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How Important is Agriculture and Familiar Agriculture Agribusiness for Brazil and Its States: An Interregional Input-Output Approach

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ABSTRACT

The aim of this paper is estimate how important is agriculture and familiar agriculture agribusiness for Brazil and its states. To do so, the GDP for the agribusiness of these complexes is estimated for Brazil and for its 27 states. The estimation is based on an interregional input-output system constructed for the Brazilian economy. The agribusiness takes into consideration the relations between the agriculture production and the other sectors in the economy (inputs for production, industry, transportation, distribution, and commercialization). The importance of the agribusiness can be evidence for it's share of about 30% in the total Brazilian GDP, but regional differences will make this average oscillates between 4% and 79% in the Brazilian states. Another distinction will be made between small familiar production and large scale production that will vary according to the product and the state. Some relation between land distribution and the type of agriculture will also be made.

Keywords: Brazil, Agribusiness, Input-Output, GDP

1. INTRODUCTION

In the Brazilian economy, the familiar agricultural sector is always remembered for its importance in absorbing the labor force and in producing food, specially direct for the self consume, i.e., it is more directed to a social approach than to an economic one, taking into consideration its low productivity and low use of capital intensive techniques. However, it is important to call attention for the fact that the familiar production, besides having the important role of reducing the rural exodus to the urban centers of the less qualified workers, also has an important contribution on income generation, if one takes into consideration not only the economy of the agricultural sector, but also the Brazilian economy. To justify the above, this paper presents the main results of a research conducted under the support of NEAD - *Nucleus for Agrarian Studies and Development in the Cabinet of the Minister of Agrarian Development (MDA)* - and FIPE - *Economic Research Institute Foundation, University of São Paulo, Brazil*.

The research resulted in the estimation of the importance of the familiar agricultural sector, which was done by quantifying the Gross Domestic Product (GDP), not only of the agricultural production, but of the all complex of industry, trade and services linked with the inputs used and the product processing of the outputs generated by the familiar agricultural properties, which was called *Familiar Agribusiness*. This term was used because the importance of one activity is not only concentrated in itself, but also in its links with the rest of the economy.

In this way, the importance of the familiar activity quantified by the GDP of the familiar agribusiness becomes a better definition of how the production of the small producers really has an impact on the economy. The estimation of the familiar and non-familiar agribusiness GDP were conducted by using primary data from IBGE (Brazilian Statistical Office) and the methodology based on the input-output analysis.

With the above in mind, the next section will present the methodology developed to estimate the familiar agribusiness in the Brazilian economy. Section 3 will present the results for the Brazilian economy with special reference to the importance of the agribusiness in the 5 Brazilian macro regions and 27 states. The final remarks are made in the last section.

2. METHODOLOGY TO MEASURE THE FAMILIAR AGRIBUSINESS SYSTEM

This section will make a presentation of the methodology used to measure the Agribusiness system in Brazil, further methodological discussions on the estimation of the Agribusiness Complex can be found on the works of Furtuoso (1998), Furtuoso, Barros and Guilhoto (1998), Guilhoto, Furtuoso, and Barros (2000), Furtuoso and Guilhoto (2003), and Guilhoto et al (2006).

The total GDP value of the Agribusiness can also be divided into 4 aggregates: I) inputs; II) the sector itself; III) industrial processing; and IV) distribution and services.

The procedure adopted to estimate the Agribusiness GDP is through the scope of the Product, i.e., by estimating the value added at market prices, and, it is tanking into consideration the methodology presented by the System of National Accounts defined by the United Nations (SNA, 1993), where the input-output matrices are integrated in this system.

The value added at market prices is given by the sum of the value added at basic prices with indirect net taxes less the financial dummy, resulting in:

$$VA_{MP} = VA_{BP} + INT - FDu \qquad (1)$$

where:

VA_{MP} = Value added at market prices

VA_{BP} = Value added at basic prices

INT = Indirect net taxes

FDu = Financial dummy

To estimate the GDP of **Aggregate I** (input for vegetal and animal production) one uses the information available in the input-output tables regarding the input values acquired by the Vegetal and Animal sectors. The columns with input values are multiplied by the respective coefficient of value added (CVA_i).

The Coefficients of the Value Added for each sector (CVA_i) are obtained by dividing the Value Added at Market Prices (VA_{MP}) of a given sector by its respective output (X_i), i.e.,

$$CVA_i = \frac{VA_{MP}}{X_i} \qquad (2)$$

Thus, the double-counting issue presented by previous Agribusiness GDP estimates when input values were considered, instead of the value added effectively generated by it, is eliminated. In that sense the GDP of the **Aggregate I** is given by:

$$GDP_I = \sum_{i=1}^{n} z_{ik} * CVA_i \qquad (3)$$

i = 1, 2, ..., n are the economic sectors

where:

GDP_I = GDP of aggregate I (inputs)

z_{ik} = total input value of sector i to the agricultural sector k

CVA_i = value added coefficient of sector i

The estimates for the **Aggregate II** (the sector itself) considers the value added generated by the respective sectors, subtracting the values used as input from the value added of these sectors, thus the double-counting issue found in the previous Agribusiness GDP estimates for the Brazilian economy is again eliminated. Then one has:

$$GDP_{II} = VA_{MP_k} - z_{kk} * CVA_k \qquad (4)$$

where:

GDP_{II} = GDP of aggregate II

and the other variables are as previously defined.

To define the composition of the **Aggregate III** (agriculture based industries) several indicators were adopted as for instance: a) the main demanding sectors of agricultural products obtained by input-output matrix estimation; b) the share of agricultural input in the intermediate consumption the agroindustrial sectors; and c) the economic activities carrying out the first, second and third transformation of agricultural raw materials.

