

Community Vegetable Gardens in Teresina: connected lives in urban environments

Tiago Luís da Silva Soares¹
Jane Márcia Mazzarino^{II}

Abstract: Thinking of urban gardens as an alternative for socio-environmental development in large cities leads to questioning which aspects of people's lives are most significantly affected by activities in urban vegetable gardens in Teresina/Piauí. The objective of the article is to analyze how the social institutional, economic, and productive aspects are dynamized in the experiences of the gardeners inserted in the Community Gardens Project in Teresina. The research is exploratory and qualitative, based on a bibliographical, documental, and field study. 12 vegetable gardeners were interviewed in depth. Data treatment was based on textual analysis. As some of the results, it was evident that the gardens favor social ties and the expansion of income, as well as entrepreneurship, but even with the support of the city hall, there is a need for greater access to equipment and infrastructure elements, such as water and toilets, as well as training.

¹ University of Valle Taquari,
Lajeado, RS, Brazil.

^{II} University of Valle Taquari,
Lajeado, RS, Brazil.

Keywords: Vegetable gardens; Community; Gardeners; Change.

São Paulo. Vol. 26, 2023

Original Article

DOI: <http://dx.doi.org/10.1590/1809-4422asoc20220172vu2023L4OA>

Introduction

The worsening of the rural exodus in Piauí, as well as throughout Brazil, since the 1950s, leads to the search for alternative occupations for people newly arrived in the capital, who do not find vacancies in the labor market. Teresina, with an estimated population of 868,075 inhabitants (in 2020), is the most populous city in Piauí. It is conurbed with the Maranhão city of Timon, thus forming the Integrated Development Region of Greater Teresina, which agglomerates about 1,194,911 inhabitants (IBGE, 2010).

The municipality, together with other partner agencies, develops public policies in order to reverse the negative effect produced by the high population growth rates, registered over several decades by the rural-city migration flow. The Community Gardens Project in Teresina was the way the city found to generate work and income, in a set of actions to combat poverty, carried out with the objective of guaranteeing means and productive and management capacity to community groups to promote the improvement of their general subsistence conditions and raising the standard of quality of life and social organization (SDR, 2020).

The implementation of community agricultural activities took place from 1987 in the areas of villages and slums of the municipality of Teresina, identified as large pockets of poverty, in which families are basically of origin but migrated in search of better living conditions, which led to serious economic and social problems for Teresina, as reported by the Secretariat for Rural Development (SDR, 2020).

From the first successful experience in the Dirceu Arcoverde neighborhood, the city government expanded the number of community gardens in the city, taking them to other peripheral areas. Data from 2020, published on the Teresina City Hall *website*, indicate that the municipality has 46 gardens spread across all areas of the capital, in addition to 12 agricultural fields in operation and 17 under implementation (PREFEITURA DE TERESINA, 2020). The objective of the study is to analyze how the social, institutional, economic and productive aspects are streamlined in the experiences of the gardeners inserted in the Community Gardens Project in Teresina.

Urban agriculture represents new options for work, earning income and exercising citizenship. The practice of urban agriculture also minimizes the food needs of families, increases the green areas of the city, gives utility to vacant lots (many of which have served as garbage dumps for a long time) and makes it possible to carry out work that respects natural resources.

2. Development

2.1 Vegetable garden and its dimensions

The objective of the article was polished based on the aspects identified as most relevant, resulting from the bibliographical research carried out in articles published on the subject in scientific journals. In this section, some of them that theoretically support the empirical study are mentioned.

Branco and Alcântara (2011) point out that the cultivation of vegetables and the creation of community gardens have stood out in Brazil in recent years, with the creation of social programs to combat poverty, carried out by the federal, state and municipal governments. Many projects focused on urban agriculture have been financed with public funds and have been included in the National Family Agriculture Program (PRONAF). There has been an improvement in living conditions and a reduction in poverty, however, there is still a lot to be done, due to lack of organization, lack of technical assistance, difficulty in accessing bank credits, etc.

According to the authors, the success of the projects seems to depend much more on community organization and the political decision to support them in relation to technical assistance, purchase of inputs, access to credits, etc. than on advanced technologies. By overcoming these barriers, urban and peri-urban gardens generate several benefits, contributing to poverty reduction and ensuring food security, as well as improving environmental conditions.

Vieira and Silva (2015) developed a reflection on the contributions of community gardens to social sustainability, with a view to the inclusion of the economically marginalized. According to the research, governments, entrepreneurs, and society in general have been more intensely interested in the theme of “social entrepreneurship” in recent years, due to globalization and the profound changes that have occurred in society, especially in the configuration of markets around the world, which has led these actors to have a sharper look at the social area, promoting sustainable development actions, quality of life and change of habits, especially in less privileged communities, based on public policies, such as the creation and management of community gardens in the urban environment of large cities.

