Exploring the organic agriculture practice in Mexico: an opportunity for small-scale farmers to feed themselves

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Abstract. We examine how organic farming practiced by small farmers in rural zones in Mexico could build a self-sufficient food system. We hold the hypothesis that the promotion of the local consumption of organic produce is an alternative to strengthen the local economy needed to sustain food self-sufficiency. The hypothesis stands against export oriented market and high external input technology of industrial agriculture that erodes small-scale farmers' ability for self-sufficient food. Firstly, a debate about how organic farming systems promote local economies is presented, drawing on sustainable agriculture approach. Organic agriculture seems to be a suitable alternative for small-scale farmers because it allegedly diminishes financial vulnerabilities since they drop chemicals and external scientific assistance costs. Secondly, by analyzing some interviews to consumers in Mexico City, and documentary sources, we characterize the socio-economic networks supporting the organic practice in the country. Finally, we trace perspectives and conclusions of this alternative.

Keywords: organic agriculture, self-sufficient food system, local food system, direct marketing, Mexico.

1. Introduction

During the second half of the 20th century, rural spaces were profoundly impacted by changes in agricultural practices. Those changes dealt with the introduction of sophisticated technology, machinery and application of chemical products (e.g. pesticides and fertilizers). This entire era is known as "the green revolution". Through decades of industrial agriculture, the productivity of crops has grown; there is more food trade among nations allowing people to enjoy a wide variety of food. In fact, one of the most celebrated achievements has been the ability to feed a bigger population across the world. However, less optimistic assessments arise when analysing issues related to the environmental and social costs of all these improvements, and the access to this greater amount of food production[i]. In the early 21st century, "there were nearly 800 million people hungry and lacking adequate access to food, comprising 18% of all people in developing countries"[ii]. Moreover, the poorest people of the world live in rural areas in developing countries[iii].

To analyze the source of hunger and rural poverty, several food scholars have provided work on the extended practices and structures of the agricultural sector with particular emphasis on how agriculture intertwines in the social spaces where it is carried out[iv]. This approach let us to know that the techniques adopted in agriculture, as well as the economic forces behind the production system, transform the social conditions in rural zones. In fact, some of these analyses point out industrial agriculture and its global market counterpart as the sources of social exclusion, land degradation and structural problems of food access. Some of the prominent outcomes of this agricultural model deal with the concentration of the food supply chain and retail system in a few transnational corporations (TNC´s) driving out the small farming bias in the agricultural sector. Therefore, it is concluded that alternatives to industrial-global food system must address solutions to the social exclusion problems and the new environmental challenges.

Taking advantage from the mentioned approach, this paper shows general outstanding results of the industrial-global food in Mexico. We mainly focus on the economic and social aspects. The consequences of this agro-industrial system in Mexico are similar to other developing countries that established neoliberal economic policies to enter to the global economy during the 1980s and 1990s. Rural migration and national food dependence are some of the most remarkable consequences. After acknowledging these results, we agree that alternatives for Mexico should assimilate small-scale farmers in a project of rural development maintaining ecological agricultural practices. Therefore, we turn attention to the organic farming in Mexico, as it apparently offers a sustainable alternative. The following are some relevant facts supporting our insight: 1) 99% of the organic farmers are smallholders and the annual growth of the sector is 30% making it the most dynamic agricultural subsector; 2) Today, 82.7% of the total organic

farmers are indigenous people organized in cooperative and living in the poorest and the most marginalized regions of rural Mexico[v]; 3) These organizations have resisted the economic tendency towards concentrating the production system in the hands of big corporations, which separate the workers from the benefits of their own labour. Then, the organic farming model followed by smallholders in Mexico in some cases has reached crucial goals pursued by peasants' movements: for instance, to control the entire production and supply chain, thus achieving a self-sufficient local economy.

Considering these facts, in this paper we explore the potentialities of the organic farming in Mexico to alleviate poverty while adopting ecological practices in agriculture. Our aim is to characterize the market and institutional frame in order to identify strengths and limits to consolidate the organic sector such as sustainable alternative. Some of the questions maintained here are: What are the characteristics of organic production systems that favour small-scale farming in Mexico? What are the barriers that organic agriculture alternatives face in Mexico? Given the remarkable external market orientation of the organic produce in our country, we also ask if the domestic market is the most suitable alternative to consolidate a sustainable organic project and what possibilities exist to develop an organic market. Also, we looked at the tensions that the global certification rules poses on the organic Mexican farmers.

This paper is organized as follows: firstly we identify the sources of exclusion caused by the industrial-global food system. Secondly, we showed the results of the dominant food system in Mexico. Thirdly, a theoretical discussion about sustainable agriculture approach is offered. This section provides a framework to identify the organic farming characteristics favouring small scale farming in the country. Fourthly, an overview of the Mexican organic sector is presented where a variety of indicators are used to analyse social and economical implications of organic farming, typology of producers, market orientation, national labelling, and programs and politics to support the sector . Fifthly, we attempt to identify the problems to create a domestic organic market drawing on demand and supply indicators. Sixthly, the first results of a survey conducted during between the months of July and September in 2008 in Mexico City and around in the explorative phase are presented to complete the discussion regarding the potential market for organic food products; as well as the consumer profile. The study was conducted by the chair of marketing for food and agricultural products of the University Georg-August. Finally, the section of conclusions is presented.

