



Mercator - Revista de Geografia da UFC
ISSN: 1984-2201
mercator@ufc.br
Universidade Federal do Ceará
Brasil

SOCIAL DIMENSION OF URBAN AND PERIURBAN AGRICULTURE

Fransualdo de Azevedo, Francisco; Perxacs, Helena; Àngels Alió, Maria

SOCIAL DIMENSION OF URBAN AND PERIURBAN AGRICULTURE

Mercator - Revista de Geografia da UFC, vol. 19, no. 1, 2020

Universidade Federal do Ceará, Brasil

Available in: <https://www.redalyc.org/articulo.oa?id=273661636005>

DOI: <https://doi.org/10.4215/rm2020.e19005>

SOCIAL DIMENSION OF URBAN AND PERIURBAN AGRICULTURE

DIMENSÃO SOCIAL DA AGRICULTURA URBANA E PERIURBANA

DIMENSIÓN SOCIAL DE LA AGRICULTURA URBANA Y PERIURBANA

*Francisco Fransualdo de Azevedo**University of Rio Grande do Norte (UFRN), Brasil**ffazevedo@gmail.com*DOI: <https://doi.org/10.4215/rm2020.e19005>Redalyc: <https://www.redalyc.org/articulo.oa?id=273661636005>*Helena Perxacs**Professor at the University of Barcelona, España**Maria Àngels Alió**Professor at the University of Barcelona, España*

Received: 14 October 2019

Accepted: 21 December 2019

ABSTRACT:

The introduction of agriculture in cities is one of the current priority axes for urban environmental reform. There is a broad consensus in this regard, largely because of the improvement of urban ecosystem balances. However, urban agriculture also offers various possibilities for society to the extent that it can contribute to solving urban poverty situations, while improving the public health of the neighborhoods where it is located, especially based on ecological principles. In addition to other advantages that directly involve the population that practices agriculture or that has it as a food source. In this way, urban agriculture helps mitigate the double socio-environmental dimension of the planetary ecological crisis of our time. In this sense, this study aims to deepen the social dimension of urban agriculture by problematizing experiences of different cities in the world (particularly Barcelona, Girona and Natal), the latter as contextualization, proposing a scheme of the different types of advantages that it entails. The conclusion points in the direction of a social phenomenon marked by territorial resistance and transition towards a more balanced and counter-rational productive paradigm opposed to the globalized totalitarian capitalist paradigm.

KEYWORDS: Urban and periurban agriculture, Social dimensión, Barcelona.**RESUMO:**

A introdução da agricultura nas cidades é um dos eixos prioritários atuais para a reforma ambiental urbana. Existe um amplo consenso a esse respeito, principalmente devido à melhoria do equilíbrio dos ecossistemas urbanos. Ademais, a agricultura urbana também oferece várias possibilidades para a sociedade, na medida em que pode contribuir para a solução de situações de pobreza urbana, além de melhorar a saúde pública dos bairros onde está localizada, principalmente com base em princípios ecológicos. Além de outras vantagens que envolvem diretamente a população que pratica a agricultura ou que a possui como fonte de alimento. Dessa maneira, a agricultura urbana ajuda a mitigar a dupla dimensão socioambiental da crise ecológica planetária de nosso tempo. Nesse sentido, este estudo visa aprofundar a discussão sobre a dimensão social da agricultura urbana, problematizando experiências de diferentes cidades do mundo (particularmente Barcelona, Girona e Natal), esta última a título de contextualização, propondo um esquema dos diferentes tipos de vantagens que essa apresenta. A conclusão aponta na direção de um fenômeno social marcado pela resistência territorial e pela transição para um paradigma produtivo mais equilibrado e contra-racional, em oposição ao paradigma capitalista totalitário globalizado.

PALAVRAS-CHAVE: Agricultura urbana e periurbana, Dimensão social, Barcelona.**RESUMEN:**

La introducción de la agricultura en las ciudades es uno de los ejes prioritarios actuales para la reforma ambiental urbana. Existe un amplio consenso al respecto, principalmente debido al mejor equilibrio de los ecosistemas urbanos. Además, la agricultura urbana también ofrece varias posibilidades para la sociedad, ya que puede contribuir a la solución de situaciones de pobreza urbana, además de mejorar la salud pública de los barrios donde se ubica, principalmente sobre la base de principios ecológicos. Además de otras ventajas que involucran directamente a la población que practica la agricultura o que la tiene como fuente de alimento. De esta forma, la agricultura urbana ayuda a mitigar la doble dimensión socioambiental de la crisis ecológica planetaria de nuestro

tiempo. En este sentido, este estudio tiene como objetivo profundizar la discusión sobre la dimensión social de la agricultura urbana, problematizar las experiencias de diferentes ciudades del mundo (particularmente Barcelona, Girona y Natal), esta última a título de contextualización, además de proponer un esquema de los diferentes tipos de ventajas que presenta. La conclusión apunta hacia un fenómeno social marcado por la resistencia territorial y la transición a un paradigma productivo más equilibrado y contrarracional, en oposición al paradigma capitalista totalitario globalizado.

PALABRAS CLAVE: Agricultura urbana y periurbana, Dimensión social, Barcelona.

INTRODUCTION

The city has always been concerned about agriculture, mainly because it is the basis of food, but also for the vital experiences of its inhabitants, that mostly came from the rural world having knowledge of the nearby agricultural environment. However, the development of urban history, with the intensive demographic growth of the city and the concentration of the economy of capitalism in large urban centers, has blurred the perception of agriculture in many citizens.

Little by little, the interest in agricultural issues in the city. Some of the first groups that began to develop a discourse on agriculture were the ones most directly involved in the need for protecting agricultural spaces: the ecologists, because the nearby agrarian spaces were the natural environment to protect, and also the vegetarians who are directly concerned about the quality of food coming from urban neighbourhoods.

Since the end of the last century and nowadays, the dissemination of the urban vegetable gardens has revitalized these concerns, even among many segments of the urban population not much interested in ecology.

However, the intensive development of the agrarian-urban ideology is not limited to urban gardens, including many other fields of economics and social behaviour, among them those of social solidarity and health.

This article analyzes the importance of urban and peri-urban agriculture in the metropolitan region of Barcelona and Girona (Catalonia), as well in Natal (Brazil), as spaces of resistance and resilience, in the latter as contextualization. Therefore, the UPA phenomenon is approached from a geographical perspective, considering two different dimensions, although interconnected: territorial and socio-environmental.

The spatiality of the phenomenon is questioned, seeking to identify and verify two main elements. On one hand, the nature of UPA as spaces of resilience that must constantly fight to maintain the agricultural use of urban and periurban land in preference to other non-agrarian uses, mainly due to urban pressure. And on the other hand, the opportunities that offer UPA as spaces of reimagination, with different entrepreneurial strategies evolving and new interconnections being established between agriculture, society and the environment. The information included here is a result of the review of different documentary sources, but also and mainly, of different empirical investigations carried out by the authors.

