O Mercosul como o principal fornecedor de alimentos para o mundo: Potencialidades, Ameaças e Oportunidades.

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Resumo

Em 1991, Brasil, Argentina, Uruguai e Paraguai se uniram para formar o Mercosul. Quando o Mercosul foi criado, inovações institucionais favoreceram mudanças de paradigma. O setor agroindustrial foi levado a buscar ganhos de competitividade na produção e comercialização internacional de grãos e outros alimentos.

A chave para esse sucesso está na harmonização de estratégias de negócios e políticas públicas com vantagens competitivas desses países. Este *paper* possui três objetivos centrais: Mostrar o que aconteceu com a produção agroindustrial do Mercosul; identificar sua posição competitiva na produção e comércio internacional de grãos e alimentos, com foco em dois principais países Brasil e Argentina; e, por fim, identificar quais são as principais oportunidades e ameaças para as cadeias produtivas agroindustriais usando a analise STEP.

O trabalho avança apresentando as estratégias possíveis para o Mercosul, seja como fornecedor de alimentos processados, seja como exportador de commodities, concluindo que a apesar de ter se tornado o mais importante exportador de commodities do mundo, ainda é necessário rever as estratégias adotadas pelo setor agroindustrial.

Palavras-Chave: Estratégia, produção e produtividade, oportunidades, Mercosul, inovação, análise STEP.

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1. Problem Statement.

In November 29th 1991, four South American countries –Brazil, Argentina, Uruguay and Paraguay– got together to form MERCOSUR, while Chile and Bolivia became associate members later. MERCOSUR implies free trade and circulation of goods and services between countries without taxes and tariffs (custom union). MERCOSUR also means agreeing to common external tariffs and adopting a common trade policy vis-à-vis other States or groups of States (common markets); it implies macroeconomic co-ordination among the member countries in relation to foreign trade, agriculture, industry, stock markets, fiscal, monetary and exchange policies (monetary union). MERCOSUR is one of the top ten economies in the world with the largest and most diversified industrial base in Latin America and the Caribbean. However, MERCOSUR is not fully implemented –monetary union is not implemented yet, and common markets and custom union are imperfectly implemented– because of the lack of enforcement of international agreements in each country and due to several economic and political crises in the last ten years.

When MERCOSUR was created, strong institutional innovation –especially in Argentina and Brazil– favored a change of paradigm. Agrifood sector has proved to be competitive in the production and international trade of grain. The key to success lies in harmonizing business strategies and public policies with competitive advantages. This was a structural change in the relationship between Government and Society: State administrative reform, privatization, deregulation of the market having an impact on production drivers, goods and services, opening up of the economy and reinsertion in the world market; and a stabilization plan to check hyperinflation. Institutional change modified the relationship between Government and Society, removed restrictions limiting the manifestation of competitive advantages to the MERCOSUR agrifood sector, and became a launching platform to build competitive advantage.

As a result, competitiveness has improved in the agribusiness sector. Institutional innovation enabled organizations to invest in technology, human resources, and chain coordination by tight networks; giving rise to high level of world competitiveness in some agribusiness sectors. Primary production and agro industrial production flourished hand in hand with exports. Changes in the rules of the game and transparency in trade, together with the introduction of new technologies and new organizational forms, lead to increase efficiency and productivity resulted in the enhancement of international competitiveness.

In order to discuss this issues in detail, this paper is organized as follow: the next section shows the objectives of the paper; later on it is especified the methodology and the theoretical framework used in the research and development of the paper; Chapter 5 shows the main results of the research both for Argentina and Brazil; and finally, concluding remarks and suggestions for future research follow.

2. Objectives.

This paper has three central objectives:

- Show what happened to MERCOSUR production in 1993 and 2002/2003, identifying its position in world's food and agribusiness trade. A focus will be given to Brazil and Argentina, the two largest countries in MERCOSUR.
- Identify what are the main opportunities to food and agribusiness chains in this countries using de STEP analyses approach.

