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ECONOMICAL AND CULTURAL CONSTRAINTS IN THE ADOPTION OF AGROECOLOGICAL METHODS

A CASE STUDY IN MINAS GERAIS – BRAZIL

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Abstract — This text traces the trajectory of the Agroecological Association of Ouro Fino (AAOF) during its ten years of existence. Located in the south of the state of Minas Gerais, Brazil, Ouro Fino's territory presents a diversified agriculture based on family labour with coffee as its main cash crop. The AAOF came into existence in 1999 with the objective of helping small local farmers in the practice of a sustainable agriculture both from an environmental as well as economic and social stand point. Nevertheless, despite the visible achievements, mainly the sale of members' production in the organic market, the Association has not yet succeeded in increasing significantly the number of affiliates particularly among family farmers. We try here to examine the reasons that have motivated current members to join and the possible causes of the difficulty in increasing their number.

Key words: family farming, farmers association, organic agriculture

Résumé — Ce texte récupère la trajectoire de l'Association Agroécologique de Ouro Fino (AAOF) pendant ses dix ans d'existence. Localisé au sud de l'état de Minas Gerais - Brésil, le territoire d'Ouro Fino présente une agriculture diversifiée de base prédominairement familiale, avec le café comme culture principale. L'AAOF est née en 1999 ayant pour le but aider les petites producteurs locaux dans la pratique d'une agriculture durable, autant du point de vue environnemental, économique et social. Pourtant, malgré les conquêtes visibles, surtout en regard de l'insertion des produits des associés au marché bio, l'Association n'a pas réussi augmenter le nombre des associés, surtout entre les producteurs familiaux. Dans le texte nous examinons les motifs qu'ont stimulé l'adhésion des membres actuels et les causes possibles de la difficulté en augmentant son nombre.

Mots clés : agriculture familiale, association de producteurs, agriculture bio

INTRODUCTION

There appears to be a common consensus today that agriculture has other functions besides just the production of food, fibers or biofuel. What is conventionally called the multifunctionality of agriculture encompasses its role in preserving natural resources and landscapes as well as social and cultural traditions. On the other hand, the growing world population and food crises like those observed in some developing countries in 2007 raised again the question of how to feed a population estimated to reach some 9 billion people by 2050 in a sustainable way. For Doré et al. (2008) this challenge is a three fold: it will be necessary to increase technical progress so that food production can be enhanced without degrading the environment, something we haven't yet succeeded in doing; economical rules will have to be modified in order to stimulate food production in southern countries and it will also be necessary changes in the world eating habits.

During the years that followed the Second World War, a set of technological measures were propagated aiming of increasing food production around the globe. What became known as the green revolution launched the era of productivist agriculture in which we find ourselves in. But despite the incontestable gains in yield, millions of people continue to suffer from food insecurity and agricultural activity is now a major polluter of the atmosphere and natural resources. The main agricultural products have become commodities that circulate around the world controlled by a few international agribusiness companies and food distribution empires (Van der Ploeg, 2008) with prices and quality standards defined far away from the farmers' fields. The technical changes in production have drastically altered work relations in rural areas with increasingly fewer people employed in agricultural activities.

On the other hand, the alternative models of agriculture that can be generically seen as ecology oriented, propose the adoption of environmentally sound agricultural practices capable not only of producing food but of creating economical and social relations aligned with the means and traditional social structures to be found in many family farming-based communities.

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This article can be placed alongside already existing studies that try to identify the factors that stimulate change and the adoptions of new practices by family farmers. The study benefits from several sources of information: the farmers who are members of the AAOF; the non-members in close contact with members, such as neighbors and relatives; the consumers of organic products and local professionals in charge of providing technical assistance to family farmers. Field research was based on the application of an open questionnaire and oral interviews and complemented with data about agricultural production and environmental problems in the municipality of Ouro Fino.

As we will see in the following sections the motivation to do things differently from those around must be constantly renewed in order to help farmers to face the challenges of farming

1. FAMILY AGRICULTURE IN BRASIL

If in many countries agriculture and family farming are basically synonymous, in Brazil authors like Prado Junior, 1994, Furtado 1995, Guimarães, 1989 have long identified the historical predominance of the large land ownership, which assures local economical and political power. Family farming has, for most part of the country, developed in the interstices of large plantations growing export cash crops. From this highly concentrated land distribution resulted in a peasantry that in the words of Wanderley (1995) can be considered a hindered sector, unable to fully develop its potentialities and in permanent struggle to gain access to land and other resources.