THE PHENOMENON OF URBAN AND PERI-URBAN AGRICULTURE: INTRODUCTION TO UPA IN BARCELONA AND GIRONA

Food is an essential resource that every human being needs. We depend on food, but food growing is not always being valued as much as it deserves. This is a fact in our cities where agriculture has been progressively taken over by urban uses as the socioeconomic value given to farming in and around cities decreases. An example of this can be found in Europe where sprawl “contributes significantly to the loss of fertile farmland” (European Environment Agency, 2016).

The agriculture surviving in and around cities is called urban and periurban agriculture (UPA). Following Mougeot (2000) we can consider that the term UPA refers to agriculture that has a high connection with cities directly interacting with the economic and ecologic urban system. UPA can even have some distinct

features that can generate more resilience compared to other types of agriculture: “UPA is able to overcome constraints and tap on opportunities because it tends to be smaller-sized, more dispersed, more adaptive to external pressures, higher-valued and higher-yielding, more intensive and integrated, more profitable or fungible, more innovative and synergetic with non-agricultural land uses, activities and services considered as urban in nature (the urbanization of the countryside brings along an urbanization of agriculture)” (Mougeot, 2000).

Bit by bit urban and periurban farming (UPA) is gaining recognition as an important activity that “provides fresh food, generates employment, recycles urban waste, creates greenbelts, and strengthens cities’ resilience to climate change”. This definition clearly shows the multifunctionality of UPA in urban areas contributing to improve social well-being, local economy and environment. Thus, UPA is becoming a relevant activity to be promoted by local authorities and communities. Initiatives such as the Milan Urban Food Policy Pact show this trend. This Pact signed by 199 cities from different countries of the world is an international pact to promote urban food policies that was launched at the C40 Summit in Johannesburg. The movement “Action on local food” is spreading to many cities from the north, like Barcelona, Guelph or Milan, as well as from the south, such as Belo Horizonte or Windhoek (Forster, T., et al., 2015). UPA can deliver important environmental, social and economic functions. However, it is important to highlight that in poorer countries the socioeconomic role of UPA is even more essential as it can help deprived communities to get a direct source of fresh and affordable food. In richer countries though, the social function of UPA is also acquiring more and more importance, as it has been realized that growing food can be of great benefit to people with mental health or social problems.

Catalonia located in the north-east of the Iberian Peninsula, has suffered a significant urbanisation process since the 1960s and 1970s, due to the rising residential demand and the construction of mobility infrastructures, especially around the capital city, Barcelona. Folch et al (2018) said highlights the loss of almost one third of the agricultural land in the ten most populated municipalities of the province of Barcelona from 1982 to 2017. This had a direct impact in the fields surrounding cities that suffered from sprawl, reducing space for agriculture. On the contrary, there are some rural areas in Catalonia that are experiencing agriculture abandonment due to the loss of population and the harder conditions of some areas for farming. To prevent this, the agricultural sector have for years been protesting for a law to be introduced to protect agrarian soil. It was not until last year that the “Law of agrarian spaces” became a reality. This law seeks “to stop the growing use of land due to urban growth and the expansion of the forest area, which entails not only intrusion in the agricultural environment, but also generates significant quotas of legal uncertainty and loss of competitiveness of farms” (Llei 3/2019, del 17 de juny). An important aspect of the law is the recognition of UPA spaces and the obligation to develop a specific plan for these areas. The law describes periurban agriculture as the one that is located in the outskirts of urban areas having the following features: a high urban pressure, the pressure of other economic sectors over food land uses and resources, instability of land uses, a significant land division and a high pressure due to an intensive social use that can be incompatible with agrarian activity.

In Natal, Province of Rio Grande do Norte, Brazil, despite being considered by the IBGE as a municipality with a 100% urban population, reinforced by the Master Plan of the municipality in 2007, it is noted the presence of several focuses of the phenomenon of urban agriculture, whose territorialities are noted by the presence of urban farmers. So, and their representations composed of small gardens, gardens and productive backyards, as well as small commercial establishments of vegetables, sometimes on the very street or avenue where they are produced. Thus, it represents an example of territorialities in the Natal urban fabric, with greater prominence in the suburbs, especially in the Northern and west Administrative Zones. The position of public power regarding the non-recognition of rural spaces (or their practices) in the city of Natal is evidenced by the absence of public policies for the sector. In addition, there is little visibility of this phenomenon in the population's imagination, despite its social importance for groups of people in

conditions of social and environmental vulnerability who find in this practice an important means of food supply and social reproduction.

FIGHTING URBAN SPRAWL: PRESERVING OPEN LAND FOR AGRICULTURE DEFENDING FARMLAND IN AND AROUND BARCELONA METROPOLITAN AREA

Research on environmental movements in Catalonia from 1970 to 2013 allow us to verify that the protection of agrarian spaces dates to the 1970s. Many of these movements were located in the surroundings of Barcelona metropolitan area and they have recently become even more intense.

One of the first movements took place during the 1970s, with the aim of protecting the rural environment of Gallecs against a large housing complex planned by the Ministry of Housing . Gallecs is a space located mainly in the municipality of Mollet del Vallès and in another five surrounding municipalities (in Barcelona Metropolitan Region) . The agricultural land here basically belonged to tenants who dedicated it to horticultural crops, cereals and fodder for the Barcelona market. They were a modest group of people, who soon received support from environmental groups and associations, mainly from the anti-nuclear field, as well as from alternative culture movements, from hippies and from residents of nearby urban populations and some academics (e.g. the Catalan geographer Pau Vila). The social mobilization managed to stop the urban development project, although it needed to wait more than 30 years to get a serious protection with the inclusion of part of the Gallecs area in the Plan of spaces of natural interest of Catalonia (PEIN).

Since then, different mobilizations have taken place to protect agricultural areas, in Catalonia and specifically in metropolitan regions, given the enormous speculative pressure on rural spaces located in these areas.

One of the recent mobilizations, was against the project known as EuroVegas and was especially significant both for the number of activities that were carried out to complain, as well as for the variety of people and groups involved. The Eurovegas project planned to transform 800 hectares of the Delta del Llobregat agricultural park into a tourism and leisure complex in an area located between the airport of Barcelona and some neighbouring municipalities. It is a remarkable example of this type of citizen mobilization to protect existing agricultural spaces (Alió, Casanova, Gianohino, 2017). This mobilization took place in 2012 and numerous social sectors participated in it, from farmers convinced of the need to have agriculture near the city, to multiple neighbourhood, cultural and environmental groups and platforms, as well as groups of professionals including professional associations. Finally, like in Gallecs, the Eurovegas project was dismissed.

The Eurovegas case shows the existing high vulnerability of periurban agriculture in front of new urbanisation projects that still pressure these areas.

THE RETURN OF AGRICULTURE IN THE CITY OF BARCELONA

Looking at agriculture in large cities we must point out the difference existing between periurban areas, where agriculture is mainly market oriented with professional farmers, and urban areas, where agriculture usually focuses on self-consumption having recreational or social purposes.

In Barcelona, a city with the highest densities in Europe, this model is evident. Barcelona, like many cities, was surrounded by agriculture lands that bit by bit disappeared under concrete. Thus, by the end of 2018, there were only 2 farms surviving in the boundaries of the city: La Ponderosa and Can Calopa de Dalt. We will look at them carefully because the social, ecological and cultural functions that these areas play give them a value that greatly exceeds the quantitative significance of their surface.

