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## Rural Social Development: Small-scale Horticulture in São Paulo, Brazil

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Organic farming is increasingly considered as a possible alternative model to design a new rural society in Brazil and making sense in a global economy. Farmers in São Paulo have set up collectives, based on new relationships with institutions and urban consumers, in three Brazilian metropolises. The starting point for the research presented here therefore, was the hypothesis that organic farming is a *social* strategy, committed to creating spaces for agricultural production in order to rebuild rural communities. The research uses an institutional framework to investigate modes of organization, and the dynamic of economic and social relations. Secondly, the authors characterize the process of organic farming as social development in Ibiúna territory, and identify contingent economic and environmental interactions. Thirdly, the authors analyse the evolution of organizational forms through various initiatives to aid production, certification and distribution, and show how stakeholders can select and marginalize farmers. Finally, the chapter outlines those elements of social organic development that act as a template for the renewal of farmer associations, and discusses available strategies to reduce the risk inherent in sustaining alternative avenues for organic sector development.

### Introduction

The first step to formal recognition of organic farming in Brazil was the establishment of standards covering production, processing, identification, and certification for vegetal and animal products, by the Ministry of Agriculture (FAO, 2004). Recently introduced legislation provides a broad definition of organic principles and cites various acceptable production methods, including agroecology (Altieri, 1995), biodynamic, and permaculture (Lula da Silva,

2003). Alternative systems, such as participative certification (Oliveira and Santos, 2004) and political agroecology (Byé *et al.*, 2002), are recognized in national law because it is the express aim of the organic law to support small farmers, foster cultural integrity of rural communities, and promote sustainable development. The law also acknowledges multiple certification systems (Pallet *et al.*, 2002; Fonseca, 2002), over 20 of which use third party auditing, to state, national or international standards (de Souza, 2003). Certification is optional for small farms that sell direct, on condition that records for agricultural and processing procedures are kept. However, bodies accredited to either IFOAM or ISO-65 standards must certify organic exports.

Thus in Brazil organic farming is not only a food production system but also a means to address environmental and cultural challenges. In this way, organic agriculture goes beyond compliance with regional, national or international standards, and is both reflexive and self-directing. The authors reject therefore the thesis of linear development based on economic concentration and industrial technologies, in which parallel systems, such as direct sale, small-scale on-farm processing, and subsistence, are considered anarchic and vestigial adjuncts to mainstream niche markets and not developmental pathways in their own right. Conventions theory acknowledges the scientific and socio-political legitimacy of multiple developmental pathways. However, the patterns of relationships, between agricultural production, food consumption and environmental conservation that contribute to the reduction of social inequality and territorial erosion are critical to sustaining these alternative pathways of development.

Various studies attest to a revitalization of rural communities in Brazil, arising from recognition of the social dimensions of agriculture and consequent diversification of activities having an economic dimension (Carneiro, 1997a; Campanhola and Graziano da Silva, 2000). This process entails building new rural-urban relations based on both symbolic and material exchange. Assuming that various forms of organic farming coexist and correspond to different institutional arrangements, the research poses the following question: Does social cohesion build capacity for small farmers to engage with markets? The objective of this research was to explore patterns of social conventions, and the potential to replicate in the context of small farming those conventions that are meaningful in relation to food quality and environmental issues.

Existing demand for root, fruit, leaf and salad vegetables, combined with favourable prices for fresh produce has produced a buoyant market for fruit and vegetables and stimulated expansion of horticultural production. Organic farming is an opportunity to add further value to horticulture. In Brazil, consumer willingness to pay for organic food of certified or guaranteed quality is high but organic supply remains below the level of demand (Assis, 2002). Furthermore, a much larger latent market is believed to exist, inhibited by the organic premium.

To date, the contribution made by the social sciences to the study of organic farming in Brazil has been limited to a few case studies (Tubaldini and Coelho,

2002; Cittadini, 2004). In particular, the way in which smallholders adopt organic methods in peri-urban areas, the green belt, as a means to access urban markets, has received no special attention. Thus, the authors elected to conduct a community-wide case study of Ibiúna, in São Paulo State, where there is already a cluster of organic holdings and the territorial management of organic farming is at stake (Abreu and Bellon, 2004).

