

DEVELOPMENT AND CURRENT SITUATION OF ECOLOGICALLY-BASED AGRICULTURE IN BRAZIL AND IN THE STATE OF SÃO PAULO

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Summary

The objective of this scientific study is to present the current situation of the development of ecologically-based production in Brazil and in the state of São Paulo. In this way, the history of the emergence and expansion of ecologically-based agriculture was recovered. Production and market diversity, the motivating elements of this expansion, and obstacles were identified, taking the current context into account. Such production and market diversity is recognized in the law apparatus of organic production n.10.831, December 23rd 2003, prescribed in 2007. This concerns products which are derived from different agricultural styles: biodynamic, organic, natural, permaculture, agro-forest systems, regenerative, etc.

In order to reach the goals of this research we conducted a socio-economic interpretation of collected statistical data and an analysis of interviews carried out with diverse social agents and economic organizations. The results are as follows:

i) History of the emergence and expansion of ecologically-based agriculture; ii) Identification of the development stage of ecologically-based production in Brazil; iii) Identification of the development of ecologically-based production in the state of São Paulo; iii) Identification and characterization of production chains that are respectively certified for exportation and local markets; iv) Comments on various production and market aspects, based on the studies of cases conducted within the scope of the Global Org project, the author's research actions and especially on the ongoing transition process.

The results presented here are findings that must subsidize the creation of public policies in the scope of the development of production and commercialization of organic food products in this country⁷.

¹ This scientific study is an integral part of a series of results from the GLOBALORG/Brasil project, having ongoing activities and being connected to Convênio da Embrapa Meio Ambiente and ICROFS, Denmark.

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Introduction

In Brazil there has been a growth in the production of food and other agricultural products which are based on ecological principles, and there are many denominations for this type of production: ecological product, organic product, agro-ecological product, natural product, etc. In fact, this concerns distinct methods of ecological production and insertion into the market (ABREU, L. S. from; BELLON, S. and CORRALES M. F. 2005). In order to capture the diversity of ecological agricultural styles, when it comes to Brazilian production, we make use of agricultural denominations with an ecological foundation.

Thus, synthesizing the contribution of CAPORAL & COSTABERBER (2004) and using the given document: Marco Referencial em Agroecologia da EMBRAPA (2006) as a base, we can affirm that ecologically-based agriculture is characterized by integrating the set of styles of ecological production, respecting the qualifications, and reducing the possible misconceptions involving technicians, environmentalists, businesses and consumers in this subject. This denomination is also widely used by the Programa Nacional de Apoio à Agricultura de Base Ecológica nas Unidades Familiares de Produção (Documento de Políticas Públicas do MDA, 2004) or [National Aid Program for Ecologically Based Agriculture in Family Production Units – Document of Public Policies from 2004 MDA]. The diversity in Agricultural styles and denominations is also repeated in other countries in Latin America.

The organic production law n.10.831, December 23rd 2003, prescribed in 2007, had its formulation based on the concept of agro ecology⁶, causing many elements to stand out, which are part of the conceptual notion, such as: The cultural integrity of the rural communities, social equity, increase in value of family production, apart from the respect toward natural products. Products that derive from different agricultural styles have also been recognized as organic products: biodynamic, organic, natural, permaculture, agro-forest systems, regenerative, etc.

⁷The preliminary socioeconomic knowledge from this Global Org research project favored the selection of case studies; the adaptation process of questionnaires and interviews; the choosing of different productive chain circuits (Global Org project. Product of the partnership with ICROSF, Denmark and Embrapa Meio Ambiente).

⁵For (Gliessman, 1998) agro ecology is the global study of agro ecosystems, seeks to include all human and environmental elements: a productive area, for example a cultivated field, is seen as a complex system where ecological processes equally occur (elemental cycles, interaction, auxiliary or companion plants, competition, symbiosis, etc). Agro ecology is a proposition in construction of scientific disciplines, that establishes ecological principles as a base for study, conceive and organize the agro ecosystems: productivity and management of natural resources in a way that makes them socially fair and economically viable (Altieri, 1986; 2002). Agro ecology was mostly developed in America, in Australia (Hill and Mac Rae, 1995) and in the Iberic Peninsula (Guzman et al, 2000), but is still unknown in some countries (Gautronneau *et al.*, 1989 ; Bellon *et al.*, 2000).

The IFOAM - International Federation of Organic Agricultural Movements⁹, an entity that establishes criteria, norms and rules for companies around the world to validate certifying and auditing procedures for agricultural activities and food processing (Almeida, 2008)⁷, entitles production that applies ecological principles of organic agriculture or organic production, therefore, to refer to international production, especially from developed nations, we will use this terminology.

In Brazil's rural territory one can find diversity in social forms of ecologically-based production, different transition processes and commercialization systems. It is taken that the transition process or even the transformation headed to an ecologically-based agriculture is the crossing from the conventional system to production with an ecological base. This is a social process that involves multiple dimensions: social, cultural, ecological, economic, organizational, technical and know-how (Moreira, 2003; Bellon & Abreu, 2006). In other words, apart from changes in terms of agricultural practices and techniques, we identified that the social groups and communities involved with ecologically-based agricultural experiences carry a different social conscience, which is demonstrated in the practical relationship that they establish with the environmental resources and in the adoption of a peculiar way of living, which is a result of mainstream social criticism to the model based on monocultivation and to the use of pesticides (Abreu, 2005).

The worldwide vision of social agents can normally be diverse among individuals or among a social group, in terms of ethical and ecological values that guide and stimulate social actions, always applying ecological principles on a larger or smaller scale, having varied articulations with local and global society (Almeida & Abreu, 2008)⁸.

It is possible to empirically observe innovative forms of production and a producer – consumer relation to simplified replacement input systems and sales directed to intermediate distributors from important urban supply economic organizations (Bellon & Abreu, 2005).

⁹ Founded in 1972 in Versailles, France, by a group of personalities from the European Scientific Community which was connected to the eco-agriculture movement, criticizing the use of chemical products and pesticides in the food production system. Since then, the movement gained strength and at every year there was an increase in the number of participants in the conventions promoting the development of ecologically-based agriculture. The IFOAM is characterized as the first institution of public interest to regulate an international certification pattern for ecologically-based agriculture back in 1980, and carries out annual gathering of statistics on the development of "organic" agriculture around the world since the year 2000 (Almeida, 2008)

¹⁰ This dissertation, from Gustavo de Almeida, which was supervised by Lucimar S. de Abreu, is part of the research actions from the Global Org Project.

⁸⁸ This article is an integral part of the research action of the Global Org Project. See note 01.

Therefore, in order to understand the current situation of the development of ecologically-based agriculture, we pointed out the state of development in production in Brazil, the respective production chains for exportation and for local markets, the producer's universe, mostly consisting of small producers. We aim to understand the challenges set to the development of ecologically-based agriculture and to identify the force that drives this transition.