The Ponderosa, located on the left bank of the Besòs river, on the border of the municipality of Barcelona, next to Montcada i Reixac municipality, was until recently a private horticultural farm of 7 hectares that supplied fresh horticultural products by directly selling them to their neighbours. There are several causes that explain the continued existence of La Ponderosa in an area suffering from high speculative pressure since the 1960s: One of them was the interest of the owner of the farm and the land to continue with the activity, as he considered it a decent and socially very positive way of life. Indeed, the residents of the area walked to the farm to buy the products in situ, which allowed them to maintain direct contact with the farmer, the land and the plants. It was very pleasant for the neighbours who could fulfil personal empowerment in relation to their neighbourhood and the river. Moreover, La Ponderosa had a significant heritage and ecological value because water was supplied from the irrigation channel “Rec Comtal”, a channel of medieval origin from a nearby water mine that supplied the city of Barcelona. Thanks to this, the irrigation water of La Ponderosa was of much better quality than the one that could have been obtained from the polluted Besòs river

Currently, the continuation of La Ponderosa is at stake due to the death of the owner. This has led to the resurgence of the conflict between the speculative model, as proposals from real estate companies to urbanize the area quickly came out, and a more ethical and ecological city model that is being defended by the neighbourhood movement of Barcelona.

Can Calopa de Dalt is a four hectares vineyard estate owned by Barcelona City Council located in Collserola mountain range, legally protected as a natural park. It was uninhabited for years, even though there were already projects to give it a new use. From the beginning of this decade the project to rebuild the Masia began to crystallize to dedicate it to the housing of the new members of the L’Olivera cooperative. Since the seventies this cooperative, formed by people with severe disabilities and the support of management staff, was in a municipality in the rural hinterland of Catalonia where it grew high-quality organic olive groves and vineyards. There was a long relationship between L’Olivera and Barcelona City Council, based on the agreement to bottle a part of the wine production for the official events of the City Council. To this function it was added the interest to strengthen the therapeutic dimension of the cooperative, following the idea of social agriculture (Guirado, Tulla et al., 2012). This has been the approach implemented in the new location of the cooperative in Can Calopa de Dalt since 2010, that is also dedicated to organic viticulture, employing people at risk of social exclusion and/or intellectual disability.

In contrast to the loss of professional agriculture, urban agriculture has resurged with different vegetable gardens scattered around Barcelona that are basically devoted to self-consumption. In 2019 the city of Barcelona counted 119 urban gardens (municipal, community, social or private managed). In 1997 the City Council of Barcelona launched the Network of Urban Gardens, which is addressed to citizens over 65 years old. The production follows organic farming principles. The aim of this action was to improve social and environmental aspects, improving the life of the people that grow food, promoting local fresh food and increasing the green spaces of the city.

The commitment of the city of Barcelona with the Milan Food Policy Pact led to the development of the Strategy for the Promotion of Food Policy 2016-2019 of Barcelona City Council. This Strategy seeks to move towards food sovereignty influencing the entire food chain from the production to the consumption. Some of the actions focus on increasing agriculture production in and around the city, promoting urban vegetable gardens, creating a “farmland bank” and encouraging urban livestock in the Collserola Natural Park, amongst others.



FIGURE 1

Some of the existing vegetable gardens in Barcelona Metropolitan Area (Catalonia). Source:

Xarxa de Ciutats i Pobles cap a la Sostenibilitat. July 2017. Map developed, using different sources, by Jordi Montagut Alandi as a result of an internship at Barcelona Provincial Council.

Map developed, using different sources, by Jordi Montagut Alandi as a result of an internship at Barcelona Provincial Council.

The rise of urban agriculture is a phenomenon that can be realized also in many other cities and villages around Catalonia. The Network of Cities and Towns towards Sustainability has a specific working group where around 100 entities (mainly local authorities) share ideas and practices to promote urban gardens. Figure 1 shows the diversity and spread of urban gardens in different municipalities of Catalonia including social, school and urban gardens

PERI-URBAN FARMING IN THE METROPOLITAN AREA OF BARCELONA

As already mentioned, in the metropolitan area of Barcelona it has been possible to maintain an important extension of agrarian space despite the urban pressure: the Baix Llobregat agrarian park. This agricultural area has survived in a strip of land located in the low valley and the delta of Llobregat river, surrounded by the city of Barcelona, industrial areas and important transport infrastructures (amongst them, Barcelona airport). A campaign led by the main farmers' union of Catalonia was key to protect this area. In fact, it was one of the agriculture areas to be preserved in Catalonia, being a role model for others that followed. The park includes around 3,300 ha. and is managed by a public consortium established in 1998 that is made up from different local and supralocal administrations, as well as a farmers' union. This agrarian park has a Special plan for protection and improvement and a Management and development plan that establish the preservation and management directions for this area. Thanks to this agrarian park there are around 600 farms in the area. The fruit and vegetables of the Baix Llobregat agrarian park have a key role in the development of a more local and sustainable food system in Barcelona city and its surroundings.

There are also other agrarian protected spaces near the metropolitan area of Barcelona that are worth mentioning as they have a significant role feeding the urban areas around, as well as bringing social and ecological benefits to these areas. In the north east of Barcelona, inside the Metropolitan Region of Barcelona, we can find the Gallecs rural space, that is legally protected as a Space of Natural Interest. It has around 733,52 ha, with 75% of the territory devoted to agriculture. The Consortium of Gallecs is promoting organic farming (more than 40% of the farmland has been already transformed to organic farming). Sabadell agrarian park, an area of 586 ha, is also an outstanding example of how farmers and local authorities are managing to

preserve agriculture in a very dense urban territory. The park supports the preservation of native crops and outlines the role of this area, not only to produce food, but also to improve the local environment reducing the urban heat island effect.

The three experiences presented here have required and still need instruments and legislation to preserve their territorial integrity and to support agriculture activity. Although all of them have achieved a significant legal protection level, the urban pressures over these areas are still high, as it was mentioned previously with the social mobilizations needed to protect Gallecs rural space and Baix Llobregat agrarian park. Therefore, it's crucial to dynamize the agrarian productive function of these areas, as well as to show their multifunctionality, as spaces that feed the surrounding cities but that also contribute a great deal to improve the quality of life of citizens. Different instruments that are being implemented in these areas, such as land stewardship to promote agri-environmental measures or "farmland banks" to facilitate the access to farmland, are helping to support agriculture and farmers.

THE PHENOMENON OF UPA IN THE METROPOLITAN REGION OF NATAL - RIO GRANDE DO NORTE – BRASIL: A CONTEXTUALIZATION

Throughout the metropolitan region of Natal, which consists of 15 municipalities and a population of approximately 1.6 million people, the phenomenon of urban and periurban agriculture is present with greater expressiveness of urban agriculture in the municipalities of Natal, Parnamirim, Extremoz, São Gonçalo do Amarante and Macaíba.