This chapter examines how these small-scale farmers are organized, or organize themselves, to capture urban demand and develop organic production. The case study starts from the theoretical viewpoint that these farming communities have distinct social structures and economies that are different from contemporary rural society. Inside such rural territories, social networks overlap and articulate with one another but do not merge (Carneiro, 1997b), and therefore an examination of organic farm/market relations predisposes towards an understanding of these complex territorial and institutional arrangements.

## **Background**

### ***Organizational forms of organic farming in Ibiúna***

In order to explore the diversity of existing relations among farmers, consumers, and certifying agents, the authors identified and conducted interviews with farmers and other active group leaders, including technical inspectors and government officials. Interview schedules differed according to stakeholder: farmer interviews aimed to understand reasons for conversion, choice of production methods and marketing channels, and relations with other farmers and/or producer organizations. Interview schedules for technical officers focused on their activities and relations with organic farmers, as well as their understanding of the operation, growth and spread of organic farming. In total, twelve organic farmers and one conventional farmer, two marketing managers, two organic smallholder association presidents, two certification inspectors, two public sector agricultural technicians from the Rural Office (House of Agriculture), were interviewed. Discussions also took place with local counsellors and environmental activists. Based on secondary data, the research also identified the number and location of organic farmers. Most organic farmers in Ibiúna were located in the Verava micro-basin, but the office for one of the producer groups was located in the neighbouring community of São Roque, even though most produce came from farms in the Verava micro-basin.

Differences among social groups were assumed to be attributable to, not only different supply chain structures but also, specific value systems in social groups. In order to include and characterize the diversity of value systems, the study focused on norms, and rules. More generally, researchers assumed that social and economic actions occurring in the various groups derive from a moral and economic order (Weber, 1991). This ongoing order can be a way to ensure social reproduction of the group structure and values but equally it can generate

new ethical and economic values. It becomes necessary therefore to understand how a group uses cultural reference points, such as ethical or moral norms, to build an identity distinct from other groups (Oliveira, 1999; Almeida, 1999). Further, these group identities and positions are contrasted and compared with the trajectories of other groups and hence such interconnections between groups also had to be investigated.

### ***The institutional context of organic farming in Ibiúna***

Ibiúna is a municipality with multiple statuses. Located about 70 km from São Paulo, a city of 13 million inhabitants, the municipality can be depicted as both green belt (Ueno, 1985) and a tourist destination on the fringe of Paranapiacaba Mountain. The altitude of Ibiúna ranges from 840-1214 m conferring a temperate yet humid climate. Over 40% of Ibiúna's 1093 km<sup>2</sup> territory belongs to the Biosfera reserve, comprising native Atlantic forests (*Mata Atlântica*), vegetation, and associated ecosystems. Environmental protection zones are enshrined in state and federal law. This area is rich in strategic aquatic resources and natural lakes, which feed the city of Sorocaba and the community of Ibiúna. Development of agriculture in the area is marked with severe erosion problems. Horticultural holdings usually comprise both flat and steep areas, and preserved areas (Ahrens, 2003). The local climate is favourable for year-round horticulture including December to March, months when high temperatures and heavy rain halt production in other areas of São Paulo State.

The population of Ibiúna is made up of 64,160 inhabitants of the rural environment and 42,979 inhabitants of urbanized communities. However, farming is still the basis of the economy. Over 50% of landholdings are less than 10 hectares, making horticulture the prevailing agricultural activity. Most farm households (53% of the 7728 ha vegetable area) produce leafy vegetables, typically for salads (SAASP, 2001). The next most important horticultural crop is fruit. Leafy products require greater attention to temperature and water control. Many other commercial activities are undertaken alongside agriculture, often in response to the influx of city dwellers who visit the countryside of Ibiúna in search of peace and tranquility, and contact with nature. Such services include accommodation offered by country lodges, fishing, trekking, and the São Sebastião pilgrim fair. Other more elite activities have also sprung up in response to the new country house culture in the municipality, such as horse farming and riding. In actuality, many private holiday homes and second homes for the city population are small condominiums. Ibiúna attracts on average 20,000 tourists every weekend, which come from São Paulo and neighbouring cities. As a result there is a conflict of interest between those human activities that impact on natural resources and the requirements for preserving a higher environmental quality. Hydrographic basins from Ibiúna not only provide irrigation water for vegetable growing but also contribute to human water supply in both Ibiúna and Sorocaba. Formal and illegal real estate development for the

new activities such as tourism, including commercial fishing resorts, contributes to both a lower quality of and higher demand for water. Development also carries with it expectations for landscape preservation in order to support agricultural and other activities or amenities.