- Present MERCOSUR strategies; how should those strategies be in order to become the largest food supplier and what kind of strategies and environments MERCOSUR should implement to continue being a commodity supplier.

This paper is a preliminary result of an analysis done together with the *Global Food Network* Project held in Argentina and Brazil (www.globalfoodnetwork.org)

3. Methodology.

To accomplish the first objective, a research on secondary data on market shares, as well as data on commodity and food production and productivity was done. For the second and third objectives, in depth qualitative interviews (at least 5) were done in each country with specialists in agribusiness (Malhotra, 2001).

4. Main theoretical framework concepts.

Four major concepts were used to discuss the results of this paper: STEP analysis (Johnson and Scholes, 1997), competitive advantage of nations (Porter), institutional analysis (North; Williamson), and chain and networks analysis (Journal on Chain and Network Science, Wageningen Academic Publishers. Several authors). According to Johnson and Scholes (1997 p. 96) an important tool to analyze future trends and opportunities is STEP analysis. With this analysis, the major political, economical, technological and socio-cultural drivers are elaborated bringing opportunities in each factor.

According to Porter (1989, p. 167) a nation is competitive when it has good conditions in four major determinants: firms strategy, structure and rivalry (conditions how companies are created, organized and managed), demand conditions (the nature of home-market demand for industry products and services), factor conditions (labor, financial markets, infrastructure and others), and presence of related and supporting industries (suppliers, distributors and others).

New institutional economics theory mentions that institutions are partly responsible for transaction costs and play an important role in the development of trade in goods and services. North (1990, 1994) states that when transaction costs are high, institutions are important because they affect production and transaction costs. According to North (op. cit.) greater competitiveness due to lower transaction costs is the result of effective institutions with clear rules of the game, full enforcement of the law and high respect for property rights.

Transaction costs are the *ex-ante* and *ex-post* costs of a transaction. They are the not always visible costs that result from negotiating, planning and carrying out a transaction –*ex-ante*–; and the costs derived from a poor negotiation, contract adjustment and/or contract safeguard –*ex-post*–, due to errors, omissions and/or unexpected modifications (Williamson, 1993, 1996). In summary, they are the "costs of operating an economic system" (Arrow, apud Williamson, 1985).

In the analysis of an economic system, institutional environment and its enforcement are as important as the way in which organizations develop in that environment. Besides, firms that have the function of producing –neo-classical theory– and transacting –neo-institutional theory– require a certain degree of technology to carry out their activities. Organizations buy or produce the goods they need to produce their own goods and/or services, and depend on transaction costs. The firm thus appears as an organizational structure rather than a technological function (Coase, 1937). The cost of the price mechanism, the cost of the market, i.e., the transaction cost, is what leads to the creation of a firm.

North (op. cit.) introduces the notion of historical time in his analysis of institutions and of economic performance. According to him institutions and organizations learn from the past, since the present and the future are a consequence of the continuity of institutions in society. He also introduces the notion of "path dependency" to provide history with the conceptual framework in its predetermination of the present. Path dependency and history are paramount to explain institutional development; not all institutions are efficient, and inefficient institutions may last a long time and condition growth.

Finally, supply chain and network analysis have been joined by Lazzarini, et. al. (2001) with the concept of "netchain" analysis. Supply chain analysis (SCA) is a broadly defined field focusing on successive stages of value creation and capture in a vertically organized set of firms. Three core sources of value in SCA are identified: the optimization of production and operations, the reduction of transaction costs, and the appropriation of property rights (Lazzarini, et. al., op. cit.). Network analysis (NA) is a broad field commonly associated with sociology, but economists have applied these concepts to explain economic organization and performance. Three core sources of value are emphasized in NA: social structure, learning and network externalities –the importance of this analysis lays in interpersonal relationships by contracts, and individual positions occupied by agents in a network.

