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**THE RELATION OF
COMMUNITY GARDENS AND HUMAN RIGHT TO FOOD:
A case study in Berlin and Rio de Janeiro**

Rio de Janeiro/Jena

2024

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Joint-degree thesis to obtain the title of Doctor at State University of Rio de Janeiro (UERJ/Law College) and Dr. phil. at Friedrich-Schiller University Jena (FSU/Faculty of Social and Behavioural Sciences/Institute of Sociology). Area (UERJ): Legal Thinking and Social Relations. Research line (UERJ): City Law.

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DEDICATION

To Zenira Jardim e Luiz Jardim, my grandparents.

To my nieces Yasmin Jardim, Isabella Jardim, and my nephew Gabriel Jardim.

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THE RELATION OF COMMUNITY GARDENS AND HUMAN RIGHT TO FOOD: A case study in Berlin and Rio de Janeiro.

SILVA, Felipe Jardim da. *THE RELATION OF COMMUNITY GARDENS AND HUMAN RIGHT TO FOOD: A case study in Berlin and Rio de Janeiro*. 2024. 244 p. Doctoral thesis (Doctorate in Law). Law Faculty, State University of Rio de Janeiro, Rio de Janeiro; (Doctorate in Sociology – Faculty of Social and Behavioural Sciences, Friedrich-Schiller University Jena, Jena. 2024.

ABSTRACT

This investigation aims to tackle problems related to two urban resources: food and land. Firstly, regarding the violation of the human right to adequate food (food availability, accessibility, acceptability, and sustainability). Secondly, vacant land, a multifaceted problem, contributing to social-spatial segregation and socioeconomic disparities. Given these issues, transformative actions are demanded to secure the rights of individuals and communities, reduce inequalities, and sustain life on our planet. In that sense, global studies highlight community gardens as a potential strategy for repurposing vacant land and advancing the realization of the right to food. Nonetheless, a research gap exists regarding the relation between community gardens and urban food sharing, particularly in Berlin and Rio de Janeiro. Therefore, this empirical investigation contrasts urban food sharing practices (the commoning) in community gardens in these two global cities facing vacant land and right to food problems. The central inquiry guiding this investigation is: How do the principles of the right to food relate to food sharing practices within Berlin and Rio de Janeiro community gardens, and what factors explain the similarities and differences in these connections within and between these cities? The hypothesis suggests that urban food sharing within community gardens can be linked to right to food. These connections may vary based on unique socioeconomic contexts and urban challenges in each city. To empirically assess this hypothesis, the study formulated the theoretical proposition that the human right to food, the concept of urban commons, and the establishment of community gardens serve as mechanisms for addressing urban land and food crises. In-depth empirical investigations between 2019-2023 characterized community gardens' territorial and sociodemographic profiles and engaged with gardeners and experts (the commoners). Interviews and questionnaires were administered to 40 participants (20 individuals from each city). The data had a thematic coding and analysis, a combined approach between case study and content analysis methods to produce information, insights, and arguments from the sources of evidence by deductive and inductive reasoning. Based on that, several similar and different urban food sharing activities were investigated within and between the same cities. The results demonstrated that in Berlin, community gardeners and experts' motivations primarily centered on socialization and environmental concerns, while in Rio de Janeiro, food security was the primary focus, followed by ecological and economic topics. An unexpected finding was that in Berlin, employment opportunities in enhancing food accessibility and the economic dimension of food sustainability were important for gardeners. Conversely, in Rio de Janeiro, one community garden is used to promote gender empowerment (social sustainability). Acknowledging certain limitations, especially due the COVID-19 pandemic, the study confirmed the hypothesis that food sharing practices contribute to different dimensions of the right to food, with variations based on specific socioeconomic contexts. However, agroecological food production emerged as a unifying factor across both cities,

demonstrating a shared commitment to sustainable practices. This suggests a significant international step toward social-ecological transformation in urban food and land management. The findings expanded the existing literature on the role of urban agriculture and alert for the necessary promotion and protection of community gardens.

Keywords: Community gardens; human right to adequate food; urban commons; urban food sharing; vacant land.

A RELAÇÃO ENTRE HORTAS COMUNITÁRIAS E O DIREITO HUMANO À ALIMENTAÇÃO: Estudo de caso em Berlim e no Rio de Janeiro.

SILVA, Felipe Jardim da. *A RELAÇÃO ENTRE HORTAS COMUNITÁRIAS E O DIREITO HUMANO À ALIMENTAÇÃO*: Estudo de caso em Berlim e no Rio de Janeiro. 2024. 244 f. Tese (Doutorado em Direito). Faculdade de Direito, Universidade do Estado do Rio de Janeiro, Rio de Janeiro; (Doutorado em Sociologia). Faculdade de Ciências Sociais e Comportamentais, Friedrich-Schiller-Universidade Jena, Jena, 2024.

RESUMO

Esta investigação visa abordar problemas relacionados com dois recursos urbanos: alimento e terra. Mais precisamente, trata da violação do direito humano à alimentação adequada (disponibilidade, acessibilidade, aceitabilidade e sustentabilidade dos alimentos); e dos imóveis ociosos, um problema multifacetado, que contribui para a segregação socioespacial e as disparidades socioeconômicas. Tendo em conta estas questões, são exigidas ações transformadoras para garantir os direitos de indivíduos e de comunidades, reduzir as desigualdades e sustentar a vida no nosso planeta. Nesse sentido, estudos globais destacam as hortas comunitárias como uma estratégia potencial para reaproveitar terras vazias e promover a realização do direito à alimentação. No entanto, existe uma lacuna na investigação sobre a relação entre hortas comunitárias e partilha urbana de alimentos, particularmente em Berlim e no Rio de Janeiro. Portanto, esta investigação empírica contrasta as práticas urbanas de partilha de alimentos em hortas comunitárias nestas duas cidades globais. A investigação central que orienta esta investigação é: como os componentes do direito à alimentação se relacionam com as práticas de partilha de alimentos nas hortas comunitárias de Berlim e do Rio de Janeiro, e que fatores explicam as semelhanças e diferenças nessas conexões dentro e entre essas cidades? A hipótese sugere que a partilha urbana de alimentos nas hortas comunitárias pode estar ligada ao direito à alimentação. Estas ligações podem variar com base nos contextos socioeconômicos únicos e nos desafios urbanos de cada cidade. Para avaliar empiricamente esta hipótese, o estudo formulou a proposição teórica de que o direito humano à alimentação, o conceito de bens comuns urbanos e o estabelecimento de hortas comunitárias servem como mecanismos para guiar a urgente transformação das cidades. Investigações empíricas aprofundadas entre 2019-2023 caracterizaram os perfis territoriais e sociodemográficos das hortas comunitárias e envolveram hortelões e especialistas. Entrevistas e questionários foram aplicados a 40 participantes (20 indivíduos de cada cidade). A estratégia para análise de dados foi uma codificação e análise temática por meio de raciocínio dedutivo e indutivo. Os resultados demonstraram que em Berlim as motivações dos horticultores comunitários e dos especialistas centravam-se principalmente na socialização e nas preocupações ambientais, enquanto no Rio de Janeiro a segurança alimentar era o foco principal, seguida por temas ecológicos e económicos. Um resultado inesperado foi que, em Berlim, as oportunidades de emprego para melhorar a acessibilidade aos alimentos e a dimensão económica da sustentabilidade alimentar eram importantes para os horticultores. Já no Rio de Janeiro existe uma horta sendo usada para promover o empoderamento de gênero (sustentabilidade social). Reconhecendo certas limitações, especialmente devido à pandemia de COVID-19, o estudo confirmou a hipótese de que as práticas de partilha de alimentos contribuem para diferentes dimensões do direito à alimentação, com variações baseadas em contextos socioeconómicos específicos. No entanto,

a produção alimentar agroecológica emergiu como um fator unificador em ambas as cidades, demonstrando um compromisso partilhado com práticas sustentáveis. Isto sugere um passo internacional significativo em direção à transformação socioecológica na alimentação urbana e na gestão da terra. As descobertas ampliaram a literatura existente sobre o papel da agricultura urbana e alertam para a necessária promoção e proteção das hortas comunitárias.

Palavras-chave: Bens comuns urbanos; compartilhamento de alimentos; direito humano à alimentação adequada; hortas comunitárias; imóveis ociosos.

DIE BEZIEHUNG VON GEMEINSCHAFTSGÄRTEN UND DEM MENSCHENRECHT AUF NAHRUNG: Fallstudie in Berlin und Rio de Janeiro

SILVA, Felipe Jardim da. *DIE BEZIEHUNG VON GEMEINSCHAFTSGÄRTEN UND DEM MENSCHENRECHT AUF NAHRUNG: Fallstudie in Berlin und Rio de Janeiro*. 2024. 244 Seiten. Dokortitel. Doktorarbeit in Rechtswissenschaften – Rechtsfakultät, Universität Rio de Janeiro, Rio de Janeiro; und Soziologie - Fakultät für Sozial- und Verhaltenswissenschaften, Friedrich-Schiller-Universität Jena, Jena, 2024.

ZUSAMMENFASSUNG

Diese Untersuchung zielt darauf ab, Probleme im Zusammenhang mit zwei städtischen Ressourcen zu beleuchten: Nahrung und Landnutzung. Erstens im Hinblick auf das Menschenrecht auf angemessene Nahrung (Verfügbarkeit, Zugänglichkeit, Akzeptanz und Nachhaltigkeit von Nahrungsmitteln). Zweitens im Hinblick auf konkurrierende Landnutzung, insbesondere bei Brachland. Hier stellt sie ein vielschichtiges Problem dar, das zu sozialer räumlicher Segregation und zu sozioökonomischen Ungleichheiten beiträgt. Angesichts dieser Probleme sind transformative Maßnahmen erforderlich, um die Rechte des Einzelnen und Gemeinschaften zu sichern, Ungleichheiten abzubauen und menschliches Leben auf unserem Planeten zu erhalten. Aktuelle globale Studien heben Gemeinschaftsgärten als potenzielle Strategie hervor, um Brachland für gemeinschaftlichen Nutzen umzuwidmen und die Verwirklichung des Rechts auf Nahrung voranzutreiben. Jedoch besteht eine Forschungslücke im Zusammenhang zwischen Gemeinschaftsgärten und urbanem Food sharing, insbesondere in Berlin und Rio de Janeiro. Daher vergleicht diese empirische Untersuchung städtische Praktiken des Teilens von Nahrungsmitteln (Commoning) in Gemeinschaftsgärten in diesen beiden Weltstädten, die mit unbebautem Land und Problemen beim Recht auf Nahrung konfrontiert sind. Die zentrale Fragestellung, die diese Untersuchung leitet, lautet: Wie hängen die Grundsätze des Rechts auf Nahrung mit den Praktiken des Teilens von Lebensmitteln in den Gemeinschaftsgärten von Berlin und Rio de Janeiro zusammen und welche Faktoren können die Ähnlichkeiten und Unterschiede in diesen Verbindungen innerhalb und zwischen diesen Städten erklären? Eine Hypothese legt nahe, dass das Teilen von Lebensmitteln in urbanem Kontext in Gemeinschaftsgärten mit dem Recht auf Nahrung verknüpft sein kann. Diese Verbindungen können je nach spezifischem sozioökonomischem Kontext und urbanen Herausforderungen in jeder Stadt variieren. Um diese Hypothese empirisch zu überprüfen, formuliert diese Studie die theoretische These, dass das Menschenrecht auf Nahrung, das Konzept städtischer Gemeingüter und die Einrichtung von Gemeinschaftsgärten als Mechanismen zur Bewältigung städtischer Land- und Ernährungskrisen dienen. In eingehenden empirischen Untersuchungen zwischen 2019 und 2023 wurden die territorialen und soziodemografischen Profile von Gemeinschaftsgärten charakterisiert und mit Gärtnern und Experten (den Bürgern) zusammengearbeitet. Interviews und Fragebögen wurden mit 40 Teilnehmern durchgeführt (20 Personen aus jeder Stadt). Die Strategie für die Datenanalyse war eine thematische Kategorisierung und Analyse, ein kombinierter Ansatz aus Fallstudien- und Inhaltsanalysemethoden, um Informationen, Erkenntnisse und Argumente aus den verschiedenen Quellen durch deduktives und induktives Denken zu gewinnen. Darauf aufbauend wurden mehrere sich ähnelnde, aber auch unterschiedliche urbane Food sharing Aktivitäten innerhalb und zwischen denselben Städten untersucht. Die Ergebnisse zeigen, dass in Berlin die Motivation von Gemeinschaftsgärtnern und Experten vor allem auf Sozialisierung und Umweltbelange abzielt, während in Rio de

Janeiro die Ernährungssicherheit im Vordergrund steht. Dies wird gefolgt von ökologischen und ökonomischen Themen. Eine unerwartete Erkenntnis war, dass in Berlin bei der Verbesserung des Zugangs zu Nahrungsmitteln auch eine wirtschaftliche Dimension bei der Nachhaltigkeit von Nahrungsmitteln für Gärtner wichtig ist (z.B. Beschäftigungsmöglichkeiten). Umgekehrt wird in Rio de Janeiro ein Gemeinschaftsgarten auch genutzt, um die Stärkung der Geschlechtergleichheit (soziale Nachhaltigkeit) zu fördern. Die Studie bestätigte die Hypothese, obwohl sie praktischen und räumlichen Einschränkungen, insbesondere aufgrund der COVID-19-Pandemie, unterlag. Die Studie bestätigt die Hypothese, dass Praktiken des Teilens von Lebensmitteln in unterschiedlichen Dimensionen zum Recht auf Nahrung beitragen, wobei es je nach sozioökonomischem Kontext lokale Unterschiede gibt. Die agrarökologische Lebensmittelproduktion erwies sich jedoch als verbindender Faktor in beiden Städten und zeigte ein gemeinsames Engagement für nachhaltige Praktiken in der Nahrungsmittelproduktion. Dies deutet auf einen bedeutenden internationalen Trend hin zur sozial-ökologischen Transformation im urbanen Ernährungs- und Flächenmanagement hin. Die in dieser Untersuchung gewonnenen Erkenntnisse erweiterten die bestehende Literatur zur Rolle der urbanen Landwirtschaft und machten auf die Notwendigkeit der Förderung und des Schutzes von Gemeinschaftsgärten aufmerksam.

Schlüsselwörter: Gemeinschaftsgärten; leerlauf eigenschaften; menschenrecht auf angemessene nahrung; urbane gemeingüter; urbane nahrungsmittelteilung.