**Specific contextual barriers to the development and organization of organic farming**

Despite the existence of vast urban populations in São Paulo (13 million), Sorocaba and Campinas (together comprising 3 million), and buoyant demand for horticultural produce, farmers located in the green belt face difficulties marketing their output, especially during summertime. Subsequently, the maintenance of small farm households that are solely dependent on agriculture is problematic. Organic farming therefore is an alternative strategy available to struggling producers. The region currently has a significant concentration of small-scale organic producers who have taken this option due to the economic crisis in conventional farming and other commercial activity. But, the opportunity offered by the green market and new approaches to farmer organization and product distribution, is not without risk. Producers in the Verava micro-basin where most participants in the study were located mostly have a low level of education (often less than 3 years schooling), with low capacity to invest, and production units made up of poor quality land and inadequate or outmoded infrastructure (Table 15.1). A holding is an administrative entity, which can be cultivated by several farmers.

**Table 15.1.** Farm size in the Verava micro-basin.

Size band (ha)	% holdings (n = 37)	% area (total 2603 ha)
< 10	70.0	4.1
10-50	24.3	10.7
50-100	2.8	3.3
>1000	2.8	46.5
Non-registered	—	35.0

Source: SAASP, 2001.

There are approximately 90 small farmers in the Verava micro-basin, 72 of which are organic. Because none of these farms exceeds 100 hectares they are referred to as *mini-fundios*. Some farmers rent land, either because they have no other means to farm or to expand their area of production. State programmes to provide technical and extension services for organic horticulture in the Verava micro-basin, which contributes to the wider Sorocabuçu catchment supplying Ibiúna with water. Environmental monitoring in the Sorocabuçu River is funded in part by the World Bank. Currently, environmental law requires that a 30 m

strip of land along the river is designated under permanent protection, so that for farm units bordering the Sorocabuçu River the area of land available for cultivation has been dramatically reduced. The extent of production of leafy salad vegetables in the micro-basin has resulted in small, specialized organic units (Table 15.2). This strategy was promoted by a local private company, as discussed in the following section.

**Table 15.2.** Distribution of horticultural production in Verava micro-basin

Vegetable Crops	%
Leaf (cabbage, lettuce)	71%
Fruit (tomato, cucurbit)	23%
Root (beet, carrot, yam)	6%
Total vegetable crop area	143 ha

Source: SAASP, 2001.

Although there is suitable pasture for grazing in Verava, there is less animal husbandry than in other parts of the Ibiúna territory. Five farms in Verava raised horses or mules and several other farmers used horse manure as compost. However, no data could be found to verify this observation. Poultry keeping was found as a large-scale operation in one rural enterprise and poultry waste was previously one of the most affordable methods of compost used but the organic certification authorities recently banned this practice.

## Case Studies

### ***Forms of social organization for organic production and commercialization of farming***

The majority of, and oldest, organic farms in the micro-basin converted in the 1990s through the support of a project initiated by agronomists and other professionals who were ideologically engaged in the Brazilian environmental movement. These activists set up a company (C) to develop and commercialize organic production on smallholdings. This history helps to explain how the various forms of organization coexist. The authors' research identified four distinct forms of social organization, collective and entrepreneurial, that express *a priori* different concepts about the market and organic farming, but all of which used the company (C) as a constant reference point.

#### ***1. Church and supermarkets***

The first form of organization is represented by the Association of Small Rural Producers from Ibiúna (APPRI), which is linked with the Campo-Cidade (Country-City) Foundation, created in the late 1980s. Campo-Cidade activities

have been important for local development of organic farming in two districts, including Verava. APPRI was set up through:

- Initiatives of the Catholic church in two areas peripheral to São Paulo city; and
- Volunteer religious out-reach workers operating in Ibiúna.

These agents designed a project that included a set of social actions aimed at improving quality of life and increased solidarity among poor communities in the countryside and city, by regulating prices for both producers and consumers. The main objectives were environmental preservation, healthy food, and rural school education. The school building was funded by Campo-Cidade. Collective investments in transport and equipment were also achieved through the collaboration of Campo-Cidade, APPRI and the Ibiúna Union of Workers and Rural Employees. According to APPRI's present coordinator, organic farming started in the Cachoeira district (where many producers from APPRI are still active) but did not spread in the Verava district due to the downstream location and the likelihood of water pollution from upstream activities. This geographical situation made it difficult for farmers to comply with organic standards; river water analyses confirmed the presence of agrochemicals.