Methodology

The analysis was based on statistical data about Brazilian organic production, specialized literature reviews on the subject apart from interviews with agents who are directly involved with chains of *Agroecology*, *Permaculture*, *Bionynamic Agriculture and Organic Agriculture*, followed by subsequent visits to the production units and to grocery stores in the state of São Paulo. Regarding the certification, we visited the IBD center [Biodynamic Institute], located in Botucatu (SP), and interviewed the former president of AAO [Organic Agriculture Association], São Paulo (SP). We discussed the statistical data with technicians from the federal government and from the state of São Paulo.

We visited production units, selling points for organic products (open fairs and door to door selling), contacted agriculturists, researchers and technicians from development agencies. We identified and conducted interviews with the county political leadership, inspectors, environmental leaders and agriculturists. 80 people were interviewed; 20 of them were affiliated to social organizations.

¹¹ This article is na integral part of the research action of the Global Org Project. See note 01.

History of the emergence and expansion of ecologically-based agriculture in Brazil

The origin of ecological agriculture in Brazil is stimulated by neo-rural elite agriculturists and qualified professionals of the agronomic environment (Karan, 2001, Branderburg 2002), the production form can be interpreted as part of the heritage of European models¹², adapted to Brazilian context, while coexisting with other original forms established under specific conditions of the local context. Ecologically-based agriculture is also motivated by political organization that are involved with the construction of a new model of society, based on the claims for equity and social justice, such organizations are directly involved with the movements for social transformation. Thus, ecologically-based agriculture does not have the same meaning or sense in all regions or countries, in Europe it emerged from the counter-culture movement and from criticism toward the consumer society (Brandenburg, 2002).

The initiatives for the development of ecologically-based agriculture in Brazil started in the 70s, firstly known for the denomination of alternative agriculture, having three social movements as a historical base that emerged in the European context, more specifically in Germany, Switzerland, Austria and in the Anglo-Saxon region which are dominated by biodynamic agriculture. This is where the contribution of thinking from Rudolf Steiner was essential for the creation of these streaming thoughts. The rural biodynamic unit is seen as an integrated system which is self regulated and that is presently inserted into the landscape, and generally conducted by agriculturists who sympathize with life in the countryside and who are not only technically prepared but are also stimulated by high creative and artistic sensibilities. The rural environment begins to acquire characteristics from cultural and social irradiation hubs. Food production is complemented by conditions that propitiate the development of people.

¹² 1924 – Biodynamic Agriculture (Europe) – Rudolf Steiner. In 1925 – 1930 – Organic Agriculture – Albert Howard; 1925 - 1930 – Biological Agriculture - Hans Muller; 1935 – Natural Agriculture (Japan) - Fukuoka e Mokiti Okada. Thus, under distinct denominations, starting in the twentieth century, biodynamic agriculture developed (Germany and Austria), organic agriculture (Great Britain and the USA), natural agriculture (Japan) and biological agriculture (France). From these initial chains, ecological agriculture developed starting in the 70s and 80s, (Germany and Holand) regenerative agriculture (USA) and permaculture (Australia) (BRANDENBURG, 2002; DAROLT, 2002).

This debate intensified after the publication of "Silent Spring" (Carson, 1968).

In Brazil this piece of work also stirred public opinion and contributed to the expansion of ecological movements. Largely, the federation movement of the agronomic engineer associations in Brazil, marked by the accusations against multinationals from the agrochemical sector, has contributed to place below a cultural vision that lies on the prevailing belief of limited growth, creating circumstances for which something could be done to establish new relations between the environment and agriculture (Abreu, 2002).

Brandenburg (2002) demonstrates that even before the so-called Green Revolution, the necessary foundations for the development of an alternative agriculture already existed in Brazil. Public incentive policies for the modernization of Brazilian agriculture promoted the marginalization of family agriculturists who would be supported by NGOs; among other objectives this holds the intention of creating alternatives to the conventional technological model.

As of the 70s this social movement was made known as an alternative agriculture, and gained force in 1976 when the ecologist José Lutzenberger launched the Brazilian Ecological Manifesto: "O fim do futuro?" [The end of the future?], which would influence a number of researchers, ecologists and the overall community in the sense of having the need to create alternatives to the modern technological standard that was imposed in Brazilian agriculture.

In the 70s this movement was marked by opposition to the technological model and to environmental degradation, and also marked by criticism of the increasing social exclusion that started to affect mainly small sized agriculturists. This opposing movement gained force in the following decade culminating in the fulfillment of three Brazilian Meetings for Alternative Agriculture; in 1981 in the city of Curitiba – PR, in 1984 in Petrópolis – RJ and in 1987 in Cuiabá – MT.

In this period environmental NGOs went through a strengthening process, specially after the creation of the Projeto de Tecnologias Alternativas (PTA), or [Alternative Technology Project] that alongside the Federação dos Órgãos para Assistência Social e Econômica (FASE) or [Federation of Institutions for Social and Economic Assistance] centralized the performance of various organizations of alternative agriculturists.

As a result of this organization AS-PTA (Assessoria e Serviços a Projetos em Agricultura Alternativa) or [Services and Support to Alternative Agricultural Projects] was created, which significantly expanded the alternative agriculturist movement,

articulating a chain of organizations with entities from ten Brazilian states in the south, southeast and northeast regions. (PINHEIRO, 2007)

At the end of the 80s the Brudtland Report was launched, coined as “Sustainable Development”, exposing the need to think of integrated policies that guarantee the “necessities of future generations”. For this, a series of appointed measures and goals were determined which permitted the adoption of a new model of development.

It was only in the 90s that the debate over environmental problems expanded and society seemed to become aware of the matter. However, many elements hindered the advancement of dialogues and the development of plans or environmental measures: the lack of scientific precision regarding the nature of environmental problems, apart from matters of economic, social and political order. In the case of Europe, regulatory measures for agricultural activities in developed countries were only implemented in the early 90s. (Abreu, 2005).

Conventional agriculture became an unacceptable agricultural style for the world and for Brazilian society, forcing its protagonists to an impasse with an outcome that is still uncertain. Pressured politically and socially, many social categories desperately sought a way to integrate the new social and environmental standards, regardless of their founding structure and producer type. Naturally, family producers that had smaller structure seemed to be more open to the transition toward sustainability.

Worldwide Production and Commercialization of Ecologically-Based Agricultural Products

Presently more than 120 countries develop ecologically-based agriculture worldwide (IFOAM, 2007). The average growth of the world’s planted area of ecologically-based agricultural products has also risen from 15 to 20% each year (2001/2007)¹³.

After FOAM (2007) numbers show that, in 2007 the world production area of ecologically-based agricultural products stood at 50 million hectares, 30.5 million of these represent cultivated areas, 20 million represent harvests done in wild areas, this being 31 million hectares of certified products and distributors in approximately 633.981 production units.

¹³ Ministério da Agricultura Pecuária e Abastecimento do Brasil 2007.
[Brazilian Ministry of Agricultural Farming and Supply 2007]

The chart below illustrates the 2007 ranking of the 10 countries with biggest land areas intended for the worldwide production of ecologically-based agricultural products.