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INTRODUCTION

This **multidisciplinary** research's background is based two current urban crises: food and land. The first is the infringement of the **human right to adequate food**. The Human Right to Adequate Food, enshrined in Article 25 of the United Nations Universal Declaration of Human Rights, is integral to ensuring health, well-being, and the fulfillment of other human rights. This is a guide for our **common** future. It extends beyond mere charity or the prevention of hunger, encompassing the notion that every individual, whether alone or within a community, should have continuous physical and economic access to food that is culturally acceptable, sustainably produced and consumed, and preserves resources for future generations.

This principle comprises four key components recognized by the United Nations (General Comment N°. 12/1999). Firstly, it emphasizes the physical *availability* of food to meet the dietary needs of individuals, allowing for freedom of choice in production and distribution, including self-provision and availability in markets and shops. Secondly, it underscores the importance of economic and physical *accessibility* over time, ensuring that access to food does not compromise human rights, basic needs, or the resources available for future generations, while also considering intangible qualities linked to food and its consumption. Thirdly, it highlights the *acceptability* of food, which should be free from adverse substances and align with cultural norms regarding consumption, catering to diverse needs based on factors such as age, living conditions, health, occupation, and gender. Lastly, it emphasizes the economic, social, and environmental *sustainability* of food production and consumption, guided by principles such as improving resource efficiency, conserving and enhancing natural resources, protecting rural livelihoods and social well-being, enhancing resilience, and implementing responsible governance mechanisms. These principles collectively underscore the importance of sustainable agriculture in ensuring the right to adequate food for all individuals, both now and in the future.

The second urban issue is **vacant land**. This concept can be categorized into three types: *unused land*, which is not currently in full use and may be disused or in a state of disrepair; *underutilized land*, which still has potential for use but falls below parameters defined by laws such as the Master Plan or construction codes; and *unbuilt land*, which is completely unoccupied with no structures and can be classified as closed or abandoned based on its current status. They can be linked to many problems, including socio-spatial segregation and maintenance of socioeconomic inequalities.

Given these problems, there is a demand for change. This means a **social-ecological transformation** of social values, norms, practices, and conflicts relating to nature. The aim is to provide more access to rights, reduce socioeconomic disparities, and sustain life in cities and on Earth. In this sense, the **urban commons** are one of the possible ways.

Urban commons are the collectively management (*governance*) by a social group (*commoners*) to promote social, economic, and environmental sustainability through social practices and relations (*commoning*). The urban commons play a crucial role in facilitating the *social-ecological transition* by encouraging shared responsibility and benefits related to urban *resources*, from local to global level, such as parks, streets, but also knowledge. The **Human Rights** can also be understood as commons supporting the governance of a sustainable urban life. In addition, the **Right to the City** aligns with this view because it encapsulates the fair and inclusive access to urban spaces, guided by principles of sustainability, democracy, equity, and social justice. It is a communal entitlement for city dwellers, particularly those marginalized, granting them the authority to organize and act based on their customs and needs. The goal is to realize the full spectrum of rights, including **food**, self-determination, decent quality of life within urban environments.

Following this path, when applied to the food system, urban commons offer an alternative to the agri-industrial production model. The reason is that commons prioritize the *use-value* of resources (such as land, food, seeds, knowledge, sunlight, water, tools, and human labor) over their exchange-value as commodities. This is largely noticed by the worldwide **literature** through the case of **community gardens**. In the last decades, they are a crescent strategy to occupy vacant land and they can be related to the right to food.

The community gardens' land (*resource*) ownership can be categorized into public or private areas, with urban vacant land often being underutilized and unbuilt. Community gardens are established in various locations such as streets' sidewalks, residential areas, school buildings, and public parks. These gardens sometimes thrive in economically and socially vulnerable areas, reclaiming spaces once overrun by illicit activities. While often temporary, these gardens play a crucial role in enhancing neighborhood safety and liveability. The transformation of abandoned lots into community gardens serves as a grassroots solution to blight, fostering cooperation among citizens to address local challenges.

The *commoners* have diverse demographics, including individuals, families, and migrants, with motivations ranging from environmental stewardship to social engagement. Community gardens are often initiated by self-organized groups comprising volunteers,

including neighborhoods, schools, churches, and NGOs. While some gardens are managed solely by volunteers, others may hire professionals to handle administrative tasks or provide educational support. The gardeners have socioeconomic divides, involving individuals from diverse income levels, ages, education levels, and ethnicities. Motivations for participating in community gardening vary, including creating safe spaces, connecting with nature, engaging in physical activities, fostering community spirit, and promoting urban development and visibility.

While community gardens' *governance* is driven by non-profit interests, they may adopt various bottom-up financing methods such as plot rentals or contributions to courses and events. These gardens can operate independently of governmental support and may lack specific legal regulations. Despite this, they play a significant role in enhancing neighborhood livability and promoting social cohesion. In addition, while food production (*commoning*) is a regular focus, some gardens prioritize medicinal or ornamental plants. Nevertheless, benefiting both participants and the wider community, the produced food (*resource*) play a relevant role in promoting the *right to food* and often engage with other urban food sharing initiatives (food banks, community kitchens etc.).

In the gardens happen the **urban food sharing activities**. This includes sharing food portions with others, giving food to those in need, and collectively using spaces for food-related activities including growing, cooking, and eating. It embodies a communal approach to food, emphasizing shared ownership and access rather than commodification. This concept aligns with the principles of the *commons*, advocating that food should be sustainably treated as a shared resource rather than a commodity. For example, the gardening encompasses a range of tasks from planting trees and maintaining lawns to cultivating food crops using **agroecological principles**, a food production in the balance between plants, animals, people, and their environment. This also means that there is no use of artificial chemicals, fertilizers, and pesticides etc.).

Investigating community gardens is relevant to **Law and Sociology** because public policies related to community gardens could address the state's legal duty to provide human rights, the right to the city and inclusive urban development. The state could promote social and environmental justice and equity by increasing access to fresh food and green space in marginalized areas. In addition, legal frameworks and social factors could contribute to or disturb the achievement of Sustainable Development Goals, such as hunger eradication (Goal #2), sustainable cities and communities (Goal #11), and responsible consumption and production (Goal #12). Furthermore, investigating the human right to food is a complex issue

in **multidisciplinary debates**. For instance, the concept of human rights is not always understood, which triggers contestation between pro- and anti-human rights actors. Moreover, international relations are also affected by conflicts and humanitarian crises generated by the lack of food availability. In addition, promoting the human right to food could involve individual and group actions to determine how food systems should be and address the root causes of their violation. This includes access to natural resources, such as clean water, native seeds, and healthy soil, through community-based initiatives in the natural sciences perspective or on the social and legal functions of urban property and land use in the city.

Specifically relevant to **Law**, studying how the *right to food* key components are improved or infringed is crucial for establishing adequate legal protection for individuals and vulnerable groups. This involves creation, adaptation, extinction, and application of laws from local to international level. When a violation happens, responsibility can be required in a legal system. However, a suit must guarantee access to justice, which could take a long time to produce concrete effects, but a person facing the consequences of infringement of the right to food, such as hunger, could have no opportunity to wait long periods. Then, this study also matters to Law as a practical issue of right assurance before the need for a legal jurisdiction. Furthermore, the right to food requires developing and implementing policies, monitoring systems, and laws. This includes topics on food production, distribution and access, land rights, agricultural subsidies, and trade agreements. If the implemented instruments are insufficient, discriminatory, non-participative, or fail to address cases of right to food violation, it could be considered a transgression of human rights. More than that, food is essential to health and well-being and is a means to fulfill other human rights, such as work and education.

The link of *community gardens* to **Law** can be observed, for example, in the occupation of vacant land. It provides food that lights up the discussion on urbanistic law, such as masterplan, construction licenses and regulations, land use and zoning law, real estate speculation, and land tenure and property. Indeed, property rights can stimulate or disturb land access and tenure. This could require judicial and extrajudicial (mediation and arbitration) demands involving different stakeholders, such as private and public landowners, gardeners, politicians, voluntary associations, district representatives, and researchers. Additionally, community gardens are aligned with environmental law. Food sustainability can promote education, nature regeneration, and conservation, support local ecosystems, and reduce carbon emissions with food long-distance' transport.

On the other hand, *food availability, accessibility, acceptability, and sustainability* matter to **Sociology**. To illustrate, there are issues regarding how the instruments mentioned above are created and who they impact" for better clarity. Additionally, there are dissimilarities of ethnic-racial access to the right to food. For example, the lack of physical and economic access to healthy and fresh food for Black, Indigenous, and other communities of color within a reasonable distance represents a problem for equality, democracy, and justice. This can be understood as environmental racism. Income, gender, social class, and education are also related to food inequalities, such as lack of money to buy food, no stable access to piped water to clean and prepare the food, and exclusion of girls right to education aiming to improve life conditions through a future qualified work. Another bond is that individual and collective norms and values shape a food system's use, offer, and demand. This represents consequences to access, preferences, and consumption patterns, such as food without meat or avoiding fast food. Government policies, such as tax benefits or restrictions on certain products, and social movements advocating for or against certain food companies can influence these patterns. The pandemic also brought insights into social priorities, collective mobilization for food access, and behavior change related to food safety.

Furthermore, research on *community gardens* is relevant to **Sociology**. For instance, the study of motivation for uses, target individuals and goals, benefits, and challenges across different social groups and through various community gardens from similar social groups. Moreover, community gardens can host social integration and inclusion of people from different backgrounds. Also, they could create a sense of belonging for new residents, introduce education for children about food culture, or open space for memory preservation for immigrants. Community gardens have the potential to supply local markets, impact health, and raise the connection to nature. Other possible research interests are the collective form of land administration and the background of causes for moving or closing a community garden.

Regarding the **literature review** on community gardens in *Berlin*, the previous investigations primarily focus on food *availability*, where **vacant land is transformed into spaces for small-scale food production**; food *acceptability* promoted through food education and food culture preservation; and social and environmental dimensions of food *sustainability* achieved through community building and environmental education. In contrast, research on community gardens in *Rio de Janeiro* places significant emphasis on food *availability* by **repurposing vacant land to address food insecurity**, including mitigating the effects of the COVID-19 pandemic. It also manages food *accessibility* to combat distribution inequality, food

acceptability by preserving medicinal plants' culture, and various sustainability dimensions encompassing social interactions, economic aspects, and environmental remediation. About *Berlin*, it is important to mention that it is the most populated city in Germany, with 3.645 million people (2019), and it has a high city development level. Moreover, Germany has a very low food insecurity level. In contrast, *Rio de Janeiro* has around 6.6 million inhabitants (2022), of which 2.5 million live in extreme poverty. The city has unequal development associated with a Brazilian moderate level of food insecurity.

However, the above literature offers a limited volume of publications related to *Rio de Janeiro*, and this city has not been a part of any cross-country studies. In contrast, *Berlin* has been a focal point for numerous cross-country investigations focusing on European cities. Some studies in *Berlin* also refer to community gardens that no longer exist or have relocated to new locations. Additionally, there are three main problematic areas. Firstly, food *acceptability* and economic *sustainability* have not been as extensively researched as other aspects. Secondly, while many studies support the urban commons theory, it is not often treated as a central theoretical framework. Thirdly, some studies encompassed more than just community gardens, leading to the analysis of interviews combined with other research subjects like allotment gardens and community kitchens.

These limitations highlight the **research gap** that this study seeks to address. It aims to provide a comprehensive, direct, and unique cross-country examination of the connection between community gardens and urban food sharing in the context of the human right to adequate food.

Given that, the **research question** guiding this investigation is *how do notions of the right to food connect to food sharing activities in Berlin and Rio de Janeiro community gardens, and, within and between cities, how to explain these connections' similarities and differences?*

The **hypothesis** is that *urban food sharing activities in community gardens can be connected to food availability, accessibility, acceptability, and sustainability. Still, the relations may differ based on specific socioeconomic contexts and unique urban challenges within and between cities.*

To test it, the research **general objective** is to *examine the food sharing activities of community gardens in Berlin and Rio de Janeiro, contrasting them based on the conceptual and territorial focus detailed above.*

To answer the research question, an initial step was the **theoretical** investigation of the aforementioned urban crises by exploring their precedents and contemporary situations. This

made it possible to understand that problems involving food and land have multiple causes and consequences, including social, environmental, and economic dimensions, and they are based on the same roots of resource commodification, the view that a resource must be explored as much as possible to provide profit to a limited group of beneficiaries. This path pointed out the importance of human rights, commons (alternative governance in opposite to commodity), and urban agriculture to guide the change (*specific objective “a”*). More precisely, the human right to food, urban commons, and community gardens were defined as three standards for mitigating urban land and food emergencies (*specific objective “b”*). The integration of these elements demonstrated that *community gardens are urban commons transforming vacant urban land. The new land use (resource) embraces people (commoners) doing food sharing activities (commoning) with social, economic, and environmental dimensions developed in connection to the human right to adequate food.*

After settling the theoretical ground, the next step was to define an **empirical** methodological strategy to investigate and test the hypothesis by characterizing the profile of territory, gardeners, and experts related to community gardens in Berlin and Rio de Janeiro, along with examining the urban food sharing activities connected to food availability, accessibility, acceptability, and sustainability in these gardens (*specific objective “c”*).

Given the literature review and research on urban commons, the choice was to develop an empirical qualitative case study for an exploratory investigation with a mixed **inductive** and **deductive approaches**. In this context, **“the case”** means *community gardens’ urban food sharing activities connected to the human right to food.*

Then, the empirical research encompassed two cases, **Berlin** and **Rio de Janeiro**. They were selected because they represent **global cities facing problems connected to vacant land and right to food** (ANNEX C, D, E, F). Given that, **both cities are offering as one of the possible solutions the land use repurposing by promoting urban and peri-urban agriculture, including community gardens as public policies.**

This indicates that *both cities* are increasing the strategy of **food as social function of property and city**. This has been happening especially since the initial decade of the **21st Century**. In *Berlin*, there are currently over 200 community gardens (ANNEX C, Figure 08), and a government program (*Gemeinschaftsgarten-Programm*) is being developed since **2009**. This follows a historical **tradition** of urban agriculture. Since the 19th Century, the *Kleingarten* system of allotment gardens (usually private and paid land possession) is part of the German urban culture. In *Rio de Janeiro*, since **2006** the city government established a program (*Hortas*

Cariocas) with 56 community gardens in public schools and social, economic, and environmentally vulnerable neighborhoods. The United Nations recognizes it as a **model** for achieving Sustainable Development Goals (SDGs).

Additionally, *both cities* participate in the Milan Urban Food Pact and SDGs Agenda 2030 and adopt constitutional social democratic welfare models involving the promotional function of Law. Moreover, they have a federalist political organization that makes it possible to analyse the local level, and they integrate countries that signed multiple human rights and environmental agreements.