SCA focuses in vertical ties, but NA in horizontal ties (Stabell and Fjeldstad, 1998); SCA emphasizes in sequential interdependencies, whereas NA focuses on pooled and reciprocal interdependencies, emphasizing different facets of inter-organizational relationships. So, netchain analysis instead of focusing on certain sources of value and/or coordination mechanism given a certain type of interdependence, it begins by recognizing the relevant interdependencies involved in inter-organizational collaboration. Some netchain configurations could be demonstrated by three cases: a. Buyer-Supplier relationships, b. Information Technology enabled Inter-Organizational collaboration, and c. Macrohierarchies or hierarchies involving organizations (Lazzarini, op.cit.).

5. Results.

As results of this research, we present here the Argentine and Brazilian numbers of main food and agribusiness chains in 1993 and 2002/2003.

5.1. Argentina's Numbers.

As it was mentioned before, institutional innovation enabled organizations to invest in technology, human resources, and chain coordination by tight networks; giving rise to high level of world competitiveness in some sectors.

In Argentina, institutional and organizational innovations were leveraged by the introduction of technological innovations, i.e. the introduction of the No Till system at an earlier stage resulted in more efficient production. With the advent of GM Soya combined with the best technology available in No Till systems and the deregulation of the glyphosate patent in Argentina, Soya production boomed. Additionally, the installation of high-tech oil and meal manufacturing plants transformed this sector into the most competitive sector of the agrifood system.

Comparing the tables and other sources we can observe in Argentina the following results (see Table 1 and 2):

- More Argentine participation of Soy bean (Argentina and Brazil totalize nearly 50% of soy bean production, exports and soy bean oil exports).
- Third world producer of Soya and first world sunflower producer.
- First world exporter of Soya and sunflower oils and Soya by-products.
- The most inexpensive industry of Soya and sunflower oil production.
- First fresh and industrialized lemon exporter.
- First fresh pear exporter.
- Second world exporter honey as commodity, but Argentina's honey has more quality than its competitors.

(Insert table 1 and 2 here)

Continue analysing the tables it can be inferred that Argentina has doubled the exports of wine, with almost the same level of production. On the other hand, the production and exports of corn increased participating on the 9% of global trade –second world exporter. Nearly the same happened with wheat, but with fewer quality. Beef in Argentina has the problem to continue having Foot and Mouth Disease, and it can't enter in developed markets –i.e. Japan, EU, USA, South Asian Countries– that have higher prizes. The natural markets are those developing countries with less income, low added value strategies, informal markets and little culture to eat beef.

As it is seen in the analysis Argentine advanced more in the production of commodities than of food or specialties. To supporting this statement could be mentioned that Governments always followed agricultural production. On the other hand, Argentina has a big path dependency around agricultural production and players aren't interested or don't have the resources –financial, technological and human resources– to add value. One of the most important issues that Argentina has advanced in recently years is the building of new organizational figures: rent-agricultural firms. One company manages more than 50,000 hectares of agriculture in different parts of Argentina, some by the figure of farmers that extend their networks gaining in scales economies –Los Grobo Case, Ordóñez & Nichols (2003); El Tejar S.A.– and others as agribusiness' coordinators –seed pooling–. Some estimations states that around 50% of the agricultural production in Argentina is produced by this type of netchain.

The participation of commodities in the Argentine exports is 25% (U$S 7,5 Billion)[1]. The other percentages fulfill agricultural manufactures (30%: U$S 9 Billion), industrial manufactures (30%: U$S 9 Billion) and petroleum (10%: U$S 3 Billion). Food only represents not more than 5% of Argentine exports (2%: U$S 1.5 Billion). Nowadays agribusiness represents 10% of the Argentine GDP. Comparing actual data with 1993, the results are totally different: Agricultural products and by-products represented only 40%, and the rest were petroleum and industrial manufactures in this order. The increase of the exports became with an increased of the agricultural area, the production and productivity and the technology applied during the last 10 years.