The study shows that Brazil, in the last 50 years, has undergone a very accelerated urbanization process. Vieira and Silva (2015, *apud* BELTRAN, 1995) state that, in the 1940s, the population living in cities in Brazil corresponded to 25%; in 2000, there was an increase that jumped to 82%, a fact that generated enormous cultural changes, such as the denaturalization of knowledge and customs related to agriculture, the loss of the identity of the new generations with the land and the “swelling” of cities, causing social problems, such as the increase in the number of villages and slums. In view of this, governments and social organizations seek to develop public policies that involve these people in order to promote economic and social development and combat unemployment and exclusion. Among these policies is the valorization of urban and family agricultural production, in order to encourage, facilitate, guide, and monitor its development.

According to the authors, community gardens, directly linked to the economic factor and developed by families in communities managed by cooperatives or with the participation of public authorities, which contribute with technical and logistical support, have the purpose of ensuring the subsistence of families and supplying markets, as well as enabling a more pleasant climate among residents and better living conditions, by allowing part of the production to be sold, which enables better living conditions for people, who often lived in precarious conditions.

Vieira and Silva (2015) concluded that, in view of the need to rescue human dignity, it is necessary to build new public policies that enable the population's livelihoods and reduce the rates of social inequality, unemployment, hunger, among others. They found that there are still several political and cultural barriers and that their implementation will only be successful if there is a continuous plan of encouragement, guidance, monitoring and specialized technical support. Therefore, it is necessary to think of educational public policies that guide and accompany the development of family farming, more specifically, community gardens.

For Oliveira and Santos (2018), urban agriculture is the result of activities previously understood as primarily rural, which gain new meaning in the urban space, preserving traditional agricultural knowledge, through management techniques, whose production is directly aimed at the city population, thus strengthening the creation of a new professional category, that of "Urban Farmer".

The authors' study, developed in the city of Campo dos Goytacazes -RJ, analyzed the Eco community gardens project, which provided for the cleaning, maintenance and planting of popular gardens, on land provided by the City Hall, whose production was destined to the population, through the institutions and the municipal education network, making it possible to insert unemployed people, so that they could contribute to the city's economy.

The program had about 150 gardens, of which 57 were restructured. The registered farmers participated in courses on agroecological practices, and received guidance through partnerships with the State University of Northern Rio de Janeiro (UENF) and the research company UENF agropecuária do Rio de Janeiro (PESAGRO), which conditioned farmers to the rules of the program, such as prohibiting crops above 60cm in height, to avoid the growth of weeds and the accumulation of garbage.

It was observed that the program started well, generating income and fostering families, but after a certain time, the agreements began to be breached. The public policy, implemented with vigor and interest by the public authorities, began to give way to individual interests to the detriment of the collective interest. In this context, the gardens in the urban area, now deactivated, became the object of questioning and used by real estate speculation, according to Oliveira and Santos (2018).

In turn, Sperandio *et al.* (2013) described an experience that points to the use of urban voids in public lands, rescuing the social function of property and generating a feeling of well-being, resulting from "topophilia", a kind of sentimental connection that emerges in relation to certain places.

The vegetable garden studied by Sperandio *et al.* (2016) brings the social and territorial reverberations resulting from the use of part of an old urban void. The families involved and the city officials were so involved that they created a kind of co-responsibility, manifesting a sense of belonging to the place and the communion of common desires in favor of the project. The feeling of collectivity prevailed, as did the pride in the green and fertile flowerbeds. It was found that the feeling of social inclusion and solidarity created a strong bond with the site and greater respect for public space and the environment.

Participants claimed that the activities developed in the garden were reflected in the consumption of healthy food, income generation, teamwork practice, improved mental health and general health, among other benefits.

The authors concluded that the community garden project in Conchal is a public policy that converges with the construction of a healthy city, since it aims to stimulate the practice of collective work in the community, promoting the social and human dignity of families. It was possible to observe the improvement of the quality of life and space, as well as the intensification of social relations and affective ties between those involved. Economic benefits were also found for the workers, as since they save by consuming the products they grow, in addition to earning by selling them to the neighborhood residents. When asked about the collective work in maintaining the garden, there was a feeling of appreciation and high self-esteem, in addition to the garden becoming a spatial reference, being the scene of several social relations.

The study by Pavesi and Freitas (2016) shows that horticulture functions as a Socio-ecological System (SES), which enables the understanding and management of complex systems formed by the natural and social components, realizing the meeting of three inherent qualities: economic viability, ecological integrity, justice and social cohesion.

The authors cite the case of the city of Detroit, which experienced the migration of the automobile industry, which caused unemployment and poverty and showed a devastated landscape. The urgency to find a way out led the population to organize around a project to rebuild the city's economy and improve the quality of life of its inhabitants.

The solution found was to cultivate the urban soil, which made the community engage in learning processes that allowed them to give up values inspired by modernity, to rescue their roots and pre-industrial knowledge and to assimilate and apply scientific and technical knowledge, necessary to solve associated problems, such as the recovery of contaminated soils, the erosion of riparian areas and the filling of the urban landscape, previously occupied by industry.

The project was widely supported and promoted by a network of governmental and non-governmental organizations, which offered all kinds of resources to the community and its institutions, including educational ones. The project was very successful and showed that the effectiveness of new proposals based on the co-production of knowledge and teamwork lead to alternative and sustainable scenarios and build the adaptive capacity of communities.