Also, the already presented research gap in the literature reinforces the motivation for the case selection. So, this cross-country analysis seeks to explore the contrasting data from Global North (*Berlin*) and Global South (*Rio de Janeiro*) contexts, shedding light on the interplay between the right to food and food sharing practices within urban settings and investigating socioeconomic disparities, cultural dynamics, community engagement, stakeholders' involvement, and the practicalities of realizing the human right to food.

Considering each case, the selected **qualitative techniques for data collection** included semi-structured *interview* with thirty-one in-depth and open-ended questions, sociodemographic *questionnaire* with closed-ended questions, and archival document research. The targets were *gardeners* and *experts*, the commoners. The “*experts*” were the professionals related to agriculture with or without work paid by/income related to a community garden, public agents, and researchers on community gardens, food systems, and similar topics. The “*gardeners*” were the ones not included as “*experts*”; the “*gardeners*” were doing gardening or administrative activities in a community garden during the field visit, including volunteers and amateurs with financial support. There were forty eligible participants, twenty in person, in *Berlin*, and twenty online, in *Rio de Janeiro*. *Documents* complemented the empirical data. The written sources were public and private archives, and the non-written sources were images, photographs, digital audiovisual media, and cartographic material.

Based on the above sources, the data was organized and proceeded. Later, there was a **thematic analysis**. The conductors of the data analysis were the sub-questions from the research question. The first sub-question was “*What are the community gardeners’ urban food sharing activities connected to the human right to adequate food?*” This required a deductive integration of the human right to food notions (food availability, accessibility, acceptability, and sustainability) to food sharing activities. These activities can be organized in a matrix (ANNEX A)¹ composed of *sharing elements* – foodstuff (including seeds, plants, compost),

food spaces (including sites for shared growing, areas for food redistribution), food skills (including sharing knowledge and experiences about food growing, eating, redistribution or disposal) – through different *sharing modes* – informal, illicit, or unorganized (IIU) activities (foraging, gleaning), collecting, gifting (voluntarily granting something without expecting any form of compensation), bartering (trading goods or services directly without the use of currency), selling (the exchange of goods or services for monetary payment) for profit or not.

Nevertheless, the original table of food sharing activities from the literature (ANNEX A) includes community gardens, kitchens, and food banks. Then, a few modifications were necessary to combine with the logic of this study purpose (regarding only community gardens). The second sub-question was also deductive construction: “*In what ways are there similarities and divergences among these activities within each city and between them?*” The third sub-question was inductively built: “*Why are there commonalities and distinctions among these activities within and between each city?*”

As a **result**, several similarities and differences in urban food sharing activities were observed within and between the same city. For example, in *Berlin*, the food *availability* motivation was primarily centered on socialization and environmental concerns, while in *Rio de Janeiro*, food security was the primary focus, followed by economic and environmental purposes. An **unexpected finding** was the role of employment opportunities in enhancing food *accessibility* and the economic dimension of food *sustainability* in *Berlin*. In *Rio de Janeiro*, an interesting outcome was the use of a community garden as a tool for gender empowerment. **The results confirmed the hypothesis. However, agroecological food production** (cultural food *acceptability*) emerged as a unifying factor across both cities, demonstrating a shared commitment to *sustainable* practices regardless socioeconomic scenarios and specific urban challenges. This suggests a significant international step toward social-ecological transformation in urban food and land management. The findings expanded the existing literature on the role of urban agriculture and raise awareness of the necessary promotion and protection of community gardens.

Nonetheless, the study had several **limitations** to consider when interpreting the results. It cannot be claimed that the study represented all activities in community gardens in Rio de Janeiro and Berlin, nor can the findings be generalized to urban and peri-urban agriculture as a whole Global North and Global South. This limitation arises from the relatively small sample size of participants and territories investigated. Additionally, the study did not include other important stakeholders, such as the real estate market and neighbors, and had limited

participation from public agents. Some participants faced difficulties during interviews, including language barriers and access issues, leading to incomplete responses. Factors like seasonal challenges and the **COVID-19 pandemic** further complicated empirical data collection. The study was developed from 2019-2023, so there were many travel and contact restrictions. Lack of digital data and language translation barriers also posed obstacles. Online interviews had technical issues, such as internet connection, while in person interviewees were more focused, despite complicated to be achieved. It is also important to acknowledge that subjective data interpretation may vary between researchers.

Furthermore, it is crucial to acknowledge that the understanding of subjective data can vary based on the reflexivity and background of different researchers. Consequently, the interpretation of the data may diverge from that of others, potentially yielding disparate results. To mitigate potential discrepancies and ensure the quality control of the interview guide (APPENDIX A) and sociodemographic questionnaire (APPENDIX B) were developed with the support and insights of the researchers from the Mentalities in Flux Junior Research Group (Flumen) at Friedrich-Schiller University in Jena, Germany, drawing upon their previous experience. In addition, the initial literature review and theoretical framework informed the construction of these materials. After that, the research project underwent a thorough review and approval process by the ethics committee of *Plataforma Brasil* (Process Id. CAAE P 49263021.4.0000.5282) (ANNEX B, and APPENDIX C), as mandated by Brazilian law for conducting interviews in Brazil. This submission also encompassed details related to the case study protocol. Regarding the selection of bibliographic sources, a meticulous approach was adopted, taking into account criteria such as quality (peer-reviewed, research credibility), authenticity (geographical and temporal context of the text's creation), and institutional provenance.

Then, despite some limitations, the study was able to generate results and draw conclusions, providing room for **reproducibility** and **innovation** in further qualitative and quantitative research, even using or adapting the same interview guidelines. As open access, this study can be freely and unrestrictedly accessed by any person. Then, it could be useful for policymakers around the world.

Moreover, the results of this doctoral investigation can **contribute** to **Law** and **Sociology** because the human right to food is an abstract and complex director for life and well-being. Its good governance is essential to achieve other human rights. Nevertheless, despite the unquestionable significance of society having established food as a human right, it is registered

as *words* internationally recognizing rights and duties in *papers*. Hence, society must know and discover how to *practically* apply those words efficiently for individuals and groups to tackle their violations. In other words, different bridges must be constructed with many theoretical and empirical pillars to comprehend and act against infringing on the right to food in the concrete world. This runs through the innovation and adaptation of social initiatives, such as community gardens. Also, filling the research gap is valuable because it represents a different perspective from the regular fulfillment of the right to food through the problematic agri-food system.

The structure of this work is organized by this Introduction, Literature Review, two theoretical chapters, one empirical methodological chapter, one chapter for empirical results and discussion, conclusions, references, appendix, and annex.

Chapter 1 conducted a systematic literature review that highlighted key information, including the connections to the right to food, relevant concepts, and research methods. This process involved distinct phases, such as defining the scope of the review, formulating guiding questions and protocols, searching for and selecting evidence, evaluating the quality of the evidence, extracting and synthesizing data, and finally, reporting and disseminating the findings. This comprehensive review ultimately identified a research gap in the field.

In **Chapter 2**, the text is divided into several sections that trace the evolution of land use and property rights in urban areas, as well as their relation to agriculture. The *first* section examines the historical shift from common property and agricultural land in early civilizations to the dominance of private property and exchange-value in more recent times, leading to a reduction in urban agricultural space. The *second* section covers the Modern Age and the 20th century, highlighting the emergence of an economic perspective that prioritizes land as an asset for accumulation rather than for communal benefit. The *third* section delves into the social and functional consequences of this perspective, including the exclusion of agriculture from urban spaces, the proliferation of vacant land, and the development of substandard living conditions. The *fourth section* discusses the reintroduction of food production into urban areas following World Wars and the establishment of the Universal Declaration of Human Rights, emphasizing the revival of communal resources. The *fifth section* addresses contemporary challenges in the urban food system, spanning from agricultural production to waste management, and calls for urgent social-ecological transformation. The *sixth* section introduces urban agriculture as a potential solution to these challenges. Finally, the *last* section lays the groundwork for theoretical pillars that will guide this transformative approach, which includes the concepts of

urban commons, the human right to adequate food, and the transformation of vacant land through community gardens. These pillars will be explored further in the next chapter.

Given the above, **Chapter 3** has four sections. The *first* section focuses on the concept of the human right to adequate food, exploring its definition, the associated responsibilities, and its interconnection with other human rights. The *second* section delves into the concept of commons and its relevance in urban contexts, particularly in the context of urban commons. The *third* section provides a comprehensive overview of community gardens worldwide, including various aspects such as motivations, territorial characteristics, profiles of gardeners, and the range of activities they engage in. The *fourth* section acts as a synthesis, bringing together key elements from each section to create a cohesive theoretical foundation. This foundation serves as the basis for conducting empirical research, which will investigate the profiles of territory, gardeners, and experts involved in community gardens in Berlin and Rio de Janeiro, as well as their food sharing activities related to food availability, accessibility, acceptability, and sustainability. This empirical investigation is crucial in addressing the central research question.

In view of that, **Chapter 4** presents the empirical methodological strategy adopted in nine steps: the definition of the research problem, the definition of case units, case selection, determination of data collection techniques, data collection, data organization, data analysis, and interpretation, reporting and discussing results, and recognizing limitations.

The results are presented and discussed in **Chapter 5**. Initially, there are two important sections involving each city investigated. First, there is an overview of socioeconomic and urbanistic data relevant to the analysis. This is followed by territorial, socioeconomic, and demographic information on community gardens (urban commons), gardeners, and experts (commoners) participating in the empirical research. After that, the chapter has a section for the urban food sharing activities (commoning) related to each of the human rights to food's key components (food availability, accessibility, acceptability, and sustainability).

Concluding the study, **Chapter 6** is structured into two main components. The first part seeks to amalgamate the theoretical and empirical discoveries, while the second part addresses the study's limitations, contributions, and offers recommendations for future research. Additionally, it provides a summary of the response to the research question and concludes with essential final reflections.

Finally, the **Appendix** and **Annex** were relevant to illustrate and resume relevant data in tables, cartograms, and graphs.

1 LITERATURE REVIEW

The central research question is *how notions of the right to food connect to food sharing activities in community gardens in Berlin and Rio de Janeiro and, within and between cities, how to explain these connections' similarities and differences*. To address it, a systematic literature review² pointed out important information, such as connections to the right to food, the main related concepts, and methods. Based on this, it was possible to define a research gap because of a staged process composed of phases. These phases were the definition of the review scope, guiding questions and protocol, search for and selection of evidence, appraisal of the quality of evidence, data extraction and synthesis, and reporting and dissemination.

1.1 Procedure

The scope of the review was to map studies on the topic of the community gardens' identifying key components of the human right to food (*food availability, accessibility, acceptability, and sustainability*) in *Rio de Janeiro* and *Berlin*, and to create an overview of cities with similar social and demographic contexts. The objective was to identify research gaps and formulate hypotheses for verification within this doctoral thesis. This enabled the construction of objectives, formulation of methods, and justification of territorial limits and theoretical frameworks.

The questions to be answered during the review process were: *how are community gardens connected to the key elements of the human right to food? What are the main concepts related to the study? What was the methodological strategy?*

To guarantee systematicity and **transparency**, the protocol was to use academic and institutional databases. The selection of databases included Scopus, Web of Science, United Nations online library, German National Library, Brazilian repositories of doctoral dissertations and master's thesis (Digital Library of Thesis and Dissertations, and Plataforma Sucupira), Brazilian repository of academic papers (Portal de Periódicos da CAPES). In each source, specific keywords in English and in Portuguese were applied. For example, the investigation based on "community gardens," "vegetable gardens," and "edible gardens," in combination with "*Berlin*," or "*Rio de Janeiro*," and "right to food," or "food" in conjunction with these cities. The results were regarding books, academic papers, master theses, and doctoral dissertations. Prior to data collection, verification procedures ensured the quality (peer review,

research integrity), authenticity (temporal and territorial context of the text's composition), and institutional reliability.

Careful attention was given to the **quality** of the included evidence. On the selected results, there was a clear, systematic approach to the synthesis of the data, answering the previous questions in a narrative structure that included sample characteristics and results related to the right to food and other important highlights. Also, there was a filter for publications on Social Sciences, except for supplementary studies on Humanities (Geography) and Health Sciences (Public Health).

The **exclusion categories** were studies not conducted about the target city (for example, in the search for community gardens in *Berlin*, some results did not even mention the city of Berlin) or exclusively about allotment gardens, as well as retracted papers³ and duplicated results in the same database or between the two different sources previously cited. Given the limited results from *Rio de Janeiro* and the importance of examining contextual data for each city, the literature review was extended into similar socioeconomic urban contexts in the Global North and South, such as the cities of São Paulo and Vienna.

The data was extracted and organized in a separate file. After that, there was the synthesis of relevant data, including methodological details and findings related to the research question. The following section presents the findings.

1.2 Findings

Much of the current literature on community gardens in *Berlin* has mentioned *food availability* on the topic of transformed vacant land as a space for small-scale food production, *food acceptability* through the promotion of food education, and food culture preservation, besides *social and environmental food sustainability* dimensions by community building and environmental education. In contrast, a significant portion of previous research on community gardens in *Rio de Janeiro* focuses on *food availability*, repurposing vacant land to alleviate food insecurity, including efforts to mitigate the effects of the COVID-19 pandemic; *food accessibility*, tackling segregation on food distribution; *food acceptability*, by preserving the culture of medicinal plants; and *social* (human interaction and social cohesion), *economic* (affordability and work opportunities), and *environmental* (remediating degraded space) *sustainability* dimensions.