2. Outstanding results of the industrial-global agri-food system.

In this paper we understand the dominant food system as a both industrial and global system. On the one hand, given the methods of production based on large-scale, machine and chemical intensive farm, it is call industrial. The industrial agriculture departing point took place with the introduction of soils chemicals in the 19th century. As is well known, the industrial food production encompasses cattle, fishing and agriculture, but in this paper we will focus our attention on the agricultural sector. On the other hand, since the retailers today controlling the trade food channels are mainly transnational corporations operating in the nationals´ economies, the system is also called global[vi]. Indeed, the global nature of the dominant food system was consolidated during the 1990´s, when almost all Latin American, Asian and African countries established economic liberalization policies, thus facilitating the entrance of transnational retailers, for instance Wal-Mart and Carrefour[vii].

Commonly the industrial and global food system has been justified in light of the need to feed a bigger world population. In fact, through decades of industrial agriculture the productivity of crops has grown; there is more food trade among nations allowing people to enjoy a wide variety of food. Furthermore, the collapse of rural communities took place, because the adaptation of industrial farming demands to invest large amounts of capital to develop sophisticated technical skills and buy the chemical inputs normally produced by corporations outside the farms. However, many communities lacked financial capacity and appropriate institutional support.

Industrial agricultural systems have undermined the diversity of rural views and local farmers´ collaboration, since the solutions for land problems are brought from scientific research center, far away from local actors and without their participation (IAASTD Report, 2008)[viii]. This is how the requirements of industrial agriculture restricted or prevented alternatives modes of rural development, then it became a source of social inequalities. In overall, the model promoted an anti-small farming bias, given preference to the agri-business and centralized policy making decision and knowledge structures operated independently from local rural realities[ix]. On the other side, the environmental consequences and threats

to human health because of the use of pesticides, fertilizers and monoculture methods have widely documented by several authors[x]. Thus, the environmental demands also strengthen the claim to shift the dominant agricultural practices.

In overall, social collapse in rural societies and the threat on the resilience capacity of land jeopardizes the food security of the entire society. Indeed, in 2007 began an international food prices that crudely revealed how vulnerable the developing world is in terms of food security. This food price crisis was associated to the financial speculation of food commodities and the upturn of the world hydrocarbons prices. However, a price analysis does not reveal the structural causes that originated it. Rather, the structural causes deal with the dismantling of agriculture as a livelihood of a meaningful population of rural areas and the concentration of the food trade channels in a few retailers that control food prices and quantities[xi]. This is why we need to build a sustainable food system addressing alternatives to alleviate rural poverty in rural zones and including a variety of rural views. The use of local resources and local farmers´ knowledge will be essential to face the environmental challenges and build accessible agricultural knowledge systems for small farmers to let them overcome the social exclusion of industrial agriculture.

3. Mexico within the global and industrial agricultural system.

From the 1940s to 1970s the agricultural sector had a crucial role in the national development of Mexico, achieving at least the food self-sufficiency aim. Also, its role as a provider of raw materials for the national food industry was significant. This period was called the "agricultural miracle." However, these trends were abruptly interrupted by the wave of neoliberal policies in the early eighties, which pursued structural adjustments geared to the global market[1]. Since then, market forces have replaced the functions of the state in driving the development in the country. This led the farming sector to a breakdown, given the radical economic openness and the stiff competition that the sector suddenly faced.

Officially, the neoliberal economic program attempted to increase productivity and efficiency in the performance of the whole economy, including the farming sector. However, the institutional framework to cope with this highly competitive environment within the agricultural sector mainly supported those farmers already qualified as productive and efficient[xii]. Thus, farmers of the fruit and vegetable sector were benefited by governmental programmes, since according to market indicators they were the most productive ones[2]. By the 2000 the dismantling process of small and medium units of production was evident: while in 1994 there were 4 million of profitable unit farms, later in 2000 year only 300 thousand remained in operation, which mainly produce to external markets[xiii].

Thus, the criteria to modernize the sector ignored the multifunctional role of agriculture within the social fabric of rural zones. Agriculture should not be conceived as a machine to produce food commodity, but a catalyser of social stability, livelihood and food national security[xiv]. In Mexico, the farmers considered as non productive became part of new poor people of rural zones, then subject of the social assistance programmes. However, the social assistance has not replaced the economic and social functions of agriculture. Consequently, rural zones are marked by migration: almost 600 hundred people leave their homes to migrate towards the US everyday. In overall, 4 million of farmers left the rural zones in the last ten years and the economic support of families that stayed in the villages comes from the income generated by the migrants working outside the villages[xv]. In fact, the incomes generated by the migrants have become the second most important –after petroleum- provider of foreign currency.

Not only the dismantling process into the agricultural sector increased poverty, but also caused the lost of food sovereignty in the country. With the economic liberalization the food policy of Mexico changed

[1] In Mexico the first package of liberalization policies was applied after the debt crisis of 1982. By the end of the 1990s the liberalization was completed.

[2] The most important governmental programme to modernize the agricultural sector in Mexico was introduced in the early 1990s and called Programa para la modernización del campo (Programme for the agricultural modernization).

from food sovereignty to food security, which aimed to guarantee food access throughout cheaper food available in international markets. Interestingly, along with the food policy shift, a process of food dependency was taking place. While, in 1990 the imports of grain represented 19.8% of the total apparent national grain consumption, in 2006 it reached 31.5%. Mexico has become dependent of external staple food supply in the shortest period of time compared with the rest of the world. From 1990 to 2004 our growth rate of national food imports reached 7.8% annually[xvi]. This fact is remarkable in the case of rice and wheat: in 1990 37% of the rice consumed in Mexico came from external markets while in 2006 the dependency was 71%. During the same period, the imports of wheat shifted from 8% to 56%[xvii].