Therefore, the Brazilian case demands a clear definition and delimitation of the family agriculture category. It is generally agreed that family farming is a form of agriculture production that associates the family, the ownership of the means of production and the direct management of the work. The multiplicity of ways in which this trilogy can manifest itself in concrete situations molded by the specific characteristics of the agro ecosystem, different historical processes and particular socio-economic and political circumstances is responsible for the great diversity found within family farming. The predominant way in which the work is organized appears in most papers (Kageyama, 2008) and in the governmental definition of family agriculture as the basic parameter of differentiation from the non family sector of agriculture production.

Since the middle of the 1990's the Brazilian government has adopted specific policies directed to family agriculture like the National Program for the Support of Family Farming (Pronaf) and established that the family unities as being those that meet the following criteria: are no larger than four times the regional fiscal module; have a labour force composed predominantly of family members; most of the family income is derived from farming activities; and are family-managed. Those that fulfill these conditions are entitled to differentiated lines of credit and certain facilities to market their production

The 2006 agricultural census showed that despite its historical neglect and the political emphasis on Brazil's export cash crops, 84% of all agriculture establishments in the country are family farms, responsible together for 87% of the national production of manioc, 70% of national production of beans, 46% of the maize, 38% of the coffee, 34% of the rice and 58% of the country's milk production.

1.1. The multifunctionality of family farming

In recent decades the discussion around family farming has being enriched with the added contribution of the debate on the multiples functions of agriculture; from this perspective the "rural" is no longer seen as the exclusive domain of agricultural activities and of farmers.

According to Marsden and Sonnino (2008), the concept of multifunctional agriculture is interpreted in Europe in three competing ways, reflecting different approaches to rural development: as a palliative for those producers unable to survive from agriculture only in a productivist and competitive environment; as a form of farmland diversification through the addition of ecological, social and aesthetic functions to farming; and as part of a sustainable rural development paradigm where agriculture plays a socio-environmental role, sustaining rural economies and cultures. The authors list three conditions for an activity to be considered multifunctional under this last interpretation: adds income and employment opportunities to the agricultural sector; corresponds to the needs and expectations of society at large; and implies a redefinition and reconfiguration of natural resources in and beyond the farm enterprise.

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In Brazil multifunctionality is defended as a public policy tool for the support and promotion of family farming. The family forms of agricultural production are considered as *“...the ones that better express, effectively or potentially, the concept as a public policy aiming to promote of a productive model that is socially equitable, environmentally sustainable and capable of valuing the diversity of cultures and biomes”* (Cazella, et al, 2009). The project “Researches and dissemination actions around the theme of the multifunctionality of family farming and territorial development in Brazil” conducted from 2006 to 2008 by researchers from different institutions identified four functions that the multifunctional family agriculture must comprise: the socio-economic reproduction of rural families, the promotion of food security for themselves and society at large, the maintenance of a social and cultural fabric and the preservation of natural resources and rural landscapes.

Although the Association of Agroecological Producers of Ouro Fino that we will be analysing in this paper is not composed only of family farmers, the family labour and support is a fundamental aspect for the adoption and economic viability of organic farming methods and the Association, to be truly agroecological, must incorporate the other dimensions of agriculture into its objectives.

1.1.1. The effects of modernization of agriculture on family farming

In Brazil, like in most developing countries, the modernization paradigm gained momentum beginning in the 1970s decade onwards with the adoption of a technological package including chemical fertilizers and pesticides, high yielding hybrid seeds, and increasing mechanization. The consequences are well known (Mendras, 1984). The yield augments and economic success of some farmers was accompanied by the lost of propriety through bank debits, the increase in rural exodus, the loss of biodiversity and the degradation of natural resources. The negative consequences were particularly hard for family farmers.

But perhaps equally important as the social and economical consequences of the modernization of agriculture is what we could call a switch in status references. If in the old peasant societies communal modalities of work were valued, in the machine era the effort to eliminate human labour is incessant. As pointed out by Francis (1994), the adoption of what are considered modern practices and especially the purchase of showy machinery, has a status element involved. And so does the utilization of methods that enhance human control over nature's processes. This last embedded dimension of modernization has over time developed a deep down resistance to adopt practices that could be seen as a going back to the hard physical labour of old times. Complementary to this when farmers are reduced to mere producers of undifferentiated commodities for global food industries that demand standardized products that will only acquire a “personality” at the final stages of processing the vital linkage between producer, product and locality is lost.