What is essential from the publications is that several studies have begun to examine issues related to **food availability** provided by community gardens in *both cities*. What is

similar is the use of vacant land to transform territories as a strategy that is not centered on food-related reasons but on changing or preventing wastelands and dump grounds,⁴ as well as on social justice and environmental sustainability.⁵ However, in *Rio de Janeiro*, there was also an effort to avoid drug sales and consumption and the construction of more houses. This study was focused on community gardens on public land without a cross-country analysis.⁶ Additionally, efforts to address food insecurity⁷ include mitigating the impacts of the COVID-19 pandemic.⁸ The difference is that *food availability* in *Berlin* was also indirectly investigated by the integration of community gardens and private allotment gardens (two different categories of urban agriculture) in a cross-country study to Poland (Warsaw).⁹

According to the literature, **food accessibility** is part of *both cities*. In *Berlin*, there is an economy related to subsistence agriculture and physical access to organic food, representing symbolic economic savings.¹⁰ The difference to *Rio de Janeiro* is that various studies explicitly assess the contribution of community gardens to physical food accessibility to mitigate – not solve – food insecurity, especially in low-income and Black communities without markets and street fairs (food apartheid).¹¹

In addition, **food acceptability** in community gardens has been indirectly investigated in *both cities*. In *Berlin*, it was connected to information and education of food culture, especially knowledge on food manipulation and consumption for children¹² and on memory preservation, giving space for people to cultivate plants from their original country or city.¹³ In *Rio de Janeiro*, the cultural link to ancestral knowledge regarding medicinal plants was prevailing.¹⁴

Moreover, thus far, previous studies have attempted to **food sustainability** (long-term *food availability* and *accessibility*) in *both cities*. Even so, the focus in *Berlin* was on the *social*¹⁵ and *environmental*¹⁶ *sustainability* dimensions. The cross-country research involving these dimensions in *Berlin* included Italy, Hungary, and Spain;¹⁷ Germany (Cologne), Switzerland, Austria, the United States of America, Canada, the United Kingdom,¹⁸ France;¹⁹ and other German cities, as well as New Zealand.²⁰ In *Berlin*, the long-term maintenance of a garden is threatened when the state (as the landowner) develops new interests in land use, often for recreational purposes, leading to potential threats and forced relocations.²¹ In *Rio de Janeiro*, the literature presents the importance of *social, economic, and environmental sustainability* dimensions of community gardens as a security (food and peace) strategy that is threatened by criminal agents.²²

As a brief illustration of the investigation's relevance, research in other cities also reported, directly or indirectly, one or more elements of the right to food in community gardens. In São Paulo, the biggest Brazilian city, a study on the effects of the pandemic of COVID-19 on urban agriculture reported that *food availability* was affected and work on community gardens was reduced but did not stop. Without governmental support and ways to obtain materials, there were negative consequences to *accessibility*.²³ Also, simultaneous results indicate debates on *food acceptability* given the educational role of community gardens.²⁴ The challenges to *food accessibility* and *sustainability* in São Paulo were secondarily investigated in contrast to Melbourne.²⁵ Furthermore, a study focusing on urban activism in São Paulo and Paris provided insights into *food availability* in both cities.²⁶ In Vienna, community gardens are one of the elements for eco-political *economic sustainability*,²⁷ and *food availability* is connected to the desire for self-produced fresh food but not linked to poverty.²⁸

Only a single study²⁹ has a similar theoretical approach to the common and methodological strategy of interviewing stakeholders to identify how community-based initiatives contribute key elements for food democracy (participation, the **right to food**, sustainability, and reorienting control). Thus, the right to food forms a subcategory in the analysis. This is in stark contrast with this doctoral investigation because, here, the right to food is a central category. Moreover, the above-mentioned study collected data on community gardens, food banks, and community kitchens in *Berlin*, London, and Dublin, while here, the empirical collection was only on community gardens from *Berlin* and *Rio de Janeiro*. The overall essential result regarding community gardens is that the study revealed a link from community gardens to *food availability* (providing space for local food production), *access* (opportunities for accessing healthy, locally grown food), *acceptability* (empowering individuals to learn how to grow their food), and *sustainability* (urban green). Specifically on *food availability*, the study presented the challenges of the lack of legal land use guarantee and no zone law classification as parks or green areas in the three cities.³⁰ Following the citation track of the aforementioned researchers/research group, it was possible to observe a list of **urban food sharing activities**,³¹ which proved to be extremely relevant for this doctoral investigation's method proceedings (detailed in Chapter 4).

To obtain results, the above investigations shared common topics, such as the occupation of **vacant urban land**, benefits, and challenges to creating and maintaining a community garden. This is relevant to understand what is behind the urban transformation and land dispute. The results also included **urban commons** as the main instrument or accessory tool of the theoretical framework in *Rio de Janeiro*,³² in *Berlin*,³³ and in cross-country studies.³⁴ Regarding methodology, the aforementioned studies have primarily employed **qualitative**

approaches, consisting of **empirical case studies** based on **semi-structured interviews** conducted in both cities,³⁵ as well as international studies.³⁶

The strengths of that research are that they are multidisciplinary, reinforcing the importance of community gardens for society, even those unrelated to food, and bringing contributions to different fields. Despite that, they have some weaknesses. Regarding the local case studies, there are just a few publications related to *Rio de Janeiro*, [1] and this city is not involved in any cross-country study. At the same time, *Berlin* has many cross-country investigations focused on European cities. A few cases in Berlin also mentioned community gardens that no longer exist or moved to new places, such as Himmelbeet and Peace of Land. Moreover, there are three other main problematic points. First, *food acceptability* and *food economic sustainability* are not as much investigated as the others. Secondly, the studies usually support the urban commons theory but not as a central theoretical framework. Third, some studies were not exclusive to community gardens. Consequently, the interviews analysed were combined with other research objects, such as allotment gardens and community kitchens.

This identified a **research gap** for a comprehensive cross-country study on the urban food sharing relationship of community gardens or the human right to adequate food, based on the theory of urban commons, particularly focusing on *Berlin* and *Rio de Janeiro*. Therefore, the following chapters, 2 and 3, build a theoretical framework to enable an empirical investigation (Chapters 4 and 5).

2 PRECEDENTS AND THE CURRENT CRISES OF URBAN FOOD AND LAND

This research aims to examine urban food sharing activities of community gardens in *Berlin* and *Rio de Janeiro*, focusing on their connection to the human right to adequate food, and analyse, within and between cities, the reasons for these connections' similarities and differences. This has as background two current urban crises. The first concerns the food system's failure to provide the human right to adequate food. The second is the vacant urban land. At first view, they seem unrelated, but they share social, environmental, and economic explanations for challenges, consequences, and possible ways to mitigate issues. Moreover, they have a connection based on the private property and urban expansion past. Consider this, it is crucial to understand that the current urban complications have not exclusively originated in the last years or decades. In the same sense, this opens space to investigate how the past can assist these urban dilemmas nowadays toward a better future than the scenario presented in the introduction.

Given the above, this chapter has a *specific objective (a) to assess the precedents and current crises of urban food and land relations in the search for the pillars of their social-ecological transformation*. This assessment is done in seven sections.

The *first* section concerns the hegemony of private property (focusing on exchange-value for individual benefit), the disappearance of common property (focusing on use value benefiting all), and the reduction of the space for agriculture in the city. It includes its overview during the Neolithic, Greek Classical Antiquity, Roman Antiquity, and Middle Ages. The *second* section follows the track on the Modern Age and late Modern Period, closing on the 20th century. This period starts to mark the accumulative economic view of land and food. The *third* section examines the consequences of this view, focusing on the social and functional division of the space (excluding agriculture), generating urban vacant land, and soil hierarchy, such as high-income neighbourhoods' with public infrastructure side to unattended Favelas and Urban Communities.

Moreover, the *fourth* section investigates the re-entry of food production to the city and legal-urbanistic context after world wars, highlighting the establishment of the United National Universal Declaration of Human Rights and the resumption of the commons. The *fifth* section explores the contemporary troubles regarding the urban food system, from agricultural production to domestic waste. This urgent call is for a social-ecological transformation of the urban food system. One of the possible ways, urban agriculture, is introduced in the *sixth* section. The *final* section resumes the ground construction for theoretical pillars of an approach

to guide this change, mitigating the urban land and food crises. Investigated in the next chapter (specific objective “b”), these pillars are the urban commons, the human right to adequate food, and transforming vacant land with community gardens.

2.1 The space for agriculture during the urban expansion: from common to private land

The city is the product of human existence at a certain historical time. Since the **Neolithic** (3,500 b.C. - 3,000 b.C.) and its agricultural revolution in Europe, the development of techniques and the social and natural conditions of the work are a few reasons that allowed the growth of food production and expansion of territorial occupations and invasions worldwide leading to the current agriculture. [2] Also, “the beginnings of food production represent a strategic shift in human behavior, towards the manipulation of the soil environment and through an influence on the composition of plant populations grown in that soil, via preferential seeding and tending of one or a few species.”³⁷ This **agricultural revolution** potentially started with crops in vegetable gardens near the dwellings, which had already been deforested and were fertilized with domestic waste or on land recently inundated by river floods.³⁸ With increased needs, the agricultural area required more space, so the land occupation was *divided into spaces* with different functions, such as housing, agriculture (especially using the slash-burn system), animal husbandry, religion, and military defense.³⁹ Then, the past brought two important ways of city development and view that influenced the world into how it is nowadays.

During Greek Classical **Antiquity**, the agricultural revolution was related to the cultivation of cereals using the scarifier plow for the most superficial layer of soil.⁴⁰ The *polis* (city-state) represents a unity of three zones: private areas (occupied by the dwelling houses), sacred areas (temples of the gods), and public areas (intended for political meetings, commerce, theater, and sports games).

Regarding property, according to Aristotle, the moral, a reason for justice, would be found in the good of others, doing what is advantageous to others. This arises in the proportionality between the subjects’ things and the perception of the good to others. This would be an integrated worldview of totality that seeks harmony.⁴¹ Aristotle treated property as a requirement for the virtuous life of the citizen, an instrumental element for the development and performance of functions inherent to it (and not the functions of the owner), which must be acquired in a natural and non-commercial way. As for the property right, it has three combinations between the property and its use: (i) private property and **common use**, (ii)

common property and private use, and (iii) **common property and use**.⁴² His preference was for the first since the common property would stimulate negligence and generate discussions about the way things are distributed, while private property would serve as a stimulus to the dedication to self-love, friendship, generosity, and moderation. The reason is that without private property, individuals could not use it to benefit others to meet the needs of friends, partners, and strangers.⁴³

Aristotle illustrated Sparta, where property ownership is individual, but its usage is commonly shared when needed. While every citizen possesses their property, a portion is designated for the benefit of friends and another piece for the benefit of all. Lastly, a third portion is reserved for personal use exclusively.⁴⁴ Thus, the good of the *polis* depended on a key element: the virtue of the citizen, an item inherent in property, since there would be no virtue without property, in the same way that there would be no property without virtue. Therefore, despite the intimate connection of home as an economic unit and the city, the unlimited commercial acquisition of the property would be incompatible with ethics and virtue-oriented political life. Consequently, private property depended on the common interest generated by education,⁴⁵ a task of the *polis*, and the laws, which must promote the “virtues of character, punishing, when necessary, the behaviors considered vile and exhorting people to obey righteousness, imposing the necessary correctives on those who deviate from it,” because “only in the good and just city could men be good and righteous; and only good and righteous men are able to institute a good and just city.”⁴⁶

During the Roman Antiquity, the **activities associated with food production were expelled**.⁴⁷ In Roman Empire law (27 A.C-1453), the classification of assets is highlighted, adopting elements of ownership differentiation to define the legal regime of protection. The first group, *res in patrimonio*, would be the things that make up the patrimony of a private individual. The second group, *res extra patrimonium*, was composed of goods that had no correspondence in exchange currency, so humans could not appropriate them because of the destination or material impossibility for this: (i) *res humani juris*, as the **common** things (air, sea), universal (forum, stadiums, theaters, in which the administrators are not owners) and public (things belonging to the State, public use); and the goods of divine law, (ii) *res divini juris*, such as sacred things (temples), religious things (tombs) and saints (city gates, walls).⁴⁸ The commons were also noticed by Caio Júlio César (100 B.C. – 44 B.C.) on barbarians’ resources administration. [3]

Only on post-classical law (Diocletian until the death of Emperor Justinian, 565 A.D.), the property was the absolute right to use, enjoy, dispose, and claim the good. The exteriorization of the domain is a strong indication of the existence of the property, and the property in Rome would have an absolute, unlimited character, operable to other individuals, exclusive and perpetual, transmitted by tradition. Then, the right-holder could exclusively link the property to his interests, regardless of social or collective demand. The property was seen as the exclusive center of the entire system, turning it around the economic and legal order, which supported the characteristics of a person's strongest power over an object.⁴⁹

Later, a remarkable phenomenon for the **medieval city** was the fall of the Roman Empire and the consequent dispersion of the inhabitants through the fields, where they could extract their sustenance supported by an **agricultural revolution** related to the cultivation in crop rotation of cereals with the use of a plow in the deepest layers of the soil.⁵⁰ Due to the barbaric invasions, the Roman lords abandoned the urban centers. They went to live on their properties in the countryside, forming rural centers and fostering the emergence of medieval fiefdoms. In them, other less wealthy Romans sought protection and work on the land, but to do so, they should give the owner part of the production. The servile system of production came into force.⁵¹ In the center of the field, there was the residence of the landowner (cathedral, abbey, castle), and in the extensions of land, there were the barns, stables, personal and administrator dwellings, and there was the hierarchy of lands in different centers (food production, religious, civil, and commercial). The land organization for agriculture used to have **common space**, and traditionally, there was soil **care** by rotation system to extend its use. Of the ancient cities, only ruins remained after the barbarian invasions and reconstructions. They are studied and visited but no longer function as part of the current city. However, many medieval towns are still inhabited and preserve original customs and traditions, with repercussions in the contemporary city, such as the London division between economic seat (city) and political seat (Westminster).⁵²

In the Middle Ages, there was a general change in the paradigms of property established in Roman law. The domain was an overlay of rights between the overlord, the feudal lord, and the vassal, which depended on it because of the protection of the land against barbarian invasions. This shows that the subdivision of the land was also a matter of survival of the population since the feudal lord was responsible for the free people who worked there. However, this fact represented a legal uncertainty for the development of the economy since, in addition to the partition of the land, each feudal lord commanded, punished, and applied

justice differently.⁵³ Consequently, landowning was an element of power and exploration on the property hierarchies.

Since the 11th century, the social system was grounded on feudal lords (rich men), peasants (free farmers or enslaved people, taxpayers, the majority of the population), and clergy. The church was a holder of large amounts of land, with great religious influences, such as Saint Ambrose (337-397 A.D.) and Saint Augustine (354-430 A.D.). They promoted the adequacy of the individual initiative but condemned the abuses of property, underscoring the **social function**. In addition to them, Saint Thomas Aquino (1225-1274) resumed ancient Greek thought by considering that human nature acts for a purpose, such as **good to others**. Thus, the interest of the collective would be the greater end. To him, property is founded as a natural law, a rational guide to the human being, good, and justice.

