



**The scenario of urban vegetable gardens of Londrina: Challenges and potentialities in the promotion of sustainable cities**

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#### **Abstract**

Having as central theme the urban gardens, the aim of this research was to present aspects concerning the urban vegetable gardens of Londrina to enter the discussion of the challenges and potentialities that this form of social organization of food production can contribute to create mechanisms and strategies aimed at the struggle for the crystallization of sustainable cities and communities. The methodological procedures were based on secondary (scientific production, documents and official websites) and primary (simple observation and visit to a municipal school) sources of information. It was found that urban vegetable gardens in Londrina, whether in the community format or in municipal schools, have relevance in the context of building sustainable communities in the city. In Londrina the vegetable gardens have involved technicians, students, education professionals, neighborhood residents in a process of resumption of a practice that can contribute to minimize the impact of hunger among families with lower purchasing power and also contribute to the care of the environment.

**KEY WORDS:** Urban Agriculture. Food. Environmental Education.

#### **INTRODUCTION**

The social production of urban space is marked by socio-territorial inequality that engenders a territorial order that does not promote environmental balance. On the contrary, there is a conflict between the capitalist logic of spatial organization and the struggle for environmental justice that generates urban “unsustainability” (ACSELRAD, 2015), considering that it is related to the geographically unequal production of urban space and the author defends the hypothesis that these environmental conflicts may be linked to the expression of social actors about the problem-posing resulting from this “unsustainability”.

In this context, these conflicts can be hidden or recognized, the first situation being the denial of the worrying reality of Brazilian cities, as can be seen from the data on the number of households occupied in subnormal agglomerations (named by IBGE - Instituto Brasileiro de Geografia e Statistics - for favelas) which increased from 3,224,529 (2010) to 5,127,747 (2019), and the total number of subnormal agglomerations from 6,329 to 13,151, throughout the national territory (IBGE, 2020), which have the following characteristics :

[...] the lack of technical (basic sanitation, energy, garbage collection, etc.) and social (health, education) infrastructure, in addition to the precariousness of housing, generally located in inappropriate areas (banks of urban rivers, old landfills, areas with a steep slope), most of which are located in – permanent preservation areas/APPs, which by prerogative of Law No. 12,651/12 should be preserved. (ANTONELLO, 2022, p. 278)

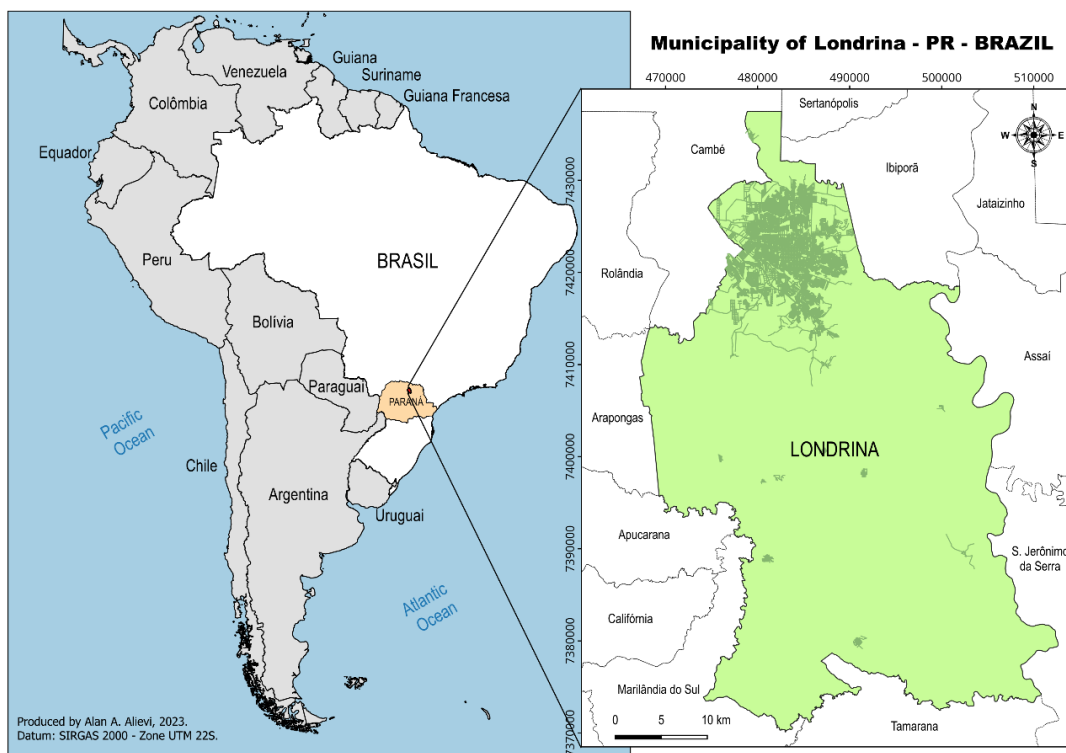
The characteristics of the concrete conditions of existence of these subnormal clusters refer to the environmental conflict marked by the contradiction between the struggle for survival of these families, who have to live with the lack of habitability in their homes, and the environmental issue, since they are located in large areas of environmental fragility.