When studying the UPA phenomenon in Natal, Locatel and Azevedo (2010) highlight its presence and importance as a remarkable social phenomenon in the city's economic, cultural and environmental dynamics, ensuring that a significant percentage of families develop agricultural activities in the backyards of their homes, on vacant lots, on the banks of public roads and streams in the city of Natal-RN. For the authors, in some cases, this production is not only for self-consumption, but also as the main, and sometimes the sole source of income for the family. This can be seen in various parts of the city, such as the Pajuçara, Potengi, Lagoa Azul, Nossa Senhora da Presentation, Igapó, Salinas, Redinha, Northeast, Bom Pastor, Felipe Camarão, Guarapes and Planalto neighborhoods, that is, in areas close to rivers and lagoons, with emphasis on river terms, the areas near Potengi and Pitimbu rivers. Pium and Rio Doce in the west, north and south of the city. However, the area of influence of the UPA in the metropolitan region of Natal is also present in the municipalities conurbated with the capital, that is, Parnamirim, Macaíba, São Gonçalo do Amarante, Extremoz and other municipalities (Figure 2).

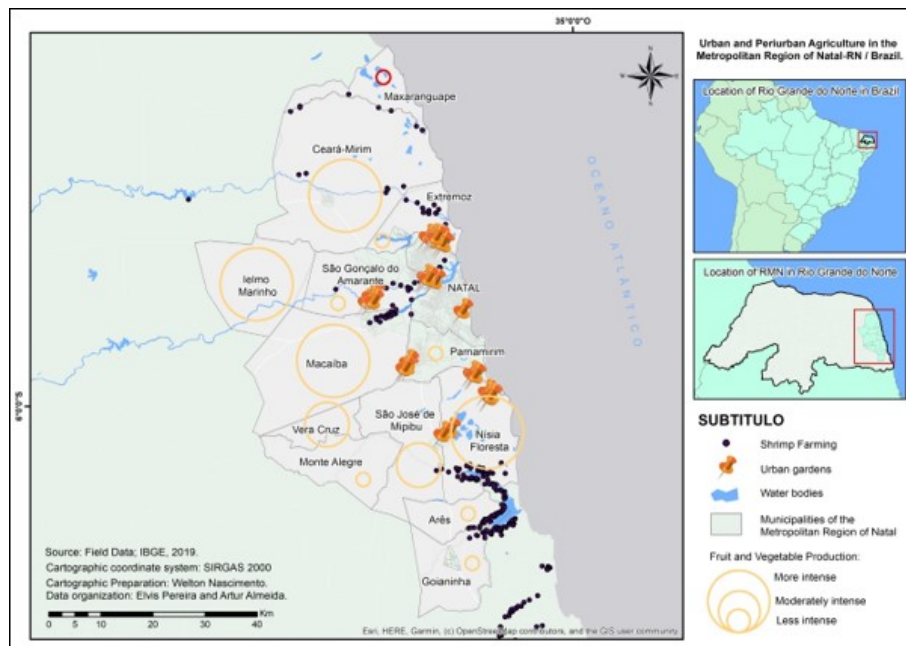


FIGURE 2
Urban and Periurban Agriculture in the Metropolitan Region of Natal-RN/Brazil.
Field Data, IBGE, 2019

It is noteworthy that the highest incidence of UPA in the metropolitan region of Natal occurs especially in the territories that are more socially and environmentally vulnerable with greater inequality and social exclusion, such as the Natal neighborhoods of Pajuçara, Potengi, Lagoa Azul, Our Lady of Presentation, Felipe Camarão, Guarapes and Plateau.

However, the UPA also presents itself significantly in other areas of the urban and periurban territory between the municipalities already mentioned, that is, Parnamirim, especially on the banks of the Pium River and the western zone of the municipality, Extremoz, especially near the Rio Doce. Macaíba in the area of influence of the Potengi River and São Gonçalo do Amarante somewhat diffusely in the territory.

The UPA is also an important factor in food supply and social reproduction in the municipality of Natal, the neighboring municipalities and other municipalities of the metropolitan region of Natal where the phenomenon occurs. The goods produced are intended mainly for the self-consumption of the producers and their families, but also for the local market and inter-municipal markets, distributed at the Natal and metropolitan region free markets, middlemen, public markets and the trading system in general, creating several short circuits, distribution of agricultural and livestock products in and around the state capital and the interior of the state.

Thus, the phenomenon of UPA in around Natal is territorialized in various areas through the cultivation of vegetable gardens and livestock, especially in the territories of the North and West Administrative Zone, although it also affects the municipalities around the capital, such as São Gonçalo do Amarante, Extremoz, Macaíba, Parnamirim and Nísia Floresta. These are close to buildings, paved streets and avenues. However, it is necessary to understand that “their characteristics vary by the plurality of techniques used, existing natural conditions, availability of human and capital resources, location of cultivated areas and others.” (LOCATEL; AZEVEDO, 2010).

RETHINKING MODERN AGRICULTURE: ENTREPRENEURIAL STRATEGIES OF UPA URBAN AGRICULTURE AT THE CROSSROADS OF COLLABORATION

Richard Sennet (2012) said that to succeed at difficult things, we must do it along with other people. This is especially true for agriculture, that is inserted in the economic dynamics and it suffers from the speculative pressure of the financial market (that seeks greater capital gains than the ones that can be reached with agriculture), the competition of industrial agriculture fixing prices, as well as the progressive ageing of farmers.

Within this context, an agriculture with a lower environmental impact and that produces healthier food is becoming increasingly necessary. In this way, agriculture in general and particularly urban agriculture have been transformed into a field of conflict which converges, on the one hand industrial and speculative pressure and on the other hand the emergence of organic farming together with the need for consumers, mostly urban, to procure healthy foods.

Currently, the economic model of future agriculture is being discussed. In this context, the city and its periurban spaces are transforming themselves into a kind of social laboratory where we try different possibilities for collaboration between the social actors involved, particularly farmers and consumers, with the objective of preserving agriculture in the urban/periurban spaces and strengthening the transition towards sustainable agrarian systems.

For this reason, the study of the characteristics and composition of business initiatives in agrarian economies has become a topic of extraordinary interest. In principle, we can find a broad array of agriculture modalities, starting with the difference between industrial agriculture, which follows the capitalist model, and social and solidarity economy (Alió i Azevedo, 2015) and continuing with an extraordinary heterogeneity, especially in the case of urban agriculture. Below we include a very simple scheme that can help to identify the main patterns of this complexity based on the basis that all of them, when they reorient the production towards healthier or ecological products, need to reorganize their commercial strategies apart from conventional intermediaries (Table 1).

1. Cooperation between a small group of farmers and many consumers (associated or not).
2. Cooperatives of producers with own selling points.
3. Collaboration with restaurants.
4. Farm sponsorship
5. Individual producers with direct selling points and complementary activities.
6. Direct sale in fairs and markets.
7. Direct sale in markets from wholesale and big sales chains.
8. Social agriculture
9. Community gardens, usually for self-supply.

TABLE 1
Modalities of agriculture in relation to commercialization.
Source: Àngels Alió (2019) from Binimelis & Descombes (2010).
Àngels Alió (2019) from Binimelis & Descombes (2010).