Because of the world food prices crisis in 2006, the food security policy maintained in Mexico showed its vulnerability even in staple food like maize, which is original of the country. In fact, the domestic maize demand has to be satisfied with external supply, given the lack of incentives to produce it internally. This is part of the structural changes the economic liberalization brought into the agricultural sector in our country. To date (2009 year) the maize price in Mexico increased 200% with respect to the 2006 price[xviii]. Although a stabilization of prices is expected, the trends in the world-wide agricultural sector indicates another priorities in the sector, for instance to extend the bio-fuel crops, which would make even more difficult for dependent countries to accessing to staple food. In light of this, countries with a similar situation of Mexico should reassess the self-sufficient principle and thus, move towards food sovereignty in the near future.

As seen, the outstanding results of liberalization of the agricultural sector of Mexico are rural poverty and food dependency. Nor the economic liberalization neither the social assistance combined with migration led to a sustainable route for the agricultural sector. Despite the large flows of rural migration, still 22.5% (24 million of people) of the total Mexican population live in rural zones, approximately 70% of them live in very precarious conditions[xix]. Therefore, the Mexican experience shows the need of a strategy for agriculture to return at the center of rural communities. In the following section we frame the alternatives in the sustainable agriculture approach. Particular attention is paid on organic farming given the potentialities of the organic sector in Mexico.

4. The need for an alternative to the industrial and global agri-food system.

The important lesson from the dominant food system experience is that if we want to prevent consequences on the entire socio-economic system, then the rural areas can no longer be conceived only as a space for the exclusive production of commodities The food crisis of 2007 demonstrated that both rural and urban population mostly in developing countries rely on the global food system to satisfy their food needs, which deepens the entire system's vulnerability. Hence, when the system whose role is to provide food has been threatened, the integral functioning of the whole society is also at risk. Paul Thompson[xx]unfolds the concept of rural sustainability reminding us that a lack of capacity to produce food means a threat to the society's ability to reproduce itself. So both the natural dimension and the social dimension, insofar as they work together to provide food, must be 'regenerative'. In Thompson's words "the human population's need for food sets one system parameter, but in meeting this parameter it is possible to deplete soil, water and genetic resources used in food production. Since each of these is a regenerative subsystem, threats to these subsystems represent threats to total system sustainability. Similarly, farms and rural communities represent subsystems. If farming is unprofitable, or if the local institutions that support farming are not regenerated, the sustainability of the larger system is threatened"[xxi].

Following Thompson's reasoning, we focus on a sustainable strategy to reduce migration keeping rural Mexican populations living in their towns, producing food, protecting rural natural landscapes while improving their quality of life. To what extent do these goals of rural sustainability stand against the neoliberal agricultural model of an industrial-global food system? What kind of food system is needed to develop this rural sustainability approach? The most popular alternative approach is called 'sustainable agriculture' and it embraces all the alternative systems to industrial agriculture; its main purpose is to minimize ecological damage. "Sustainable agriculture" encompasses a wide variety of agricultural methods and practices, from traditional to highly technical ones. However, its very broad mandate needs to be adjusted and fine-tuned when exploring its local sites of applicability. We thus make an effort to unfold it.

Sustainable agriculture, as a concept, was introduced in the early 20th century.[xxii] Three basic principles have guided the spirit of sustainable agriculture: it is agriculture that is ecologically restorative, socially resilient and economically viable. We can identify two important waves in sustainable agriculture: On the one hand the introduction of organic agricultural practice and, on the other hand, the agro-ecology approach (Ibid). The latter is quite recent.

In keeping with its origins, organic agriculture can be defined as a particular kind of sustainable agriculture practice that avoids the use of chemicals and is entirely dependent on the land's biological fertility. Crop rotation techniques are applied on the farm[xxiii]. Organic methods demand an optimal and consistent management of all the flora and fauna available on the farm in order for it to produce the necessary organic matter that keeps biodiversity in land. The first experiment in organic agriculture took place in 1947 in England and was supported by the English Soil Association. This experiment consisted in comparing the performance of a conventional farm and an organic one. Given the extraordinary superior results yielded by the organic farms which were tested, the movement in support of organic farming gained popularity. Drawing on a more recent definition of organic agriculture from the International Federation of Organic Agriculture Movement (IFOAM), organic agriculture means "a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved".

Agro-ecological approaches seem to go a step further in designing alternative agricultural systems, in that they take into account more than one method to manage the land ecologically. Therefore, agro-ecological practices are consistent with the diversity of ecosystems. Moreover, agro-ecology enhances self-sufficient farming as a fundamental formula of sustainable agriculture, because it puts emphasis on the use of local resources, -for instance, local farmer's knowledge and local biological resources. Thus, the dependence on external inputs like technical assistance and other inputs is reduced.

Given the characteristics mentioned above, agro-ecology appears to be a suitable alternative for poor farmers who lack financial capacity to afford the costs of external inputs. All the agricultural methods embedded in this framework share the following principles: Multiple land use strategies, traditional resource management techniques, local cropping system design and management, use of local resources and natural pest control, and finally, in-situ management and conservation of local biodiversity. According to Miguel Altieri[xxiv], what stands out in this scientific approach is the fact that the farmer's local way of thinking lies at its foundation. For instance, this approach valorizes folk taxonomies (soils, plants, animals), farming knowledge, knowledge of natural and climate cycles, knowledge about adaptation of species, knowledge about potential uses of plants, soils and environment[xxv].