**Box 15.1. Spotlight on the Association of Small Rural Producers from Ibiúna (APPRI).**

Presently, APPRI includes over 50 farmers who supply over 800 families organized into purchasing groups, and many other families who frequent Sunday open markets at the Catholic church. However, only two of the 50 farmers are formally certified organic. Every fortnight APPRI farmers supply boxes containing 10 different products. The agriculture practised can be described as diversified, household-based, with low environmental impact and strong bonds between farm families and other citizens. On rotation, each farmer also has the opportunity to sell directly in an open market in São Paulo, where a higher premium can be obtained. Farmers have also set up direct trading links with consumer groups outside São Paulo, whose members periodically visit farmers and know the local conditions of production. Such cultural interchange contributes to the revitalization of the local rural culture, which is based on religious activities, music and horses, and the recognition of indigenous knowledge, such as of medicinal plants some of which are included in food boxes. Both market customers and consumer group members are socio-economically vulnerable but nevertheless aspire to eat healthy food. This aspiration is for good functional nutritional reasons but is also embedded in a value system that aims to sustain local food production and native plants. Cultural interchange also leads to a sense of cordiality and partnership among people with different social horizons.

In the early 1990s, a different expression of organic farming came from the participation of four farmers from São Roque and Ibiúna in the two municipalities' street markets and in São Paulo Organic Producers' Fair. These

farmers received support from the Farmers' Association of São Paulo and were encouraged to join Coopernatura, a new cooperative operating in the three neighbouring communities of Vargem Grande, Jundiaí and Mogi das Cruzes. The rationale behind Coopernatura in 1991 was to supply the 50 shops in São Paulo city that were selling natural and whole foods and were preferentially located in middle class districts. Coopernatura employed a manager, salesman, and secretary and invested in delivery vehicles but the coop failed after two years due to a lack commitment among members and subsequent instability of year-round supply:

The producers' vision was immediate and individualistic. They continued selling in street markets, especially during summertime when prices are higher. They were only selling excess production to Coopernatura, and when the price was higher. Only two producers were supplying Coopernatura year-round, myself and the other director (Coopernatura member).

Nevertheless, the efforts of association among farmers clearly created new spaces for marketing during this period.

## *2. A large commercial company (H&A)*

The second form of insertion of farmers into the market is characterized by vertical integration between farmers and the company H&A. The main goal in 1994 was to create new marketing channels and to occupy spaces in city supermarkets, using the experience of Coopernatura. The objective was to obtain a year-round supply of organic horticultural products with good visual quality. According to one company director, vegetables had previously often been 'small, ugly, crooked and expensive'. The company is legally defined as an association of small organic farmers but operates as a conventional private capital company. H&A is a large commercial concern that controls the entire supply chain, aims to maximize profits and efficiency, and uses aggressive marketing techniques that are not transparent and are ethically questionable. Suppliers receive less than a third of the prices paid by supermarket customers but nonetheless the company maintains that it sells fairly traded goods. According to interviewees, H&A's aggressive drive for profit has squeezed the profitability of farming causing discontent among farmers, and has introduced capitalistic forms of social organization for organic production to the area. One hundred and thirty farmers sell produce through H&A and about 70 of these are located in the Verava rurality.

The regulation of market flow is achieved through contractual obligations previously designated by the company's eight agronomists that stipulate exclusivity; farmers must sell their entire output to the company. All inputs and technical services are part of the contractual planning of production and the costs for these services are passed on to the farmers. In addition, certification is

conducted through the company and paid for by the farmer. However, the company is not obliged to purchase a farmer's entire output. Products are sold on consignment; farmers only receive payment for produce sold and not for spoiled or surplus produce. The cost of compliance with these terms is therefore high and reduces farmer profit substantially. H&A's products are clearly distinguishable, in supermarkets in all major Brazilian cities, by their brand, modern packaging, certification and labelling.