In the estimation of **Aggregate III** (Agriculture Based Industries) one adopted the summation of the value added generated by the agroindustrial sectors subtracted from the value added of these sectors that have been used as input in the Aggregate II. As previously mentioned, this subtraction is done to eliminate the double-counting found in previous Agribusiness GDP estimates, as so, one has that:

$$GDP_{III} = \sum_{q} \left(VA_{MP_q} - z_{qk} * CVA_q \right) \qquad (5)$$

where:

GDP_{III} = GDP of aggregate III

and the other variables are as previously defined.

In the case of **Aggregate IV**, regarding the Final Distribution, one considers the aggregated value of the Transportation, Commerce and Service sectors. Out of the total value obtained for these sectors only the part corresponding to the share of the agricultural and agroindustrial products is designated to the Agribusiness in the final product demand. The approach adopted in the estimation of the final distribution value of the industrial agribusiness can be represented by:

$$GFD - INT_{FD} - IP_{ED} = DFD \tag{6}$$

$$VAT_{MP} + VAC_{MP} + VAS_{MP} = TM \tag{7}$$

$$GDP_{IV} = TM * \frac{FD_k + \sum_{q \in k} FD_q}{DFD} \tag{8}$$

where:

GFD = global final demand

INT_{FD} = indirect net taxes paid by the final demand

IP_{FD} = imported products by the final demand

DFD = domestic final demand

VAT_{MP} = value added of the transportation sector at market prices

VAC_{MP} = value added of the commerce sector at market prices

VAS_{MP} = value added of the service sector at market prices

TM = trading margin

FD_k = final demand of agriculture

FD_q = final demand of the agroindustrial sectors

GDP_{IV} = GDP of aggregate IV

The Agribusiness GDP for each sub-complex is given by the sum of its aggregates as:

$$GDP_{Agribusiness} = GDP_I + GDP_{II} + GDP_{III} + GDP_{IV} \tag{9}$$

where:

$GDP_{Agribusiness}$ = Agribusiness GDP

and the other variables are as previously defined.

The scheme of the overall application of the above methodology for the case of the familiar agricultural can be seen in Figure 1.