Between the organic agriculture approach and the agro-ecological one, there is a porous boundary. Similar to agro-ecology practices, organic agriculture gives preference to the use of local biological resources, at the same time reducing the use of chemicals. Both seek to maintain and protect local biodiversity. However, insofar as organic agriculture was initially designed by scientists, it is not clear to what extent it is culturally sensitive and socially viable for poor and small farmers. In other words, it is necessary to prove to what degree organic practices rely on outside-farm knowledge. In this regard, the Food and Agricultural Organization (FAO) says that "the access to knowledge is the major bottleneck when converting to organic management. Inexperience and lack of adequate extension and training for knowledge-intensive management systems and location-specific science require long-term investments in capacity building"[xxvi]. However, Gomez et al[xxvii]when referring to the experience of small farmers involved in organic practice in Mexico, state that organic systems are singularly feasible for smallholders, as they can apply indigenous technologies (no necessarily mechanized methods) and their own knowledge of local soil and climate conditions.

5. Overview of the organic sector in Mexico

In this section we provided an overview of the organic sector in Mexico. Although agro-ecological practices exist in Mexico since the pre-Hispanic times; it was not until recently when modern organic farming has been increased rapidly in the country. This growth is related with the fact of the increasing demand for organic products in developed countries since the early 1990s. As far as we know; there are 128,819 farmers involved in organic agriculture. The annually growth rate of the sector is 30%, thus, it is

the most dynamic farming sector. Because of the long tradition using agro-ecological techniques in most of the indigenous and rural population in the country were possible to improve organic farming scheme relative rapidly, therefore the organic sector is characterized by the predominance of the small-scale farmers. For instance, in 1996, 97.5% of the total organic farmers were small and according to the more recent statistics in 2008 they represent 99.9% of all organic farmers. Despite, the superior numbers of small-scale farmers, large farmers are gradually increasing their participation in terms of cultivated land. While, in 1996 large producers cultivated only 11% of the total organically cultivated land; in 2005 this increased to 20%. In general terms, the growth of the organic sector in Mexico has been encourage by foreign technical and financial support most of them with the participation of Non Governmental Organizations (NGOs), religious groups, private foundations, and cooperation´s agencies[xxviii].

5.1 Social and economical implication of the export oriented scheme

Organic Farmers in Mexico as in other developing countries attempts to satisfy the existing demand centralized in Europe because their domestic mature organic markets[xxix]. Therefore, the country is considered as organic producer export oriented due to around 85 or 80 % is exported mainly to the United States and Europe[xxx]. Therefore, organic farming regards environmental, economical and social implications. Among the economical reasons, the satisfaction of a demand existing in the external markets especially in the winter season. Until 2005, organic farming covers 797 zones of production in 28 out of 32 federal states. Due to the export oriented governmental programs, medium and large-scale farmers were encouraged to produce by the organic farming scheme[xxxi]. Around 99.9 percent of the total organic farmers were classified as small-scale farmers who harvest 93.9% of the total organic area in the country. Into this category there are 22 indigenous groups most of them altogether into cooperatives. Small-scale farmers have plots of 3.02 hectares on average. Into the social implications organic farming reduce the immigration because of the demand for local labour[xxxii]. However, the high cost of certifications stymie the development of the sector due to an important barrier to export for most of the small-scale farmers who produce without a financial support (see Table 1 and Table 2).

Table 1. Mexico. Farmers typology for size of producer (number of organic farmers)

Type of producer	1996		2000		2004-2005		2007-2008	
	Number	%	Number	%	Number	%	Number	%
Small	12,847	97.5	33,117	98.6	80,319	99.6	124,965	99.95
Large	329	2.5	470	1.4	345	0.4	66	0.05
Total	13,176	100	33,587	100	80,664	100	125,031	100

Source: CIESTAAM, 2008

Table 2. Mexico. Social importance of indigenous producers in the organic sector according to cultivated land

Producer	2004/05		2005/08	
	Number of producers	Out of total (%)	Number of producers	Out of total (%)
Indigenous producers	46,695	57.89	103,488	82.77
Total of producers	80,664	100.00	125,031	100.00

Source: CIESTAAM, 2005; CIIDIRI CIESTAAM CONACYT, 2008

5.2 Politics, programs and their consequences

Although the organic farming is the agricultural sector with the highest annually growth rate, several barriers and limitation stymie the sector. One of the most important is the roll of the Mexican government which has related unlikely. In a study conducted by Gómez et al (2005) that encompassed 244 units of organic production, 63% of them mentioned to have someone federal governmental financial support; and other 27% have a local governmental financial support. However, this financial support covers only the travelling and assisting to fairs promoting and merchandising organic products and in some cases to cover

a part of the total cost of certification. In the study someone of the organic units mentioned to receive federal and local financial support, while other 49 of the units of production, mentioned receive no one. Other problems deal with the lack of specific programmes supporting organic farming. Moreover, the small size of the domestic and local markets and the high cost of certifications; other barriers pointed out in the study the absence of politics, a regulatory framework, a national organic label, subsidies, also technical and financial support, as well as bureaucracy and unclear rules about the governmental[xxxiii].

5.3 National organic certification label

Regarding national regulations, although in the 1997 was created a national norm for organic produce based on the international norms held by the International Federation Organic Agriculture Movements (IFOAM) and the Codex Alimentarius by FAO for instance, the *Official Mexican Norm, NOM- 037- Fito-1995.* Some aspects such as animal origin products were incomplete. More recently; in the year 2006, the Mexican government concluded a regulatory framework[xxxiv]. *Iniciativa de Ley de Productos Orgánicos* to promote and regulate the national organic produce however it is unclear what kind of programs, strategies, and supports might be applied also the existence of a national organic label.