Finally, food production in Argentina hasn't had increasing production. As it was mentioned above, players couldn't or weren't interested in production of food, especially because of the lack of property rights enforcement and the food import politics Argentina had from 1991 to 2001 –local consumers had high money power because of the tide currency 1:1 to Dollars. The result, most food production companies are international holdings but with low scale, because Argentina is not a big food market –comparing Argentina and Brazil: 37 MM inhabitants : 200 MM inhabitants. On the other hand, Argentineans income historically wasn't important, during the 90's it increased, but after devaluation in 2002, the income rate decrease almost to half. To sum up, the continuous institutional changes, the weak enforcement –in Argentina agricultural, calves and food production float from sanitary and taxes formality to informality, depending on the regulations– and the low capacity to coordinate the value chain are the responsible for not having an important food industry.

[1] Total Argentine Exports U$S 30,000 MM.

5.2. Brazil's Numbers.

Brazil is emerging as an important food supplier due to the competence that the country got in the last years. Competence coming from suppliers, like low volume irrigation systems, artificial insemination, machines and implements, new generation defensives, ferti-irrigation, biotech and others. Competence coming from farmers, with higher degree of education and professionalism, increase in competition, and market orientation and also the presence of large multinational companies in trading and distribution. A large internal market, with increasing patterns of exigency is also offering food companies opportunities to have scale and patterns for international markets.

Also several improvements in Brazil's institutional apparatus happened in the last 10 years, with regulations in environmental matters, property rights, quality procedures and others. The country is:

- First world exporter of sugar.
- First world exporter of beef.
- First world exporter of poultry.
- First world exporter of coffee.
- First world exporter of orange juice.
- Second world exporter of soybeans.

The potential to increase is large. A recent report from USDA (United States Department of Agriculture) shows that Brazil has 845 million hectares. Only 42 million are used for agriculture. Another 42 million are roads, cities, lakes (cannot be used). 444 million hectares are forestry and should be used exploring the biodiversity and for the markets of aromas, medicinal and others. There are 140 million hectares not used yet in the Cerrado region and 170 million hectares that are pastures. Soybeans can be produced in a area between 50 and 100 million hectares, producing from 150 million to 300 million tons, if international market demands. In several food chains, Brazil has the lowest cost structures in the world.

Productivity is growing fast due to research and development, most coming from Embrapa (Brazilian public research agency on agribusiness). Some numbers of production, productivity and shares are showed in table 3 and 4.

5.3. Common Opportunities and Strategies due to Institutional and Environmental Changes

This topic summarizes common opportunities for Brazil and Argentina coming from external variables and strategies for commodities and value added products for Mercosur food and agribusiness main chains. Table 5 presents the STEP analysis (Johnson and Scholes, 1997).

The STEP analysis shows the opportunities that food and agribusiness companies in Brazil and Argentine are facing. These companies are enhancing efforts to supply Mercosur and achieve new international markets on commodities as much as on value added products.

Table 5 - Common opportunities from Brazil and Argentina coming from external variables