The table shows nine types or modalities that denote extreme diversity when establishing agreements and forms of cooperation to develop alternative agriculture to the dominant economic structures.

First, there are two types of cooperation or association between farmers and / or consumers with fixed points of sale in the farm, in cooperatives or in other stores in the village or the city. In the early 1970s the cooperation model emerged from the interest of consumers in healthy and organic food. This is the case for El Brot cooperative, one of the first in Catalonia, followed by Germinal, El Rebost and later Ecoconsum, all of them grouping farmers and consumers, mostly from urban areas.

The cooperation between farmers and catering establishments followed. On one hand there are the ecological school canteens, with a trajectory that dates back to the end of the last century and that include a triple association: the schools' fathers and mothers who assume the responsibility of the management, the city councils or county councils and farmers using an ecological growing system. On the other hand, there are restaurants that buy and serve local food from local farmers, and some have even engaged with the Slow Food movement.

Another quite recent modality is the sponsorship in the farm, which tends to focus on livestock, consisting of the sponsorship of an animal from its birth. It also promotes the relationship between farmers and consumers that usually benefit from activities organized by the farm.

There are also farmers with direct-to-consumers sale points and sometimes this is complemented with recreational activities for children and environmental education.

The modalities described until now clearly differ from the following two categories. The first one is associated with the celebration of fairs and markets, with a very diverse periodicity (weekly, monthly, yearly). In contrast, the following categories include all those farmers who sell their products to wholesale markets or establishments such as supermarkets.

Another type of agriculture that is acquiring importance especially in urban and periurban areas is social agriculture practices that focus on people with risk of social exclusion with the aim to empower them and to improve their health and employment opportunities (González & Perpinyà, 2013). This type of agriculture has experienced a strong revaluation (Guirado, Tulla et al., 2013).

There are usually specialised professionals such as pedagogues that are involved in this kind of activities, as well as public institutions and other societies, usually non-profit. The products of social agriculture are sold usually in fixed points of sale and tend to participate in associative sales and collaboration networks.

Finally, the community gardens represent contemporary urban agriculture in a more symbolic way. There is a great diversity of urban vegetable gardens, from municipal ones, in which an association between users and municipal governments is established, to gardens managed by citizens, which may be in occupied properties or not. We can also find smaller vegetable gardens in balconies, terraces and rooftops (from families, public institutions, universities, etc.). These vegetable gardens usually promote organic farming systems.

The emblematic transition towns movement, that started in Totnes on 2006, has specially contributed to the spread worldwide of the great diversity of urban and collaborative agriculture from private to community gardens. The transition movement brings back the connection between rural and urban through urban agriculture (Neal, 2013). It's interesting to point out that environmental concerns (particularly the need to tackle climate change) have promoted the rise of agriculture in urban areas as well as a certain ruralization that can be realized with (Neal, 2013): agrarian markets, the increasing availability of local, seasonal and organic food, community gardens, etc.

The transition movement promotes a fossil free agriculture through the development of local, organic and multifunctional agriculture following the principles of Permaculture (Pinkerton & Hopkins, 2009). Worldwide there are more than 1000 initiatives of transition that undertake a significant variety of actions to promote local and sustainable agrifood systems that reconnect both the community around them and nature. These actions help to move from the current system of farmers that feed passive consumers to a renovated one based on active consumers that get connected with their food and even with farming (Pinkerton & Hopkins, 2009).

SUSTAINABILITY AND MULTIFUNCTIONALITY OF UPA

The proximity of UPA to consumers increases the interest and chances to establish cooperation between farmers and consumers but also to develop entrepreneurial initiatives based on sustainability and multifunctionality of agriculture (Zasada, 2012). A PhD research carried out in Girona urban region (an

urban area with around 200.000 inhabitants located in the north of Catalonia) shows that progressively more farms include multifunctional activities (Perxacs, 2016). The number of farms in this region has followed the common decrease tendency of farms in Catalonia. In 2009 there were around 900 farms.

A sample made with 90 farms and a detailed study of 31 farms showed that bit by bit agrarian entrepreneurs are developing more multifunctional farms and are establishing closer relationships with the community and nature. The research identified around 10 novelties that can be seen as seeds of transition (Wiskerke & Ploeg, 2004) and 70 indicators of a transition to a more sustainable and community-linked agriculture, highlighting the following issues: more sustainable agrarian practices, direct sales, rural heritage preservation and offer of recreation activities for citizens linked to the farm.

The analysis carried out in the urban region of Girona shows that there is not a general transition of this area towards a more sustainable and resilient food system but there are different elements that can be identified in different farms, in the society and the local government that help to move forward on this transition. UPA, and especially those farms that are increasingly multifunctional and/or that establish closer links with society and nature can contribute a great deal to the construction of a more resilient and sustainable agrifood system. Figure 3 below summarizes some of the contributions from the agriculture sector, citizens, and/or local governments that help to build a more sustainable and resilient agrifood system. Many of these elements were identified in the research carried out in Girona urban region.

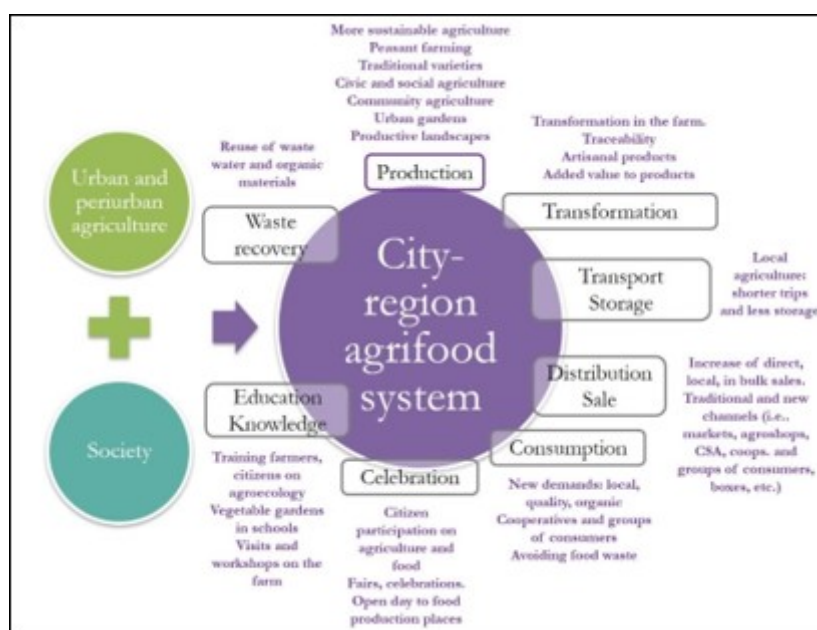


FIGURE 3

Contributions to a more sustainable and resilient city-region agrifood system. Source: Own elaboration from different sources (de la Salle & Holland, 2010; Zeeuw & Drechsel, 2015).

Source: Own elaboration from different sources (de la Salle & Holland, 2010; Zeeuw & Drechsel, 2015)

DISCUSSIONS

Given the above, it is noted that in different societies, humans materially or immaterially appropriate the territories, either by transforming them directly or by accessing them, using them to guarantee their survival and social reproduction. So, being in the space which is being territorialized, as it can be realized in various contexts in societies (political, economic, cultural, environmental, institutional, etc.).