The authors concluded that achieving sustainability requires charting a path, planning strategies, strengthening people's adaptive capacity, and providing opportunities for the situated and collaborative learning needed to reconnect the traditionally separate worlds of humans and nature. Also related to the collaborative perspective, the study by Barata and Albuquerque (2018) addresses the process of participation in community urban gardening programs, relating this participation to the promotion of local sustainability. The work sought to understand what motivates citizens to participate, how they participate, and what the results of this participation are, taking as a case study the urban gardens in the municipality of Cascais, Portugal.

Participants pointed out the taste for contact with the land and nature as one of the main motivations for their participation, as well as the improvement of family nutrition, the possibility of obtaining higher quality vegetables, and avoiding the control exercised by large plantations, which dictate what urban consumers consume, to see their own food grown, enjoying the feeling of freedom of choice by not having to buy industrialized cultivated products, subject to chemical treatments and fertilizers.

The savings in the family economy were also identified as a motivation and an expected benefit, in addition to the possibility of providing children with a place to be in contact with nature, run, get dirty, sow, plant, water, etc. They saw in the project the opportunity to learn about this theme, to resume family and cultural traditions, to occupy their free time, accessing a feeling of satisfaction for having achieved something that contributed to the fight against isolation and to the strengthening of neighborhood relations. Participation in the project created a sense of responsibility, enhancing involvement in other community issues.

Silva (2014) points out that urban agriculture contributes to food security, as it increases the quantity and quality of food available to those living in cities, contributing significantly to the quality of life and the aesthetics of urban space, in addition to minimizing the effects of global warming, providing occupation, and income for those involved.

For the author, the successful development of urban agriculture depends on access to land and spaces for the commercialization of products, as well as knowledge about the sustainable management of the process, in order to integrate agricultural activity with the expanding urban environment requires alternatives that provide quality of life. Urban agriculture, as a social policy, supports marginalized people and can insert them into a productive activity by occupying empty areas. In addition, in schools, nurseries, government institutes, religious temples, gardens can be used as pedagogical tools for children and young people, generating income and food security, as well as helping to combat hunger, conserve biodiversity, develop local and regional economic activities, improve the landscape and people's quality of life.

For Ribeiro *et al.* (2017), it is important to recover the old healthy and sustainable practices through agroecological experiences and urban agriculture. Their study points out that the gardens serve as a strategy for the creation of "community joint efforts", as a way to enhance agricultural production by integrating people into the project, while rescuing solidarity practices forgotten in time and empowering through the achievement of autonomy.

The testimonies collected showed the development of skills in the environmental dimension, signaling a new look of the participants towards the environment and a collective desire to contribute to the preservation of nature. Sustainable practices were also incorporated into their homes, communities, in addition to new agricultural practices in the dimensions of food and nutritional security and health, from various angles.

Ribeiro *et al.* (2012) developed an experience of agroecological urban agriculture in the city of Embu das Artes, metropolitan region of São Paulo, through the Harvesting Sustainability Project, based on raising awareness and mobilizing families through training

processes for agroecological production. The project trained 840 people, addressing topics such as health, environment, agroecology, organic agriculture, permaculture, sovereignty, food security, cooperativism, associativism, and solidarity economy. The actions counted on the partnership of civil society organizations and the municipal government.

In the second phase, the project was expanded with the implementation of 13 community gardens in various neighborhoods of the municipality. It was found that there was the development of environmental awareness, changes in eating habits, as well as the collective desire to contribute to the preservation of nature. The organic waste previously destined for the landfill became organic fertilizer; solid waste such as tires, wood, rubble, among others, became part of the infrastructure of the gardens. There were changes in eating and consumption habits, reducing expenses with industrialized foods. In the psychosocial field, transformations were noticed in patients with problems of depression, social phobia, or chemical dependence. These people became more proactive and were socially inserted. The authors conclude that the project contributed to the strengthening of local empowerment, to individual and collective protagonism, to the creation of a healthy environment, promoting health and quality of life, in addition to community mobilization.

Orsini and Kahane (2013) understand that the urbanization process brings undesirable consequences such as reduction of fertile land, deforestation, air and water pollution, reduction of rainfall drainage, and creation of peri-urban areas where socio-economic constraints are exalted and poverty is condensed. Urban horticulture contributes significantly to the food and nutrition security of urban dwellers, with social, physiological, socioeconomic, cultural, educational, and recreational benefits, especially in developing countries. The authors believe that horticulture will become crucial for the sustainability of urban food supply in the future.

These studies help to build an overview of urban agriculture, demonstrating that it is present in both developed and developing countries, with great importance in people's lives. Through these articles, it can be inferred that community gardens are a strategy for the socio-environmental development of cities.

2.2 Methodology

This study is based on bibliographic, documentary, and field research, the latter carried out through interviews with vegetable growers. The bibliographic research was restricted to studies on the subject of community gardens published in scientific journals. The documents consulted were accessed in the collection of the Municipal Secretariat of Rural Development and contain relevant data from the municipality of Teresina: municipal master plan of gardens; horticulturist manual developed by the technicians of the Superintendence of Rural Development; spreadsheets with data from the gardens; agricultural fields; magazines; reports; annals of works on Environmental Education; in addition to data from the Brazilian Institute of Geography and Statistics (IBGE).