Drivers	Institutional/Environmental Changes
Political / Legal	• Growth of taxes due to recent reforms. • Restraints in agricultural frontiers in Amazon Borders. • Global heating agreements. • Zero Hunger program of new Government. • Political measures to alleviate poverty. • Land distribution reform. • Tributary and Social Welfare Reforms. • External policy to develop new commercial partners: India, China, Other Asian Countries, South Africa and Arabian Countries. • More prepared for international negotiations (www.iconebrasil.org.br). • Regulation of GMO's. • Increase in institutional reforms. • Pressure against protectionism in WTO (cotton, sugar). • Bi-Lateral agreements. • Increased commitment with Mercosur. • Increase constraints in water and charge for water use in agriculture. • Agricultural Ministry comes from Cooperatives movement. • Brazil large profit with reduction of commercial barriers: alcohol, sugar, orange juice and subsidies. • Increase in diplomatic pro-active positions abroad.
Economical	• Stabilization of economy. • Stabilization of internal and external debt. • Trade balance will be reduced due to growth of Economy. • 2004 will face another smooth devaluation of the currency. • International capital entering at lower rates, but in a good international position when compared to other emergent economies. • Diversification of exports markets growing towards Asia: India, China and Japan. • Cost increase for companies due to taxes. • Increase in production costs to farmers due to higher inputs prices (US$ and margins recuperation, mainly fertilizers and machines). • Margin reductions and increase in cost controls for growers. • Growers are creating network procurement to reduce costs. • Cooperatives will gain power and financial programs. • Mergers and acquisitions will continue, reducing number of input suppliers and buyers, pressuring farmer's prices. • Growth of internal market for food is a threat to exports. • Loose sanitary controls are a large threat for appearance of diseases (Foot and Mouth, BSE in cattle). • Brazil as an operational/industrial platform and distribution center for South America (several factories moved from other South American Countries to Brazil due to scale needs). • Very high potential for agricultural growth – cerrado.

Drivers	Institutional/Environmental Changes
Socio Cultural	• Increase in health consciousness = increase in consumption of fruits, vegetables, other fresh products and functional products. • Increase at education level. • Farmers more professional and specialized. • Farmers are outsourcing services building networks. • Growth in the perception of the importance on participating in collective actions (Abag, LaranjaBrasil – www.laranjabrasil.com.br). • Discussion regarding GMO's, technology. • Organic markets increasing. • Growth in appeal for job creation industries. Sugar cane can benefit, also Coops. • Socio cultural background closer to US and Europe than Asia. • Language and religion uniformity being a competitive advantage against other developing nations.
Technological	• Strong increase in productivity (grains). • New generation agrochemicals. • Low volume irrigation. • Bio Diesel and flex fuel cars (alcohol and gasoline). • Growth in use of satellite data and precision agriculture. • Machines and farm equipments for tropical crops being developed and exported.

Source: authors, based on interviews with specialists. Authors would like to thank the great contributions of Prof. Dr. Sam Giordano in elaborating this table.

In order to enhance market position in commodities and elaborated food, several strategies were listed in the interviews, divided in two blocks. Strategies for commodities and for specialized products. Table 6 lists these general strategies.

Table 6 – General strategies for commodities and specialized products for MERCOSUR in the next 5 years

Commodities	**Elaborated Food**
• Improve institutions • Improve general logistics • Ports modernization investments • Roads and Ferry improvement and intermodal connections • GMOs and Non-GMOs segregation • Lower even more production costs • Taxes Simplification and Reduction • Improve negotiations skills to enhance access to new agrifood markets • Large producer cooperatives advancing towards trading services • More direct relationships among cooperatives • More investments in technology for farms supplies (biotech, precision farming) • More professional farmers • Collective actions • Enhance scale to reduce costs • Develop PPP – Public and Private Projects	• Improve institutions • Property rights enforcement • Develop market intelligence systems to find opportunities • More forces on export consortia • Export packed food through retailers • Occupy private label segments • Product and services innovation • Enhance MERCOSUR and their countries images as high quality food supplier • Enhance certifying organizations. • Typical and ethnical food • Collective marketing actions on fairs and events • Appellation of origin • Organic food • New specialized distribution system • Direct access to foodservice • Direct access to small retailers

Source: authors, based on interviews

6. Conclusions and future research.

MERCOSUR has not been able to enter the most developed markets as a large food supplier, but is already a important world commodity supplier, it is the first producer and exporter in some products. Some reasons of this commodity development could be the informal institutional environment –lack of culture in food production, as opposed to commodity production–, the commodity supplier's path dependency MERCOSUR has, the little respect for the rules of the game and low capacity to coordinate the value chain, what is changing. Also access to markets is a fact that has held MERCOSUR's potential in the last ten years.