Chart 14: Ranking of the 10 largest worldwide producers of ecologically-based agricultural products

Countries	Land for organic Production in hectares
Australia	12.300.000
China	2.300.000
Argentina	2.200.000
USA	1.600.000
Italy	1.100.000
Uruguay	900.000
Spain	900.000
Brazil	889.000
Germany	800.000
United Kingdom	600.000

In parallel to the international commerce of ecologically-based agricultural products, there is also a growth in the world market of Fairtrade products, that in 2006 stirred US\$ 1.552 billion, corresponding to nearly 4% of the commercialized volume in the worldwide market of ecologically-based agricultural products and less than 0.1% of the worldwide trade of food, estimated at US\$580 billion in the same year.

According to data from FLO¹⁴, the Fairtrade market grows at an annual rate of 40%; since 1997 the volume of commercialized food that is certified has increased, and in 2007 this volume stirred 2.380.000.000 Euros: reaching the mark of 250 thousand tons sold in the 60 countries where it is commercialized. Adding Europe and the USA there are more than 100.000 supermarket chains and 3.000 stores that commercialize Fairtrade products.

14 Oral presentation from Darana Castilho de Souza – Connection Official from FLO. Site: www.fairtrade.net WORKSHOP EVENT - Contexto da Comercialização e perspectivas do Mercado Justo da Agricultura Familiar no Nordeste ocorrido na Bahia / Brasil em Junho de 2008. [Commercialization Context and Market Perspectives for fair trade of Family Agriculture in the Northeast, took place in Bahia / Brazil in June 2008.

The international market is a buyer for the production of ecologically-based agriculture in Brazil; however few producers supply these demands. The main products of ecologically-based agriculture that are exported are; coffee (MG and ES); cacao (BA); soy, brown sugar and erva mate (PA); orange juice, palm oil and dried fruit (SP); cashew nut (NE) and guaraná (AM). Most of the OP is primary, involving little processing.

According to the Brazilian Agency of Investment and Promotion of Exports (Apex), the annual growth rate for the sector is 30% and there is a great demand from the import market, especially from Japan, the United States and the European Union. Brazil's participation at Biofach 2007, the biggest and most important exposition of certified products in the world surpassed all expectations. During the four-day event, more than 40 Brazilian companies that were in Germany with support from APEX-Brasil, closed deals in the order of US\$36.4 million for the following 12 months, surpassing the initial prediction of US\$20 million. Still in 2008 Brazil will have export statistics for ecologically-based agricultural products (Secretária de Comércio Exterior do Ministério do Desenvolvimento Indústria e Comércio/2007) or [Department of Foreign Trade of the Commerce and Industrial Development Ministry].

Identification of the development stage of ecologically-based production in Brazil.

As previously mentioned, in Brazil there are various ecologically-based production systems that can be commercialized under the nomenclature “ecologically-based agricultural products” as long as they conform to the organic production law n^o 10.831, December 23rd 2003, prescribed in 2007. The production styles that fit this set are ones that only seek the replacement of input (chemical to organic) to those that are guided by the principles of agroecology¹⁵.

¹⁵ Agro ecology in Brazil is being treated as a scientific discipline in the Executive Power (MDA, MAPA, MMA, MDS), in research (Embrapa, Empresas Estaduais e Universidades) and in Rural Extension (ASBRAER). Agro ecology is the source of inspiration for the formation of public policy institutionalization for family agriculture, having a weaker or stronger action in different territories, depending on the political nature of the local social forces¹⁵.

Following the international trends, there is also a growth in Brazilian ecologically-based production and Fairtrade production.

Ecologically-based production grows at a rate of 30% a year, depending on the region of the country. According to PETTAN et al (2007)¹⁶, the following initiatives are presented in order to have access to this distinctive market:

1. Certify production, aiming for the foreign market or large retail chains.
In this group there are approximately 22.000 certification projects for ecologically-based agriculture¹⁷;
2. Not certify the production and commercialize in regional and domestic markets.
This group, which is much larger than the previous group and is difficult to quantify, is characterized by a production that has an agro ecological base - it is not officially certified;
- 3 Produce for self consumption and commercialize what remains, without making use of any chemical input. This group belongs to a profile of more than 2 million production units from family agriculturists that are settled in agrarian way in the north and northeast regions.

In this context, the Agriculture Ministry (MAPA, 2007; IFOAM, 2007) informs that in 2007, 888 thousand hectares were planted in the country from certified ecologically-based agriculture (fruit, vegetables, cereal crops, coffee, honey, milk, meats, soy, palm, sugar and chicken) placing the country, according to the above world ranking, in 6th world place in managed areas, which represents 0.25% of the total agricultural area occupied by 19.000 certified ecologically-based agricultural properties. According to the Planeta Orgânico or [Organic Planet] (2005), the social group in these properties is basically formed by family agriculturists and by companies that produce for exportation (sugar, orange juice, coffee and soy). 70% of this certified production is located in the south and southeast regions of the country.

The area that is occupied by sustainable extraction is 5 million hectares for chestnut, açaí, pupunha, latex, fruit and other species from tropical rainforests, mainly in the north region (Amazon). The chart presents the production areas with an ecological base in relation to the national agricultural area.

¹⁶ PETTAN, K.B; RITTL,C.; BAHER, A.; RAMM, G. & MEDAETS, J.P. Evaluation: Introduction of Voluntary Social and Ecological Patterns in Developing Nations. Initial Report from Country Case Study – Brazil: Forest Products/ FSC; Sustainable Coffee Product /4C; Fairtrade Sustainable Products /Flo; Biodiesel Product / Social Stamp. COMO - Consulting für Projektmanagement und Organisation GmbH. Work carried out for the Federal Ministry of Economic Cooperation and Development (BMZ) Germany, São Paulo, July 2007.

¹⁷ It is important to emphasize that the legislation authorizes certification through third parties. Just as it innovated for the official acceptance of Participation guarantee System (SPG). For further information, see organic production law n. 10.831, December 23rd 2003, prescribed in 2007.

Table 16: Ecologically-based agricultural production area *versus* national agricultural production area.

Ecologically-based agricultural production	Area (hectares)	% of ecologically-based agriculture/national agricultural area
Cultivated	889.000	0,25 %
Extraction	5.000.000	1,6 %
Total (organic production)	5.889.000	1,86 %
National agricultural area	311.800.000	100%

Source: Ministério da Agricultura, Pecuária e Abastecimento do Brasil e Empresas Certificadoras (2007)

When the cultivated areas are added to the sustainable extraction areas, Brazil moves up to 2nd place in the world¹⁸ in agricultural production area with an ecological base, thus presenting 11.8% of the world's productive area.

Studies carried out in 2007¹⁹ register that more than 15.000 rural producers work in ecologically-based agricultural production (0.4% of the Brazilian rural producers), this being 80% of family agriculturists and 20% employed. Ecologically-based agriculture is estimated in 300 thousand tons per year. The annual commerce is of 250 million dollars; 30% being commercialized in the domestic market and 70% in the external market.