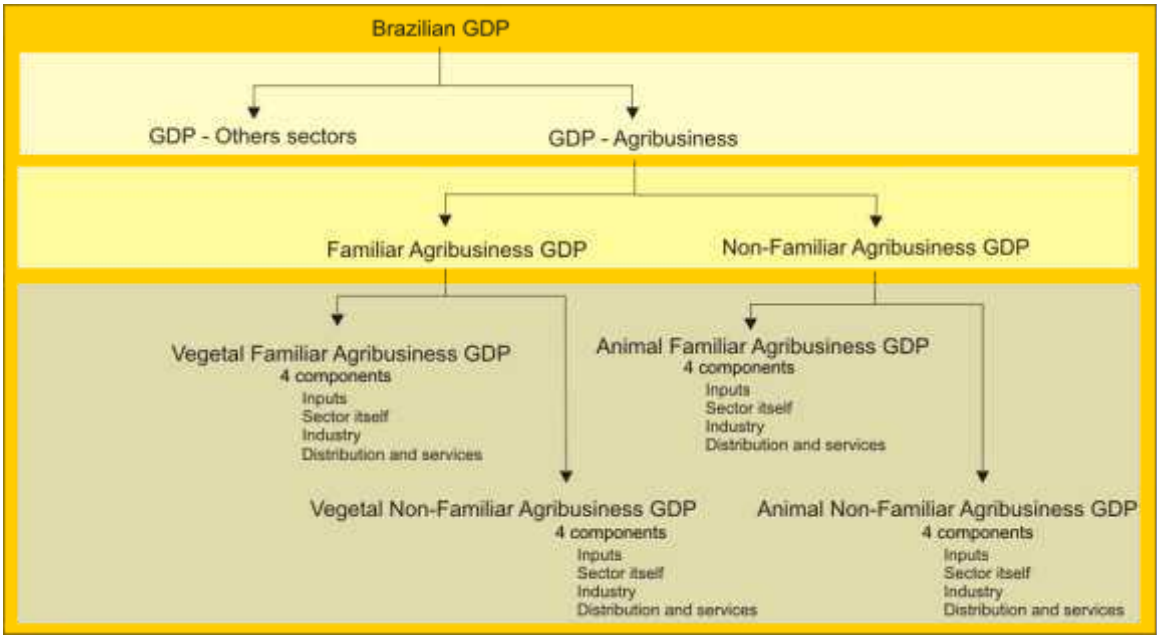


Figure 1: Scheme of the Agribusiness Structure

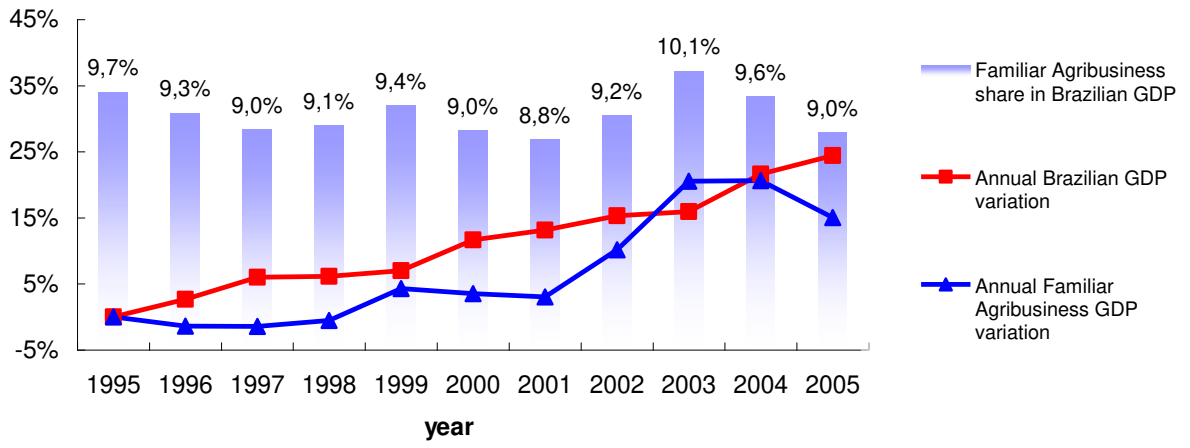
3. THE BRAZILIAN FAMILIAR AGRIBUSINESS

This section will start with an overview of the importance of the familiar agribusiness in the Brazilian economy. Then, this study goes down to see the importance of the familiar agribusiness in the Brazilian 5 macro regions and in each one the 27 Brazilian states.

The results show that the familiar segment of the Brazilian agriculture, despite its heterogeneity, is responsible for an expressive share of the agricultural production, and of the product generated by the Brazilian agribusiness, giving its links with important segments of the Brazilian economy.

From 1995 to 2005, the familiar segment of the Brazilian agribusiness was responsible for around 10% of the overall Brazilian GDP, an expressive share if one takes into consideration that the agribusiness as a whole represents around 30% of the Brazilian GDP.

While the Brazilian GDP had an accumulated growth rate of almost 24%, reaching around R$ 1.9 trillions in 2005, the evolution of the familiar agribusiness was smaller, with an increase slightly above 15% (Graph 1).[1]



Source: Research Data

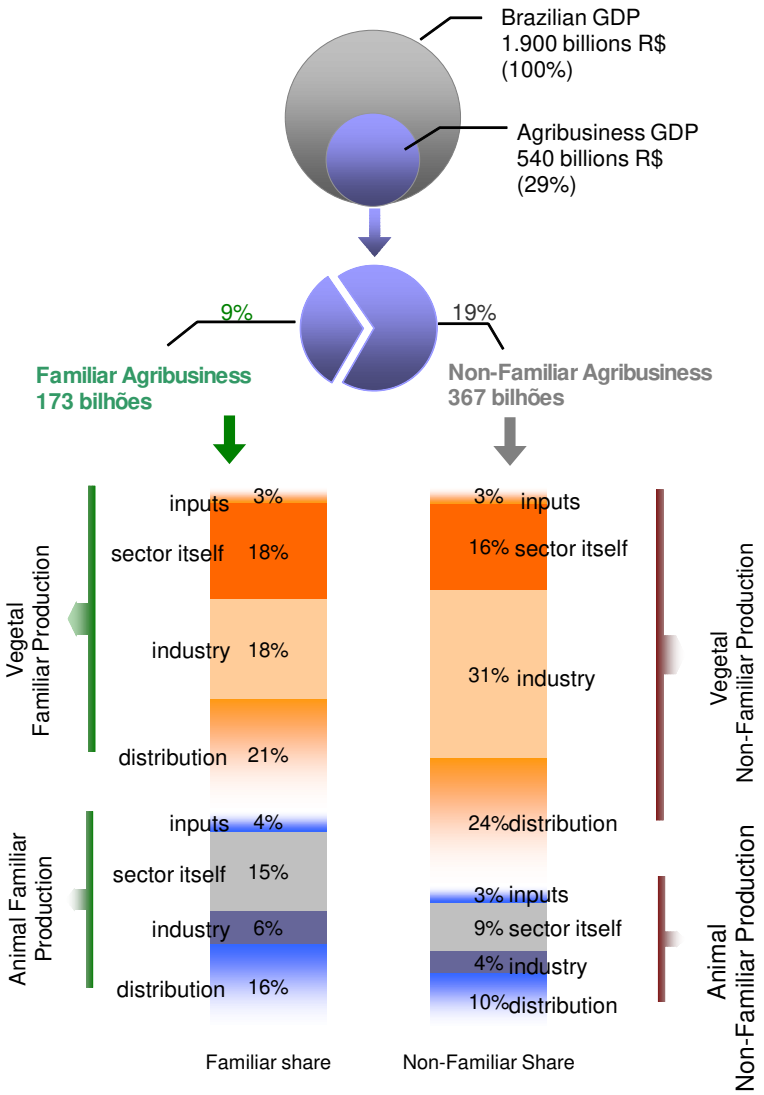
Graph 1. Evolution of the Brazilian GDP and the Familiar Agribusiness GDP, with its Respective Share in the National GDP, 1995 to 2005.

Between 2001 and 2003, the growth rate of the familiar agribusiness was well above the national average, with a slowdown in 2004, and a decrease in 2005, not only in the familiar sector, but also on the whole agricultural complex, due mainly to: a) an exchange rate overvaluation; b) climatic problems in important producing regions; and c) sanitary problems in animal production. In 2005 the share of the familiar agribusiness in the national GDP was 9% and the share of the whole agribusiness, was 28%. To better understand which is included in these shares, it is important to remember that together with the rural sector (vegetal and animal production), it was taken into consideration three other groups: a) inputs to agricultural production; b) processing industries; and c) distribution system (trade, transport, and services linked to the productive chain).