During the past two decades agroecology has been seen by many as an approach to rural development capable of enhancing production in a sustainable way by focusing on local solutions compatible with the agroecosystem's potentials and particularities and the local people's cultural and social traditions. Many initiatives in Brazil and Latin America have proved its benefits but the challenge of adopting agroecology as one of the tools for promoting sustainable rural development remains. The study of pros and cons of local experiences can indicate the key elements behind more or less successful initiatives. The understanding of a particular agricultural context requires taking into account that agricultural development results from the complex interaction of a multitude of factors and demands an interface between agriculture and social and economical systems.

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In Brazil, the new National Policy of Technical Assistance and Rural Extension for Family Agriculture (PNATER) proposes an agroecology based and free technical assistance to family farmers. Nevertheless, professionals are poorly prepared in their college formation for the challenges of promoting sustainable agro systems, which is reflected in the low number (1,8%) of establishments registered as organic in the 2006 agricultural census.

2 – THE ASSOCIATION OF AGROECOLOGICAL PRODUCERS OF OURO FINO-MG

Coffee arrived in Brazil around 1727 and progressively became a major cash crop. The southern part of the state of Minas Gerais is responsible for 53% of the national production and most of its coffee is grown by small family farmers in mountain areas.

Located in the very southern part of Minas Gerais, Ouro Fino's economy is based on a diversified agricultural production led by coffee but also encompassing also dairy and horticultural products, beef, vegetables, maize, beans and timber. More than 70% of the agricultural establishments have less than 20 ha and 84% of all establishments are considered to be family farms. With a hilly topography an average of 900 meters above sea level, the region belongs to Brazil's most important area for *Coffea arabica* production.

Adaptable to all sizes of proprieties and cultivated equally by small and medium size farmers, coffee is the major pillar for the local economy. But the price of coffee beans varies according to international dynamics beyond the farmer's control, and frequently costs of production are higher than revenues, especially for those that depend on hired labor. Even though coffee beans are priced according to a range of quality standards (including degustation tests) local traders conveniently utilize only two classifications for pricing, discouraging investments in quality.

The nutrient-poor, erosion-prone latosol soil of the region, the high slop of some plantations and the nutritional needs of coffee plants result in a demand for fertilizers often beyond the smaller farmer's means. Even so, producers are constantly approached by representatives of agro products enterprises ready to sell necessary as well as unnecessary agricultural inputs. This has led to the general belief that production is impossible if not supported by an array of external inputs.

The Agroecological Association of Ouro Fino (AAOF) was born in 1999 as the result of the work of two professional related to the local city council administration. The initial talks with individual farmers and already existing farmer's associations aimed at increasing awareness about the environmental and economic benefits of adopting more sustainable productive systems that demand less external inputs. The interested farmers and consumers met for communal meals provided by the only organic producer at the time. Thus the original Association was formed by producers and consumers, a situation that latter changed as process of organic certification required a group composed only of farmers.

The original group was formed by producers, consumers and sympathizers of the agroecology idea. In 2004 the Association gained a new statute and only the nine producers remained affiliated. Today there are 16 small farmers with an average propriety size of 17 ha. Of these, only 6 can be considered family farmers according the governmental definition mentioned before and make little use of hired labour. The others combine the farming activity with some other income generating job and have permanently hired workers. All farmers own the propriety and the majority inherited at least part of the land. Despite the parents' dedication to the organic production, up to now only three of the farmers have an heir interested in taking over the work.

2.1 – The organic production and commercialization

All farmers affiliated with the AAOF are coffee producers to some degree. Three are commercial vegetable producers and the great majority combine coffee growing with fruits like banana, avocado, citrus, papaya, nuts, etc. beans and maize for sale and for their own consumption, small animals like poultry, bees and sheep and some cattle. The family farmers and the non family farmers who live on the propriety are better able to diversify and combine agriculture and animal husbandry.

With the rapid growth of the organic market in Brazil there is plenty of scope for further increase and diversification of AAOF production. Consumers complain that there are few fruits offered and that is a potential area to be exploited taking advantage of the cooler temperatures provided by the local chain of mountains. In fact, although the organic coffee gets better prices, the international coffee market has kept the price of coffee about the same during the past 10 years while the costs of inputs continue to climb. Diversification is therefore and imperative for the economic viability of these farmers.