The second situation would be the recognition of this reality in order to face it, as in the moment it is made visible and relevant, it is possible to think of strategies aimed at intervening in the territory, through dialogue between knowledges: the popular and the technical, for a political

confrontation of this reality via the implementation in the territories of public social and urban development policies (urban planning) and, thus, being able to believe and fight for a change for cities and move towards achieving SDG 11 Sustainable Development/ODS ( UN Brazil, 2022), in particular, SDG 11 (Sustainable Cities and Communities) of the 2030 Agenda.

Therefore, the scope of this reflection stands out, which is to present the scenario of urban community gardens in Londrina (picture 1) to enter into the discussion of the challenges and potentialities that this form of social organization of food production can contribute to creating mechanisms and strategies aimed at the fight for the crystallization of sustainable cities and communities.

Picture 1. Location of the city of Londrina in the Northern Paraná



Source, IBGE, 2015

This is a qualitative research approach, using information gathered from secondary sources such as scientific productions, documents and official websites. In addition, a survey of primary information sources, in this case, carrying out fieldwork with a visit to a municipal school in Londrina, dialogue with the agronomist engineer from the city hall and the teacher who manages an educational establishment. Notes were made of the main points of the dialogue and simple observations.

## SEARCH RESULTS

When thinking about urban gardens, it is worth clarifying that they are linked to the practice of urban agriculture, which develops within the urbanization process and its consequences, particularly environmental conflict (environmental degradation), thus emerging as a practice production that has as one of its aspects agroecology, which according to Leff (2002) would be “ecologically sustainable” production. However, it stands out that urban agriculture “[...] is often associated with sustainable planning strategies, as it allows the preservation of green areas in the city, ensuring an aggregate of ecological functions in urban environments and, also, functions of stay and recreation” (TEIXEIRA, 2016, p. 13).

The development of urban agriculture gains relevance both in the defense of planning aimed at sustainable cities, as well as focused on food production, which can contribute to a healthy diet for the needy population, such as those living in subnormal agglomerations in Brazil, in addition of having the potential to generate extra income for the people involved, according to Almeida (2015, p.420) it has the viability of “[...] providing food and combating hunger, as a way of life and a tool for overcoming poverty”.

In this vein, the United Nations Development Program (UNDP) believes that urban agriculture can be integrated into sustainable human development policies (BOUKHARAEVA et al., 2005). According to the study of these authors, urban agriculture, therefore, urban community gardens can perform the following functions, namely: a) food function; b) well-being, therapy and identity functions; c) transmission of knowledge and culture. Among these functions, food has the greatest repercussion and dedication to research, with the concern for food security, since a large portion of the world's population goes hungry, this fact is related to the issue “[...] that half of the people classified as those who suffer from hunger (840 million, according to FAO) currently live in cities” (BOUKHARAEVA et al., 2005, p.418).

According to the Second National Survey on Food Insecurity in the Context of the Covid-19 Pandemic, in Brazil, approximately 33.1 million people were in a situation of food insecurity (mild, moderate, severe), which is equivalent to 58.7% of Brazilian population. In the state of Paraná, based on the percentage according to households, around 53.5% were in a situation of food insecurity, with 29.9% classified as mild, 15.0% moderate and 8.6% as insecure serious eating disorder (VIGISAN, 2022).

In the city of Londrina, according to data from the Municipal Department of Social Assistance from 2019, there were 51,243 families registered with CadÚnico and in 2022, the number increased to 72,476 (TAROBÁ, 2023). Of this total, part of the families has lived in irregular occupations (favelas) in the city of Londrina. These are families in situations of poverty and extreme poverty, who depend on public actions and policies to have access to the minimum, such as food.