Taking from Figure 2, the contribution of the familiar agricultural sector (vegetal, 18%, and animal, 15%) for the composition of the familiar agribusiness is greater than in the non-familiar system (vegetal, 16%, and animal, 9%). This fact shows that the familiar system is less articulated with the industrial sector.

[1] The average exchange rate in 2005 was R$ 2.44 per US$.

Products like fruits and horticulture are important for the familiar agriculture and require a small degree of processing before reaching the final consumer; at the same time products like soybean, sugar cane, and cotton are the inputs of a whole group of industrialized products. As a consequence, in the non-familiar agriculture, a great share of the GDP is attributed to the processing industry (vegetal and animal, 35%), while in the familiar this share is of 24%.

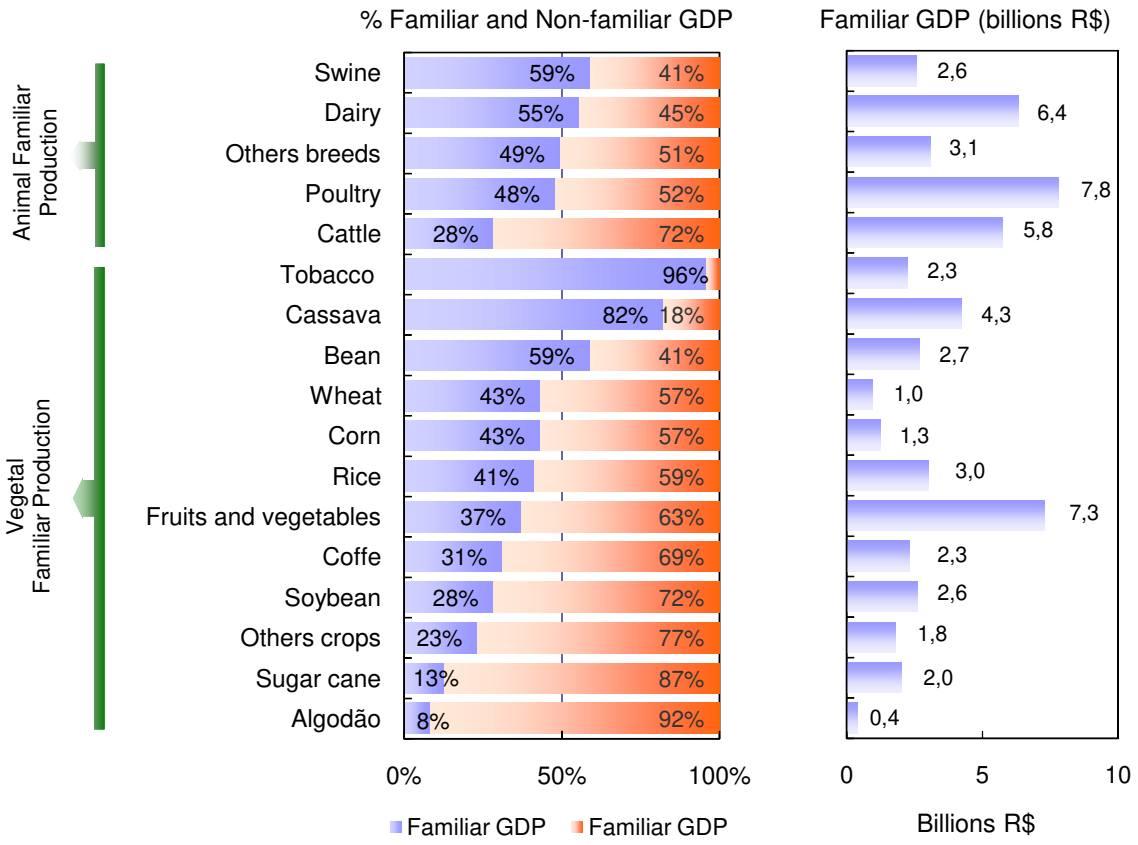


Source: Research Data.

Figure 2: Composition of the Familiar and Non-Familiar Agribusiness in 2005

Comparing the vegetal with the animal production (Graph 2) it stands out that in the two kinds of agribusiness (familiar and non-familiar), the share of the vegetal production is

greater, but, in the familiar agriculture, the animal sector has a greater importance, giving the production of poultry, pigs and dairy products.



Source: Research Data.

Graph 2: Share of the Familiar GDP and Non-Familiar GDP in the Main Agricultural Products and the GDP Value of Selected Products Made by the Familiar Agriculture.

The specialization of the production is giving by the proper characteristics of each productive system in each one of the Brazilian regions. Some types of vegetal and animal production are better suitable for familiar production, like the ones more intensive in labor, while other are better produced in a capital intensive environment. Besides that, the Brazilian regions differ in physical (temperature, landscape, soil type) and social characteristics, which implies heterogeneity in the size of the properties and in the social organization.

Concerning the GDP of each type of vegetal and animal production, some products are mainly linked to the familiar system. Graph 2 shows that the national production of tobacco,