The absence of a national label is concerning the certification process, due to twenty-one agencies certify the organic land area in the country and the only one agency of national origin is Certimex. The rest of the agencies are from the United States, Germany, Italy, Switzerland, Sweden, Guatemala, and Holland. More recently, the Participatory Guarantee Systems (PGS) or *participatory certification* has become an alternative scheme of certification for the small-scale farmers; although the scheme has the limitation to export it is useful to promote production and consumption across the country in a local level (Gómez et al 2009). Moreover the organic produce in the next section, we explain about the stage of the domestic market for organic products in Mexico.

6. Stage of the market for organic products in Mexico

Due to the export oriented scheme the domestic market for organic products was leave out as target market. As other emerging market, in Mexico the organic market is characterized because the lack of information regarding opportunities and challenges to develop it for instance, information about the total turnover and sales, demand, consumption. Lernoud & Paviano (2006) estimated that around 85 or 80 % of organic produce is exported and the rest 20 or 15 % is sold in the domestic market; 10% is sold as conventional produce and the rest 5 % is sold with organic label.

Regarding demand and consumption, some of the limitations argued to build an organic market in Mexico deal with the low knowledge about organic produce by the Mexican population, and the price sensible due to the national level of household incomes, thus, the low willingness to pay for premium prices. Concerning the Food Supply Chain (FSC), inconsistent supply in the retail channels has been mentioned as constraint consumption[xxxv]. Regarding consumer behavior; there are few studies one of them regards the willingness to pay for organic products in three capital cities in the northern of Mexico[xxxvi]. Also in Mexico City other study regards attitude as well as target groups of consumers[xxxvii]. However, there is not enough information about who, where, why, and how frequently people buy organic products.

In order to approach our understanding about the who are buying organic products in Mexico, thus the stage of the organic market in Mexico, and its expectance we conducted an explorative market research with 257 Regular Consumer of Organic Food (RCOF) interviewed face-to-face inside of specialized stores and organic markets named as *tianguis* during the months of July and September in 2008 in Mexico City and around. Some of the questions concern the numbers of years buying organic products, frequency of buying also a set of socio-demographic questions. The data were analyzed by the SPSS Program Version17.00, all the aspects are statistically described in this paper.

Firstly, the number of years that the consumers self-reported to have buying organic products is resumed in the Table 3. We see that most of the consumers have more than three years buying organic products, although there are a significant number of recent consumers, thus, the possibility to develop a domestic market for organic products at least in the capital city and around which is one of the main important

concerning national FSC due to the population[3]. However, the organic assortment offered and the consistency in the supply is one of the challenges to develop the domestic market.

Table 3. Number of years buying organic products in years

	Frequency of answer	Percent of the sample
Less than one	45	17,5
One	42	16,3
More than one	50	19,5
More than two	37	14,4
More than tree	83	32,3
Total of respondents	257	100,0

Source: own estimations

6.1 Organic assortment

Since the domestic market in Mexico is still in the seed stage, there is a relative short organic assortment in the retail channels. The assortment consisting of national and imported products, regarding the imported products the assortment depends on the country of origin for instance, some fresh products as vegetables and salads come from the United States as well as cereals, muesli, soya milk, teas, bread. Other products such as pastas, spices and wines come from Italy and Spain. Also cosmetics and essences for aromatherapy or homeopathic medicine come from Germany and France. Due to most of the national organic produce is exported, the national origin assortment consist of fresh and seasonal products; for instance, fruits, vegetables, and salads. As seen, the national origin assortment consist of products with low transformation level such (e.g. coffee, muesli, marmalades, animal and dairy products, honey, spices, cereals, bread and bakery). This is not only because of the governmental politics and programs also the low knowledge about organic food products in the domestic market, therefore not only the development of the organic farming sector either the development of the domestic organic market in Mexico dependent on the tendencies in the external markets.

The largest assortment is sold by 1) *Specialized shops,* including organic, green, environmentally friendly and fair-trade products; the size of the assortment depends on the size of the store. 2) *Direct marketing,* in most cases are small producers or cooperatives who organize themselves to sell one day per week; most of the assortment is seasonal, fresh vegetables, fruits, local crops, honey, and coffee with low inputs and low or artisanal manufacturing processes and without packaging. Regarding the chains of conventional supermarkets, the organic assortment depends on the format and location of the outlet according to the socio-demographic of the zone. 3) *Supermarkets* for instance, *Superama* which is managed by foreign capital offers an assortment between 100 and 200 products including fresh vegetables and fruits, honey, coffee, and milk from national origins and imported assortments of cereals, marmalades, juice and soya milk). 4) *Hypermarkets,* the largest assortment is offered by *Wal-Mart Supercenter* and it is likely to *superama* because both pertain to the same retail group. The size of the assortment offered by hypermarket from national origin (e.g. Chedraui, Comercial Mexicana and Soriana*)* is smaller, most of them products from national origin and distributed from the national brand *Aires de campo*. Finally, the assortment offered by *members 'club* (e.g**.** Costco and Sam´s Club) is unlikely (see Table 4). Other marketing channels are cafeterias and restaurants some of them inside of the specialized stores.

Table 4. Size of the organic assortment in the mainstream food retail channels in Mexico

Food retail channel	Size of the assortment in total products
Specialized stores	1000 - 1200
Direct marketing	200 – 300
Supermarkets	100 – 200
Hypermarkets (foreign origin)	100 - 200
Hypermarkets (national origin)	50 – 70
Member´s clubs	20-50

Source: own estimations (2008).