Londrina had 447,065 inhabitants in the city alone in 2000, that is, around 96.94% were located in urban space. In 2010, it had 493,520 inhabitants (97.4%) in the urban area (IBGE, 2000, 2010). The city has maintained population concentration in recent decades, this fact has deepened

the problems of lack of social facilities (health, education, leisure) and infrastructure (social housing, basic sanitation), which has affected the population with low or no purchasing power. This dynamic is linked to accelerated and segregationist urbanization that constituted the hallmark of the urbanization process in Brazil, including Londrina.

The population with lower purchasing power and unable to afford housing costs, in Londrina has occupied irregular areas, generally at the bottom of river valleys, building their homes. The consequences of the economies of expropriation of workers and society in general are the social contradictions that emerge in urban space, with favelas being the result of this segregationist logic that directs the social production of space, denying part of the population the right to the city, to a dignified life.

The location of favelas in Londrina follows the logic of the land market, that is, a large part is found in peripheral areas and at the bottom of valleys (on the banks of urban rivers). In addition to precarious housing, in the post-pandemic period, unemployment and food insecurity increased among families living in favelas.

It is in this context of families experiencing food insecurity that food production in community and school gardens becomes important tools for improving the nutrition of families without purchasing power in the city.

Urban gardens in Londrina have increased in number in the last decade and since 2017, Londrina's city hall has encouraged and subsidized the organization and maintenance of gardens in neighborhoods and municipal schools.

Since 2017, the city has had a specific law for urban gardens. Law No. 12,620, of December 13, 2017, which established the Municipal Urban and Peri-Urban Agriculture Policy (PMAUP) and created the Municipal Urban and Peri-Urban Agriculture Program (AgriUrbana), which offers technical support, machines for leveling and organizing beds, materials for fencing, for example, as well as vegetable and fruit seedlings for establishing the garden.

With this law it was established that the implementation of the program will take place, on the initiative of the Public Power and through the Management Committee, in allocating “[...] municipal public areas requested by interested parties and consulted on their viability by the Municipal Secretariat of Agriculture and Supply (SMAA) for urban agricultural activities” (LONDRINA, 2017). Among the objectives of the Municipal Urban and Peri-Urban Agriculture Policy (PMAUP), we highlight the focus on expanding “[...] food and nutritional security for urban populations, with priority for those people who are socially vulnerable and [...] promoting participation in the urban, social and environmental management of cities [...]” (LONDRINA, 2017).

To organize the collective garden in the neighborhoods, according to field surveys carried out in 2022 with those responsible for the AgriUrbana program at the Municipal Department of Agriculture, the first step is to organize the group into a residents' association. Once this step has been completed, it is necessary to register with the municipal agriculture department and wait for the families to register. The agriculture department has allocated, via a 2-year use concession, public



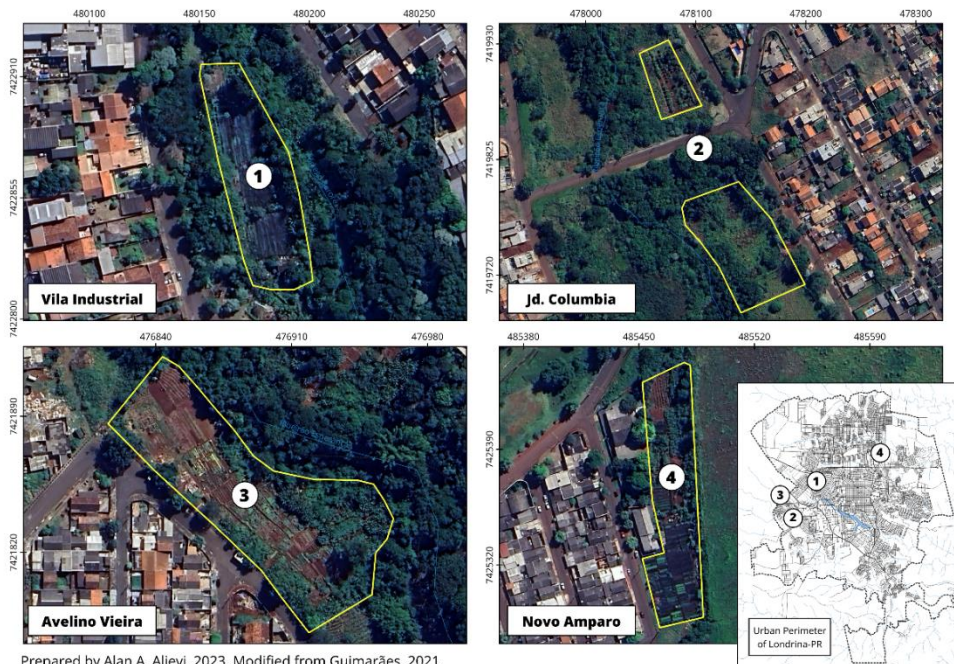
land belonging to the city hall or the Housing Company of Londrina/Cohab (picture 02), which is close to the residence of these families.