Furthermore, Saint Thomas Aquino followed Aristotle's statement about the need for private property for the **common good** and for "guiding goods to order, efficiency, security, and peace, not disconnected from the instrumental values of modern freedom."⁵⁴ However, the legitimacy of the property remained on managing it according to the moral duty of common use: "Man should not have things outside as his own, but as **common**, in this sense that, willingly, each one **shares them with the needy people**."⁵⁵ It balances the powers of use in line with the community virtue, a true obligation characteristic of property. In the same space, thus, the public and the private coexist, the individual and the common interest, social, cultural, and ideological connotations that make it unique.⁵⁶ Following that, during Feudalism, part of the agricultural land and other resources such as forests and water were reserved for collective use. Around the 12th and 13th centuries, the commons were institutionalized⁵⁷ as **rural** associations with collective representation and a system of decision.⁵⁸ This was possible due to different reasons. Among them are population growth, the need for new social organization forms,⁵⁹ and resource depletion (wood and grazing area).⁶⁰

In the Middle Ages, cities started to grow the traits of exchange centers, such as the merchant settlements of **Berlin** (a city officially founded in 1237) and Cologne. With the masses of artisans and merchants, the town grew, forming the suburbs larger than the original core and forcing the expansion of the walls of the villages. Consequently, the physical frontiers and concepts of urban and rural changed, and **food production was pushed away from urban areas again**.

The artisanal and mercantile population (bourgeois) is associated, developed, and strengthened as a public power guiding personal and economic freedom, judicial and

administrative autonomy, and more balanced taxation. The urgent need for defense, the scarcity of resources, the lack of specialists, and the new spirit of freedom formed spontaneous, carefree urbanism and variable constructions. With the European economic renaissance (10th century), agricultural production increased, and industry and trade moved to a new level. Maritime cities such as Venice, Genoa, and Pisa gained prominence as shopping centers.⁶¹

Also, new cities were formed for economic and military reasons, but urban growth was cut in the mid-14th century by the plague and the decline in economic activity. In general, in medieval cities, unlike the ancient cities, public spaces do not form contiguous and separate areas but rather a **common**, complex, and unitary space – the result of an **equilibrium** between public law and private interests to regulate the various centers –. Unlike antiquity, in which Athens, Rome, and Constantinople deserved to stand out, in the medieval period, hundreds of median cities appeared (300 to 600 hectares of surface and 50,000 to 150,000 inhabitants), such as Milan, Florence, Barcelona, Paris, and London.⁶²

2.2 The economic value of land and food

Later, **modern cities** had population growth, redistribution in the territory (migration from the countryside to the town), and technological innovation, which diversified the goods and services of agriculture, industry, and tertiary activities. There was the construction of toll roads, railways, and the emergence of the steamboat, making the scope of the movement of goods wider. The housing of the countryside, which had plenty of space around with multiple functions (living, animal breeding, space for children), was replaced by a place in the city with no space for outdoor practices and cramped houses with low-quality materials, with brick walls and a firmer roof, but still with primitive or non-existent furniture and service. The construction on the soil was seen as a temporary manufactured good without incorporation into the land. Then, replaceable by another construction. It means that **the land started to have economic value** according to location, demand, etc. At that time, traditional forms of public control of the built environment were devalued, such as urban plans and regulations. In addition, there are economic teachings of limitation of public intervention in social and urban life. The elites explored the freedom of private initiative in the real estate field.⁶³

The Renaissance (14th to 17th century) is an important mark of the beginning of the Modern Age since Humanism was established, when the human being is the center of philosophy, arts, politics, etc. (anthropocentric view), surpassing the medieval theocentric

position that legitimized the power of kings. During this period, scientific discoveries opened room for the **first agricultural revolution of the modern ages**, from the 16th to the 19th century. It was a period based on polyculture focused on cereal farming associated with animal husbandry and without crop rotation.⁶⁴ The productivity growth followed and supported the development of industrialization and overseas expeditions, searching for more resources and consumers. This generated **exploration of natural wealth** and charted the course of history in many areas, especially in Africa, Australia, and the Americas, where pre-existing agricultural systems were replaced by very specialized systems (sugar cane, cotton, coffee, cocoa, palm trees for oil extraction, banana, etc.).

With the most intense colonization, the metropolis limited and controlled administratively, economically, and politically the urban potential of the colony and the role of the rural, such as in **Rio de Janeiro** (officially founded in 1565). The metropolis and the median cities, such as Paris, grew up and made urban changes, intensifying the **remoteness of rural activities to give space for houses and industries**. For example, the periphery was developed, an initiative free of luxury neighborhoods, poor neighborhoods, industries, deposits, and social and architectural homogeneity.⁶⁵

With the emergence of Absolutism, the organizational forms related to commons suffered more and more pressure to “intensify economic production and centralize the management of resources with the purpose of enriching the royalty.”⁶⁶ After the Absolutism, the Liberal State regarded the commons as a type of property on the brink of vanishing,⁶⁷ primarily because they were seen as a contributor to rural poverty, often attributed to the absence of unrestricted entrepreneurial activities.

In the 18th century, the ideals of the Enlightenment intellectual and philosophical movement fundamental rights were formed. However, there were different reasoning lines related to **private property**. From one point of view, for Voltaire, it was necessary to respect the accumulation of property, even if it generated inequalities and luxury.⁶⁸ From another perspective, for Montesquieu, ostentation and luxury corrupted virtue and compromised the idea of equality from a democratic government,⁶⁹ and for Rousseau, private property generated **inequalities** between men and ruined the political body.⁷⁰ Following this view, Adam Smith pointed out that the main source of wealth was work and not the earth. For him, “whenever there is much property, there is great **inequality**.” He illustrated that “for every rich man, there will be at least five hundred poor men” and that “the property of a few presupposes the indigence of many.”⁷¹

In the **Late Modern Period**, in the 18th century, the French Declaration of the Rights of Man and the Citizen (1789) was responsible for reinforcing the absolute and exclusive character of **private property** in Roman law, as observed in Article 2 (“The purpose of every political association is the preservation of the natural and unenforceable rights of man. These rights are freedom, property, security, and resistance to oppression”), as well as in words “inviolable” and “sacred” of Art. 17 (“As property is an inviolable and sacred right, none of it may be deprived, except when legally proven public need requires it and on condition of just and indemnification.”).⁷²

In 1804, the Napoleonic Code (Civil Code) became an important element of Roman and French inspiration that contributed to law beyond its jurisdiction (France), even reaching **Brazilian** law. With this legal instrument, property rights were categorized as a branch of civil law. The Napoleonic Code followed the principles of the French Revolution (1789), from which the liberal bourgeoisie, who wanted to destroy the ancient privileges of the clergy and nobility, emerged victorious. Thus, he was responsible for eliminating the frequent exemptions and other benefits given by kings to feudal lords. Consequently, the remnants of the feudal monarchies declined in favor of strengthening the absolutist states. There was an excessive preoccupation with **safeguarding individual property**, which became accessible to anyone and with equal treatment. It was a right considered sacred because it was the result of the liberation of the French lands of the former feudal lords.⁷³

With the semantic evolution and causing sensitive changes in the content of the proprietary law, in 1851, August Comte, followed by León Duguit, stated that property, although private, had a **social function**. Forty years later, in the papal encyclical *Rerum Novarum*, Pope Leo XVIII defended the thesis (1891) that “private and personal property is, for man, of natural law.”⁷⁴

Despite the initial statement of the social function of the property, after the French Revolution and the First Industrial Revolution, the modern city was consolidated as a liberal city, a **disordered and uninhabitable environment**, which can be defined as

Superposition of many unregulated and non-coordinated public and private initiatives. Individual freedom, required as a condition for the development of the industrial economy, proves insufficient to regulate the transformations of construction and urbanism produced precisely by economic development. The poor classes suffer more directly from the inconveniences of the industrial city, but the rich classes cannot think of running away from them altogether.⁷⁵

For instance, there were epidemics, such as cholera, in 1830, when rulers were forced to correct hygienic defects and begin the clash with freedom of initiative. France, **Germany**, and England abandoned the thesis of non-state intervention in life, replacing it with other mechanisms of control of the new city model, in which there is coordination between business people, land owners, and state participation in large public works.

The liberal city became post-liberal, allowing the reorganization of European cities, such as Paris, and the foundation of colonial cities worldwide. This model is marked by the management agreement on urban spaces: the public administration deals with the essential scan for the city functioning, such as streets, squares, railways, aqueducts, sewers, gas, electricity, telephone, etc. and behaving as landowners when building schools, and hospitals, for example, while the real estate managed the land served by this infrastructure. The post-liberal model is also characterized by the dependence of public or private owners on the use of urbanized land, in which the administration's influence is primarily indirect, exerted through regulations that impose limitations on building measurements to public spaces and establish relationships between adjacent buildings. However, it is important to note that the owners **retain all the financial gains from urban development** (such as increased property value), preventing the administration from recovering the funds invested in constructing public services.

During the 19th and 20th centuries, the “free” worker (without a permanent bond to the ground as in medieval cities, getting distance from nature and food production) was within an open market, including the labor market, resulting in two main consequences.

With a Marxist basis, the first consequence is the “metabolic rift.” The idea concerns the relationships between the capitalist economic system and the natural environment. In summary, there is an ecological imbalance between how society [4] produces and consumes resources and the environment's capacity to regenerate and sustain these resources. During the process of pursuing economic growth and profit, there are ruptures due to the **exploitation and depletion of natural resources in an unsustainable manner**, and the outcomes are environmental degradation, including climate change, biodiversity loss, soil mortification, and pollution, and the disconnection of society from natural metabolism.⁷⁶ The metabolic rift turns people, their power, and nature into **commodities**.⁷⁷

The second result is the **urban population growth and spread**. The suburbs, a mix of countryside and urban areas, were driven to areas increasingly far from urban centers. Public parks (artificially bringing the country's experience) and popular housing built with public money arise, but without solving the serious problems of excessive density in the center, such

as the precariousness of housing. The city's growth brought the overlap of the medieval town and open space for industries and cars. Indeed, the modern city, industrial and capitalist, was focused on factories (fueled by the consistent domination of the colonies and concentrated in the same place given the emergence of steam), mining, railways, buildings, and real estate speculation.

Consequently, agriculture was **again pushed away from the urban areas**.⁷⁸ The scientific advances of the second industrial revolution enabled the **second agricultural revolution of the modern period**: “motorization (explosion engines or electric motors, tractors and increasingly powerful automotive devices), large mechanization (increasingly more complex and efficient machines) fossil-fuel-powered; and chemification (mineral fertilizers and treatment products).”⁷⁹ The aim was to produce specialized agricultural products that would bring more financial benefits and support industrialization.⁸⁰ Nevertheless, this vigorous progression of the Second Agricultural Revolution was not a general and harmonious development process.⁸¹ Therefore, the city represented a territory of many social problems and an increased **imbalance** between work activities, **agriculture**, commerce, religion, arts, and fun. This was a division of the space as it has already figured in the classical and feudal cities.

2.3 The social and functional division of the space, urban vacant land, Favelas and Urban Communities

The commons played a “significant role in shaping modern **Germany**”⁸² and fostering “the communal organization as an inherent characteristic of Germanic peoples.”⁸³ Then, the commons were kept alive as part of German agrarian politics until the end of World War II. This can be noticed even as part of the immigration process. For instance, in the South of Brazil, original agents of commons (such as Indigenous and other traditional communities) were substituted by German (and other European nationalities) collective forms of rural soil use.⁸⁴ Subsequently, interest in the commons dwindled,⁸⁵ and forms of communal land management gradually disappeared because of capitalist development.⁸⁶

To better understand the urban crises generated by the growing capitalist accumulation of urban space, especially in the **post-war period**,⁸⁷ it is necessary to investigate economic-social relations (the difference in classes) regarding land. One of the possibilities is through the theory of urban land income. [5] It is an economic operator that produces and reproduces urban space's social division.⁸⁸ They are crucial parameters for determining the pricing of urban soil

and justifying the allocation of land uses. They enable the owners of urban land to appropriate a portion of the appreciation generated by the social production of urban space. The appropriation amount depends on the scarcity produced by the social investment made and to make around the property, the significant impact of the localization factor, the predominance of the monopoly price, and the potential uses and competitors for land use dictated by the market and urban legislation.⁸⁹

Two agents are crucial in this process: the private sector and the state. The private sector pressures the government to invest in already well-equipped places. This leads to an expansion of income derived from urban land in these localities, thereby causing an increase in land pricing (land valuation in cities) – and a significant portion of the accumulated urban land income is appropriated by those who have ownership or control over the properties, even if they have not directly contributed to the land valuation process from which they will benefit⁹⁰, as another repercussion, the state's action in different forms: “through fiscal imposition; investment in urban infrastructure works, equipment and improvements; the instance of law, in the form of urban plans and laws [protecting private property]; and action as a real estate agent.”⁹¹

These factors conflict with the interests of those who seek the city as a **use-value** (determined by its usefulness) and not as an **exchange-value** (possibility of buying and selling transmitted by the commodity).⁹² With the prevalence of the exchange-value, the city is transformed into a commodity: Understanding this is relevant because commodities can be sold at prices necessary to realize the full value and surplus value embedded in them. Consequently, “the commodification of urban land as a private capital impedes the right to the city as a social good.”⁹³ During commodification,⁹⁴ **the market price of the land will constitute an effective mechanism of spatial organization** where the land income submits access to land in urban space at a value higher than its production cost,⁹⁵ even when it means no use at all (vacant urban land).

Nowadays, the city is a production and consumption center where almost no space is left without the market's interference.⁹⁶ Indeed, it has a commercial function and is a commerce insert in a local, regional, or global competition with other cities to attract more people and investments. Limited resources and conditions generate a territory of social, political, environmental, and economic daily conflicts.⁹⁷ From this standpoint, private property keeps guiding the wish to individually enjoy a status or have more access to infrastructure and services.