In the poorer regions of the north and northeast, the main abounding initiatives are referred to in 02 and 03²⁰, despite the existence of a small group of certified agriculturists. The production volume and sales volume of non-certified ecologically-based production is not officially known in these regions, but studies from PETTAN (2007); BEZERRA (2007) e CAMPOS (2007)²¹, supported by “Programa Nordeste de Combate à Desertificação” or [Northeast Program for Combating Desertification] from the GTZ Agency- Brazil, prove its importance to the domestic market, family agriculturists and local development actions.

¹⁸ AGRICULTURE (2006).

¹⁹ DAROLT (2007) e MDA (2007)

²⁰ Item 02 – not certify production and commercialize in local and regional markets, and item 03 produce for self consumption and commercialize the exceeding amount, without using chemical input.

²¹ PETTAN (2007); BEZERRA (2007) and CAMPOS (2007).

1- Bezerra, R.C. Study on the Potential of Family Agriculture from ecologically-based agriculture in Vale do Submédio São Francisco. Programa Nordeste – Componente DES 02, PN 04.2084.4-001.00 da AGÊNCIA DA GTZ NO BRASIL. RECIFE, 2007

It is also known that non-certified production is greater than certified production. These very studies identify and prove that in the domestic and institutional markets agro ecological products are accepted without a certification and that agro ecological open fairs are a good place for the commercialization of products from family agriculturists through direct sales to consumers, having significant social and economic results.

Currently, the main ecologically-based agricultural products are: coffee (MG and ES); cacao (BA); soy, brown sugar and erva-mate (PA); orange juice, palm oil and dried fruit (SP); cashew nuts (NA) and guaraná (AM). Most of the production is primary, involving little processing.

In the country, there are 32 certifiers for ecologically-based agricultural products, however, the IBD, which is an important certifier in the country, certifies more than 3.500 producers with more than one hundred types of products; vegetables and large grain plantations, natural and industrialized foodstuff such as coffee, sugar, dairy products, sweets, cotton and other fibers, cosmetics, fruit juice and wine. Following are the main export chain products.

Ever since the 90s the organizations connected to ecologically-based production multiplied, increasing the number of producers and also large scale production, diversity and quality. For twenty years the market has been limited to a small number of fairs from producers and to the selling of weekly baskets directly to the consumer.

Currently, supermarket chains commercialize production causing fairs to expand, consequently increasing direct sales between the agriculturist and the consumer; using values such as trust and cooperation as a relationship base, additionally presenting the possibility of better gains for the producer and lower prices for the consumer.

2- CAMPOS, R. L **STUDY ON THE PRODUCTION AND MARKET OF THE COMMERCIALIZATION HUB OF ITAPARICA**. Northeast Program– Component DEC 02, PN 04.2084.4-001.00 from AGÊNCIA DA GTZ NO BRASIL. RECIFE, 2007

3- PETTAN, K.P. Study on the institutional and local markets for family agriculture in the Sertão of Pernambuco , Northeast Program– Component DEC 02, PN 04.2084.4-001.00 da AGÊNCIA DA GTZ NO BRASIL. RECIFE, 2007

Current situation

Production area of ecologically-based agriculture	888.000 ha
Value added to the sector	US\$ 250.000.000
Value of exports	US\$ 120.000.000
Number of companies in the sector	150
Growth rate of production	30% a year
Number of certified projects	15.000
Certified properties for ecologically-based production	19.000
Property's social characterization	Family Agriculture
Location of production	70% in the south and southeast
Sustainable Extraction	5.000.000 ha

Source 2007: Ministério da Agricultura, Pecuária e Abastecimento do Brasil e Empresas Certificadoras.

In Brazil, certified production occupies an area larger than 888 thousand hectares; data gathered from the Ministério da Agricultura and APEX-Brazil reveal that the estimate of business for these products in the country is of US\$ 250 million. Each year Brazil exports from US\$ 100 to 120 million in certified ecological products, and more than 90% of the 150 national exporting companies are small sized firms.

The United States, Germany, France, Japan and the United Kingdom are the most provided markets by Brazil. In the world ranking, the country is among the eight biggest producers of ecologically-based agriculture in the world.

Domestic Market²²

We will present this topic focusing on the most relevant aspects of the Brazilian market of ecologically-based products. Brazil's market development of foodstuffs is characterized by great changes in the past years. Regarding certified and ecological products, sales growth has been significant in the capitals of Brazilian states, mainly in the south and southeast regions. Health concerns are the main reasons for the greater purchase of ecological products; the fact of them being pesticide-free is seen as an important characteristic of these products.

²² This topic was elaborated based on interviews (e-mail) carried out with Pedro Santiago from the Commission for Regulating the Law on ecologically-based agriculture. Together with the information from MAPA (Ministério da Agricultura e Pecuária), Agro ecology coordination, apart from other mentioned sources.

The markets and commercialization opportunities are varied, for example, soy, white and brown sugar, coffee and citrus juice are the main exported products – sweets and juice from ecologically-based agriculture, mostly juice is being more and more commercialized in the country; dairy products (yogurts, cheese and others) represent a potential market in Brazil's domestic market (Carrefour and Pão de Açúcar, Campinas 2007). Small grocery stores exclusively selling ecological goods and services also appear in Brazil, and have an important role in supply. Country resorts and inns offering ecological meals, ecotourism presenting ecologically-based production are also a promising sector (Comissão de Regulamentação da Lei da agricultura de base ecológica. 23/11/2007) or [Regulation Commission for the ecologically-based agriculture law. 23/11/2007]

The consumption of ecologically-based products in Brazil does not reach 1% of the food market within the country, although, in Latin America, Brazil is the country consuming the largest amount of this type of production. The market in Brazil (being considered aggregate of all sectors) is growing as a result of the increasing perception from part of the consumers to the superior product quality in comparison to conventional products and of the benefits to health and to the environment. This also stimulates production.

Moreover, due to the vast agricultural area, Brazil has good soil and climate conditions that make it possible to produce a vast range of ecological products.

When it comes to essential oils, cashews and erva-mate: where there is growth, there has been a good potential for expansion. Babaçu oil, vegetable oil, forest essences, vegetable extracts are in the process of increased production, presenting a good potential. [Regulation Commission for the ecologically-based agriculture law. 23/11/2007]

The IBD certifies practically all beef from Brazilian ecologically-based agriculture, which is destined not only for internal consumption, but also for exports. This production is mostly located in the Pantanal of Mato Grosso. The biggest certified meat butchery is the Brazilian Friboi, which is also the world's largest butchery. The second largest is the North American Tyson. Between 2004 and 2006 the number of animal farms certified by the IBD practically doubled; the number stood at 16 and now there are 30 [Regulation Commission for the ecologically-based agriculture law. 23/11/2007).

In Brazil the central market system for the commercialization of certified vegetables is still underdeveloped; this initiative recently happened in Curitiba (PR).

In many cities and capitals a commercializing system was created, by producers, to distribute goods in homes, restaurants and open fairs or in partnership with wholesale distributors, who have prospered since the mid 1990s.