**Box 15.2.** The main certification bodies in São Paulo State.

The Association of Organic Agriculture (AOA) was created in 1989, started registering organic producers in 1992, and created an organic label in 1996, which is likely to gain IFOAM accreditation in the near future. AAO is based in São Paulo city and the label is widely recognized on products in most of São Paulo's supermarkets. Many farmers in the study area are certified by AOA. During the same period, (the 1990s), the company that grew out of Coopernatura moved away from AOA certification to the Biodynamic Institute of rural Development (IBD), which was set up in 1986 and began certifying from 1990. IBD was accredited to IFOAM standards in 1995 and to ISO 65 in 1999, for the German market. IBD is located in Botucatu in São Paulo State and is the only Brazilian association with internationally recognized organic and biodynamic certification. IBD group certification reduces the cost to individual farmers by as much as 90%. The Brazilian Biodynamic Association (ABD), created in 1999, also provides certification and conducts research and training. A third certifying body operating commercially in the study area is ECOCERT.

Farmers joining H&A were initially certified by AAO but later obtained group certification from IBD. One of the reasons for the switch was so that H&A could access larger domestic and export markets. However, the division of responsibility between farmers and H&A is unclear due to the lack of traceability from product to farmer. Certification can be obtained for a cooperative or association, or by a commercial enterprise also using its own label but this is not without problem:

The company owns the certification label, and marketing with this label occurs solely through this enterprise. Then the enterprise selects a set of producers, completes audits in various areas, everybody agrees, and they are certified. But it consists in a collective certificate, which belongs to the solicitor. Then a producer cannot sell on his own with this label, but must sell through the enterprise, the wholesaler. To sell on his own, he is bound to sell as conventional product. This was somehow a manipulation to maintain the producers (former AAO inspector).

Researchers interpreted these findings as a coherent system, in which H&A has played a pioneering role in planning production, distributing product and accessing mainstream urban markets. But this drive to expand markets into commercial spaces has been accompanied by the replacement of cooperative

relations with a more Taylorian management ethos (Williamson, 1986). The inherent risk for farmers in this management strategy is high since planned production at farm level can exceed market demand, one interviewee used the term super-planning to indicate both the lack of balance between supply and demand and the vast scale of the operation, which encompassed over 100 farm units. In any case, large commercial organizations offer relative market security for an agricultural activity with high levels of technical and economic risk. In horticulture, planning is critical (Salmona *et al.*, 1977). Delegating planning to a third party with technical support lends security to the production process but restricts opportunity for producers to learn new skills. Moreover, production requires little interaction among producers and in this form organic farming becomes the mere substitution of conventional agrochemical inputs with mechanical and other permissible organic techniques.

### *3. Horizontal integration between productive and commercial positioning*

A third form of social organization identified in Ibiúna is represented by an association of 15 small farmers, eight of which prioritize the commercial dimension of the association, whilst the remaining seven regularly supply to the association since membership does not involve a contract of exclusivity. This group is led by one member farmer who chose, for ideological reasons, to create a new organization based on the principles of exchange of information and sharing problem solving approaches through daily contact. Unlike the aforementioned group, this group prioritizes the social as well as the economic dimension of organic farming in return for a 10% share of gross profits (i.e. retail price received). Management of the association is flexible and participatory. The association supplies two large supermarkets and several smaller retail outlets. The group also operates home delivery and sells to a consumer group, in a Catholic community on the outskirts of São Paulo, and periodic open markets similar to Campo-Cidade (the chairman of the association was formerly treasurer for Campo-Cidade). However, most produce is destined for the supermarkets where it is sold alongside AAO products. Members have more freedom to plan planting schedules and incorporate diverse agricultural strategies and the group collectively discuss any market intelligence gleaned so that individual farmers can adjust enterprise management accordingly. All individual producers are certified by AAO, whereas the collective box scheme is certified by ECOCERT. These farmers hire agronomists independently of the association.

Since moving from a rurally located operation to a packing plant in the centre of Ibiúna in 2004, the association has grown rapidly. The new premises enable the association to conduct weighing and packing operations on a larger scale (employing three assistants) and to provide invoices and receipts to customers and producers. The chairman of the association presents the producers with their cheques in person because he feels that face to face communication is important

for building strong but amicable business relationships. However, as the association increasingly faces competitive pressures, it will have to demonstrate the ability to, not only understand but also, respond to market signals and the challenge for the future is in achieving this ability without losing social cohesion and justice in the process.