At first, the organic fruits and vegetables were sold at a stall in the local market and in supermarkets, but since October 2008, the group started selling a larger range of products at an open ecological market at in the much larger city of Campinas, in the neighbouring state of São Paulo, some 130 km away. This has placed the group in contact with the Brazilian organic commerce at large and enhanced the possibilities for innovation in production. The expansion from the local market to a larger one is considered an important achievement by AAOF associates. During the first weeks, sales at the Campinas market did not exceed 200 euros per week, but 18 months later, this amount have increased four folds. This has allowed the Association to purchase a used van at the end of 2009.

The AAOF affiliates are free to sell their production as they please but, a good part of the coffee is sold through the cooperative named COOPFAM (Cooperativa de Agricultores Familiares de Poço Fundo e Região) located some 150 km away. Created in the year 2000 with only 20 members, today the cooperative is composed of 246 families organized in small cells and associations and is part of the Fair Trade Labeling Organisation (FLO). The coffee that is not sold through the Cooperative or organic buyers contacted by the Association is processed and sold directly to consumers.

We can therefore identify three market dimensions in the AAOF – the local market that absorbs a good part of the vegetable production, the middle distance market represented by the organic open market in Campinas and the international organic coffee market. Thus producers have managed to engage themselves in short and long circuits of distribution, often supported by social relations vital to the building of markets based on mutual trust (Wilkinson (2008).

But the insertion in the more formal organic markets, like the international coffee market demands an internationally recognized certification. The AAOF is now certified by the Bio Control System Eco-Garantie (BCS ÖKO). The organic certification is costly and often not affordable for the smaller farmers as shown in figure 1. The joint certification that is possible through an Association diminishes costs but creates a group responsibility for the fulfillment of regulations. That can lead to the rise of gossip and distrust. The certification cost for AAOF member is at present around 200 euros each per year.

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Figure 1. Proportion of organic establishments certified and not certified



Source : IBGE, Agricultural Census, 2006

2.2 – The motives for joining the AAOF

We asked current members of AAOF what led them to join the Association and were presented with answers that can be divided in the following categories:

- a long standing interest in sustainable forms of agriculture. This group was formed by those who had already been involved in some sort of alternative movement and wanted to practice a more environmentally friendly agriculture.
- health problems with chemical agriculture. This group houses those farmers involved with crops that demand intensive use of pesticides, like tomatoes. Turning to organic agriculture meant being able to remain farmers without the health risks.
- the economical benefits of organic products. The group encompasses farmers that wanted to add value to their production.
- the search for alternatives for a small propriety. This group is composed of those who are new to agriculture and want to do something different on their small piece of land.

The following quote from one of the first family farmers to join the group exemplifies the search for a healthier relation with agricultural activity:

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“Before I had problems with chemicals. I used to have a lot of head aches. Now I am a lot better. Now I can feel the scents of the earth. The earth has a very nice scent. I like to go barefoot in the garden. Before I couldn’t.”

Donizeti Godoi, Ouro Fino, 2005

2.3 The motives for not joining AAOF

Although the Association has increased its numbers from nine farmers in 2004 to sixteen current members, this growth is small if compared to other organic initiatives such as the already mentioned COOPFAM (Silveira and Marques, 2009). The motives alleged for not joining are:

- yields, especially of coffee, will decrease. It is true that the majority of AAOF members have experienced a decrease in coffee production, and are still looking for ways to revert this situation. Appropriate technical assistance is crucial to improve production.
- production costs will increase. Certainly organic methods demand more labour. The prohibited use of herbicides, for example, is pointed to as a major difficulty. This is a constraint particularly for those who depend on hired labour.
- markets are uncertain. Even though the organic market grows every year, it is still less consolidated than conventional ones.
- the certification legislation is hard to follow. It is true that the relationship between farmers and organic certifying agencies is not an easy one. The inspector is often seen, and behaves, like someone much more inclined to point out faults than to help farmers to look for solutions. Besides, joining an organic certified Association means having to comply with a set of norms that limits the freedom farmers are traditionally accustomed with .

As we have already pointed out, the modernization of agriculture created parameters of yields and practices highly dependent on external agricultural inputs that are hard to break.

3 – FINAL CONSIDERATIONS

Despite the visible economic and environmental benefits shared by the AAOF members, the association fails to attract other small farmers and remains at the meagre number of sixteen affiliates due to economical as well as cultural reasons.

In its ten years of existence the Association has gained access to new markets and accumulated experience in group relations and organic practices. Yet, to continue to grow, it has to look for new alliances with research and education institutions and make an effort to gain visibility an active voice in future rural development initiatives within its own community and in the Brazilian organic and agroecological movements.

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Figure 2. Coffee plantation of a AAOF associate



Source : Field reseach, 2010

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