In this context, the phenomenon of UPA constitutes, thus, a set of territorialities of resistance and resilience, dating back to the very genesis of cities. It has a concrete dimension, arranged in the territory,

capable of producing and reproducing spaces within cities around the world, articulating and engendering economic circuits that guarantee food supply and the social reproduction of various individuals and social groups. This phenomenon also presents an abstract and immaterial dimension, based on subjectivity and a series of relationships in the territory, established with other social actors.

It is important to emphasize that agriculture is considered one of the oldest economic activities in the history of mankind. More than that, it is a social practice that articulates with several other dimensions of daily life and living, that is, it is imbedded and articulated with culture in its multifaceted, with food (in food), celebrations and parties (harvest, for example), beliefs (events and phenomena of nature, such as the seasons of the moon and sun), etc. Regarding the manifestation of this phenomenon in the city, its genesis goes back to the very history of urbanization, because as cities began to grow, agriculture continued to exist or expanded within and / or around the urban sites in consolidation worldwide, as a strategy of guaranteeing, above all, a food base for the city population.

Often, agriculture developed inside and / or around cities served as the sole source of survival for the population who practiced it, which does not differ much from what we see today in various parts of the world, especially in various cities of the world. Southern hemisphere - in Africa, Latin America and even Asia, although to a lesser extent this also happens in Europe, in cities of the so-called developed countries.

Recognizing the relevance and importance of this phenomenon on an international scale and aiming above all to address it within the framework of certain policies and programs, with a view to addressing issues related to food security and the income of socially and environmentally vulnerable families and groups, the UN has recently recognized UPA as a multifunctional, diverse activity, including the production and / or processing of agricultural and livestock products in intraurban and periurban areas for self-consumption and / or marketing purposes. It is about harnessing local resources and inputs, respecting local knowledge, promoting gender equity through the use and coexistence of appropriate technologies (social technologies, for example), based on participatory, collective and democratic processes to improve the quality of life of the urban and periurban population. Therefore, the UPA covers agricultural practices that develop in and around city spaces around the world (FAO, 2018).

The UN also recognizes that because it is a multifunctional and diverse activity, the UPA is able to respond to a wide range of urban themes, including fighting poverty and strengthening self-esteem, as well as stimulating and improving the health of the population, because it encourages exercises of the body and the mind, and can offer fresh and healthy food to consumers, especially when UPA follows the principles of agroecology. Besides, often, UPA contributes to the improvement of the urban environment, the participative governability, the territorial planning, and the increase of food and nutrition security (FAO, 2018).

However, FAO itself has warned of three challenges that cities in Latin America and the Caribbean must face when developing UPA and maintaining gardens in the urban fabric: the first challenge concerns the lack of space in most large and medium sized cities, in view of the growth that has been observed, both in agricultural practice and in the urban fabric; the second corresponds to poor soil quality; and the third concerns the unreliability of the water supply, since the water used is not always potable and cannot guarantee the quality and health of what is produced. Hence, this work supports the creation and implementation of public policies, especially in cities and countries where there are problems such as poor sanitation, water supply or soil availability and quality, in order to include such issues in the political and technical agenda and in urban planning, since the UPA is a reality in various parts of the world with an important social content.

This is a phenomenon that is (re) produced on a smaller scale when considering the area occupied by producers, since they usually occupy small plots of urban or periurban soil, productive backyards, farms, sites, permaculture, etc. However, this scattered agriculture has a remarkable expressiveness and significance when considering the number of agents involved, the volume of production generated annually, the typology

of land use forms, characteristic spaces and the total area covered in different portions of the territories considered urbanized or periurban, in various parts of the world.

The territorialities of UPA are configured in the planting, the location of the gardens, the relationship of the subjects with the surroundings and the public power, but also in dealing with the land, harvesting, fishing and creative activity. They also manifest themselves, in the commercial and social exchanges of those who develop it and use it as a source of food supply, articulating different forms of marketing and destinations of production, thus engendering flows and triggering various processes, products, subjects and social groups.

Although in various territorial contexts urban agriculture is developed as a hobby or with social motivations that involve the logic of community organization, collective and solidarity actions, it exists also the urban farmer who constitutes himself as a social agent that lives the city from an economic practice, which is the cultivation of plants with commercial value, and through the trade of the products resulting from agricultural work, and all the relations established from this economic activity. (LOCATEL; AZEVEDO, 2010).

Thus, the capacity of the urban agriculture movement to resist and propagate under the most varied forms of organization and reproduction in contemporary cities, and in the case of Brazilian cities, with greater expressiveness in metropolitan spaces, in the capitals, is emphasized. This phenomenon is also noted in most of the medium-sized cities, and also in small towns, where, for example, horticulture and small animal breeding (pigs, sheep and poultry, for example) can be found.

In the case of Catalonia the territorial resistance of UPA can be realized in the successful cases of Baix Llobregat Agrarian Park or Gallecs Rural Park where it has been possible to “protect” farmland, although they are still facing different urban pressures that impact on agriculture activity. Even if UPA has been reduced in urban areas, especially in Barcelona city and metropolitana area, there is a resurgence of urban agriculture, as mainly to social farming practices. These increase and spread the multifunctionality of UPA.

Santandreu and Lovo (2007) consider the UPA multidimensional, including production, processing and service provision, generating products (such as vegetables, fruits, medicinal plants, ornamentals, cultivated or derived from extractivism, etc.) and livestock (small, medium and large animals). It can be focused on self-consumption, exchanges and donations or commercialization, efficiently and sustainably reusing local resources and inputs (soil, water, waste, knowledge, etc.). The authors also affirm that such activities are practiced in urban or periurban spaces linked to metropolitan dynamics, articulated with urban territorial and environmental management.

Also, according to Santandreu and Lovo (2007), the development of UPA involves formal or informal individuals or organizations immersed in the most diverse social conditions, being an individual or a collective activity. The practice of UPA also relates to leisure, health, culture, the economy and the environment. Also noteworthy is the involvement of vulnerable social groups and others, such as the unemployed, women, migrants, people with special needs, children, young and old, periurban producers, traditional communities and other groups.

When studying the reality of 11 Metropolitan Regions in Brazil, namely: Belo Horizonte (MG), Curitiba (PR), Porto Alegre (RS), Rio de Janeiro (RJ), Sao Paulo (SP), Brasilia (DF) and Goiânia (GO), Belém (PA), Fortaleza (CE), Recife (PE) and Salvador (BA), the authors concluded that in all of these the UPA is noticeable.

Therefore, it is inferred that this is a very present and representative phenomenon in many other metropolitan regions and other Brazilian cities, regardless of size.

Through this and other studies we can see the expressiveness that has gained the movement of urban and periurban agriculture around the world. Within this process, it is important to highlight the importance of community garden projects, particularly in Brazil, where it is possible to identify the existence of dozens of projects of this nature in metropolitan regions and in medium-sized cities. Santandreu and Lovo (2007) identified community garden projects in practically all the areas mentioned above, that is, in the main

Brazilian metropolitan regions, although it can be inferred that in other regions this phenomenon also appears.