#### *4. Integration through an existing cooperative*

A fourth form of organization was established in 1995 by 23 producers in one rural neighbourhood as a reaction to the harsh conditions for producers in the first identified market channel. Farmers who were concerned about the low price paid to producers compared with retail prices in supermarkets, sought to assure fair economic return on production by enrolling dissident organic farmers in a regional cooperative. Integration of the association with the cooperative occurred in late 2003 following a training course offered to both association and cooperative members. Although the director of the cooperative had already discussed the possibility of integration, the course provided an opportunity for farmers to cement this relationship. Members of the association gain enough marketing support to become commercial and benefit from the cooperative's strategy to explore new markets. The premium market for organic products is to be found in the supermarkets of medium and large cities in São Paulo State, where the cooperative operates. It is anticipated that the cooperative will also target export markets for specific horticultural products. As in the previous form of organization, this cooperative does not require members to supply exclusively nor adopt an obligatory certification system. The director, taking into consideration transportation, administration and networking costs, monitors the prices paid to the producer and by the consumer for fairness. Finally, as well as providing access to more and cheaper organic inputs, integration benefits farmers through the availability of technical expertise from specialist organic agronomists who are proficient in organic methods such as the use of green manures.

#### *Persistent individual forms of direct selling*

Small farmers who sell in street markets and informal outlets on city streets represent the fifth and final form of organization. This form of direct selling was not closely observed in this study and is practised by many farmers who are also affiliated to an association or cooperative.

#### **Summary of organizational forms**

In the final analysis, the forms of organization encountered were diverse but had overlapping trajectories. The formative influence of Campo-Cidade and Coopernatura persists to this day and some of the original project agronomists

are still active in the region. The existence of H&A is an acknowledged lifeline for some farmers. An examination of organizational forms not only reflects existing market relations but also, illustrates the emergence of new economic relations among farmers and between farmers and consumers with changed food purchasing priorities (Table 15.3). Most of the organizations investigated did not operate exclusivity clauses thus allowing farmers to spread risk by selling to the association, cooperative, direct, or to APPRI.

**Table 15.3.** Classification of organizational forms encountered.

Case	Farmers	Production and certification	Marketing	Values
1. APPRI	50 farmers, 2 organic farmers Interaction with city consumers	Food autonomy and diversity via box scheme Consumer-validated	Solidarity in pricing and integration Food sovereignty communities	Fraternity, cooperation Congruence between principle and practice
2. Private co. H&A	70 organic farmers in micro-basin Hierarchical/technical relationship	Super-planning Input and technical assistance Group certification	High visual quality City supermarkets Demand-stimulated conversion	Economic realism, technological orientation High environment impact
3. Organic assocn.	15 scattered farmers Mutual exchange Strong leadership and market investment	Individual initiatives Exchange experience/information Farmer group certification	Commercial agility and efficiency Fairer prices for producers	Social justice, respect, liberalism
4. Group coop.	15 neighbouring organic farmers, 105 conventional farmers	Based on org. farmers' experience, possible impact on conventional farmers	Outer-city supermarkets Secure markets and fair prices (producer and consumer)	Timing Collective vision Regeneration Proximity

## Discussion

### *Defining new territories*

In the case of organic farmers in Ibiúna, the space for articulation and action is not solely the municipality of Ibiúna, or the circles of geographically proximate relations (i.e. neighbourhoods). The organic farmers in the study maintained complex relationships with diverse actors in wider networks relating to marketing, technical assistance, certification systems, and urban consumers. The

authors suggest therefore that the territory should be viewed as the expression of multiple means to integrate small-scale farmers in a peri-urban area with low socioeconomic status, as agents in globalization. Although Ibiúna's main economic identity is a tourist location, much of the labour employed in this sector comes from the surrounding conurbations. Therefore, specialist organic horticulture offers the opportunity to develop a locally based rural industry with added value. The role of Ibiúna municipality in the growth of organic farming is a crucial route to decentralization of local government power, in contrast to the dynamics imposed on citizens in other peri-urban areas (Lorda and Duvernoy, 2001). However, analysis of the process of farmer-insertion into wider markets has highlighted the deficiency in public policy instruments available to support and strengthen family farming in general, and organic farming in particular (Assis, 2002). But, despite a scarcity of resources, the Micro-basins Environmental Monitoring State Programme is an indirect form of financial aid for organic farmers who need to understand the environmental constraints that are regularly monitored by the certification institution. This in turn facilitates the expansion of environmental objectives within the programme.