[3] 19,231,829 of population living in Mexico City consulted in www.inegi.org.mx accesed in July 2009.

6.2 Distribution and Mainstream retail channels of organic products

Understanding the stage of the organic market in Mexico imply to understand the FSC process. According to Schwentesius & Gómez (2006) there are five mainstream retail channels where food products are sold in Mexico 1) traditional markets; 2) weekly market (*tianguis*); 3) small traditional shops with limited assortment and the quality depend on the incomes and preferences of the neighborhoods; 4) specialized shops with little importance because the consumers prefers to buy in *tianguis;* and 5) self-service stores including several formats such as hypermarkets, supermarkets, members' clubs and convenience stores. Some of them are of national capital origin and others of foreign capital. Most of the self-service are chains of conventional supermarkets covering all the country. Also, there are many local chains and small independent market[xxxviii].

The organic products in Mexico are mainly distributed by chains of conventional supermarkets, specialized shops also direct marketing by *tianguis orgánicos*, this last one is inspired in the Community Supported Agriculture (CSA) scheme an covers several cities and regions across the country because of national networks of small-scale farmers, producers and consumers selves organized encourage the organic movement in Mexico (Gómez et al, 2009). Following the FSC in Mexico proposed by Schwentesius et al (2006) we ask about the frequency of buying organic products into five mainstream retail channels where organic products are sold: 1) *specialized shops* 2) *direct marketing* (e.g. tianguis organico Chapingo); 3) *hypermarkets* (e.g. Wal-Mart Supercenter); 4) s*upermarkets* (e.g. Superama) 5) *members´clubs* (e.g. Sams Club, and Costco). Although was not possible interview consumers inside of conventional supermarkets the estimated assortment on this channel is described in Table 4.

6.3. Frequency of buying in the mainstream retailing channels

The preference in store and frequency of buying varied depending on the organic assortment offered according to the season and the size in each one of the retail channel. Regarding the frequency of answer for the three main formats of conventional retail channels, the less frequency of buying is in *hypermarkets* and *members' clubs.* From the total sample only 3.9% self-reported to buy in the members' clubs; 24.1% mentioned to buy in hypermarkets. Regarding the *supermarkets*; 38.9% mentioned to buy there. Because of the study was conducted inside of specialized shops and organic markets, 88.7% buy organic products in *specialized shops* while 24.5% mentioned to buy in *direct marketing* (see Table 5).

Table 5. Frequency of buying organic products in the mainstream retail channels in Mexico

Retail channel	Times per week					Percent of total of the sample			
	Less than once	Once	More than once	Twice	More than twice	Total of respondents	Percent of the total sample	Missing answers	Percent of missing answer for each retail channel
Hypermarkets	33	27	1	1	0	62	24,1	195	75.9
Supermarkets	47	43	9	1	0	100	38.9	157	61.1
Members´Club	8	1	1	0	0	10	3.9	247	96.1
Specialized store	95	110	18	3	2	228	88.7	29	11.3
Direct Selling	21	39	2	1	0	63	24.5	194	75.5

Source: own estimations (2008).

7. Who is buying organic products in Mexico?: The consumer profile

In order to characterize the consumer profile some socio-demographic were loaded by cross-tables, aspects such as age, gender, education level, family size, and household incomes were analyzed. Thus, the consumer´s profile is the follows. 1) *Gender:* because in Mexico as in other countries woman are responsible for the nutrition in most of the households the total sample consists of women 72% and 28% are men; 2) *Age*: most of the consumers are younger adults between 30 and 50 years old 65%; the second main group consists of mature consumers with more than 50 years old 21% and the youngest consumers who are less than 30 years old was the small group in the sample 13.6% (see Table 6); 3) *Education*: most of the consumers have a high education level due to 54.9% are graduated; 27.7% have a master degree; 12% are high school degree consumers, which is the smallest group of the sample. It has to be mentioned

that in the latter 1970´s a historical change took place in the educational system due to the first massive entrance of women to universities. Because of, most of the older group has a high school education, as well as the youngest are university students who still study.

Also, 4) *household incomes* were considered in our study according to the Socio-Economical level classification[4][xxxix]. Then, interviewees self-reported monthly incomes let us distinguish consumers as follows: 43.2% are middle household incomes, 18.7% lightly lower-middle household incomes; 15.2% of the consumers are lightly higher- middle incomes. Interestingly, the less representative group belong to consumers with the lowest and the highest household incomes: 10.1% for the first ones and 5.1% for the second ones. Now, we describe the family size and life cycle 5) regarding *family size* most of the consumers corresponds to younger families due to 34.5% of the interviewees self-reported a partner and one or two children in the household. Followed by household with 2 o 3 members 23.5%; other 16.5% mentioned to live alone; and the least are consumers living with parents 11.3%; other 9.7% consumers mentioned to live without partner but with children. Additionally, 5.8% reported to live with friends. Regarding the number of children, most of the household consist of one or two persons without children 61.1%; and household with 1 child 16.7% and 2 children 15.2%. Therefore, we the profile of the consumers buying organic products in Mexico seems likely to consumers in mature markets in Europe[xl] as well as in other emerging markets for instance Brazil[xli].