The field research was conducted through interviews with 12 vegetable farmers.

These unstructured interviews were composed of questions related to the categories derived from the bibliographic study (Table 1). The interviews took place in the garden itself, through individual visits to gardeners who expressed interest in participating in the research.

Table 1 - Categories and aspects addressed in the interviews

Categories/Aspects	Elements
Social	Relationships in the gardens Collective work
Institutional	Land division Capacity building Relationship with the municipality Organic production
Economic	Commercialization Financing Income
Productive	Crops produced Purchase of equipment Management Water system Soil treatment

Source: From the authors, 2021.

The field study was carried out in three vegetable gardens (Promorar, Tabuleta and Itararé), which are among the ten largest in the city and concentrate the largest number of gardeners. Most of the interviewees do not have completed elementary school. Some are already retired and use the garden as a supplement to their income. Data collection in the field trips was carried out between January and April 2021. Table 2 characterizes the interviewees.

Table 2 - Profile of interviewees

Name	Horta to which it belongs	Age	Marital status
R	Promote	62	Married
J	Promote	65	Married
L	Promote	63	Married
M	Promote	53	Married
C.	Itararé	74	Married
MA	Itararé	61	Married
Jo	Itararé	58	Married

Ja	Itararé	38	Married
MH	Tablet	70	Married
F	Tablet	67	Single
MJ	Tablet	45	Married
A	Tablet	73	Married

Source: From the authors, 2021.

A former manager of the Superintendency of Rural Development (SDR) was also interviewed in order to obtain information about the specificities of each space, the general rules for the acquisition of a seedbed, and the process of people's participation in this program. The data were treated through textual analysis (MORAES, 2005). An in-depth reading of textual materials was performed in order to describe and interpret them (MORAES, 2005).

2.3 Dynamics in community gardens of Teresina

The 46 gardens spread across all areas of Teresina bring together 1719 plots. About 10,000 people live directly or indirectly from the production of vegetables in urban gardens. The largest of them is the one in the Itararé neighborhood, in the Southeast Zone of the capital. This garden, created in 1986, is five kilometers long.

The former manager of the Rural Development Secretariat (SDR) reported that, at the beginning of the process, a partnership was established between the São Francisco and Parnaíba Valley Development Company (CHESF) and the Teresina City Hall, in order to take advantage of the land through which its transmission lines pass (an unhealthy place for the construction of housing units), to implant community gardens. The municipality itself also used areas on the banks of rivers and on the outskirts of the city. This section presents the results of the study in terms of the categories proposed.

The synthesis of the results in relation to the social category points to the presence of social bonds and aspects of solidarity among the gardeners, as well as conflicts arising from disputes over the use of spaces and insecurity. As for the category related to institutional issues, the following were found the lack of a more effective policy regarding the distribution of land; the lack of continuity in training, despite interest; partial compliance by the municipality regarding support and structuring for more effective work in community gardens. Regarding the economic aspects, it was verified the presence of heterogeneous marketing channels, with access to financing, showing a small to medium economic rise for those who migrated to work in community gardens, with some having greatly improved their family economic power. As for the productive aspects, it was found that there is little diversity of crops produced by the gardeners; there is a lack of equipment to facilitate work in the gardens, in addition to the difficulty of access or irregular access to water; a mixture of forms of management and soil treatment (conventional and organic), with a tendency to accept ecologically more sustainable practices, which is not

properly explored due to lack of technical support and training of gardeners.

Table 3 - Summary of results according to categories and the dynamics of their elements

Categories/Aspects	Elements boosted by the gardens
Social	<p>Relationships in the gardens: meetings to find collective solutions (infrastructure, irrigation); favors bonds of friendship; generates good coexistence; conflicts due to informal sale of plots / beds; ceding of garden spaces for private use; existence of thefts.</p> <p>Collective work: joint efforts to clear the garden paths; in with gardeners in difficulty; “vaquinha” to repair machinery and equipment.</p>
Institutional	<p>Division of land: gardens installed on vacant or idle land, under power lines; selection of gardeners by registration, aptitude and interest; informal and irregular transfer of plots/ beds between gardeners; lack of plots/ beds for producers limits income, while there are abandoned and unproductive plots/ beds that are not given to producers who are interested.</p> <p>Training: despite the interest in training, the courses promoted by the Municipality are sporadic and insufficient, not serving all gardeners; some in partnership with the federal government, management courses, production techniques, especially organic.</p> <p>Relationship with the Municipality: marked by conflicts and contradictions: lack of support for maintenance, infrastructure, security, sanitation, transportation; on the other hand, they recognize support for irrigation and electricity; municipality subsidizes 100% of electricity.</p> <p>Organic production: Municipality subsidizes organic compost from pruning, but there are complaints about its quality and mixtures; provides transport for those who use manure in production.</p>
Economic	<p>Commercialization: sale in the garden or at fairs, directly to the consumer; sales at fairs promoted by the city hall; sale to government food acquisition programs; dissatisfaction with amounts paid.</p> <p>Financing: small bank loans backed by the state agricultural agency; funds from the municipal treasury; loans through the Popular Bank of the Municipality; misuse of funds.</p> <p>Income: from half to two minimum wages; for a large part of the gardeners, it is the main source of income, others use the earnings as a supplement to income, for subsistence or to ascend economically; working in the community garden has improved family economic power; joining government programs increases income; those who have more area for production have increased income, which is limited by the beds available for each gardener.</p>