Every two years, the secretariat itself, via technical support, carries out an inspection to ascertain the progress of the garden and the interest of these families gathered in the association in continuing to produce for another equivalent period. The production from each garden has supplied the responsible families and is also sold in the neighborhood at more affordable prices than those charged in the formal market.

In municipal schools, the process has been centralized in the Municipal Education Department, which receives the request from the school that has the area to build a school garden and supports all bureaucratic and pedagogical arrangements. According to field surveys at a municipal school with a school garden in 2022, the participating schools have an agronomist engineer (municipal employee) available to guide the preparation of the beds and planting, monitoring each stage of the garden's development. It is interesting to highlight that the development of the school garden is carried out based on the idea of a mandala and also in traditional flowerbed formats, but without repeating it.

As we were told, in the area where the garden will be built, the technician, the teachers and the children involved choose the type of mandala (or traditional flowerbed) and the name of the garden, based on observation and creativity. For example, a vegetable garden was organized with a snail-shaped mandala, as the children found that there were several garden snails (picture 03).

Picture 2. Location of some community gardens in the city of Londrina



Prepared by Alan A. Alieji, 2023. Modified from Guimarães, 2021.

Source: Guimarães, 2021

Picture 3. Highlighted, vegetable gardens organized at the Laura Verginia de Carvalho Ribeiros Municipal Center for Integral Education in Londrina/PR



Source: Environmental Education in Londrina.

<https://sites.google.com/edu.londrina.pr.gov.br/educacaoambiental/hortas-escolares/conhe%C3%A7a-as-hortas-de-londrina/cmeis?authuser=0>

This has happened in each school garden, with the beds having unique shapes and organized with different materials. In the garden with beds that resemble the shape of the snail, clay tiles were used and in the other gardens, wooden trunks, tires, bricks, PET bottles were used (figure 04) as explained to us by the responsible agronomist.

As reported by the managing teacher of one of the schools visited, the vegetables, tubers and aromatic herbs produced in school gardens have been used to complement school meals and are also donated to the families of children who attend schools. And the entire process of preparing the garden with beds, sowing, cultivating, organizing irrigation, caring for plant development and producing organic fertilizer in the compost bin is carefully explored by the teachers involved in the project, correlating the scientific concepts worked on in the classroom with practice in the school garden.



Picture 4. Gardens organized at the Municipal Center for Integral Education and municipal schools in Londrina/PR



Source: Source: Environmental Education in Londrina.