Identification of ecologically-based production in the state of São Paulo

The state of São Paulo consists of a large and diversified market of ecological products that are certified by organizations that practice external auditing. Production is also diversified, listing the most economically important products; coffee, sugar cane, oranges and vegetables. The following chart presents the diversity of the primary certified ecological production in the state:

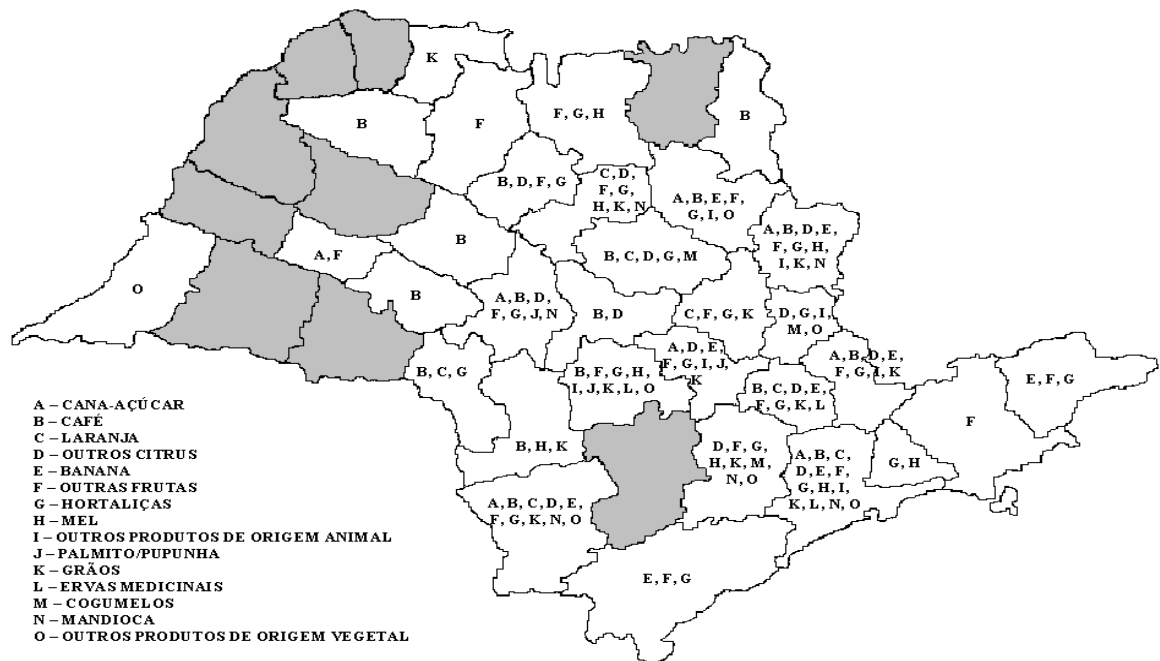
Chart 3: Ecologically-based agricultural products in the state of São Paulo

PRODUCT	INCLUDES
sugar cane	
coffee	
oranges	
other citrus	tangerines, lemons, persian lime (may include oranges)
banans	
other fruit	acerolla, strawberries, passion fruit, wild berries, atemóia, cherimóia, kiwi fruit, raspberries, figs, grapes, apples, mango, peach, guava, plums, kaki, pineapple, avocato, papaya, pecan nuts, lichia, jabuticaba, uvaia, carambola, pears, quince, blackberries, nuts, macadamia, coconut
vegetables	include potato production
honey	propolis, bee wax, other beekeeping products, beekeeping stocks
other animal products	eggs, milk, beef, giblets, leather, buffalo breeding
palm "cabbage"	pupunha
grains	beans, corn, soy, alfalfa, oatmeal, wheat, sunflower, barley, rye, cereals
medicinal herbs	
mushrooms	various types
cassava	
other vegetable products	fruit and other seedlings, eucalyptus and brazilian pepper tree plantations, green fertilizing, urucum, grazing

Source 2007: Empresas Certificadoras e Secretária da Agricultura do Estado de São Paulo.

Based on the data and information collected together with the certification companies that are in the state of São Paulo, we have drawn maps to better visualize the land area distribution of ecologically-based products.

Figure 3: Ecologically-based agricultural production in the state of São Paulo



- A-Sugar cane
- B-coffee
- C-oranges
- D-other citrus
- E-bananas
- F-other fruit
- G-vegetables
- H-honey
- I-other animal products
- J-palm/pupunha
- K-grains
- L-medicinal herbs
- M-mushrooms
- N-cassava
- O-other vegetable products

In the same way, there is a very diverse range of industries for benefiting ecologically-based agricultural products, apart from the establishments that are exclusively dedicated to the commercialization (more importantly exports) and to restaurants, who can now receive quality stamps:

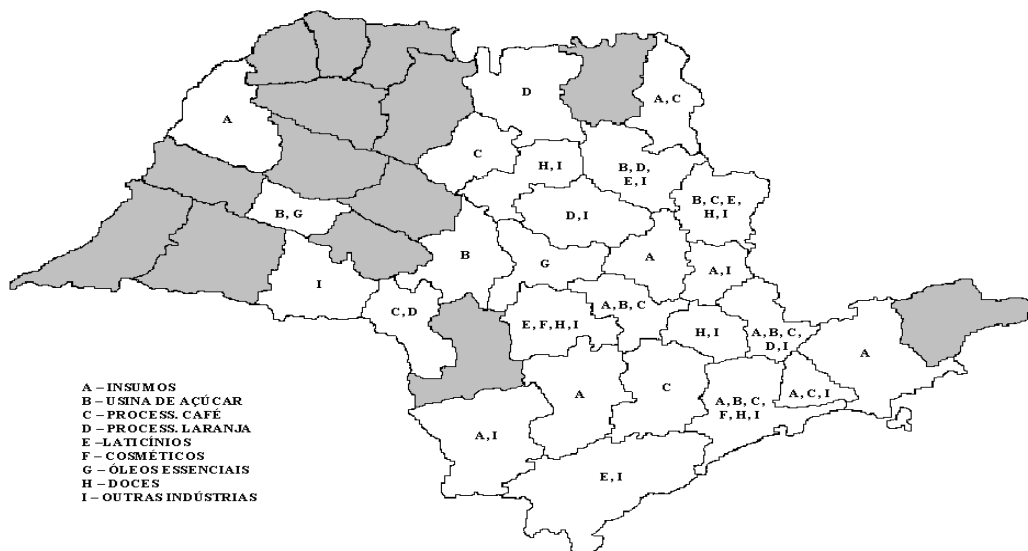
Chart 4: Industry for benefiting ecologically-based agricultural products in the state of São Paulo

TYPE	INCLUDES
input	
sugar mills	brown sugar, regular sugar, cachaça, molasses
coffee processing	toasted coffee, coffee extract, soluble coffee, ground coffee
orange processing	concentrated juice, pasteurized juice, essential oil
dairy products	yogurts, cheese etc
cosmetics	
essential oils	may include essential orange oil
sweets	jellies, jams, fruit conserve, doce de leite etc
other industries	tofu, chocolate flavoured products, tea, fruit compote, oils, butter, cereal and fruit bars, fruit vinegar, processed tomatoes, processed fruit, dry fruit extract and coconut erva mágua extract, fluid fruit extract, juice, ice cream, seasonings, chutney, conserve, concentrated juice, juice, fruit pulp, tomato sauce, flour, vegetables with little processing, ethyl alcohol containing cereals, maltodextrine, essences, beef processing, organic product dehydration, sachet sugar, honey processing, coconut water

Source 2007: Certificadoras, e Secretária da Agricultura do Estado de São Paulo.