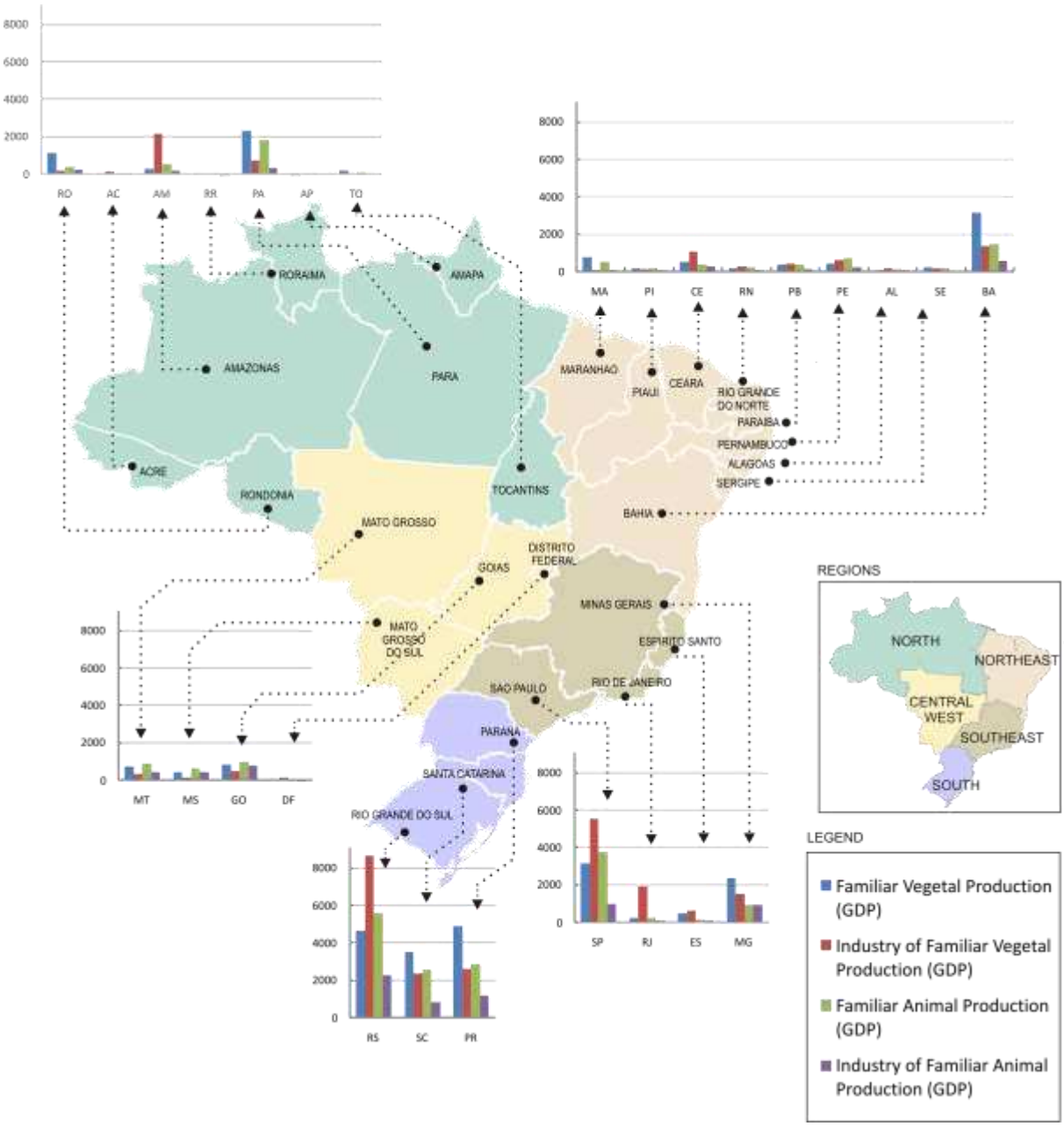
manioc and beans are mainly done by familiar properties. In the same way, in the animal production, with the exception of cattle raising, the other product are related to the familiar properties.

As a result of the above, the GDP in the industrial chains of poultry, pig, dairy, tobacco and some others vegetal products are more related to the familiar agribusiness. In the case of the non-familiar segment, it stands out the chains of the wood and cellulose, sugar and alcohol, textiles, cattle raising (meat and leather), vegetal oil, and coffee.

In terms of localization, Figure 3 and Tables A1 through A3 in the Annex, show that the familiar production is concentrated in well demarked regions. In the North, Northeast and South regions, the familiar agribusiness has an expressive share in the GDP of the agribusiness. On the other hand its share in the Central West and Southeast regions is much smaller. Of the 5 Brazilian macro regions, the South and Central West regions are mainly based on agricultural production, the first one being mainly linked with familiar agriculture in all of its three states, and mainly the Rio Grande do Sul state, while in the second one there is the predominance of the non-familiar production.

The importance of the familiar agriculture in the South region has its roots in the colonization process, which was done mainly by Europeans immigrants which developed associative and cooperative forms that allowed them to compete with the large properties. These familiar properties have acquired the capacity of technological absorption, making them as productive as the more capital intensive properties. As a result, the land valorization has made prohibitive the predatory competition, causing the big properties to move to land abundant regions, colonized more recently, like the Central West region.

The North region, where the agricultural frontier is located, has a greater share of the familiar agriculture, but the total value of the Agribusiness is low if compared to the other regions. The type of familiar properties in the North and Northeast regions are very different from the ones in the South region, because its structure is derived from an old type of agriculture, mainly direct to the subsistence and still kept, given the saturation and the unemployment found in the urban centers.



Source: Research Data.

Figure 3: Value of the Familiar Agribusiness and Its Components in the Brazilian States

4. FINAL COMMENTS

Even with the adversities of land and capital scarcity, difficulties for financing, low availability of technology and deficiency in the technical assistance, the importance of the familiar agriculture for the Brazilian GDP is representative. But, the modernization process of the rural production has brought more benefits to the large and more commercial production.

Also, the diversity in terms of size, capital and technology, makes the priorities of each familiar property quite different. Despite the existence of local associations and cooperatives in some regions, they are hardly found in others.