Productive	<p>Crops produced: seeds are offered by the Municipality and purchased by the gardeners; they produce spring onions, coriander, cabbage, lettuce, beet, tomatoes, carrots, medicinal plants (mastruz, mallow, lemon balm, holy grass, etc.).</p> <p>Purchase of equipment: the supply of equipment by the Municipality is insufficient, requiring purchase by gardeners; equipment that could assist gardeners is stored in Municipality spaces.</p>
Productive	<p>Management: caterpillars, ants, and aphids are usually treated with insecticides sold in the market; weeds are controlled through manual weeding; few gardeners have undergone training for organic production; Banco do Nordeste promoted a course to combat pests with natural insecticides; they use Nim for caterpillars and green onions for aphids, as well as soap powder with bleach and lemon for locusts.</p> <p>Water system: City Hall drills wells and provides sprinklers, drip hoses; in some gardens, irrigation is manual, which demonstrates unequal access between gardens; electrical maintenance problems for irrigation are often solved with resources from the gardeners; pumps are missing, which could improve access to water in order to meet the demands of the gardeners' productions.</p> <p>Soil treatment: use coconut straw, animal manure, compost from prunings, chemical fertilizer.</p>

Source: From the authors, 2021.

The aspects related to the life of the participants stand out, whose statements showed that there was an increase in the quality of life due to having an occupation, as well as socioeconomic progress due to the complementation of post-retirement income. The social and economic benefits prevail when the gardeners analyze the presence of the garden in their lives, since “the idle person, without activities, accumulates many benefits” diseases and in the garden, we have an occupation working and having income”, as reported (M., participant 2, from the exploratory study). It was found that the gardens do change lives, as was the case of MH. “My life has changed 99% because when I was a bagger, I worked with other people’s money and earned only commission and lived on rent. Now I don’t, what I sell is mine, I managed to build my own house, I have a cart to move around before I could only afford to eat” (MH, participant 4, from the exploratory study).

Community gardens were found to be inclusive spaces that provide gardeners with a sense of satisfaction for having achieved something more in life. This feeling tends to contribute to the fight against isolation and to the strengthening of relationships with companions. “When you’re retired, and you’re sitting at home, all you can think about is nonsense. And here in the garden people come, even if they buy little, but they sit and talk and then time passes better” (C., participant 3, exploratory study).

Sperandio *et al.* (2013) state that the people involved in the garden manifest a

sense of belonging to the place, show pride in their green and fertile beds, thus having a feeling of social inclusion and solidarity, generating a strong bond with the place where they live and work, in addition to a greater respect for public space and the environment.

A similar situation was observed in the Itararé neighborhood, where, on a Saturday, families living in nearby neighborhoods go to the site to buy food. Moments like these generate social interaction and, often, a good conversation, which feeds self-esteem, especially that of older gardeners, who need this interaction to fill the void, which they sometimes feel due to age. In this sense, an elderly gardener stated that the garden is a hobby for him, because time passes faster, since there are always people to talk to and interact with. According to him, staying at home attracts mainly psychological diseases.

For Ribeiro *et al.* (2017), the use of pedagogical strategies in vegetable gardens enables the fusion of different types of knowledge (traditional and science), generating new knowledge through the exchange of experiences. This he reality can be seen in a conversation with an agricultural technician from the Secretariat for Rural Development (SDR), when he reported how much they also learn from the gardeners. According to the technician, the knowledge acquired in academia does not always overlap with the empirical knowledge brought by the gardeners. Our study showed that the traditional knowledge brought by the ancestors is fundamental for the productive results of the garden.

However, it was observed that the new generations (children and grandchildren of the gardeners interviewed) do not have the concern to carry on the work of their parents, which can lead to the denaturalization of knowledge and the profession of urban farmer. On the other hand, the incentive through collective work and public policies, with the proper training, could reverse this situation and generate the valorization of this form of environmental work.

According to Monteiro and Monteiro (2006), family farming corresponds to a production unit in which the ownership, work, and financial management of the family unit prevail. In the case of family farming carried out in the community gardens studied, gardeners tend to be characterized by production for subsistence and to supplement income; however, we detected three cases of entrepreneurs, who leveraged better results and, consequently, greater economic development. In this sense, the relevance of the implementation of public policies aimed at family farming is evident, which enables local development and the improvement of people's quality of life.

According to Oliveira and Santos (2018), urban agriculture is the result of activities previously understood as primarily rural, which gain resignification in the urban space, helping to preserve traditional knowledge, through the management technique, which favors the creation of a new professional category, that of the urban farmer. The study showed the rural origin of the gardeners, who bring with them the traditional knowledge acquired in the fields, which is fundamental for their productive practice. Allied to this, good performance in planting depends on training. Although they are sporadic, the City Hall periodically offers training courses, many of them on organic farming.

