxins and dyes (0.0499), fibers (0.0469) and tanning products (0.0442). No significant changes in the spatial pattern of location of GPV, as indicated by the *REDC*, were observed for fibers (0.0001). Between 1994 and 2006, compared to 1994 and 2000, there was an increase in the *REDC* for the following groups: food (0.0141), aromatics, medicinals and toxins (0.1264), fibers (0.0775), charcoal (0.0670), firewood (0.0071) and roundwood (0.0769). These groups showed changes in the spatial pattern of production location, but these changes were not relevant at the regional level.

The *REDC* decreased between 1994 and 2012 compared to 1994 and 2006 for the following products: food (0.0084), aromatics, medicinals, toxins and dyes (0.0357), fibers (0.0125), roundwood (0.0040) and tanning products (0.0004). This means that there were less changes to the spatial pattern of production between 1994 and 2012 than between 1994 and 2006.

The evolution of the specialization coefficient (*SC*) for different plant extracted products for Northeast Brazil compared to Brazil between 1994 and 2012 is

Table 3. Redistribution coefficient for plant extracted groups for Northeast Brazil compared to Brazil between 1994 and 2012.

Products	1994 and 2000	1994 and 2006	1994 and 2012
Food	0.0049	0.0141	0.0084
Aromatics, Medicinals, Toxins and Dyes	0.0499	0.1264	0.0357
Rubbers	-	-	-
Waxes	0.0001	0.0001	0.0000
Fibers	0.0469	0.0775	0.0125
Non-elastic gums	-	-	-
Charcoal	0.0364	0.0670	0.1607
Firewood	0.0017	0.0071	0.0087
Roundwood	0.0334	0.0769	0.0040
Oleaginous products	0.0036	0.0031	0.0079
Tanning products	0.0442	0.0209	0.0004

Figure 2. Evolution of the specialization coefficient (SC) for different plant extracted products for Northeast Brazil compared to Brazil between 1994 and 2012.

presented in Figure 2. No significant differences in specialization were observed for plant extracted groups between Northeast Brazil and Brazil, as all *SC* values were lower than 1.

The restructuring coefficient (*RC*) for plant extracted products for Northeast Brazil between 1994 and 2012 is presented in Table 4. For the periods between 1994 and 2000, 1994 and 2006, and 1994 and 2012, the *RC* was close to 0. This indicates that there were no changes to the production structure for the plant extracted groups studied during these periods for Northeast Brazil.

It is noteworthy that Northeast Brazil shows a composition that is similar but not identical to that of Brazil, as the values for the plant extracted groups were close to 0 during the studied period. This similarity is explained by the production of waxes and fibers, considered relevant group to the economy of Northeast Brazil.

The GPV of the waxes and fibers group is similar for Northeast Brazil and Brazil. This indicates specialization for this group, directly affecting the *SC,* because it had a low participation in the total plant extractivism GPV for Brazil. In Brazil, the main roundwood producers are the states of Pará, Mato Grosso, Bahia, Amazonas and Rondônia (IBGE, 2010). The state of Bahia is the main responsible for roundwood having a higher *SC* than other extractivism products in Northeast Brazil. In 2010, the state of Bahia was responsible for 1052983 m^3 of the total 12658209 m^3 of roundwood produced, with the most important municipalities being Riacho de Santana and Serra do Ramalho.

Between 1994 and 2000, the plant extracted groups that showed no changes in production structure were tanning products (0.0000), aromatics, medicinals, toxins and dyes (0.0002), and waxes (0.0009). The *RC* of firewood (0.0688) increased between 1994 and 2006 compared to the period between 1994 and 2000, indicating small changes to the production structure that were not significant. During this period, the groups presenting no changes in structure were the same, namely, tanning products (0.0000), food (0.0005), and aromatics, medicinals, toxins and dyes (0.0014).

For 1994 and 2012, the *RC* increased compared to the remaining years for the following products: food (0.0075), aromatics, medicinals, toxins and dyes (0.0015), waxes (0.0206), charcoal (0.0908), roundwood (0.1051), and oleaginous products (0.0229). These values indicate no significant changes in the production structure, but it should be highlighted that firewood showed a lower *RC* than that of the remaining years (0.0195).

Table 4. Restructuring coefficients for different plant extracted products for Northeast Brazil between 1994 and 2012.

Products	1994 and 2000	1994 and 2006	1994 and 2012
Food	0.0025	0.0005	0.0075
Aromatics, Med., Tox. and Dyes*	0.0002	0.0014	0.0015
Rubbers	-	-	-
Waxes	0.0009	0.0025	0.0206
Fibers	0.0308	0.0312	0.0157
Non-elastic gums	-	-	-
Charcoal	0.0174	0.0688	0.0908
Firewood	0.0246	0.0611	0.0195
Roundwood	0.0422	0.0154	0.1051
Oleaginous products	0.0167	0.0116	0.0229
Tanning products	0.0000	0.0000	0.0000

*Aromatics, Medicinals, Toxins and Dyes.

4. CONCLUSIONS

For the conditions of the present study, it is concluded that there is no disparity in plant extractivism between Northeast Brazil and Brazil according to the location indicators studied (*LQ*, *LC*, *Gac*, *REDC*). The *LQ* of plant extracted groups was more relevant to the economy of Northeast Brazil compared to Brazil for the period between 1994 and 2012. *LC* values lower than 1 indicated that plant extractivism is not more concentrated for Northeast Brazil than for Brazil. The *Gac* showed that plant extracted groups were regionally distributed in Northeast Brazil. The *REDC* showed no structural changes between 1994 and 2000, 2006 and 2012. The level of regional specialization for regional measures (*SC* and *RC*) was identical for Northeast Brazil and Brazil, with no changes in the production structure during the studied period. However, studies of disparity for different plant extracted groups in Northeast Brazil at smaller regional scales (state, mesoregion, microregion and municipality) are needed.

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