Following the previously adopted procedure we have drawn the following map:

Figure 4: Processing industries of ecologically-based agricultural products in the state of São Paulo



- A – input
- B – sugar mills
- C – coffee processing
- D – orange processing
- E – dairy products
- F – cosmetics
- G – essential oils
- H – sweets
- I – other industries

Ecologically-based agricultural production chain in the state of São Paulo

The main ecologically-based agricultural cultivations in the state of São Paulo, taking into account the cultivate area and production volume, are destined for exportation.

In terms of agricultural business, in recent years, the international market has offered profitability to the sector, considering the large-sized negotiations in recent years that were observed by our research team at the event of BIOFACH (Feira Latino Americana de produtos da agricultura de base ecológica) or [Latin American Exposition for ecologically-based agricultural products], but also because the characteristics of São Paulo's socioeconomic development favor company organizations with a great investment capacity.

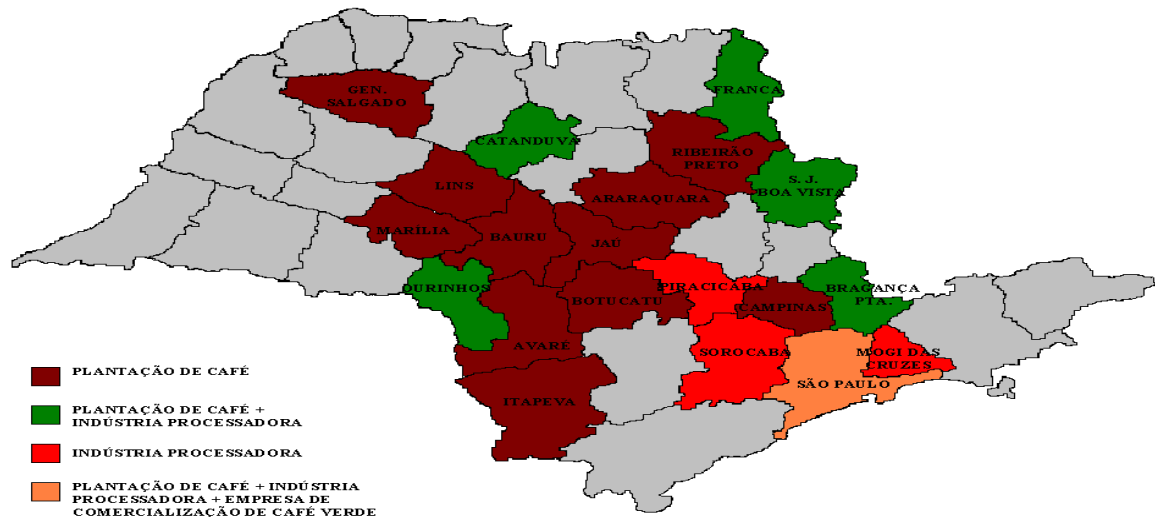
Verifying the structure of vegetable commercialization, we observed that some distribution companies have a great influence over property planning, a notorious characteristic of the companies that act in São Paulo's green belt; for example, in the Ibiúna region they monopolize commercialization channels through contracts with large grocery store chains. This association is characterized by having weak social cohesion, promoting the scattering of many state-certified products, coming from São Paulo's small agriculture, having a precarious social organization and fragile cooperation ties.

These characteristics can be seen through social relations involving social class entities or associations and cooperatives (Bellon&Abreu, 2005).

Coffee

The production of coffee from ecologically-based agriculture in the state of São Paulo, for the producing family's own consumption and also for large scale commercialization, are found in the indicated distribution areas in the map below. This is mainly so due to high prices of the gross product and processed product. This is confirmed when we observe the location of processing industries, which are close to the exporting center of Santos (SP). A number of these companies are certified for their management procedures by the IBD.

Figure 5: Production, processing and commercialization of ecologically-based coffee in the state of São Paulo

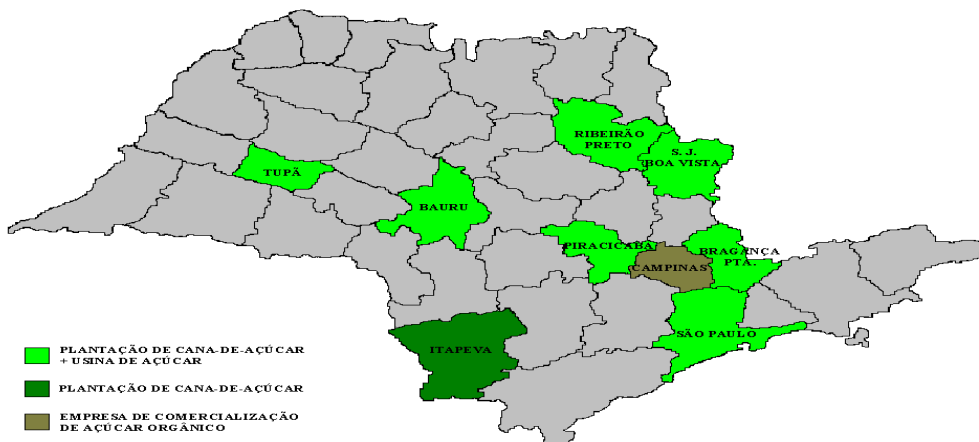


- brown – coffee plantations
- green – coffee plantations + processing industry
- orange – processing industry
- coral – coffee plantations + processing industry + commercialization of green coffee

Sugar

The production of ecologically-based sugar cane is generally associated with the existence of sugar mills, which benefit the gross substance in products with greater added value (see industry chart). It is important to point out that properties are very large, but we can also find these products in family properties and agrarian reform settlements.