It is the role, not only of the government, but of all the society to better direct the public policies for the familiar agriculture, mainly: a) in the regions direct to the production of goods linked with the familiar production, i.e., vegetal and animal production which are more labor intensive; and b) in areas where there is no condition for the mechanization process.

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ANNEX

Table A1. Familiar Agribusiness and its Components share in GDP, Brazilian States in 2004 (Values in 2005 R$) (|Average Exchange Rate in 2005: US$ 2.44)

Region	States	GDP - All sectors (million R$)	Familiar Agribusiness GDP (million R$)	Familiar Agribusiness share in GDP	Components of Vegetal Familiar Production GDP (million R$)				% in Familiar GDP	Components of Animal Familiar Production GDP (million R$)				% in Familiar GDP
					Non Agr. Inputs	Sector itself	Industrial processing	Distribution, services		Non Agr. Inputs	Sector itself	Industrial processing	Distribution, services	
North	AC	3,475.66	479.38	13.8%	11.58	39.84	93.83	82.10	47.4%	17.89	43.89	50.34	139.91	52.6%
	AP	3,988.68	199.71	5.0%	1.33	5.61	12.64	47.09	33.4%	18.16	45.37	0.20	69.31	66.6%
	AM	38,476.98	4,342.99	11.3%	33.09	229.58	2,173.00	674.54	71.6%	135.68	483.77	199.61	413.73	28.4%
	PA	36,661.97	7,949.16	21.7%	257.40	2,309.17	539.87	790.01	49.0%	310.08	1,958.68	373.35	1,410.60	51.0%
	RO	10,447.25	2,779.32	26.6%	121.32	1,021.70	120.79	192.39	52.4%	71.23	363.13	220.61	668.15	47.6%
	RR	1,998.60	136.34	6.8%	6.83	28.41	11.63	18.74	48.1%	14.35	20.63	1.49	34.27	51.9%
	TO	5,111.81	568.94	11.1%	35.80	145.71	25.16	44.75	44.2%	40.41	101.02	49.08	127.02	55.8%
North east	AL	12,389.70	1,296.05	10.5%	41.76	71.58	140.88	514.36	59.3%	58.14	122.26	92.53	254.54	40.7%
	BA	93,148.26	9,906.09	10.6%	380.97	3,189.60	1,304.04	1,419.87	63.5%	327.18	1,515.28	555.63	1,213.51	36.5%
	CE	35,659.53	4,371.71	12.3%	105.53	547.80	1,060.48	1,126.72	65.0%	104.13	379.07	265.75	782.22	35.0%
	MA	17,740.90	2,778.08	15.7%	176.05	910.02	105.93	340.04	55.1%	128.62	483.97	102.22	531.22	44.9%
	PB	15,935.03	2,744.40	17.2%	55.26	357.62	415.71	644.62	53.7%	92.87	435.30	143.93	599.09	46.3%
	PE	51,137.53	3,829.83	7.5%	72.12	512.43	503.98	787.79	49.0%	185.43	694.53	201.91	871.65	51.0%
	PI	9,232.50	1,270.95	13.8%	30.66	211.83	128.46	238.75	48.0%	46.98	192.63	74.93	346.71	52.0%
	SE	14,067.17	1,277.59	9.1%	61.96	254.30	154.02	337.93	63.3%	81.97	192.79	26.56	168.05	36.7%
	RN	17,053.32	1,850.30	10.9%	74.25	243.71	292.00	575.49	64.1%	86.58	231.96	66.97	279.34	35.9%
Central West	DF	46,660.54	112.16	0.2%	4.56	8.12	19.89	20.13	47.0%	10.93	14.72	5.30	28.51	53.0%
	GO	44,296.36	5,360.42	12.1%	217.70	841.29	402.69	390.08	34.5%	512.22	954.30	783.56	1,258.57	65.5%
	MT	29,950.29	3,951.67	13.2%	116.40	763.72	226.96	239.08	34.1%	280.36	887.48	448.83	988.83	65.9%
	MS	21,392.64	3,465.73	16.2%	86.93	486.66	165.80	225.55	27.8%	188.89	672.87	467.24	1,171.79	72.2%
South east	ES	36,975.28	2,265.30	6.1%	62.62	415.17	556.88	742.47	78.5%	49.11	119.65	101.44	217.96	21.5%
	MG	178,601.04	10,317.49	5.8%	545.93	2,395.09	1,473.07	1,524.64	57.6%	518.26	903.10	980.33	1,977.07	42.4%
	RJ	238,615.47	4,798.67	2.0%	52.91	234.34	1,903.32	1,739.47	81.9%	125.89	277.53	92.07	373.15	18.1%
	SP	586,029.78	26,277.12	4.5%	716.07	3,240.78	5,859.85	8,417.04	69.4%	805.92	3,060.81	955.62	3,221.02	30.6%
South	PR	116,538.60	20,947.57	18.0%	1,012.25	5,625.84	2,661.31	3,775.87	62.4%	627.03	2,806.27	1,160.55	3,278.45	37.6%
	SC	75,271.53	16,987.27	22.6%	616.87	4,390.19	2,659.59	3,443.09	65.4%	873.01	2,430.90	846.99	1,726.62	34.6%
	RS	153,178.75	41,626.18	27.2%	786.36	8,055.43	9,483.69	9,936.16	67.9%	970.24	6,090.90	2,225.13	4,078.27	32.1%
Brazil	**BR**	**1,894,035**	**181,890**	**9.6%**	**5,685**	**36,536**	**32,495**	**38,289**	**62.1%**	**6,682**	**25,483**	**10,492**	**26,230**	**37.9%**

Source: Research Data.