Silva *et al.* (2016), in a recent article, state that the vegetable cultivation system

in the city of Teresina is predominantly organic, which brings a sense of food security. When addressing the category related to institutional aspects, in the organic production item, it was evidenced that weed control is done by manual weeding, as well as organic fertilizer (animal manure) is used in soil management, while pest control is generally done through agroecological practices. We also identified that these practices are mixed with other, conventional ones, therefore, the work in the gardens enables the exchange, and hybridization of knowledge.

The reports of the interviewees point to a change in individual life from the gardens, which brings us to Pavesi and Freitas (2014), who cite studies about civilizations that became extinct due to the inability to reorganize themselves to face crises and disturbances, while other communities came together and rolled up their sleeves to rebuild themselves after facing major problems, as was the case of the city of Detroit (USA), which ceased to be the city of the engine to become the city of cultivation.

The authors' contribution refers to the social category as collective work, which, in the gardens surveyed, was not identified, since there were very few mentions referring to collective work for the good of all. We observed an exacerbated individualism in the urban gardens studied, as each one takes care of his garden bed and is concerned with its results. It is understood that if collective work were more encouraged, the results would be more promising and the changes would be much more visible, especially in relation to the search for access to what depends on the support of the municipal administration.

Branco and Alcântara (2011) state that success in vegetable gardens seems to depend much more on community organization and the political decision to support them than on advanced technologies. In our research, we found that, even in the face of individualized production, when the community organizes itself and has transparency in its actions, the results are positive, as we found in the Tabuleta neighborhood, where the association meets weekly, weighs and writes down all the production, organizes in spreadsheets the production of each gardener, and then sends it to the government's social programs. This is a collective work that effectively materializes. When the money is deposited, the spreadsheet is consulted and the proportional apportionment of each one's production is made, this strategy being an egalitarian and fair income distribution tool for all.

But the economic issue has other influences besides income. Wandscheer and Medeiros (2012) refer to the transportation problem cited by the gardeners as causing considerable losses, due to the perishability of the products, which often spend days waiting for transportation. A gardener in the Promorar neighborhood states that the transportation provided by the municipality is insufficient to meet the demands of gardeners, which brings serious losses, such as the loss of products, which increases the cost and decreases the profit margin, since payments are usually made by volume and weight.

Queiroz and Guedes (2018) point out in their research on vegetable gardens that the most reported difficulties were the scarcity of resources, the difficulty of marketing the products, due to factors such as insufficient production and high price. In our research, the most highlighted difficulties were transportation for the disposal of products and the

lack of security in the gardens, which brings many losses to the gardeners.

Final considerations

The study showed that, of all the categories, the social aspect is the most relevant, because, through it, we can measure the advances and setbacks in people's lives, pointing out the effectiveness or ineffectiveness of public policies. When we refer to the social category, we always associate it with society (group of people) who share the same ideals and who interact with each other constituting a united community; however, we found in our research that the gardens surveyed still need to advance a lot in this aspect, as individualism and meritocracy still prevail. We recognize that some governments (federal, state and municipal) have worked hard, especially in the last 20 years, to try to reduce the rates of people living on the margins of the poverty line. Some social programs have contributed greatly to this reduction; however, they are not yet consolidated as effective policies for change and income distribution, but only as palliatives.

We believe that there must be a profound revision of current social policies and a new vision of development. It is no longer acceptable that most far-reaching public policies are applied only in large urban centers, where they often translate into electioneering works. Governments should always seek to accommodate projects such as community gardens, especially in socially depressed regions, breaking with the rigid structure that encourages social inequalities.

The reports also demonstrate the relevance of training, even if it is sporadic. Training and public investment can reverse the limitations mentioned by the interviewees in relation to the community gardens studied: security, access to land, production model (more organic), increased income, access to equipment, water and ways to make the soil richer.

In general, it can be inferred that Teresina's gardens are inspiring for the transformation of territories towards a more sustainable local development. Each garden hides exciting life stories, some of which we were able to bring to this study. Each life interspersed with the cultures of the gardens became more meaningful after this work experience.

In common, the stories show that the mark of rural culture runs through the life history of these gardeners and, with it, the mark of the rural exodus and the reunion with the land. Although they act individually, they maintain friendly relations in these community spaces. The main conflicts occur with invaders and with the municipality, from whom they expect more in terms of infrastructure (transport, training, purchase programs, etc.). Many difficulties reported could be solved with political will, public investment, and collective organization, in which associations play a relevant role.

Many gardeners discovered themselves to be leaders of some processes, especially in the family sphere, from the encounter with the gardens, as was the case with many women. The will to work ran through the life stories that we brought to the work. Each character was chosen for having a story of overcoming. They had something inspiring to share, like realizing how liberating the simple act of preparing the land, planting, tend-

ing, harvesting can be.

All the stories connect knowledge from different generations, family values and practices. They were all peripheral characters, who took the centrality of their own lives and that of their families, changing their place in society. They seem to show that believing in oneself is the starting point to glimpse opportunities.