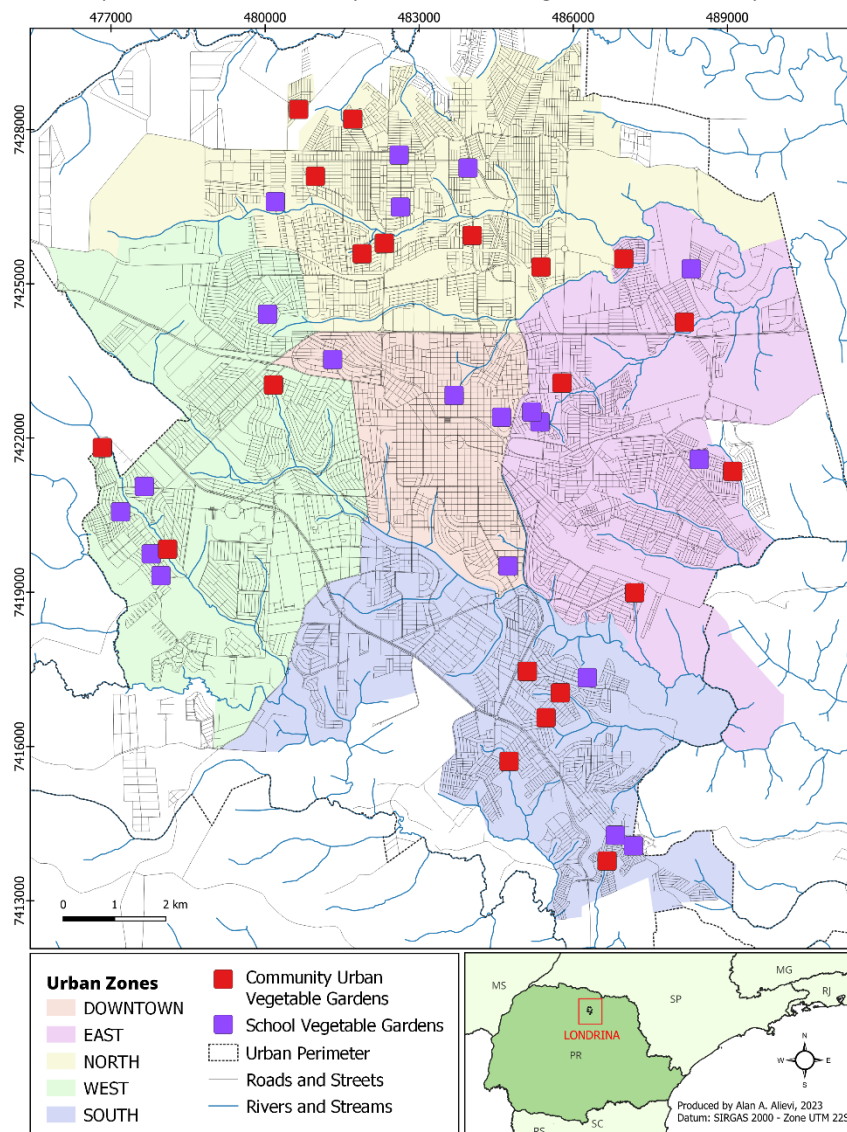
<https://sites.google.com/edu.londrina.pr.gov.br/educacaoambiental/hortas-escolares/conhe%C3%A7a-as-hortas-de-londrina/cmeis?authuser=0>

In the context of teaching and learning, school gardens can be understood as an important pedagogical strategy since they enable different ways of approaching school content in a concrete and playful way, as well as enabling the subjects involved to reflect on the relationship with food and health in the urban-industrial society we live in. When it comes to working with school content based on the organization and collective cultivation of a vegetable garden, it contributes to the problem-posing of environmental issues, health x good nutrition, collective work in production and collective consumption, of the lunch distributed at school (OLIVEIRA, 2018). In addition to this concept, one can work with those directly involving the scientific concepts of soil, water, environment, quality of life, among others, whether in the field of geography or in other disciplinary fields at school, integrating the school community and an instrument for the pedagogical work of the various elementary school subjects, with more practical and meaningful classes for the subjects involved (OLIVEIRA, 2018).

In terms of quantity, in Londrina there were 26 community gardens by the year 2022 according to the Municipal Department of Agriculture. In 2021, Guimarães (2021) spatialized 20 vegetable gardens in the urban perimeter of Londrina (figure 05). In terms of location in the city of Londrina, 5 vegetable gardens were in the South Zone of the city, 5 in the East Zone, 7 in the North Zone and another 3 in the East Zone. The greatest concentration of gardens was in the north of the city, while in the central area of the city there were no urban community gardens.



Picture 5. Spatialization of community and school urban gardens in Londrina by 2021/2022



Source: Guimarães, 2021; Surveys on the city hall website in 2022.

Guimarães (2021), explains that this greater concentration in the north of the city can be explained by two reasons, namely:

[...] the socioeconomic condition of the London population in this Zone and the amount of empty spaces available, while the fact that there is no HUC in the central portion of the city is due to the fact that real estate speculation in the central areas of the city It has a greater intensity than on the outskirts, and the presence of empty spaces that can be used for this purpose is rarer.

School gardens totaled 32 in 2022, with some still in the process of being organized in other municipal schools. It can be seen in figure 05 that among the 20 gardens mapped so far, they were found in all areas of Londrina, including the central area.

It is possible to state that urban gardens in Londrina can be understood as a public policy of human development by contributing to the nutrition of families with low purchasing power, assisting in well-being, identity and helping to maintain knowledge and cultures, as discussed by Boukharaeva (et al. 2005, p.418).

It is still necessary to consider that gardens have great educational potential, whether in informal education when carried out in the format of a community/collective or even individual garden, or in formal education when organized within schools and integrated into the educational process in a meaningful way for the subjects of the school community, thus assuming an important role as a “tool for overcoming poverty” as discussed by Teixeira (2016).