Table A2. Non-Familiar Agribusiness and its Components share in GDP, Brazilian States in 2004 (Values in 2005 R$) (|Average Exchange Rate in 2005: US$ 2.44)

Region	States	GDP - All sectors (million R$)	Non-familiar Agribusiness GDP (million R$)	Non-familiar Agribusiness share in GDP	Components of Vegetal Familiar Production GDP (million R$)				% in Familiar GDP	Components of Animal Familiar Production GDP (million R$)				% in Familiar GDP
					Non Agr. Inputs	Sector itself	Industrial processing	Distribution and services		Non Agr. Inputs	Sector itself	Industrial processing	Distribution and services	
North	AC	3,475.66	394.70	11.4%	3.29	10.79	52.89	43.05	27.9%	24.10	50.45	47.31	162.83	72.1%
	AP	3,988.68	413.47	10.4%	1.54	2.99	28.52	127.29	38.8%	27.41	97.67	0.32	127.74	61.2%
	AM	38,476.98	4,256.52	11.1%	15.72	106.88	2,336.96	547.05	70.6%	141.21	625.02	96.10	387.57	29.4%
	PA	36,661.97	8,523.10	23.2%	195.82	1,250.89	1,595.94	872.80	45.9%	464.27	2,183.78	318.20	1,641.40	54.1%
	RO	10,447.25	1,757.79	16.8%	53.71	277.42	228.48	161.54	41.0%	42.11	299.75	160.88	533.90	59.0%
	RR	1,998.60	253.33	12.7%	8.78	53.28	18.49	26.64	42.3%	26.36	43.44	3.40	72.95	57.7%
	TO	5,111.81	1,284.29	25.1%	85.39	401.63	75.06	157.35	56.0%	81.39	194.37	62.80	226.31	44.0%
North east	AL	12,389.70	2,962.84	23.9%	207.52	451.09	956.83	588.93	74.4%	83.68	188.56	96.96	389.27	25.6%
	BA	93,148.26	19,782.51	21.2%	862.94	6,762.40	4,357.73	3,986.68	80.7%	351.25	1,646.87	468.43	1,346.20	19.3%
	CE	35,659.53	4,703.33	13.2%	58.16	387.10	1,526.57	1,046.66	64.2%	101.73	316.17	552.51	714.41	35.8%
	MA	17,740.90	2,972.97	16.8%	134.37	707.98	183.79	463.40	50.1%	126.01	653.81	67.12	636.47	49.9%
	PB	15,935.03	3,636.57	22.8%	68.59	427.93	1,071.13	872.11	67.1%	83.98	335.18	286.49	491.17	32.9%
	PE	51,137.53	8,215.10	16.1%	162.97	1,615.44	1,921.66	1,678.22	65.5%	289.39	1,227.38	163.47	1,156.57	34.5%
	PI	9,232.50	1,419.39	15.4%	27.13	250.26	233.86	425.51	66.0%	29.46	183.17	22.44	247.55	34.0%
	SE	14,067.17	1,595.60	11.3%	41.90	196.06	506.49	395.58	71.4%	89.12	161.48	21.05	183.93	28.6%
	RN	17,053.32	3,139.49	18.4%	80.49	312.68	971.96	969.22	74.4%	115.93	290.33	59.78	339.11	25.6%
Central West	DF	46,660.54	1,676.55	3.6%	69.79	112.99	449.92	389.45	61.0%	130.87	195.01	46.69	281.83	39.0%
	GO	44,296.36	20,348.54	45.9%	1,642.23	4,808.20	3,605.72	3,729.27	67.7%	1,287.92	1,842.70	1,059.80	2,372.68	32.3%
	MT	29,950.29	16,154.67	53.9%	1,113.90	4,807.00	2,423.56	1,934.60	63.6%	1,108.62	2,006.20	762.44	1,998.35	36.4%
	MS	21,392.64	13,339.80	62.4%	653.92	2,924.21	1,544.44	1,369.66	48.7%	544.66	1,892.18	1,389.85	3,020.89	51.3%
South east	ES	36,975.28	8,477.96	22.9%	157.92	993.25	3,261.73	3,178.12	89.5%	103.23	216.07	143.12	424.51	10.5%
	MG	178,601.04	33,605.39	18.8%	1,889.08	8,004.38	6,517.69	7,385.66	70.8%	1,400.16	2,402.20	1,500.93	4,505.29	29.2%
	RJ	238,615.47	12,740.52	5.3%	85.14	339.88	6,021.00	4,773.45	88.1%	228.19	445.54	139.09	708.24	11.9%
	SP	586,029.78	123,697.34	21.1%	2,918.30	17,478.73	42,754.39	35,021.94	79.4%	2,929.56	9,707.74	2,960.53	9,926.16	20.6%
South	PR	116,538.60	31,289.31	26.8%	1,252.78	7,124.42	9,221.44	6,984.35	78.6%	561.71	2,167.49	760.18	3,216.93	21.4%
	SC	75,271.53	24,007.89	31.9%	353.39	2,801.07	13,575.31	4,835.25	89.8%	369.14	915.16	318.90	839.67	10.2%
	RS	153,178.75	33,772.18	22.0%	750.48	6,765.15	7,157.07	6,427.92	62.5%	701.74	3,786.76	3,416.70	4,766.36	37.5%
Brazil	**BR**	**1,894,035**	**384,421**	**20.3%**	**12,895**	**69,374**	**112,599**	**88,392**	**73.7%**	**11,443**	**34,074**	**14,925**	**40,718**	**26.3%**

Source: Research Data.