Nonetheless, considering the soil's irreproducibility and less available privileged spaces, the unparalleled land creates market conditions to **increase capital accumulation** (either through speculation and real estate development or through the circulation of capitalized income in the financial market such as mortgage and real estate securities),⁹⁸ which is often connected to production and maintenance of **urban vacant land** until a more profitable use is possible (land financial speculation). This could consist of the disruption of the public land's social functions.⁹⁹

The vacant land concept has been developed since the early decade of 1940,¹⁰⁰ and so far, there is no unique international categorization of its types. However, the literature recently treated them, for example, in the United States of America, as post-industrial, derelict, unattended with vegetation, natural, and related transportation. Another classification is the one regarding Chinese cities. It stated the typology of vacant land as wild grassland, wild grass mixed with shrub and tree land, bare land, abandoned building mixed with rough grassland, abandoned building combined with empty land, and left building land.¹⁰¹

In summary, **urban vacant land** can be developed in three ways: **1. Unused land**, the one that is not currently in full use. They may be disused or, in the case of constructions, in a state of disrepair, possibly on the verge of ruin or already in ruins. Conversely, if the land's condition does not render it unfeasible for use, it is classified as "closed;" **2. Underutilized land** is the one that still has potential for use and/or occupancy, even if such use is partial or temporary. However, their usage falls below the parameters defined by applicable laws, such as the Master Plan or construction codes. The state of conservation of these flatlands may or may not be compromised, but due to their partial utilization, they are typically considered as partially closed; and **3. Unbuilt land** is completely unoccupied parcels of land with no structures. They can be further classified as closed or abandoned based on their current status.¹⁰²

In addition to being associated with land financial speculation, urban vacant land can be attributed to various socioeconomic factors. Among them, there is population decline, the rapid expansion of cities, economic globalization, deindustrialization, suburbanization, inadequate investment, an oversupply of land, haphazard land division, irregularly shaped land parcels, and **environmental concerns**,¹⁰³ such as stormwater volume retention,¹⁰⁴ and bee's conservation in cities.¹⁰⁵

Vacant land can be a problem related to multiple dimensions. From the economic perspective, it could be associated with maintenance costs, not collected taxes, and lower surrounding property value. From an ecological view, irregular waste deposits, soil

contamination, and loss of green areas.¹⁰⁶ Moreover, it reinforces the **dispute of urban land uses**,¹⁰⁷ generates the **fragmentation and hierarchization of urban land functions** (commercial, industrial, residential, etc.),¹⁰⁸ and **socio-spatial segregation**.¹⁰⁹ Another result is the city peripheralization:¹¹⁰ “opposition between center and periphery: the richest social classes are established in the most central areas, equipped with infrastructure and with higher prices; the poor classes are relegated to the peripheries, distant and devoid of equipment and services,”¹¹¹ such as basic sanitation system, electricity, mobility, etc. In some cases, these problems have territorial expansion to other municipalities, becoming a common issue in metropolitan areas.¹¹² Moreover, there is the “separation between the areas occupied by residences of the popular classes and by residences of the most privileged classes.”¹¹³ The non-deterministic result is a “significant influence in the **social interactions** that form the basis of any political mobilization.”¹¹⁴ Thus, the **socio-environmental use of the urban vacant land is urgent**.

The continuous urban population growth without urban planning and mismanagement resulted in environmental degradation,¹¹⁵ generated cities with circulation problems, **without adequate green spaces and leisure**¹¹⁶ for the entire population, in addition to “ineffectiveness or even the non-existence of an urban policy that addressed the housing needs of the low-income population.”¹¹⁷ Consequently, the urban poor population is forced to distribute itself in inadequate places, environmentally unsafe, and without basic infrastructure – the **slums** –. It is “mainly through informal shelter and informal income-generation strategies.”¹¹⁸ The slums can be seen from two perspectives. The first of which is positive:

Slums are the first stopping point for immigrants – they provide the low-cost and only affordable housing that will enable the immigrants to save for their eventual absorption into urban society. As the place of residence for **low-income employees**, slums keep the wheels of the city turning in many different ways. The majority of slum dwellers in developing country cities earn their living from informal sector activities located either within or outside slum areas, and many informal entrepreneurs operating from slums have clientele extending to the rest of the city. Most slum dwellers are people [...] living within the context of extensive urban poverty and formal unemployment. Slums are also places in which the vibrant mixing of different cultures frequently results in new forms of artistic expression. **Out of unhealthy, crowded, and often dangerous environments can emerge cultural movements and levels of solidarity** unknown in the suburbs of the rich. Against all odds, slum dwellers have developed economically rational and innovative shelter solutions for themselves.¹¹⁹

Nevertheless, the negative side stands:

Slums have the most intolerable urban housing conditions, which frequently include tenure insecurity; lack of basic services, especially water and sanitation; inadequate and sometimes unsafe building structures; overcrowding; and location on hazardous land. In addition, slum areas have high concentrations of **poverty** and social and economic deprivation, including broken families, unemployment, and economic, physical, and social exclusion. Slum dwellers have limited access to credit and formal job markets due to stigmatization, discrimination, and geographic isolation. Slums are often recipients of the city's nuisances, including industrial effluent and noxious **waste**, and the only land accessible to slum dwellers is often **fragile, dangerous, or polluted – land that no one else wants**. People in slum areas suffer inordinately from water-borne diseases such as typhoid and cholera, as well as more opportunistic ones that accompany HIV/AIDS. Slum women – and the children they support – are the greatest victims of all. Slum areas are also commonly believed to be places with a high incidence of crime, although this is not universally true since slums with strong social control systems will often have low crime rates.¹²⁰

Earth is believed to host over 250,000 slums, with the five largest metropolises in South Asia (Karachi, Mumbai, Delhi, Kolkata, and Dhaka) that accommodate a population exceeding 20 million residents.¹²¹ Worldwide, they assume different names and forms, with distinction in the access to certain essential services. This land is “dangerous terrain that is not suitable for construction – very steep slopes, riverbanks, and flooded areas. Likewise, they settle in the deadly shadow of refineries, chemical industries, toxic waste dumps, or alongside railways and highways.”¹²²

In **Brazil**, they are represented under the concept of Favelas and Urban Communities. The concept is based on

Predominance of households with degrees differentiated from legal insecurity of ownership; and at least one of the other criteria below: absence or incomplete and/or precarious provision of public services; predominance of buildings, streets and infrastructure that are usually self-produced and/or guided by urban and constructive parameters different from those defined by public bodies; and/or location in areas with restrictions on occupation defined by environmental or urban planning legislation.¹²³

This includes irregular settlements called by “different names such as **favelas** [the term is probably related to an area named as a plant (*Cninoscolus quercifolius*)],¹²⁴ *ocupações*, *comunidades*, *quebradas*, *grotas*, *baixadas*, *alagados*, *vilas*, *ressacas*, *mocambos*, *palafitas*, *loteamentos informais*, *vilas de malocas*, among others.”¹²⁵ In these places, “the growing socio-environmental injustice prevents or hinders the realization of human rights.”¹²⁶

For instance, in the case of **Rio de Janeiro**, they were established before the real estate market interests and the densification of urban land occupation following the slavery abolition (late 1880s)¹²⁷ and public policies as housing solutions especially based on economic motives,¹²⁸ but also involving the ethnic factor. Then, the slums have a pattern of concentrating a group

of low-income and majority Black people,¹²⁹ even nowadays.¹³⁰ As a worldwide phenomenon, the 20th century was generically characterized by verticalization and urban expansion. To develop this, the constructions resulted in vulnerability to displacement¹³¹ and gentrification,¹³² affecting more Black people.¹³³ Later, for economic reasons, the slums in the industrial Rio de Janeiro attracted migrants from Brazil's northern and northeastern areas,¹³⁴ confirming the above "first stopping point."¹³⁵ Further, the social segregation in Rio de Janeiro can be associated with fear and violence¹³⁶ due to a "situation marked by the activities of drug trafficking and the dangers and prohibitions arising from it"¹³⁷ and the consequences of police actions.¹³⁸

Additionally, the cities were (re)organized according to rationalist or functionalist urbanism that influenced urban planning during the late 19th and early 20th centuries, generally reinforcing the urban space division, fragmentation, and hierarchization. This period was particularly notable for introducing the Athens Charter in 1933, in which the private and public¹³⁹ urban property should attend collective interests regarding housing, work, leisure, and transportation.¹⁴⁰ This reinforced the **exclusion of food production as an urban social function.**

2.4 The re-entry of food production to the city and legal-urbanistic context after World Wars

Representing a step of agriculture's return to the city, the **allotment gardens** have been registered as a source of food since the end of the 19th Century, especially during economic crises, such as the "garden of the poor" as **German** governmental strategy of using public vacant spaces to overcome the malnutrition of rural migrant families and unemployed people, instead of paying financial support. The vegetable gardens were also responsible for food security in the post-war period. The pioneer legal approach is from 1919, but in 1983 came the first federal law to approach the duties and rights related to allotment gardens in Germany.¹⁴¹ The allotment gardens are part of the food security history and culture in Europe, such as in France (*salons du Pauvre*), Austria, and England. The same is valid for the United States of America (Victory Garden).¹⁴² After the economic recovery of Germany, the remaining *Kleingarten* or *Schrebergarten* were mostly used as private (with some fees and fences) scape-places of the industrialized city,¹⁴³ and the special role of leisure for family and friends. Nowadays, they are more connected to leisure and environmental concerns. Food production is still part of the *Kleingarten*. However, a great potential for food production could be explored.¹⁴⁴

The period after the World Wars increased the **Law** functionalization¹⁴⁵ by institutionalizing the crucial rights to guide the future of humanity on the Universal Declaration of Human Rights.¹⁴⁶ **Human Rights** can be understood as a rights' composition (not only disposed on the Universal Declaration of Human Rights of 1948) to which every person, independently of jurisdiction, must contribute and enjoy equally without discrimination as a common standard to establish freedom, justice, and peace in the world.¹⁴⁷ They are inalienable, indivisible, interdependent, and interrelated. Human Rights must be promoted, recognized, and protected by the rule of law. They are

a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.¹⁴⁸

The freedom mentioned above reveals a crucial part of their importance.¹⁴⁹ However, the concept is not unique. There is a complex evolution and involution of theories and practices in time and variation of society in a theological, philosophical, and juridical position. For example, in July 2022, access to a clean, healthy, and sustainable environment was declared a human right.¹⁵⁰ Thus, investigating human rights is complex in multidisciplinary and updated debates. For instance, the concept of human rights is not always understood, which triggers contestation between pro- and anti-human rights actors.

Moreover, international relations are also affected by conflicts and humanitarian crises connected to the violation of rights. When a violation happens, responsibility can be required in the legal system to establish adequate legal protection for individuals and vulnerable groups. This involves creation, adaptation, extinction, and application of laws from local to international level. In addition, it is necessary to develop and implement policies, monitoring systems, and laws. When the implemented instruments are insufficient, discriminatory, non-participative, or fail to protect people, it could be considered a transgression of human rights. In addition, Human Rights are an abstract and complex director for good governance that people must know and discover how to apply¹⁵¹ in the cities because a city “must be an area for the realization of all human rights and fundamental freedoms, ensuring the dignity and collective well-being of all people, on a level playing field, equity, and justice, as well as full respect for

the social production of habitat.”¹⁵² The concept of social rights guarantee was adopted by Italy (1948), **Germany** (1949), Spain (1978), Chile (1981), and **Brazil** (1988).

In the last decades, Human Rights critics have developed a sense of cultural bias and imperialism,¹⁵³ overcoming social and economic issues,¹⁵⁴ complex application of universalism,¹⁵⁵ and limited protection.¹⁵⁶ Consequently, limitations and challenges to Human Rights were exposed. Naturally, not all negative aspects have been solved so far. Still, their continuous refining is an ongoing process to experiment with better ways to address the world’s diverse social and environmental needs. This reasoning led to urban social and legal organizations against violating rights and multidisciplinary investigations on urban land use. This has given rise to various concepts, including the **Right to the City**. This emerged in 1968 when Henry Lefebvre proposed that the city should be shaped by democratic decisions made collectively by its inhabitants. It should serve as a space for social interaction and the expression of creativity.¹⁵⁷

As with other conceptual perspectives, the Right to the City also can focus on access to information and communication technologies,¹⁵⁸ emphasis on the right to housing, and the need for social and spatial justice to distribute the benefits of the city to all citizens.¹⁵⁹ In addition, it can highlight the importance of political participation and the transformation of the city’s social and spatial structures.¹⁶⁰ There is also the understanding of **the city as a common good** as an element of the Right to the City.¹⁶¹

Other contributions to the debate came from different international conferences that proposed an agenda for specific problems, such as housing (United Nations Conference on Human Settlements in 1976, 1996, and 2016) and environment (United Nations Conference on Environment and Development in 1972, 1992, 2012). To the city, this was an essential integration between “rural” topics related to the effects of the **third agricultural revolution** (Green Revolution) between 1950 and 1960 and the urban problems. Then, the “environmentalism of the rich”¹⁶² resulted in international funds, organizations, and political parties, especially during the 1960s and 1980s, focusing on environmental problems, including acid rain, nuclear worries, and life conservation. Examples are the World Wide Fund for Nature (WWF) (Switzerland, 1961), the Greenpeace (Canada, 1971), and the political party *Die Grünen* (**Germany**, 1979).¹⁶³ Through the different environmentalism, “detractors of ecology always say that concern for the environment is something like a **hobby** for citizens of rich countries who, since they do not have to worry about survival until the end of the month or teacher strikes, decide to protect whales from the South Atlantic or Chinese pandas.”¹⁶⁴

Later, the decade of 1990 was marked by “environmentalism of the poor” (also in richer countries, such as the United States of America) regarding “actions and concerns in situations where the environment is a source of livelihood”¹⁶⁵ as part of the global **environmental justice** movement,¹⁶⁶ to obtain the “basic needs for life, including water, energy, and shelter”¹⁶⁷ in risk-society¹⁶⁸ with different vulnerabilities and resiliencies. For instance, the Rome Declaration on World Food Security (World Food Summit of 1996) agreed to “implement policies aimed at eradicating poverty and inequality and improving physical and economic access by all, at all times, to sufficient, nutritionally adequate and safe food and its effective utilization.” The goal of implementing this was, “by governments, in partnership with all actors of civil society,” “to ensure that food supplies are safe, physically and economically accessible, appropriate and adequate to meet the energy and nutrient needs of the population.” One of the ways of realizing that was by encouraging “where appropriate, **school gardens** and **urban agriculture**, using sustainable technologies.”¹⁶⁹

2.5 In-process agrifood system pressures

Urban food inequalities and problems have been intensified since the third agricultural revolution in the mid-20th century. It is common knowledge that the Green Revolution, through the upgrade in irrigation, fossil-fuel-powered mechanization, and chemical inputs, especially in developing countries – such as **Brazil**, India, and Mexico – brought the necessary increase in food production for the world population growth. In the last decades, these advances were incremented by precision agriculture technologies (Global Position System, harvest monitors and equipment for dosing seeds, irrigation, and fertilizers, drones, genetic modification, roboticization, etc.). Nonetheless, the benefits were not equally distributed, and there were many environmental side effects, so the current urban food supply chain (production, post-harvest handling, and storage, processing, distribution, consumption, waste) [6] based on the **agri-industrial business has many problems**.