### ***Organic and environmental issues at stake***

This research has thrown up new questions, such as what exactly is the environmentally driven component of social and organizational forms? The Verava micro-basin has a dual status as site of horticultural production and watershed. With a high concentration of small organic farmers, the issue of resource conservation could help reduce both transaction costs and environmental impacts. This could be achieved through, not only input management but also, the implementation of practices to recuperate soils, and ciliary (river-bordering) forest to improve water quality. An improved mix of trees, hedges and woodland would also benefit crop production through the provision of breeding grounds for pest predators etc. However, the implementation of hydromorphic buffers (ciliary) and protection zones (AAP) threaten the survival of small-scale horticulture. APPRI already supplies medicinal herbs, many of which come from wooded areas, but in general the role of agro-forestry within organic farming has not been sufficiently explored (Ahrens, 2003). The integration of trees into organic standards is rather ambiguous, whereas there are more explicit parameters laid down for conventional agro-forestry, and interestingly the use of trees in permaculture and biodynamic agriculture also (Sixel, 2003). The poor quantity and quality of water is a central debate among various actors in Ibiúna and the surrounding region. Contamination risks are real and there is an acknowledged reduction in surface water restricting the scale and scope of economic activity, which compromises the distribution of goods to major urban markets and turns responsibilities into future threats for millions of local inhabitants (Mug, 2004).

### ***The meaning of organizational and production diversity***

Despite a lack of research on organic food consumption and marketing in Brazil (Karam *et al.*, 2003), it is estimated that sales to Catholic communities through box schemes, and direct sales to urban consumers, have helped to redefine local values and guarantee the reproduction of a truly rural economy. The role of the Catholic church in the trajectory of agro-ecological movements has been noted in other Brazilian states also, namely Parana, Sta Catarina and Rio Grande do Sul where the Earth Pastoral Commission works specifically with small farmers (Brandenbourg, 2002). This form of organization is accompanied by a world vision and value system akin to biodynamic and permaculture production systems. These systems not only substitute agro-toxins with other inputs but are a prototype for a moral agriculture.

The growth of organic farming in Ibiúna is testament to a paradigmatic shift in attitude to agriculture, from production or output to survival and reproduction of family farming. The employment of multiple strategies to achieve this common goal has been recorded in other Brazilian states also (Karam, 2001; Fonseca and Campos, 2002; Schmidt, 2003). Through the integration of non-market values, new relationships between producers and consumers have emerged based on sharing experiences and information, and building technical capacity and solidarity. Direct markets enable farmers to bond socially with consumers, whereas the exclusivity required by large companies increasingly distances and alienates the farmer from the consumer. Although networking and extension patterns differ according to the form of organization in Ibiúna, the expansion of organic technical networks in particular is known to occur in other regions also (Ruault, 2000).

### ***The planning problem in horticulture***

Horticulture has a special status in organic farming, compared with other commodities, because it contributes widely to household consumption and therefore impacts directly on family well-being, health and esteem. Although the total area under organic horticulture in Brazil is relatively low (approximately 3000 ha in 2002, 1% of total organic area), the sector employs nearly 8% of organic farmers (Ormond *et al.*, 2002). Planning is a strategic operation within horticulture and this study has shown the existence of both collective and individual initiatives leading to very different crop rotations and mixtures. With reference to the different forms of organization, mass planning by the large commercial company simplifies production and reduces the diversity of crops, in opposition to the goals of organic farming. But, when commercialization is based on a network of urban consumers with relative geographical proximity, the planning system is characterized by diversity of products often combining fruit and vegetable production with dairying and short supply chains. In the final analysis, more research needs to be undertaken to investigate how organic

farming transforms conditions for farm reproduction, redefines cultural and economic identities, and contributes to social stability (Sylvander and Bellon, 2003). These results represent the first stage of an ongoing research programme. Nonetheless, the authors were able to verify that most organic farmers in the study had experienced technical or environmental failures and a fall in profits under the conventional farming model, and had been forced to exit farming for precarious livelihoods in the local informal tourist or construction sectors. In this critical situation, the large company was not perceived as exploitative but as a means to remain in agriculture. However the existence of other forms of organization is evidence of agriculture-related forms of *social marketing*, a phenomenon that is increasingly embraced as an important mechanism for international and rural development in a global economy.

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