Table A3. Total Agribusiness and its Components share in GDP, Brazilian States in 2004 (Values in 2005 R$)
(|Average Exchange Rate in 2005: US$ 2.44)

Region	States	GDP – All sectors (million R$)	Totality Agribusiness GDP (million R$)	Totality Agribusiness share in GDP	Components of Vegetal Familiar Production GDP (million R$)				% in Familiar GDP	Components of Animal Familiar Production GDP (million R$)				% in Familiar GDP
					Non Agr. Inputs	Sector itself	Industrial processing	Distribution and services		Non Agr. Inputs	Sector itself	Industrial processing	Distribution and services	
North	AC	3,475.66	874.08	25.1%	14.87	50.63	146.72	125.15	38.6%	41.99	94.34	97.65	302.74	61.4%
	AP	3,988.68	613.18	15.4%	2.86	8.60	41.16	174.38	37.0%	45.57	143.04	0.52	197.04	63.0%
	AM	38,476.98	8,599.51	22.3%	48.82	336.46	4,509.96	1,221.58	71.1%	276.89	1,108.79	295.71	801.30	28.9%
	PA	36,661.97	16,472.26	44.9%	453.22	3,560.06	2,135.81	1,662.81	47.4%	774.35	4,142.45	691.54	3,052.00	52.6%
	RO	10,447.25	4,537.11	43.4%	175.02	1,299.12	349.27	353.93	48.0%	113.35	662.88	381.49	1,202.05	52.0%
	RR	1,998.60	389.67	19.5%	15.61	81.68	30.12	45.38	44.3%	40.71	64.06	4.89	107.22	55.7%
	TO	5,111.81	1,853.23	36.3%	121.19	547.34	100.22	202.09	52.4%	121.80	295.39	111.88	353.33	47.6%
North east	AL	12,389.70	4,258.89	34.4%	249.28	522.68	1,097.71	1,103.28	69.8%	141.82	310.82	189.49	643.81	30.2%
	BA	93,148.26	29,688.60	31.9%	1,243.91	9,952.00	5,661.77	5,406.55	75.0%	678.43	3,162.15	1,024.06	2,559.72	25.0%
	CE	35,659.53	9,075.03	25.4%	163.69	934.91	2,587.05	2,173.38	64.6%	205.87	695.24	818.26	1,496.63	35.4%
	MA	17,740.90	5,751.05	32.4%	310.42	1,618.00	289.73	803.45	52.5%	254.63	1,137.78	169.35	1,167.69	47.5%
	PB	15,935.03	6,380.97	40.0%	123.84	785.55	1,486.84	1,516.74	61.3%	176.84	770.48	430.42	1,090.26	38.7%
	PE	51,137.53	12,044.92	23.6%	235.10	2,127.87	2,425.64	2,466.00	60.2%	474.82	1,921.91	365.38	2,028.22	39.8%
	PI	9,232.50	2,690.34	29.1%	57.79	462.10	362.32	664.26	57.5%	76.45	375.79	97.37	594.26	42.5%
	SE	14,067.17	2,873.19	20.4%	103.86	450.36	660.50	733.52	67.8%	171.09	354.27	47.61	351.98	32.2%
	RN	17,053.32	4,989.80	29.3%	154.74	556.39	1,263.97	1,544.71	70.5%	202.51	522.29	126.75	618.45	29.5%
Central West	DF	46,660.54	1,788.71	3.8%	74.34	121.10	469.81	409.58	60.1%	141.80	209.73	51.99	310.34	39.9%
	GO	44,296.36	25,708.95	58.0%	1,859.93	5,649.49	4,008.42	4,119.36	60.8%	1,800.14	2,797.00	1,843.37	3,631.25	39.2%
	MT	29,950.29	20,106.34	67.1%	1,230.30	5,570.73	2,650.53	2,173.68	57.8%	1,388.98	2,893.68	1,211.27	2,987.17	42.2%
	MS	21,392.64	16,805.53	78.6%	740.84	3,410.88	1,710.24	1,595.21	44.4%	733.55	2,565.04	1,857.09	4,192.68	55.6%
South east	ES	36,975.28	10,743.25	29.1%	220.54	1,408.42	3,818.60	3,920.59	87.2%	152.34	335.72	244.56	642.48	12.8%
	MG	178,601.04	43,922.88	24.6%	2,435.01	10,399.47	7,990.76	8,910.30	67.7%	1,918.43	3,305.30	2,481.26	6,482.36	32.3%
	RJ	238,615.47	17,539.20	7.4%	138.06	574.21	7,924.31	6,512.92	86.4%	354.08	723.07	231.16	1,081.39	13.6%
	SP	586,029.78	149,974.46	25.6%	3,634.37	20,719.51	48,614.24	43,438.98	77.6%	3,735.48	12,768.55	3,916.15	13,147.18	22.4%
South	PR	116,538.60	52,236.88	44.8%	2,265.04	12,750.26	11,882.75	10,760.22	72.1%	1,188.74	4,973.76	1,920.73	6,495.38	27.9%
	SC	75,271.53	40,995.16	54.5%	970.26	7,191.26	16,234.90	8,278.33	79.7%	1,242.15	3,346.07	1,165.89	2,566.29	20.3%
	RS	153,178.75	75,398.35	49.2%	1,536.84	14,820.58	16,640.76	16,364.08	65.5%	1,671.98	9,877.66	5,641.82	8,844.63	34.5%
Brazil	**BR**	**1,894,035**	**566,312**	**29.9%**	**18,580**	**105,910**	**145,094**	**126,680**	**70.0%**	**18,125**	**59,557**	**25,418**	**66,948**	**30.0%**

Source: Research Data.