MERCOSUR should revisit its strategy in the food and agribusiness sector. MERCOSUR should decide to continue being one of the largest commodity suppliers –and it must incorporate technology to reduce costs or to add value and produce commodities with added value– and to mix both strategies, changing not only agribusiness strategies, but also organizational and institutional environments. Netchain approach could have some answer to improve the competitiveness of food companies.

As future research, four food chains will be isolated, due to its importance for the last ten years in MERCOSUR, i.e. coffee (Brazil); wine (Argentina); beef, soy bean and fruit (Argentina and Brazil). The research will attempt to describe how and why those products were developed, what they represent to foreign trade and what kind of agribusiness and strategies are being developed by companies in order to increase their competitiveness. This analysis will be done together with the Global Food Network Project held in Argentina and Brazil. [site: www.globalfoodnetwork.org].

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Table 1. 1993 Argentina's numbers

1993											
	Argentina				World				Share Argentina		
Main Crop	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	Argentina Exports (Thousand Tons)	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	World Exports (Thousand Tons)	Production	Area	Exports
Rice	700.7	140.0	5.0	210.0	529,590.3	145,819.6	3.63	15,861.0	0.1%	0.1%	1.3%
Bean	200.0			70.0	15,610.5	23,711.5	0.66	2,210.7	1.3%	0.0%	3.2%
Soy Bean	11,031.0	5,088.7	2.2	2,219.4	115,153.8	59,494.1	1.94	28,858.0	9.6%	8.5%	7.7%
Soy Bean Oil	1,460.0			1,454.0				3,500.0			41.5%
Corn	11,000.0	3,000.0	3.7	4,709.0				87,654.0			5.4%
Sunflower Oil	1,181.0			738.0				1,700.0			43.4%
Wheat	9,874.4	4,547.7	2.2	5,597.7	564,498.6	222,937.9	2.53	103,717.0	1.7%	2.0%	5.4%
Meat	2,800.0			281.0				5,000.0			5.6%
Lemon	681.0	23.2	29.4	34.1							
Wine	1,447.0	209.0	6.92	250.0	25941.5			4,870.0	5.6%		0.5%
Pear	388.0	18.2	21.3	142.0				1,104.0			12.9%
Honey	59.0			55.0				288.7			19.1%

Source: Several – USDA, FAO.

OBS – Due to several sources used data can be in disagreement with one or another source.

Table 2. 2002 Argentina's numbers

	2002										
	Argentina				**World**				**Share Argentina**		
Main Crop	**Production (Thousand Tons)**	**Area (Thousand ha)**	**Productivity (Ton/Ha)**	**Argentina Exports (Thousand Tons)**	**Production (Thousand Tons)**	**Area (Thousand ha)**	**Productivity (Ton/Ha)**	**World Exports (Thousand Tons)**	**Production**	**Area**	**Exports**
Rice	713.0	125.9	5.7	233.0				27,888.0			0.8%
Bean	263.0	274.0	1.0	150.0				2,145.5			7.0%
Soy Bean	28,500.0	11,000.0	2.6	6,170.6	125,655			60,232.0	23%		10.2%
Soy Bean Oil	3,973.0			3,300.0				7,500.0			44.0%
Corn	18,725.0	3,050.0	6.1	9,300.5	597,654			102,033.0	3.1%		9.1%
Sunflower Oil	1,271.0			904.0				2,500.0			36.2%
Wheat	15,500.0	6,840.7	2.3	8,872.6	562,168	215,645	2.61	110,000.0	2.8%	3.2%	8.1%
Meat	2,493.0			344.0				6,386.0			5.4%
Lemon	1,216.9			267.0				1,505.7			17.7%
Wine	1710.0	205.0	0.1	467.5				64,000.0			2.0%
Pear	581.0			310.0				1,514.0			20.5%
Honey	93.0			91.0				371.0			24.5%

Source: Several – USDA, FAO.