References

BARATA, S.; ALBUQUERQUE, R.; SIMÃO, J. Social capital and participation in community gardens. *Methaodos*, [s.l.], v. 7, n. 2, p. 244-260, 2019. Available at: <https://www.methaodos.org/revista-methaodos/index.php/methaodos/article/download/256/460/0>. Accessed on: May 31, 2021.

BRANCO, M. C.; ALCÂNTARA, F. A. Urban and peri-urban gardens: what does the Brazilian literature tell us? *Horticultura Brasileira*, [s.l.], n. 29, p. 421-428, 2011.

BRAZILIAN INSTITUTE OF GEOGRAPHY AND STATISTICS - IBGE. Census demographic. **IBGE**, 2010.

MONTEIRO, J. P. R.; MONTEIRO, M. S. L. Community gardens of Teresina: urban agriculture and local development perspective. *Revista Iberoamericana de Economía Ecológica*, [s.l.], v. 5, p. 47-60, 2006. Available at: http://redibec.org/wp-content/uploads/2017/03/rev5_04.pdf. Accessed on: May 31, 2021.

MORAES, R. **Discursive dives**: qualitative textual analysis understood as an integrated process of learning, communicating and interfering in discourses - Emerging research methodologies in environmental education. Ijuí: Ed. Unijuí, 2005.

OLIVEIRA, A. C. N. de; SANTOS, E. V. M. The importance of Urban Agriculture: a study on the Eco Hortas Comunitárias program in the municipality of Campos dos Goytacazes - RJ. *Revista Cerrados*, [s. l.], v. 16, n. 02, p. 51- 68, 2018. DOI: 10.22238/rc24482692201816025168. Available at: <https://www.periodicos.unimontes.br/index.php/cerrados/article/view/1080>. Accessed on: Dec. 10, 2021.

ORSINI, F.; KAHANE, R.; WOMDIM, R. N.; GIANQUINTO, G. Urban agriculture in the developing world: a review. *Agronomy for Sustainable Development*, [s.l.], v. 33, n. 44, May 2013.

PAVESI, Alessandra; FREITAS, Denise de; LOPES, Bárbara Pacheco. Community horticulture and construction of sustainable socio-ecological systems. *Amazônia: Revista de Educação em Ciências e Matemáticas*,

Belém, v. 10, n. 19, p. 19-29, dec. 2013. ISSN 2317-5125. DOI: <http://dx.doi.org/10.18542/ama-zrecm.v10i19.2184>. Available at: <https://periodicos.ufpa.br/index.php/revistaamazonia/article/>

view/2184/2482. Accessed on: Dec.10, 2021.

PREFEITURA MUNICIPAL DE TERESINA. **City Hall invests more than R \$ 2 million in community gardens and agricultural fields in rural areas.** Teresina, 16 Dec. 2020. Available at:

<https://pmt.pi.gov.br/2020/12/16/prefeitura-investe-mais-de-r-2-milhoes-em-hortas-comunitarias-e-campos-agricolas-da-zona-rural/> Accessed on: May 31, 2021.

QUEIROZ, M. A. Campos de; GUEDES, C. A.; MIRANDA, Assis, R. Linhares de. The performance of volunteers of the ProHuerta program in Río Cuarto (Córdoba, Argentina) in the formation of gardens and dissemination of the concepts of organic agriculture and agroecology. **Revista De La Facultad De Agronomía**, [s.l.], v. 117, n. 1, p. 43-52, 2018. Available at: <https://revistas.unlp.edu.ar/revagro/article/view/7313>. Accessed on: May 31, 2021.

RIBEIRO, S. M.; AZEVEDO, E. de; PELICIONI, M. C. F.; BÓGUS, C. M.; PEREIRA, I. M. T. B. Agroecological urban agriculture - strategy for health promotion and food and nutritional security. **Revista Brasileira em Promoção da Saúde**, [s.l.], v. 25, n. 3, p. 381-388, 2012. ISSN: 1806-1222. Available at: <https://www.redalyc.org/articulo.oa?id=40823864017>. Accessed on: Dec. 10, 2021.

RIBEIRO, S. M.; FRANCO, J. V.; GARCIA, M. T.; BOGUS, C. M.; WATANABE, H. A. Rescue of healthy and sustainable practices from experiences with agroecology and urban agriculture. **Demetra: Food, Nutrition & Health**, [s.l.], v. 12, n. 4, p. 1113-1131, 2017. Available at: <https://www.e-publicacoes.uerj.br/index.php/demetra/article/view/28751/22871>. Accessed on: May 31, 2021.

SILVA, E. R. Management of urban agriculture. **International Journal of Sciences**, [s.l.], v. 4, n. 1, p. 17-47, 2014. Available at: <https://www.e-publicacoes.uerj.br/index.php/ric/article/view/10065/9171>. Accessed on: May 31, 2021.

SILVA, M. do S.; FERREIRA, M. J.; SILVA, G.; SILVA, D. L. CONCEIÇÃO, G. Urban agriculture: community garden of the Dirceu Arcoverde II neighborhood in Teresina-PI - a case study. **Agrarian Academy**, [s.l.], v. 3, n. 05, 2016. Available at: <https://conhecer.org.br/ojs/index.php/agrarian/article/view/5169>. Accessed on: May 31, 2021.