Figure 6: Production, processing and commercialization of ecologically-based sugar cane in the state of São Paulo

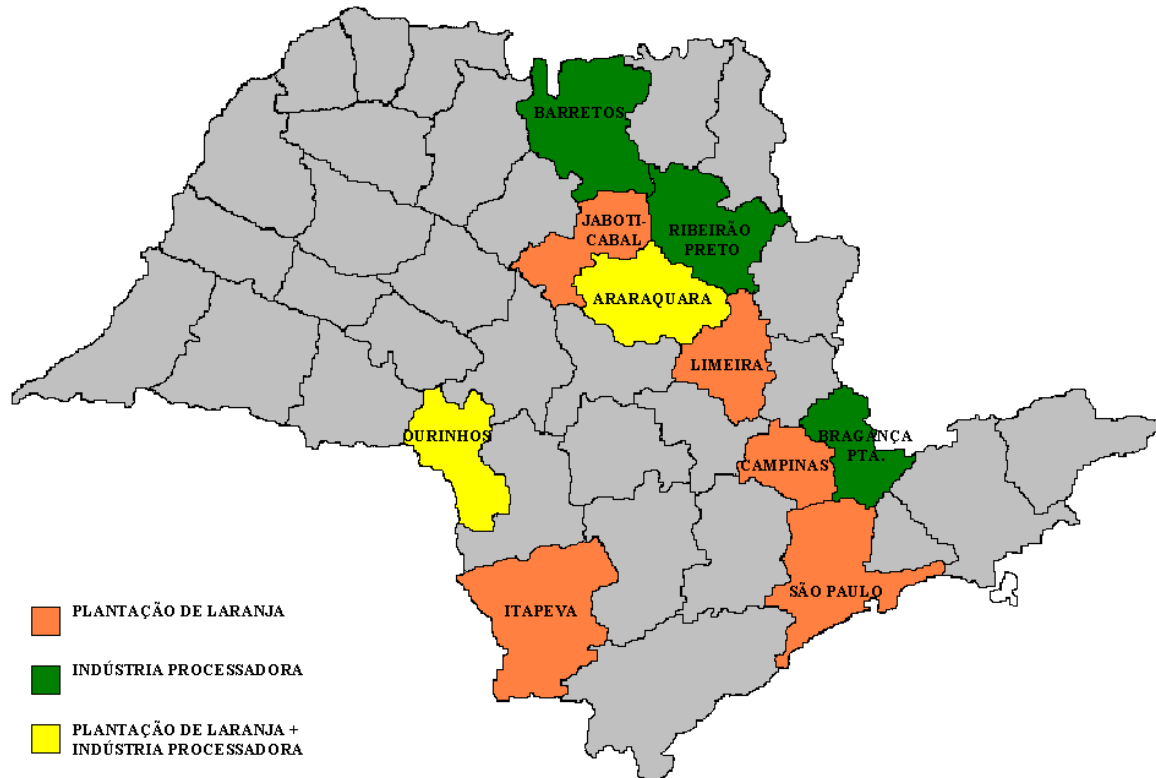


- light green – sugar cane plantations + sugar mills
- dark green – sugar cane plantations
- army green – companies commercializing organic sugar

Oranges

The production and benefiting of ecologically-based oranges partly follows the conventional production axle, extending from São Paulo to Barretos. Two other regions in the state, Itapeva (plantations) and Ourinhos (plantations and benefiting) also participate in the sector, while not being in the previously mentioned axle.

Figure 7: Production and processing of ecologically-based oranges in the state of São Paulo



coral – orange plantations

green – processing industry

yellow – orange plantations + processing industry

Vegetables

The production of ecologically-based vegetables is highly developed in the state of São Paulo and has been equally distributed close to the areas of conventional production. It was stimulated in order to supply the demands from the capital and from the city of Campinas. Mainly through large retail chains, but also sold in open fairs in high class neighborhoods in the capital and in São Paulo's town marketplace (Mercadão), also through the home delivery of baskets. The commercialization of vegetables in inner-state mid-sized cities is also noticeable, making grocery stores responsible for distribution; apart from ecologically-based agricultural product fairs from Campinas, where producers sell directly to consumers. These fairs are backed by the Associação de Agricultura Natural de Campinas or [Campinas Natural Agriculture Association], which unites agriculturists and consumers. The growing of ecologically-based horticulture was developed in family agriculturist traditional occupation areas which are located, in a very concentrated way, in the state's green belt.

Aspects of direct sales and fairs

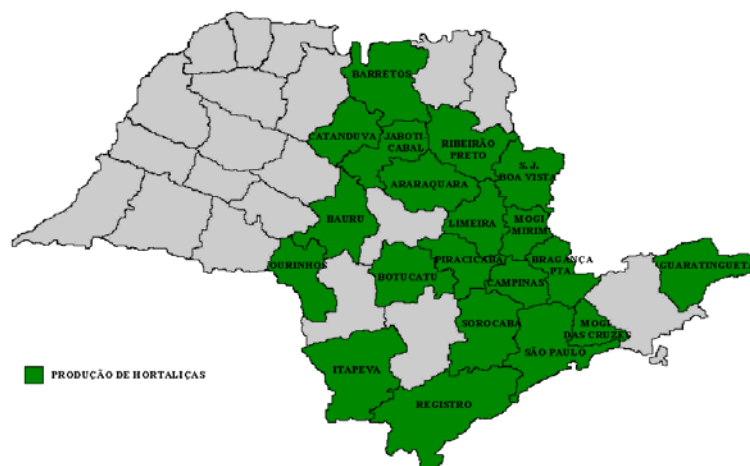
This concerns a production and commercialization form that is associated to the Catholic Church's movement in the state of São Paulo. In the Brazilian northeast (Recife- Pernambuco), it is backed by the Protestant Church and the Catholic Church. These are alike situations of country-city relations, less favored agriculturists supported by equally less favored consumers from urban zone ghettos. Complex activity systems, combining vegetable productions (vegetables, annual cultivation, milk and dairy products, fruit and bread) with unit production transformations (milking and vegetable). The relationship between producers and consumers brings development to their thinking, apart from their own "production unit and search for survival", integrating new identities and a new role for agricultural professionals, facing today's environmental challenges.

These social and agricultural practices form a completing activity system, questioning classic agronomy from research and development institutions, opening space for a wider development of the social and ecological "project", referred to in the agro ecological concept.

One of the issues to be pointed out in this topic is related to the role of national and regional institutions of support and development for ecologically-based agriculture, that interact with family production social forms to stimulate the development of ecologically-based agriculture, increasing production in order to gradually occupy more important space in the local alternative markets through economic attractions that seek to introduce new producers.

In regions that have productions which are connected to small-sized producers, the techniques are more like adaptations from traditional systems with the addition of fresh knowledge and know-how sourced at the properties, but are far from a systematic follow-up program coming from public or private technical assistance.

Figure 8: Vegetable production from ecologically-based agriculture in the state of São Paulo

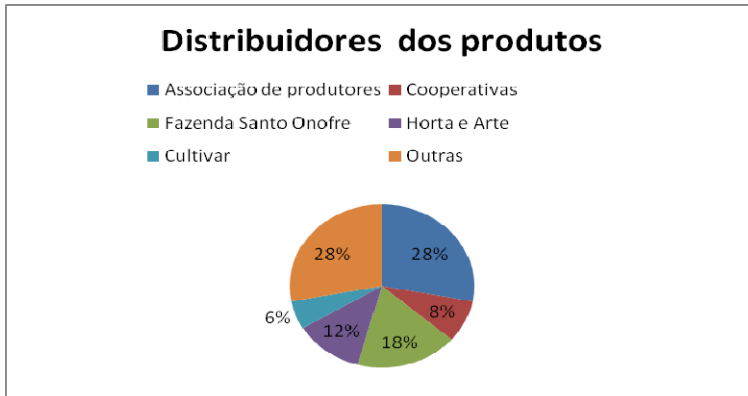


Vegetable production

In the state of São Paulo the evolution of the productive sector depends on the capacity of added value to the product, which is the addition of services to provide for the consumer's demands; this comprises classification, cleaning, minimum processing or industrialization, exposure and replacement of goods in the retail chain and home deliveries. In order to manage these activities, the productive sector needs to have associates to obtain larger scale, administrative financial and human resources that involve those operations. This configuration is an obstacle for small-sized vegetable producers that have lowered purchase power and/or negotiating authority in relation to large distributors.