Table 6. Socio-demographic profile of the sample					
Socio-demographic Dimension	Frequency of anwer	Percent	Socio-demographic Dimension	Frequency of anwer	Percent
Gender:			**Household Incomes (monthly in US Dollar)**		
Female	185	72.0	670.00 (lower level)	26	10.1
Male	72	28.0	671.00 - 1,142.00 (lightly lower-middle level)	48	18.7
Group of age:			1,143.00 - 3,451.00 (middle level)	111	43.2
Less than 30 years	35	13.6	3,452.00 - 8 382.00 (lightly higher- middle level)	39	15.2
Between 30 – 50 years	167	65.0	More than 8 382.00 (higher level)	13	5.1
More than 50 years	54	21.0	Missing answer	20	7.8
Education level:			**Life Cycle**		
Elementary	2	0.8	Alone	43	16.7
High-school	7	2.7	With couple	60	23.3
Bachelor	33	12.8	With couple and children	88	34.2
University	141	54.9	With friends	31	12.1
Post-graduate	66	25.7	With couple Without children	22	8.6
Other	7	2.7	With parents	12	4.7
Without education	1	0.4			

Source: Own estimations (2008).

[4]To establish the Socio-Economical Level in the urban zones in Mexico the Agency of Marketing Research improves an instrument considering 13 variables regarding education level of the economical responsible of the household, as well as some aspects of the house such as number of room, bathrooms, lights, material of the floor, war water, domestic appliance, number of car, and Laptops. The classification consists of six socio-economical groups and the classification is briefly described as follow, the household incomes are monthly estimated for all the groups. On the bottom is the group E, among this group is the population with the lowest household incomes less than 260 US Dollar, thus with the lowest quality of life. The second is the group D; among this is the population with a humble quality of life and lower household incomes between 260.00 and 670.00 US Dollar. From the group D+ starts the middle class, into this group is the population corresponding to the middle class, although with the lower level, the group named as lowest-middle class due to the lowest-middle household incomes between 671.00 and 1,142.00 US Dollar. The group C, consist of the population of middle class because the middle household incomes between 1,143.00 and 3,450.00 US Dollar. Up is the group C+ and consist of the population of social middle-high class do to their middle-higher household incomes between 3,452.00 and 8,382.00 US Dollar; finally in the top there is the group A/B, it consist of the population with the higher household incomes for more than 8 382.00 US Dollar.

8. Direct marketing successful experiences: some lessons for Mexico

All the previous aspects regarding buying behaviour and consumer profile let us to estimate the possibilities to develop the domestic market for organic products in general terms. In this section, we concentrate our attention in the direct marketing as a retail channel for local production and consumption. Although direct marketing has lowest investment and infrastructure in comparison to conventional chains of supermarkets; direct marketing is a traditional channel regarding FSC in Mexico. Across the country is traditional to buy food products in this channel due to human interaction and personal communication.

Regarding the experiences of direct marketing in other countries; several schemes have been provided for instance, Community Supporting Agriculture scheme (CSA). This scheme implemented originally in Switzerland and Japan during the 1960s as well as in the United States since mid-1980s contain as main proposal the conceptual idea of community-building; this scheme, sometimes wrongly referred as "subscription farming", which emphasise the economic benefits for farmers and consumers rather than embeddness as in the main proposal of the CSA scheme[xlii].

Farmer´s Markets is other scheme improved in the United Kingdom due to, the unclear information about FSC and the need of the consumers to be able to trust the authenticity and origin of food. Because authenticity and trustworthiness mediated by the personal and face-to-face interactions between farmers and consumers the channel grew up rapidly. In this way, farmers markets re-socialise food meaning by ensuring the face-to-face contact also re-spatialising food by means of locally producing[xliii].

These three schemes regard conventional food produce also the possibility to improve the scheme concerning organic produce however, a system of guarantee is important to trust across the supply chain. In Mexico, the Mexican Network of Organic Markets encourages the possibility to create local organic markets. Firstly, adopting five years ago the PGS as an alternative certification's system for small-scale farmers due to the system is a combination of community based on inspections, transparency, and trustworthiness between the participants to maintain the integrity of the organic quality[xliv]. While the system has limitations for an export oriented produce it is useful to support local and regional organic production and consumption.

Although the limited time of PGS implemented in Mexico, the preference of buying in organic markets seems as potential marketing channel. In our study, the consumers interviewed inside of the organic markets mentioned still and prefer to buy there arguing the consciousness about the season and limited size of the assortment however, it is fresher and higher quality. Most of the consumers mentioned being satisfied due to familiarity, trustworthiness and direct contact –*face-to-face interaction*- with the farmers, producers and other consumers –*affinity*- other interviewed mentioned the feeling of be part of a community –*sense of community*- due to the long time buying there. Finally, most of the consumers self-reported in general terms, to be satisfied also with the information and advice available and with other activities organized by the committee of consumers and small-producers altogether.

In disadvantage, some of the consumers interviewed inside of the specialized shops argued not favorable location as inconvenience for prefer not to buy in the organic markets, due to are far away of their neighborhoods, also the low knowledge and low information about their existence, as well as the restricted opening time due to they are open one day per week, normally at the weekend and until midday. Some recommendations of theses consumers regards the use of marketing skills to promote and merchandise the retail channel in order to improve the demand and consumption of organic products due to the low information in the Mexican population, also in consumers interested to buy but they do not know where organic products are available.

Although *tianguis*, which is the popular name used for direct marketing in Mexico, have recently been explored by the organic markets; due to the tradition across the country to buy food products there because the image of good prices and face-to-face interaction is a potential retail channel for organic products. Moreover, the ideas of re-socialising and re-spatialising organic produce by direct selling the lack of strategies to introduce new consumers as new members to enlarge the community might limit the consolidation of the national network as well as the idea of alternative to promote local production and consumption of sustainable chains of food, in consequence limiting the organic movement in the country.