SPERANDIO, A. M. G.; FRANCISCO FILHO, L. L.; FAVERO, E.; RIBEIRO, M. M.; MANFRINATO, T. Occupation of urban void as a promoter of planning for healthy city. **PARC - Research in Architecture and Construction**, Campinas, SP, v. 6, n. 3, p. 205-215, 2015. DOI:10.20396/parc.v6i3.8635018. Available at: <https://periodicos.sbu.unicamp.br/ojs/index.php/parc/article/view/8635018>. Accessed on: Dec.10, 2021.

SPERANDIO, A. M. G.; RIBEIRO, M. M.; FRANSOLIN, L. C.; SILVA, M. L.; STRASSA, A. S. A.; LOBO, N. W.; MOURA, A. C. Use of urban voids as a strategy for health promotion: experience report. **Intellectus**, Jaguariúna, year 9, n. 25, Health Edition, p. 38-55, Oct./Dec. 2013. Available at: <http://www.revistaintellectus.com.br/> Accessed on: May 31, 2021.

SPERANDIO, A. M. G.; ROSA, A. A. C.; CARMO, C. G. C. do; MONTREZOR, D. Social and territorial reverberations resulting from community gardens from the perspective of healthy

urban planning. **Arquisur Revista**, [s.l.], v. 10, p. 72-83, 2016. Available at: https://www.researchgate.net/publication/312242359_Reverberacoes_sociais_e_territorial_decurrem_de_comunidade_horta_in_the_perspective_of_healthy_urban_planning. Accessed on: May 31, 2021.

SUPERINTENDENCE OF RURAL DEVELOPMENT - SDR. 2020. Available at: <https://pmt.pi.gov.br/category/sdr/>. Accessed on: May 31, 2021.

VIEIRA, D. D.; SILVA, A. S. J. da. Social entrepreneurship and community gardens: generation of employment and income. **Revista Conhecimento Online**, [s.l.], n. 2, p. 50-62, 2015. DOI: <https://doi.org/10.25112/rco.v2i0.105>.

WANDSCHEER, E. A. R; MEDEIROS, R. M. **Urban agriculture in Belém do Pará**: productive activity, socioeconomic dynamics and spatial organization. [s.l.: s.n.], 2012.

Tiago Luís da Silva Soares

✉ tiago-soares.soares@hotmail.com

ORCID: <https://orcid.org/0009-0002-2590-8608>

Submitted on: 19/12/2022

Accepted on: 08/08/2023

2023;26:e0172

Jane Márcia Mazzarino

✉ janemazzarino@univates.br

ORCID: <https://orcid.org/0000-0002-6051-5116>

Hortas Comunitárias em Teresina: vidas conectadas em ambientes urbanos

Tiago Luís da Silva Soares
Jane Márcia Mazzarino

Resumo: Pensar as hortas urbanas como alternativa de desenvolvimento socioambiental em grandes cidades leva a questionar quais aspectos da vida das pessoas são afetados de forma mais relevante pelas atividades em hortas urbanas, em Teresina/Piauí. O objetivo do artigo é analisar como os aspectos sociais, institucionais, econômicos e produtivos são dinamizados nas experiências dos hortelões inseridos no Projeto Hortas Comunitárias em Teresina. A pesquisa é exploratória e qualitativa, baseada em estudo bibliográfico, documental e de campo. Foram entrevistados em profundidade 12 hortelões. O tratamento dos dados foi baseado na análise textual. Como alguns dos resultados, evidenciou-se que as hortas favorecem laços sociais e a ampliação da renda, assim como o empreendedorismo, mas, mesmo com o apoio da prefeitura, há necessidade de maior acesso a equipamentos e a elementos de infraestrutura, como água e banheiros, assim como de capacitação.

São Paulo. Vol. 26, 2023

Artigo Original

Palavras-chave: Hortas; Comunitárias; Hortelões; Aspectos; Mudança.

Huertos comunitarios en Teresina: vidas conectadas en ambientes urbanos

Tiago Luís da Silva Soares
Jane Márcia Mazzarino

Resumen: Pensar los huertos urbanos como una alternativa de desarrollo socioambiental en las grandes ciudades lleva a cuestionar qué aspectos de la vida de las personas se ven más afectados por las actividades en huertos urbanos en Teresina/Piauí. El objetivo de este artículo es analizar cómo se dinamizan los aspectos sociales, institucionales, económicos y productivos en las experiencias de los hortelanos insertados en el Proyecto Huertos Comunitarios en Teresina. La investigación es exploratoria y cualitativa, basada en estudios bibliográficos, documentales y de campo. 12 hortelanos fueron entrevistados en profundidad. El procesamiento de los datos se basó en el análisis textual. Como algunos de los resultados, se evidenció e los huertos favorecen los lazos sociales y la expansión de los ingresos, así como el emprendimiento, pero incluso con el apoyo de lo ayuntamiento, existe la necesidad de un mayor acceso a equipos de infraestructura, como agua y baños, bien como capacitación.

São Paulo. Vol. 26, 2023

Artículo Original

Palabras-clave: Huertos; Comunitarios; Hortelanos; Aspectos; Cambio.