## CONCLUSION

In the city of Londrina, although the number of vegetable gardens is still small compared to the number of inhabitants living in a situation of food insecurity, it can be said that the existing vegetable gardens have played an important role in the lives of families with low purchasing power by complementing the daily food with necessary nutrients and vitamins and also income, in the case of those families who manage to produce a small surplus for local businesses.

Another important aspect concerns the occupation of public areas without buildings or close to permanent preservation areas, thus avoiding the irregular disposal of waste, deforestation and assigning land that is not fulfilling the social function of urban land.

This is a public policy and an urban policy of utmost importance, with great potential to contribute to the collective project of building a more sustainable city by taking social and environmental aspects into account.

## REFERENCES

ACELRAD, H. *et al.* **O que é justiça ambiental**. Rio de Janeiro: Garamond, 2008.

ACELRAD, H. Vulnerabilidade social, conflitos ambientais e regulação urbana. **O Social em Questão**, Ano XVIII - nº 33, p.57-68, 2015.

ALMEIDA, Daniela Adil de Oliveira. Agricultura Urbana: Isto e Aquilo. *In*: COSTA, Geraldo Magela; COSTA, Heloísa Soares de Moura; MONTE-MÓR, Roberto Luís de Melo (Org.). **Teorias e práticas**: condições para a sociedade urbana. 1. ed. Belo Horizonte: C/Arte, 2015. p. 419-447.

ANTONELLO, I. T. Ampliação dos territórios vulneráveis no Brasil: o desafio do planejamento urbano para atingir a agenda das cidades inclusivas e saudáveis. *In*: COSTA, E. M.; LOURO, A. (org). **Desigualdades em saúde, desigualdades no território**: desafios para os países de língua portuguesa em contexto pós pandemia. 1ed. Portugal: Centro de Estudos Geográficos, 2022, pp. 277-284.



BOUKHARAEVA et al. Agricultura urbana como um componente do desenvolvimento humano sustentável: Brasil, França e Rússia. **Cadernos de Ciência & Tecnologia**, Brasília, v. 22, n. 2, p. 413-425, maio/ago. 2005.

GUIMARÃES, Matheus Gamas. **As hortas urbanas em Londrina**: A produção do espaço urbano e o caso da horta da Vila Industrial. 2021. 139 f. Dissertação (Mestrado em Geografia) – Centro de Ciências Exatas, Universidade Estadual de Londrina, Londrina, 2021.

IBGE, Instituto Brasileiro de Geografia e Estatística. **População Brasileira** – Censo Demográfico – Séries Temporais. 1960 a 2010 Disponível em: <<https://sidra.ibge.gov.br/pesquisa/censo-demografico/series-temporais/series-temporais/>> Acesso em: 28 jan. 2023

LEFF, E. Agroecologia e saber ambiental. **Agroecologia e Desenvolvimento Rural Sustentável**, Porto Alegre, v. 3, n. 1, p. 36-51, jan./mar. 2002.

LONDRINA. **Lei Ordinária nº 12.620, de 13 de dezembro de 2017**. Institui a Política Municipal de Agricultura Urbana e Periurbana (PMAUP) e cria o Programa Municipal de Agricultura Urbana e Periurbana (AgriUrbana), e dá outras providências. *Jornal Oficial do Município de Londrina*, nº 3414, Londrina, Paraná, 22 dez. 2017. p. 2-6.

TAROBÁ, Grupo Tarobá. Notícias, Cidade. **Superação da pobreza é o desafio da Assistência Social em Londrina**. 24 fev 2023 às 16:15 h. Disponível em: <https://tarobafm.com.br/noticias/cidade/superacao-da-pobreza-e-o-desafio-da-assistencia-social-em-londrina>

TEIXEIRA Diana Margarida da Costa Leite. **Hortas urbanas**: o contributo da arquitetura para a integração das hortas urbanas na (re)qualificação da cidade. 2016. Tese (Mestrado Integrado em Arquitetura) – Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Coimbra, 2016.

VIGISAN, Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar e Nutricional (REDE PENSSAN). **Insegurança Alimentar no Contexto da Pandemia da Covid-19 no Brasil**: II VIGISAN – Suplemento I - Insegurança Alimentar nos estados. São Paulo: Fundação Friedrich Ebert, Rede PENSSAN, 2022. E-book. Disponível em: <https://www12.senado.leg.br/noticias/arquivos/2022/10/14/olheestados-diagramacao-v4-r01-1-14-09-2022.pdf>