Main distributing companies of the ecologically-based agriculture production chain in the state of São Paulo

Considering the importance of this distribution method, we analyzed this set of data collected from a research in the field²³:



Source Data collected from research in the field, 2007.

Product distributors

dark blue – producer associations

green – Fazenda Santo Onofre

light blue – Cultivar

dark coral – cooperatives

purple – Horta e Arte

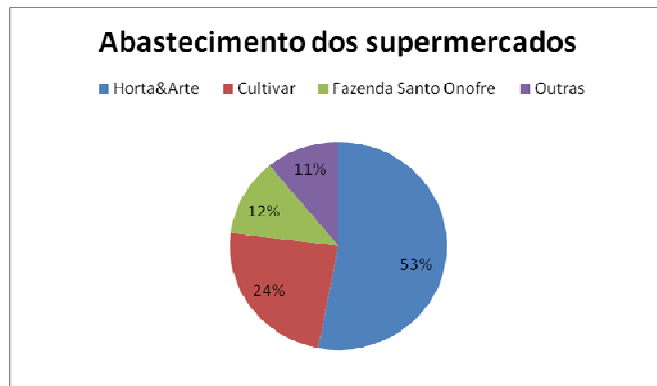
carrot orange – other

The gathered information in São Paulo shows that approximately 28.0% of product distribution is made by producer associations and 8.4% is made by cooperatives. The following distributor is Fazenda Santo Onofre, with 17.8% of quotations, Horta & Arte²⁴, 12.1% and Cultivar, 5.6% and other varied methods of distribution, 28.0%.

In São Paulo's retail market, the supermarket chains that have ecologically-based agricultural products for sale are: Pão de Açúcar, Carrefour, Wal-Mart, Big and Pastorinho in decreasing order of importance.

²³ The data is collected by the team from the GLOBAL ORG Project.

²⁴ It is an institution that works as a company but possesses a status of a small producer association, in the São Roque region.



Supermarket supply

blue – Horta&Arte

dark coral – Cultivar

green – Fazenda Santo Onofre

purple – other

The distributors that supply this area are: Horta & Arte with 53.0% of quotations; Cultivar with 24.0%; Fazenda Santo Onofre, 12.0% and the others with 11.0% (Korin,APPOI, etc).

The ecologically-based agriculture in the state of São Paulo, just like in the rest of the country, lacks a series of measures of agricultural order policies for improved development on a state and county government level. Meanwhile, producers can contribute in this process if the creation of producer associations is intensified, seeking the organization of service and input purchase, apart from product sales to the retail market. Currently the sector needs ordered growth, production diversification and planning of procedure as well as its representation to respective public facility organizations.

CONCLUSION

It was possible to identify the amplitude and the economic force of the development of the certified product chain in the country, and especially in the state of São Paulo. This situation is, without a shadow of a doubt, a social, economic and agro environmental phenomenon. It presents a large variety of ecologically-based agricultural styles in Brazil, which go far beyond the methods of replacing chemical products with other input that obey ecological specifications; multiple interpretations of ecologically-based agriculture arise (common values, direct sales, territorial entities) and also signs (labels, logos, varied certification systems that include the participative denominated system form SGP) ratified by the federal law 10.831, December 2007.

Although we lack giving depth to the study on the dimension of the impacts of public policies, it can already be stated that the destination of financial resources cannot be privileged to this or that social group as criteria that is dependent on the transition process stage, since the transition may be connected to crucial social limits; nevertheless, if we integrate and expand the focus of public policies, universalizing them to the full, this may strengthen the less favored and marginal groups of today's rural society. This can be observed in the case of Ibiúna's horticulturists, privileged case study area from the Global Org project.

One of the great difficulties to conclude the objectives of this work was associated to the lack of statistical data in Brazil on ecologically-based agricultural production; however, there is an abundant quantity of information on the subject and the task of collecting, compiling and comparing the gathered data in the country revealed itself to be quite complex and timely. This difficulty is present due to the following aspects: the MAPA ((Ministério da Agricultura e Pecuária do Brasil) or [Brazilian Ministry of Agriculture and Livestock Breeding], which offers partial information coming from certifiers that predispose themselves to pass on information, mainly due to that lack of legislation on production, most certifiers don't feel compelled to inform the government on the subject. Nevertheless, with the approval of the law in December 2007, it is expected that more effective quantitative controls on production and production distribution will take place.

In the case of Fairtrade for example, a similar situation occurs, since the entities only gather information on the regions that they reach or only from their acting segment.

In general, they not always utilize the same measures; the data is not gathered in accordance to the same time lapse; only a few associated entities publish annual reports and an even smaller number present updated data from 2007.

However, as was explained in the methodology, it was necessary to collect the compacted information and cross it repeatedly, involving hard and drawn-out work with the objective of presenting updated knowledge, thus seeming endless to the authors.

We conclude that the scenario for the development of ecologically-based agriculture and the relation to the markets came out as follows:

- i) Promotes the strengthening of contracted agriculture, having a strong emphasis on the domestic and international market;
- ii) Promotes the advancement of family entrepreneurs, supplying the domestic market. Sales to large wholesalers, associations or cooperatives;
- iii) Presents an important space for family producers that are inspired by agro ecological and biodynamic pretexts, that specifically supply the local market (fairs, direct sales and local stores);
- iv) Promotes the enlargement of the direct sales system - social solidarity to endangered small-sized agriculturists.

It is denoted that market pressure has increased substantially in the last decade, forcing some producers to conversion, favoring the establishment of ecologically-based agricultural productive processes that are based on product technology, being very likely to the conventional production process logic. These agriculturists can not only be empirically linked to the social category of small family producers but also to capitalist corporations where the family is responsible for managing the business and work activities.

The issue of social justice, the development principle of ecologically-based agriculture summoned by Ifoam/Isofar, being pertinent to a Latin American and Brazilian context, is not present in debates and discussions, and is absent in theoretical references. Inasmuch as in the articles that expose the resistance among local market (open fairs and direct sales) and large retail stores (retailers and supermarkets).

Ecologically-based agriculture is not only held in the interest of family producers but also of large corporations. The demand for ecological products is related to the interest that domestic and foreign consumers have in the quality of food and on the

impact of agriculture in the environment. The observed expansion must also be attributed to the development of a fairer market for producers and consumers, apart from the increased employment factor.

The study will be continued and will seek to increase knowledge related to certified production, the way of life of family producers and environmental aspects (agro-environmental practices) as well as going deeper into the dynamics of the food production market related to its consumption.

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