9. Conclusions. the organic agricultural sector of Mexico into a global and local perspectives: opportunities to create domestic market

The provided overview of the organic sector in Mexico shows that organic farming has been mainly an option for small-scale farmers. It has enabled them to maintain agriculture as their main economic activity. In fact, it can be said that self-organized alternatives and agro-ecological agriculture have emerged in rural zones in Mexico as a consequence of the social exclusion resulting from neoliberal policies and modern agriculture. On this way, the overview, let us to ask: why organic agriculture might be an option for small-scale farmers in developing countries like Mexico? In which way organic production systems favour small farming? How do they maintain themselves despite the weak institutional arrangement that support them?

Given the remarkable external market orientation of the organic sector in Mexico, it is important to look at the tensions that this orientation produces. Firstly, it has to be distinguished the underlying discourses and trends of the organic movement in the developed countries, where Mexican organic crops are normally sold, in order to analyse how those tendencies affect the available options for the organic sector of Mexico.

Noticeably, environmental protection and health care are at the core of organic agriculture discourses in developed countries[xlv]. However, the increasing encroachment of agribusiness into the sector in those places calls into question the achievement of ecological goals. The reason lies in the fact that large agribusinesses can find it hard to fulfil strict ecological standards, since their land tends to be more contaminated by chemical residues. So they try to influence the official standards by promoting the *input substitution approach*[5] in organic agriculture legislation. This process is mentioned by several authors as the "conventionalization of organic agriculture". At present there is a heated debate about the tendencies and dynamics that are leading the organic movement towards a structure of concentration of economical benefits and against biodiversity[xlvi].

Agribusiness and the so-called organic movement are struggling over the supremacy of the environmental aims in the developed countries. The organic movement aims to pursue a more holistic system, which includes a stronger commitment to ecology and a change in everyday life adopting alternative modes of production and consumption.

Meanwhile, organic agriculture in Mexico has been identified as an alternative way of addressing rural poverty. Social exclusion is a more prominent issue than health care and environmental protection, although these are not ignored. In fact, organic agriculture has become a market niche in Mexico who have mainly benefited from the holistic movement in the developed countries because most of the produce of small-scale farmers are basically trading in Europe through alternative supply channels by Fair-Trade Labelling Organizations[6]. Thus, the difference between discourses in the developed countries regarding organic agriculture in Mexico reveals different priorities at work in each context; also helps to identify the different nature of their threats and challenges. For example, the certification process poses an imminent threat for the small-scale farmers in Mexico, since they lack of financial capacity to cope with the certification costs. Also, if the input substitution approach becomes dominant in the international organic standards, there will be less opportunity to develop alternatives markets thus, the consolidation of the conventionalisation process.

The certification process as it is defined in the developed countries attempts to simplify and homogenize the organic production system. The rules are focused on guaranteeing chemical-free crops, but dismiss the

[5] Basically, the input substitution approach focuses on the replacement of chemicals such as pesticides and fertilizers, for biological pesticides and fertilizers. Contrary to input substitution is the holism approach, which advocates a way of production committed to environmental protection compatible with the interests of consumers concerned by environmental and health-care related issues.

[6] www.flo.net

labour organization behind the production process. Because the large scale systems are more homogeneous, centrally administered and financially stronger, their certification process is easier. Thus, organic products from large units reach the market faster. Therefore, the organic agriculture model based upon small-scale farmers is threatened by a *greenwash* of large production systems.

Another potential setback to the external market orientation of Mexican small-scale farmers resides in the increasing promotion of *local food* in the developed countries, which is gaining local consumers' support. Also in the academic and governmental institutions; approaches such as food sheds, CSA and community food security are at the frontier of sustainable agriculture and food studies and policies[xlvii]. These approaches point out a direct connection between sustainable agriculture and local markets. Therefore, in continuation some of the potentialities to develop a domestic organic market in Mexico are explored.

Furthermore, the international organic regulations in order to get more transparency in the rules of production and consumption of organic products, direct marketing stands out as an alternative to develop local markets for organic products while small-scale farmers get better prices reducing the number intermediates in the FSC. The benefits remain not only economical as well as environmental reducing the cost of transportation, certification and packaging –*green worth*- also in social terms because of human-level interaction between producers and consumers creating trustworthiness and transparency regarding food origin, localness, naturalness, sense of community, reciprocity, proximity and social connection[xlviii] as social values in food trade also reducing immigration.

In social terms, by means of personal interaction in direct marketing the participants creates social embeddedness through the communities because of the flow of information, exchange of experiences, local knowledge and trustworthiness toward the consolidation of locally sustainable production and consumption. Similar experiences regarding direct marketing schemes have been successfully provided in developed countries for instance, the CSA scheme in the United States and Farmer´s Markets in the UK as well as organic markets in developing countries in Latin America for instance, Brazil, Peru, and Uruguay. Regarding the national experience by the network of organic markets the adoption and combination between the PGS and the CSA scheme seems promising.

Taking into consideration the long country tradition of buying food products by the farmers markets called as *tianguis* there is the opportunity to build organic markets as alternative retail channels. As mentioned in the sub-section of direct marketing, the consumers of organic products in organic markets, are willing to pay premium prices not only for private benefits such as health, and good taste, but also because the sense of community, and the human-interaction, as well as interest regarding *green worth* for instance, environmentally friendly and animal welfare. Finally, we conclude that despite the scarce information and knowledge about the benefits of consuming organic products in the general population also the low information about the existence of alternative retail channels. According to the survey results showed in this paper, there are consumers willing to consume in the organic markets because of social values such as face-to-face interaction, trustworthiness, sense of community and localness.

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