Recently, Azevedo, Negre and Boneta (2018) also identified dozens of projects involving hundreds of families in Baix Empordà, in Catalonia (Europe), pointing out that this is a very positive movement that aims, above all, to promote health improvement, psycho-emotional and physical behavior of those who practice it and, in parallel, with their family members. In addition, they often also provide environmental improvements. Undoubtedly, the community gardens are non-capitalist spaces, where there is a logic of counter-rational production to the capitalist logic, that is, it has another logic of organization - community, autonomous and agroecological - allowing a greater exchange of experiences and ideas, reducing the stress of the people involved, because it is a relaxing, outdoor activity that helps exercise various parts of the body, as well as helping to improve mental health, because people suffering from any dementia, stress, depression or anxiety experience a sense of relaxation and tranquility after community gardening. Add to this, the help in improving mobility resulting from physical activity practiced, benefits in the diet by the possibility of access to fresh, healthy foods, allowing the increase of vegetable consumption. It is worth noting that the community garden movement is closely linked to the agroecology movement and the social and solidarity economy, becoming mainly territorialized in urban and peri-urban areas around the world, such as Catalonia in the European continent.

For these authors, agro-ecological community garden projects are a movement of great importance in the current global political, economic, environmental and social environment, enabling the production of ecologically-based healthy foods, promoting healthy lifestyles, enhancing agriculture. small scale, with no emphasis on profit, competition, commodification of nature, the sale of the labor force or high productivity, ultimately favoring the movement of social economies and solidarity. In the case of Catalonia, this movement also expresses the representativeness of the UPA based on a counter-rationality to the capitalist system, given that it values the principles of agroecology and social and solidarity economy. Therefore, it is a paradigm that sustains itself through social and productive relationships inspired by ethical principles, healthy, politically and socially just, and environmentally balanced living habits (Azevedo, Negre and Boneta, 2018).

Therefore, in both studied contexts (metropolitan areas of Barcelona and Natal), the phenomenon of UPA continues a movement of territorial resistance. However, the UPA disputes the territory with other hegemonic economic sectors, such as real estate capital, the multivariate trading system, industry, modern intensive agriculture (agribusiness) and tourism. In addition, public management does not recognize or legislate in favour of the UPA (which would create public policies and specific legislation to support and encourage UPA, allowing it to fulfill its social function). In this sense, the UPA is a notoriously resilient phenomenon in the modern capitalist city.

CONCLUSIONS

It is concluded that urban and periurban agriculture is a very old phenomenon in world society and is very expressive and representative of contemporary times, given its capacity of territorialization and incidence in almost all cities and regions of the planet. This is directly related to food supply, but also to the development of economic circuits, and their different forms of organization and configuration.

In Catalonia, UPA is progressively gaining importance as local food is identified as a key element to ensure that cities and territories are more resilient. Barcelona and its metropolitan area is starting to emphasize the role of their surrounding agriculture to feed the city while obtaining different social and environmental benefits. A research carried out in the Girona urban area (Perxacs, 2016) clearly shows this multifunctionality of UPA, as well as how farmers can contribute to a transition towards a more sustainable and resilient city-region agrifood system.

The important presence and appreciation of agroecological principles within this phenomenon stands out, carried out by hundreds of producers participating in projects, community or not, who produce food for their own family consumption, but also for the commercialization of the surplus produced. In this context, the involvement of public and private bodies and institutions is noted, such as municipal consortia, City Halls, Municipal Councils, Non-Governmental Organizations, cooperatives and associations of producers and consumers, with a strong presence still from the movement of social and solidarity economies, which as a whole aim at socioeconomic and environmental improvements with a focus on improving the quality of life of people who grow food, but also of those who consume, with a sense of social commitment and mutual responsibility among the subjects involved in this process.

An example of action in this direction is the policy of the Municipality of Barcelona entitled Strategy for the Promotion of Food Policy (2016-2019), whose main objective was to strengthen food sovereignty through effective planning and organization of the production and marketing chain of food, involving from production to consumption, through the promotion of urban gardens, organization of a bank of agricultural land in the city and surroundings, thus encouraging the UPA in that territory.

It is noteworthy that another element of prominence intrinsic to the phenomenon of UPA is its multifunctionality considering the set of activities of the establishments and subjects who practice it. It is noted that more and more sustainable multifunctional practices are being developed, highlighting direct sales that strengthen the short circuits of production, commercialization and consumption, preservation of rural heritage, offer of recreational activities, valorization of natural heritage, with incentive even to practice from agriculture to the young city population, among other functions and incentives.

In Brazil, it is present in all regions and practically all cities, with more expressiveness in metropolitan regions, state capitals and medium-sized cities, as in the case studied - Natal, capital of Rio Grande do Norte and its surroundings. In this case, the phenomenon is more expressive, especially in the most vulnerable and needy areas of the municipality, although it also develops in other parts of the territory, such as middle class neighborhoods, municipal borders, river valleys, etc. That is, it is a very diffuse phenomenon, but at the same time concentrated in certain neighborhoods of the North and West Zones, but also in the neighboring municipalities with Natal (Parnamirim, Extremoz, Macaíba and São Gonçalo do Amarante). Thus, there are different forms of destination and marketing of production, especially self-consumption, free fairs and middlemen, as well as sale at the place of production. It is a phenomenon that guarantees the social reproduction of a significant number of people and families in the studied territory, sometimes constituting the only alternative of occupation and source of survival of those who practice and develop it.

In Natal, free markets are a link between urban agriculture and the consumer market. Territorialities such as material and immaterial appropriations of the territories are very expressive and significant in the Natal city space, given the presence of hundreds of urban farmers and dozens of free markets in Natal and the metropolitan region. In the free fair phenomenon we can find the territorialities of fishermen, farmers, horticulturists, artisans, various service providers, sellers and consumers.

Within the free markets there are various territories involving diverse productive circuits, as well as the circuits of the urban economy (upper and lower), considering the diversity of subjects, actors and agents, products and services, content and flows that they have, but also the diversity of forms, functions and processes engendered.

Therefore, urban and periurban agriculture and free markets are territories of resistance and resilience in the city, which in the case of urban agriculture focuses mainly on the most vulnerable areas, such as the North and West administrative zones of Natal, ensuring the social reproduction of the less affluent population.

In the metropolitan area of Barcelona, the destination of production is quite diffuse, especially small and medium-sized commercial establishments, supermarket chains, public markets, restaurants, distribution networks marked by the presence of a cooperative and consumer associations, in short short circuits of

production, marketing and consumption of food spread throughout the metropolitan region of Barcelona and Girona, as well as around the Catalan territory.

Ultimately, UPA is a key element in urban and metropolitan regions that can bring social, economic and environmental benefits helping to build a more resilient and sustainable agrifood system, a thing that is increasingly urgent in the current context of the climate change emergency.