Table 3. 1993 Brazil's numbers

1993											
	Brazil				World				Share Brazil		
Main Crop	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	Brazil Exports (Thousand Tons)	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	World Exports (Thousand Tons)	Production	Area	Exports
Rice (peel)	9.902,0	4.376,7	2,3	0,4	529.590,3	145.819,6	3,6	24.575,0	1,9%	3,0%	0,0%
Bean	2.379,0	4.458,0	0,5	0,6	15.610,5	23.711,5	0,7	2.056,6	15,2%	18,8%	0,0%
Soy Bean	23.042,1	10.717,0	2,2	4.184,7	115.153,8	59.494,1	1,9	28.795,7	20,0%	18,0%	14,5%
Corn	29.207,7	12.436,3	2,3								
Cotton	1.127,4	922,6	1,2	4,4							
Coffee	1.278,8	2.259,3	0,6	964,2	10.132,8	5.551,6	1,8	4.687,5	12,6%	40,7%	20,6%
Sugar	9.261,3	3.863,7		3.115,5							
Sugar Cane	244.531,0	3.863,7	57,8	0,0	1.036.287,8	17.364,1	59,7	48,6	23,6%	22,3%	0,0%
Wheat	2.125,8	1.451,7	1,5	0,0	564.498,6	222.937,9	2,5	107.523,5	0,4%	0,7%	0,0%
Sorghum	281,4	150,9	2,0	0,1	57.001,1	42.277,7	1,3	8.669,9	0,5%	0,4%	0,0%
Orange	15.368,7	800,5	19,2	81,6	55.471,0	3.254,6	17,0	4.439,8	27,7%	24,6%	1,8%
Orange Juice	1.118,0	800,5	1,4	1.045,0				803,7			130,0 %
Fruit	32.530,9	2.396,6	13,6	0,0							
Wine	268,9	60,2	4,5	20,8	25.941,5			4.874,2	1,0%		0,4%

Source: Several – USDA, FAO, fnp, Brazilian Ministry of Agriculture, CONAB

OBS – Due to several sources used data can be in disagreement with one or another source.

Table 4. 2003 Brazil's numbers

2003											
	Brazil				World				Share Brazil		
Main Crop	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	Brazil Exports (Thousand Tons)	Production (Thousand Tons)	Area (Thousand ha)	Productivity (Ton/Ha)	World Exports (Thousand Tons)	Production	Area	Exports
Rice (peel)	10.441,4	3.190,1	3,3		567.699,0	144.888,0	3,9		1,8%	2,2%	
Bean	3.178,2	4.291,3	0,7	2,4							
Soy Bean	51.308,0	18.446,3	2,8	34.130,8	131.537,0			44.559,0	39,0%		76,6%
Corn	45.185,9	12.887,2	3,5	3.149,6	599.016,0			76.082,0	7,5%		4,1%
Cotton	2.239,4	734,0	3,1	356,9	19.098,0	30.369,0	0,6	6.577,0	11,7%	2,4%	5,4%
Coffee	2.095,5	2.418,9	0,9	1.324,6	7.194,5			5.338,4	29,1%		24,8%
Sugar				11.487,1	143.495,0				0,0%		
Sugar Cane	384.382,0	5.278,3	72,8								
Wheat	4.548,3	2.351,9	1,9	2,2	563.834,0	212.800,0	2,6	102.135,0	0,8%	1,1%	0,0%
Sorghum	1.356,5	619,7	2,2	228,5	50.157,0	37.736,0	1,3	5.323,0	2,7%	1,6%	4,3%
Orange	17.217,0	817,9	21,1	1.437,2	46.222,0			4.112,0	37,2%		35,0%
Orange Juice				1.350,2	2.158,3			1.390,7	0,0%		97,1%
Fruit				689,9							
Wine											

Source: Several – USDA, FAO, FNP, Brazilian Ministry of Agriculture, CONAB