REFERENCES

- ALIÓ, M. À. i AZEVEDO, F. F. de. La economía social y solidaria en la transición ambiental. *Mercator*, Fortaleza, v. 14, n. 3, set/diez 2015, p. 89-108. ISSN 1984-2201. DOI: 10.4215/ RM2015.1403.0006
- ALIÓ, M. À; CASANOVAS, M; GIACHINO, D. Environmental Citizen Demands. The manifestos for the agriculture protection in the Metropolitan Regions of Barcelona and the Development of the new Environmental culture. *Natal: Sociedade e Território*, 2017, 29, 1,6-39. ISSN 2177-8396. DOI: 10.21680/2177-8396.2017v29n1
- AZEVEDO, F. F. de; NEGRE, M.; BONETA, M. Más allá de la racionalidad capitalista: los proyectos de huertos comunitarios en el contexto de la agricultura urbana y periurbana agroecológica de Cataluña. *Actas del XV Coloquio Internacional de Geocrítica, Las ciencias sociales y la edificación de una sociedad post-capitalista*. Universidad de Barcelona. 2018. Disponible em: <http://www.ub.edu/geocrit/XV-Coloquio/AzevedoNegre.pdf>.
- BINIMELLIS, R. y DESCOMBES, A. Comercialització en circuits curts. Identificació i tipologia. Manresa: Escola Agrària de Manresa & Departament d'Agricultura. 2010.
- EUROPEAN ENVIRONMENT AGENCY. Urban sprawl in Europe. Joint EEA-FOEN report. 2016. Disponible em: www.eea.europa.eu/publications/urban-sprawl-in-europe
- EUROPEAN ENVIRONMENT AGÊNCIA. Towards a 'sustainable agriculture'. Bruxelas: European Union, 2016. Disponible em: <http://www.eea.europa.eu/themes/agriculture>.
- FAO - Organização das Nações Unidas para a Alimentação e a Agricultura. Horticultura y diversificación. Disponible em: <http://www.fao.org/agriculture/crops/mapa-tematica-del-sitio/theme/horticulturayladiversificacion/es/>. 2017.
- FAO - Organização das Nações Unidas para a Alimentação e a Agricultura. Agricultura urbana e periurbana. Diversos documentos e Relatórios. Disponible em <http://www.fao.org/unfao/bodies/COAG/COAG15/X0076S.htm>. 2018.
- FERNÁNDEZ CASADEVANTE, F. y MORÁN, N. Raíces en el asfalto: pasado, presente y futuro de la agricultura urbana. Madri: Edita Ecologistas en Acción, 2016.
- FOLCH, R. Natura, ús o abús?. Institut d'Estudis Catalans. 2018. Disponible em: <https://natura.llocs.iec.cat/>.
- FORSTER, T., et al. Milan Urban Food Policy Pact: Selected Good Practices from Cities. Fondazione Giangiacomo Feltrinelli: Milan, 2015. Disponible em: https://www.ruaf.org/sites/default/files/MUFPP_SelectedGoodPracticesfromCities.pdf
- LIEI 3/2019, del 17 de juny, dels espais agraris. Diari oficial de la Generalitat de Catalunya, 19 de juny 2019, DOGC 7900.
- LOCATEL, C. D. e AZEVEDO, F. F. de. Gestão do território e a prática da agricultura urbana na cidade de Natal (RN - Brasil). *Scripta Nova. Revista Electrónica de Geografía y Ciencias Sociales*. Barcelona: Universidad de Barcelona, 1 de agosto de 2010, vol.XIV, nº 331 (55). <http://www.ub.es/geocrit/sn/sn-331/sn-331-55.htm>.
- DE LA SALLE J., & HOLLAND, M. Agricultural urbanism: Agricultural Urbanism: Handbook for Building Sustainable Food Systems in 21st Century Cities. Winnipeg: Green Frigate Books. 2010.
- GONZÁLEZ, C., y PERPINYÀ, A. L'agricultura social. Aproximació conceptual i dinàmica en el context europeu. Barcelona: Biblio 3W Revista Bibliogràfica de Geografia y Ciencias Sociales, 18(1046).2013. Retrieved from https://www.researchgate.net/profile/Carles_Guirado/publication/272713292_L'Agricultura_Social._Aproximaci_terica_i_dimensi_en_el_context_europeu/links/5575869308aeacff1ffce3d8.pdf

- GUIRADO, C. & Antoni TULLA et alter: L'agricultura social. Aproximació conceptual i dinàmica en el context europeu. Biblio 3W. Revista bibliogràfica de Geografia y Ciencias Sociales. Universidad de Barcelona. Vol. XVIII, nº 1046, 25 de octubre de 2013
- MOUGEOT, L. J. Urban agriculture: Definition, presence, potentials and risks, and policy challenges. Cities feeding people series; rept. 31. 2000. Disponível em: <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/26429/117785.pdf?sequence=12>
- MOUGEOT, L. J. Agricultura Urbana - conceito e definição. Revista de Agricultura Urbana, n.1, 2000. Disponível: <https://www.ruaf.org/sites/default/files/AU1conceito.pdf>.
- MOUGEOT, L. J. Agropolis - The Social, Political and Environmental. Dimensions of Urban Agriculture. London: Earthscan, 2005.
- NEAL, S. Transition culture: Politics, localities and ruralities. Journal of Rural Studies, 32, 60–69. 2013. Disponível em: <https://doi.org/10.1016/j.jrurstud.2013.04.001>
- PERXACS, H. Agricultura i comunitats urbanes en transició cap a la sostenibilitat: Estudi de casos i avaluació al sistema agrourbà de Girona. Universitat de Barcelona. 2016. Retrieved from <https://www.tesisenred.net/handle/10803/401433#page=1>
- PINKERTON, T., & Hopkins, R. Local food: how to make it happen in your community. Green Books. 2009.
- SANTANDREU, A.; LOVO, I. C. Identificação e Caracterização de Iniciativas de Agricultura Urbana e Periurbana em Regiões Metropolitanas Brasileiras. In: FAO - Organização das Nações Unidas para a Agricultura e Alimentação; Ministério do Desenvolvimento Social e Combate à Fome – MDS; Secretaria de Segurança Alimentar e Nutricional – SESAN; Departamento de Promoção de Sistemas Descentralizados – DPSD. Panorama da agricultura urbana e periurbana no brasil e diretrizes políticas para sua promoção. Belo Horizonte, 2007.
- TERRILE, R. Planificación urbana, ordenamiento territorial y AU. Texto temático del Curso-Taller: “Diseño e implementación multi-actoral de políticas y acciones estratégicas en Agricultura Urbana”, IPES, RUAF, Lima: 2006.
- WISKERKE, J., & VAN DER PLOEG, J. Seeds of Transition: Essays in Novelty Production, Niches and Regimes in Agriculture. Royal Van Gorkum. 2004.
- ZASADA, I. Peri-urban agriculture and multifunctionality: urban influence, farm adaptation behaviour and development perspectives. TU München, Fakultät Wissenschaftszentrum Weihenstephan. 2012.
- ZEEUW, H. de, & DRECHSEL, P. Cities and agriculture: developing resilient urban food systems. Nova York: Routledge. Retrieved from <http://www.ruaf.org/publications/cities-and-agriculture-deve>. 2015.