One of them is a barrier to the self-provision of food, the restricted access to productive land due to real estate speculation (land price), bureaucracy (documents, fees), and legal prohibitions. Another problem is the expulsion of original occupants. The large-scale invasions, deprivation, and violation of the Indigenous right to land represent a historical example of **land-grabbing**. [7] This had a substantial increase in the last decades because of various factors. One of the motivations is that the urbanization process requires more and more land from rural areas. When this was not enough to sustain logic until the breaking point (such as the 2008 global

financial crisis), the global search for land was intensified as a target.¹⁷⁰ This is related to the rush to promote the globalization of agricultural production and the growing demand for resources from emerging centers of global capital.¹⁷¹

Additionally, land-grabbing is connected to the “efforts of replacing the fossil base of modern societies through the intensified use of biomass sources, one of the last concepts of bioeconomy policies,”¹⁷² with many practical consequences for societies and environments, especially for global peripheries.¹⁷³ There are “well-intended and ambitious blending targets for the proportion of agrofuels to be reached in coming years,” however, the “targets far exceed the agricultural capacities of developed countries in Europe and North America.”¹⁷⁴ Then, for instance, the European bioeconomy strategy and policy papers of bio-based ecological development are “essentially built on the prerequisite of the subordination, devaluation, appropriation and/or exploitation of (1) different geographical regions, (2) ecological foundations, and (3) prevalent bioeconomy practices.”¹⁷⁵ As a result, the production of resource-intensive bioenergy – instead of choosing other (sustainable) energy sources – generated a greater competition between food and non-food (cereals, oilseeds, and sugarcane) because of their use as biomass or biofuels raised. Consequently, it “intensified the interdependence between food, feed, and energy markets”¹⁷⁶ for heating and cooking.¹⁷⁷ While seeking new natural resources, governments, and public agencies legitimize the “unoccupied” land transfer to national or foreign investors without considering the previous user rights and having no compensation.¹⁷⁸

More than that, the search for land is connected to the **degradation of the current farmland**. Approximately one-third of the world’s farmland is moderate to highly degraded¹⁷⁹ because of ongoing human activities, such as deforestation, urbanization, and agricultural intensification, along with the negative consequences, including loss of soil organic matter (SOM) or soil organic carbon (SOC), soil compaction, surface sealing, soil acidification, nutrient imbalance, pollution, salinization, sodification, desertification, wildfires, erosion, and landslides, are progressively undermining the vital role of soil biodiversity in sustaining ecosystem functioning and delivering ecosystem services.¹⁸⁰

In addition, **climate change** already affects food production, and the future scenario is not positive.¹⁸¹ Climate change “may significantly reduce yields” (wheat, maize, rice, and soybeans) “in the long run.”¹⁸² In addition, climate change is related to the disruption of “complex interactions among species, potentially affecting ecosystem services such as pollination and the control of crop pests by natural predators,”¹⁸³ and the supplies of fresh water

are also expected to be affected¹⁸⁴ with a “direct impact on animal health and reduce the quality and supply of feed and fodder.”¹⁸⁵ Thus, “food systems have particular vulnerabilities to the adverse impacts of climate change.”¹⁸⁶ It threatens “the safeguarding food security and ending hunger,” which means a “direct impact on the realization of the right to adequate food”¹⁸⁷ because it “will critically determine the future state of natural resources, as well as the future conditions of and constraints to agricultural production, thereby affecting food availability and the stability of food supplies.”¹⁸⁸

Moreover, the rural population suffers from differentials in employment opportunities, access to public services and infrastructure, and environmental differentials that impact agricultural production and demographic factors (e.g., flood, drought, land access restriction). This scenario ordinarily leads to **rural migration**, from a totally voluntary search for opportunities to totally forced displacement by conflicts and crises, international or internal in the country, to urban or another rural area.¹⁸⁹ For example, the 2013 five-year internal migration intensity is estimated at 10 percent globally, with 6 percent migrating to urban areas, especially in highly urbanized countries such as Latin America, the Caribbean, the Near East, and North Africa.¹⁹⁰ Naturally, mobility is part of human history, and it has benefits and challenges to personal and collective growth, local economies, national development, labor shortages, and knowledge sharing to the origin and destination.¹⁹¹

Nevertheless, the rising **growth of the urban population** [8] puts pressure on the food chain¹⁹² (from production to marketing) and “on basic, administrative, and social services, infrastructure, housing supply, health and education services and to facilitate decent livelihood.” It raises the host area’s vulnerability and the urban poor level and “forces more people to live in informal settlements or inadequate housing, with associated environmental consequences.”¹⁹³ Given that, demographic structures and spatial location dynamics of the population are expected to influence the future of food demand and dietary preferences¹⁹⁴, like age, income, or concentration in urban areas, because they affect consumer behavior. For example, young and older adults have different nutrition needs and preferences. Also, the swift rise in income within emerging nations is driving increased demand for resource-intensive items such as meat, fish, dairy products, and more.¹⁹⁵ Consequently, there are effects on food prices. For instance, “in megacities worldwide, urban food prices have risen, as it has become more and more difficult and time-consuming to transport fresh produce to market.”¹⁹⁶

Also, rapid urbanization is related to “increased consumption of processed food and more sedentary lifestyles.”¹⁹⁷ The **long distances** of space/time between the distribution-

consumption of traditional agriculture to urban centers is a problem because of fossil fuel, gas emissions, food loss, and waste¹⁹⁸ (“each year, one-third of all food produced for human consumption is lost or wasted across the globe”).¹⁹⁹

On the one hand, *food loss* is defined as “all the food produced for human consumption that is not eaten by humans”²⁰⁰ or “the decrease in mass (dry matter) or nutritional value (quality) of food that was originally intended for human consumption.” Food loss “occurs throughout the supply chain – from production to final household consumption,” being “mainly caused by inefficiencies along the food supply chain, such as poor infrastructure, lack of adequate technology or access to markets, as well as insufficient knowledge and management skills or capacities by actors involved.”²⁰¹

On the other hand, *food waste* is “a part of food loss.” It is the “food intended for human consumption being discarded or left to spoil as a result of decisions taken by actors along the food supply chain,” the “food appropriate for human consumption being discarded, whether or not after it is kept beyond its expiry date or left to spoil.” It is “mainly discarding either by choice or spoilage and is closely related to retailers’ and consumers’ behaviors – oversupply due to market forces or consumers’ shopping and eating-related habits.” It is “more noticeable at the end of the food chain – retail and final consumption stages,” although it may also occur at the post-harvest stage. Food waste could be “the result of a looming ‘best by’ date or a product that does not comply with certain aesthetic criteria – marketing standards related to size, shape or accepted appearance – whether through consumer preferences, wholesalers, or retailers” which are criteria to discard edible goods not based on safety standards.²⁰² The moment that food loss and waste happens in the food chain varies by product and region.²⁰³

Moreover, physical access to affordable, nutritious foods is also problematic due to the “absence or low density of food shops, markets or outlets – particularly fresh foods of short self-life or requiring refrigeration – within a practical traveling distance (referred to as **food deserts**),”²⁰⁴ [9] and “shops and outlets offering an overabundance of energy-dense foods high in fats, sugars and/or salt and few nutritious foods” (**food swamps**).²⁰⁵ They represent food environment problems. Both cases of unequal spatial placement of food access happen even in high-income countries, like the United States of America²⁰⁶ or Canada. Still, they hit more on Black and poor communities²⁰⁷ – this is also nominated as “**food apartheid**” through “a view at the whole food system, along with race, geography, faith, and economics.”²⁰⁸ [10] Lower socio-economic neighborhoods have high geographic access to food retailers perceived as promoting mainly minimally nutritious food options such as fast-food outlets and convenience

stores).²⁰⁹ This can be seen as **environmental racism**, which means “to treat badly other people in pollution or resource-extraction injustices on grounds of membership of particular ethnic groups, social class or caste.”²¹⁰

Nonetheless, the mere production and distribution of food do not guarantee people access to it. On a global scale, food systems generate an ample food supply, but due to inequalities, not everyone possesses the **purchasing power** to secure the right to food. This starkly highlights the profound inequality between those who have access to sufficient food and those who are compelled to endure hunger.²¹¹ More exactly, every one percent rise in the cost of food represents 16 million people in a food insecurity situation²¹², with far-reaching consequences for the most susceptible demographics, including smallholder/family agriculture and low-income urban and rural communities. Naturally, the food price construction and variation are related to different reasons. One is that food prices “will be increasingly linked to oil prices” because “as most of the 82 low-income countries with food deficits are also net oil importers, the competing pressure on crop use will increase.”²¹³

With high prices for nutritious food, the markets usually offer “a wide variety of non-perishable energy-dense foods of minimal nutritional value, often high in unhealthy fats, sugars and/or salt, at lower prices.”²¹⁴ This results in the consumption of processed food, with more sedentary lifestyles also being part of this increase in obesity,²¹⁵ along with diet-related non-communicable **diseases**,²¹⁶ given the lack of access to healthy food worldwide. For example, “in Northern America, Europe, and Oceania, 28 percent of adults are classified as obese, compared with 7 percent in Asia and 11 percent in Africa. In Latin America and the Caribbean, roughly one-quarter of the adult population is currently considered obese.”²¹⁷ Thus, consequences are not only to the individual body but also to the collective, considering that “the **economic price** of malnutrition is billions of dollars lost in productivity and health care costs.”²¹⁸

Finally, other problems related to the agricultural food chain crisis reported in 2022 are:

- a) Organized violence and conflict risks:** in Democratic Republic of the Congo, Ethiopia, Nigeria, Mozambique, Sahel, Somalia, South Sudan, Syrian Arab Republic, Ukraine, [11] and Yemen;
- b) Natural hazard risks:** in Afghanistan, Somalia, Ethiopia, Kenya, South Sudan, Benin, and Guinea, Nigeria, Cabo Verde, Angola, Madagascar, Mozambique, Zimbabwe, and Haiti;
- c) Economic risks:** in Yemen, Syrian Arab Republic, Lebanon, Haiti, Sri Lanka, Afghanistan, Ethiopia, Kenya, and Ukraine;
- d) Animal and plant pests and diseases:** in Ethiopia, Yemen, and Kenya;
- e) Aggravating factor (humanitarian access constraints):** in

Afghanistan, Ethiopia, Mali, Nigeria, Syrian Arab Republic, Democratic Republic of the Congo, Niger, Somalia, and South Sudan. [12]

The **COVID-19 pandemic** also must be listed as part of the crisis because it affected the whole food chain, from production to consumption. [13] The last available evidence suggests a rise of 112 million to almost 3.1 billion in people unable to afford a healthy diet worldwide.²¹⁹

In summary, the above problems illustrate the urgent need for a profound **social-ecological transformation of urban food and land**.²²⁰ Among different issues, this change concerns

societal transformations away from dominant forms of relating to nature in different stages of food systems, as well as in the politics and policies that shape these processes. Even the idea that nature is a resource is disputed. Policymakers have indeed noticed that such a change concerns not only technology and the economy; it requires a societal transformation, and they have thus started to fund research related to societal aspects, such as values, norms, practices, and social conflicts involved in such processes.²²¹

These transformative practices can be guided by different alternative approaches representing “fresh societal conventions that govern access to essential resources, aiming to free such access from the constraints of market forces or government assistance,²²² including feminist and decolonial epistemologies and critical studies of science and technology.²²³ Also, the commons and Human Rights are possible theoretical and legal approaches to guide it.²²⁴ Urban agriculture is one of the practical ways that does not exclude the other approaches.

2.6 Contemporary Urban Agriculture

The 21st century started with important contributions to the Right to the City through the World Social Forums after 2001. Moreover, the New Charter of Athens of 2003 (for European development), in the chapter on Environmental Coherence, is an alert that toxic substances can compromise **food** and health. Furthermore, the New Charter highlights the diminishing presence of agriculture, diminishing open spaces, and declining biodiversity as illustrative instances of detrimental factors jeopardizing the urban living environment and public areas' quality. Concerning agricultural initiatives, cities should actively encourage the development of local markets and the adoption of organic production methods.²²⁵ Despite the advances and worries, the charter maintained the **exclusion of food as an urban social function**. Even so, the food could be seen included in education, health, natural and cultural

patrimony, (social, economic, and environmental) sustainability, and part of the housing as social and ecological functions of the city and property broader than the previous Charter version.

In 2006, the World Charter for the Right to the City established responsibilities and actions that civil society, local and national governments, parliamentarians, and international organizations must undertake to ensure that all individuals can live with dignity in cities. The concept of the Charter is that.

The Right to the City is defined as the equitable usufruct of cities within the principles of sustainability, democracy, equity, and social justice. It is a collective right of the inhabitants of cities, especially vulnerable and disadvantaged groups, which gives them the legitimacy of action and organization based on their uses and customs, with the aim of achieving the full exercise of the right to free self-determination and an adequate standard of living. **The Right to the City is interdependent with all human rights** internationally recognized and fully conceived and, therefore, includes all civil, political, economic, social, cultural, and environmental that are already regulated in treaties regarding international human rights. This assumes the inclusion of the right to work in conditions equitable and satisfactory; to found and join trade unions; access to social security and public health; **adequate food**, clothing, and housing; access to potable water, electricity, transportation, and other social services; to quality public education; right to culture and information; political participation and access to justice; the acknowledgment the right to organize, assemble and demonstrate; public safety and coexistence peaceful. It also includes respect for minorities and ethnic, racial, sexual, and cultural plurality, and respect for migrants. The territory of cities and their rural surroundings is also a space and place for the exercise and fulfillment of **collective** rights as a way to ensure the **distribution and enjoyment of equitable, universal, just, democratic, and sustainable use of resources**, wealth, services, goods and opportunities offered by cities. For this reason, the Right to the City also includes the right to development, a healthy environment, the enjoyment and **preservation of natural resources**, participation in urban planning and management, and historical and cultural heritage.²²⁶ (Bolded by the author)

This represents a dialogue with the Universal Declaration of Human Rights stakeholders and rights to be guaranteed, with special detach for adequate food. Moreover, the World Charter for the Right to the City is important to indicate that in cities, the **realization of human rights should be aligned with the common interest**. This considers that the **social functions of the city and of property** point that cities' public and private spaces and properties are collective goods to be used in a social and environmental balance that prioritizes the communal interest. This is a condition to assure dignity, collective well-being, equality, justice, and the social production of the habitat.²²⁷

Following that, for the planning and managing urban spatial development section, the United Nations Habitat New Urban Agenda (2017) final report presents the commitment “to support **urban agriculture** and farming, as well as responsible, local and sustainable

consumption and production, and social interactions, through enabling and accessible networks of local markets and commerce as an option for contributing to sustainability and food security.”²²⁸ In 2020, urban agriculture was listed as making cities healthier and more sustainable.²²⁹ Indeed, in the last decades, urban agriculture has been encouraged and internationally recognized as a tool to achieve key elements of the right to food because it has the potential to promote **food security**, food system resilience, and sustainability²³⁰ by the “production, processing and marketing of food on all types of publicly and privately held land and water bodies dispersed throughout urban and peri-urban areas, mostly destined to consumers residing in these areas,”²³¹ like 800 million people (1996) worldwide have been doing.²³² In addition, in 2023, FAO recently published this about urban and peri-urban agriculture:

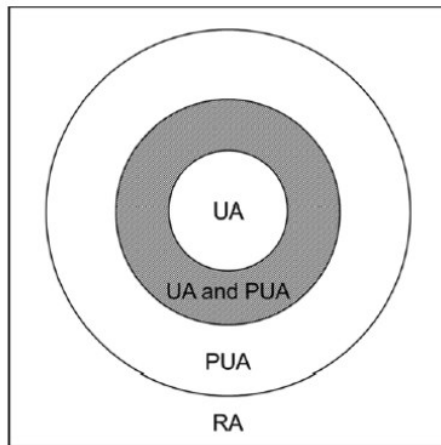
It can be defined as practices that yield foods and other outputs from agricultural production and related processes (transformation, distribution, marketing, recycling, etc.) taking place on land and other spaces within cities and surrounding regions. These involve **urban and peri-urban** actors, communities, methods, places, policies, institutions, systems, ecologies, and economies, largely **using and regenerating local resources** to meet the changing needs of local populations while serving **multiple goals and functions**.²³³ (Bolded by the author)

Regarding the above information, three main considerations are crucial for this research. The first is the conceptual and practical notions’ differentiation between urban and peri-urban agriculture. **Urban agriculture** is “predominantly located in the densely settled areas of a city.” It is usually “performed on land that is not agriculturally zoned”²³⁴ by residents, migrants, and children without formal agricultural education. In contrast, **peri-urban** agricultural landscapes reside within a transitional zone, bridging the gap between urban and rural domains. These zones, situated at the edges of urban areas, embody a blend of urban and rural characteristics with limited available agricultural and natural space. This form of agriculture, existing in residual capacity, contends with urban pressures while also capitalizing on its proximity to urban centers and markets. The practice is done mainly by agricultural professionals. Importantly, the distinction between these two regions is not fixed or absolute; rather, intersecting regions often exist, as depicted in Figure 01. This diagram illustrates how rural agriculture is positioned beyond the bounds of urban or metropolitan expansions.²³⁵

The second fundamental approach of the previous citation²³⁶ is that urban agriculture ordinarily is a strategy to **transform vacant urban land** (totally or partially not used or underutilized land) with human and natural resources regenerating potential. This has scientific recognition worldwide, especially for former industrial cities. Moreover, it is extremely

relevant due to the **increasing vacant land scenario**.²³⁷ For example, around Shenyang, China, a real estate company broke up in 2010, and this resulted in an abandoned luxury complex of 260 mansions. Nowadays, the streets give place to agriculture.²³⁸

Figure 01 - Location of urban agriculture (UA), peri-urban agriculture (PUA), and rural agriculture (RA) within the urban-rural continuum



Source: OPITZ, I. *et al.* Contributing to food security in urban areas: differences between urban agriculture and peri-urban agriculture. *Agriculture and Human Values*, Vol. 33, Issue 2, June 2016. Available at: <<https://link.springer.com/article/10.1007/s10460-015-9610-2#citeas>>. Accessed on: Oct 4th, 2023.

The third highlight of the urban agriculture concept²³⁹ is its multiple goals and benefits. In summary, they can be categorized regarding *society* (community building, education, sense of pride, aesthetic improvement, sense of security), *health* (physical activities, mental health, nutrition, food literacy), *ecology* (stormwater management, urban hydrology, organic waste and nutrient recycling, biodiversity, urban climate, air quality, urban climate, air quality, and energy consumption savings), and *economy* (economic savings on food, tourism, employment opportunities and entrepreneurial endeavors, increased property values, savings for municipal agencies).²⁴⁰ Also, it has a role in addressing *social-ecological justice*.²⁴¹

Between these functions, urban agriculture in the **Global North** typically serves to promote a more sustainable lifestyle or foster community bonds. Research in developed countries primarily emphasizes the positive impacts on social connections, health, emotional well-being, and education. Conversely, in the **Global South**, the focus tends to lean towards the economic advantages of urban agriculture. Urban agriculture plays a crucial role in meeting food security and nutritional requirements in developing nations. In regions like Latin America and Africa, individuals employ innovative methods to cultivate crops in extremely limited spaces to ensure their families' sustenance and survival. Addressing this disparity can facilitate

mutual learning. For instance, developing nations can draw inspiration from developed countries on how urban agriculture can enhance urban dwellers' social, physical, and mental well-being. Meanwhile, developed nations can glean insights from developing countries on how urban agriculture practices can yield significant economic benefits.²⁴²

Urban agriculture draws attention to the fact that conceptual delimitations are not unique because of their multiple designs, uses, and local regulations. In **Brazil**, the new National Program of Urban Agriculture (Federal Decree Number 11.700, on 12th **September 2023**) understands that the concept of urban and peri-urban agriculture as “activities and small animal husbandry carried out in urban areas or peri-urban regions, which include: - the stages of production, processing, distribution and commercialization of food, medicinal plants, aromatic and ornamental plants, herbal medicines and inputs, for self-consumption or commercialization; and II - organic waste management processes.”²⁴³ This decree is important for institutionalizing national-level urban agriculture through the combination of efforts among different public spheres, such as Federal (Agrarian Development and Family Farming; Development and Social Assistance, Family and Fight against Hunger; Environment and Climate Change; and Labor and Employment), state and local governments, in addition to civil society and private sector. Their efforts must follow principles [14] and prioritize vulnerable populations, with a highlight of the human right to adequate food and the right to the city. This represents a legal bond between urban agriculture, the human right to adequate food, the right to the city, collective forms of organization, and social, economic, and sustainable food co-production.

Even so, the decree requires complement by the legal-institutional system centered on local urban planning, the tax system (different between urban and rural), and the responsibility of specific public agencies, such as the National Institute for Colonization and Agrarian Reform (INCRA), Brazilian Institute of Geography and Statistics (IBGE), and Brazilian Agricultural Research Corporation (EMBRAPA). On one hand, according to IBGE²⁴⁴, an agricultural establishment is any unit of production or exploitation dedicated, totally or partially, to agricultural, forestry, or aquaculture activities, regardless of its size, legal form (whether it belongs to a producer, several producers, to a, to a set of companies), or its location (urban or rural area), with the objective of production, whether for sale (commercialization of production) or subsistence (support of the producer or his family). On the other hand, EMBRAPA defined urban agriculture as “the exercise of various activities related to food production and

conservation of natural resources within urban centers or in their respective peripheries.”²⁴⁵ It has three main contribution areas: well-being, environment, and economy.

The increase in food security, improving nutrition, and human health in poor communities added to better sanitary conditions reduces diseases and is related to the well-being of the population, environmental conservation of natural resources, mitigation of environmental impact resulting from human occupation, and communities transformation seeking sustainability, reuse, and recycling; increase in the generation of jobs and the incentive to the young people, adults, and elderly with job opportunities. Urban agriculture strengthens the economic base, reduces poverty, and fosters entrepreneurship, generating work for women and other marginalized groups.²⁴⁶

However, the local legal institutional system can also be exclusionary and outdated, generating problems for the development of urban agricultural activity due to the lack of reach of public policies. In view of that, recent studies on urban agricultures in **Brazil** proposed an academic categorization into *a. traditional farmers*, which occupy the transition zone where the urban gives way to the rural to preserve agrobiodiversity or replicate conventional agriculture; *b. backyard agriculture*, a small extension of land related to those classified in the category of traditional farmers. There is a significant production both for self-production; *c. initiatives by urban collectives*, different social profiles that seek to preserve green spaces in the city, environmental education, and food production in public areas; and *d. agriculture promoted or linked to the government*, like public policies to provide work or gardening educational activities in schools and business and commercial agriculture.

Regarding **urban agriculture**, the **European Parliament** calls attention to the difference between urban farming and urban gardening. Urban gardening can be related to “agricultural activities with low economic dependence on material outputs while using the production of food for achieving other, mostly social, goals.”²⁴⁷ In urban gardening, a clear distinction has emerged between zones dedicated to individual cultivation, like allotments and family gardens, and spaces where collective endeavors occur, such as educational, therapeutic, and **community gardens**.²⁴⁸ In a critical sense, urban gardening “can be traced back to the 1970s in New York, when communities re-appropriated green space for building projects and the enjoyment of nature.”²⁴⁹ In contrast to urban gardening, urban farming “is based on a business model that takes advantage of proximity to a city by offering local or regional agricultural products or services.”²⁵⁰ Regarding urban farming, the territories have been categorized into various types. This includes areas associated with on-site services, like leisure and educational gardens and local food farms.

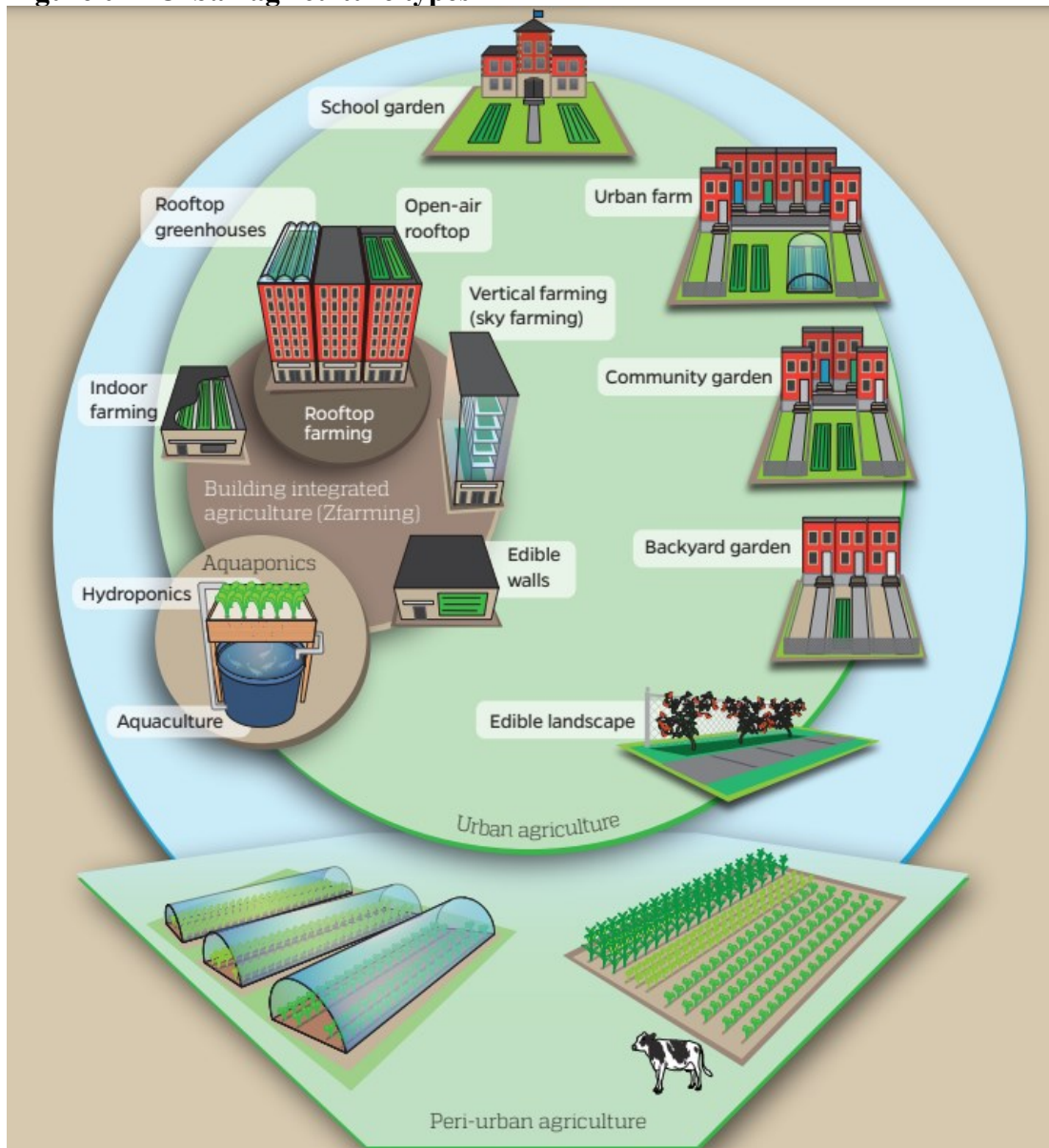
Additionally, the European Parliament recognizes that **urban agriculture** is divergent from conventional rural agriculture due to the smaller scale of the method's implementation – which limits the competition against industrialized production –,²⁵¹ the need for alternatives to soil-based practices to overcome urban soil contamination, and urban agricultures' possibility to offer more connectivity between food growers and consumers, which is an important step to advancement in the food citizenship²⁵² and is one of the possible ways for the reversion of the **metabolic rift**²⁵³ when observing different spectrums of urban agriculture.

Despite the differences, in general, urban agriculture requires physical and non-physical components to achieve its goals. The physical features are “(legal) growing space, construction, and growing material, including fertilizers, tools, and water.” The non-physical components are “funds, labor, construction permissions, training, and networks.”²⁵⁴

In common, urban agriculture tends to face some **challenges**, such as *a. skepticism, sociocultural biases, and institutional constraints* (this includes social, legal,²⁵⁵ and political issues, such as gender/ethnic/class disparities and low visibility on decision-makers agenda); *b. constrained access to resources, inputs, and financial means* (this embraces natural, political, bureaucratic, and economic conflicts, such as competition with other land uses and constrained access to water, tools, and financial resources); *c. special risks of cultivating in the city* (this counts social and natural limitations, for instance, pollution, vandalism, and driving gentrification); and *d. organizational constraints, considering human resources difficulties* (for example, lack of networking, know-how on gardening or management, and data).²⁵⁶

Regarding the **types**, urban agricultural activities can be owned by private individuals, public entities, or commercial enterprises, taking on diverse forms. For instance, there are school gardens, urban farms, community gardens, backyard gardens, and edible landscapes. Furthermore, urban agriculture is integrated into buildings or facilities, for example, aquaponics (aquaculture and hydroponics), edible walls, indoor farms, vertical farms, rooftop greenhouses, and open-air rooftops²⁵⁷ (Figure 02).

Figure 02 - Urban agriculture types



Source: SANTO, R.; PALMER, A.; KIM, B. *Vacant lots to vibrant plots*. John Hopkins Center for Liveable Future. May 2016. Available on: <<https://clf.jhsph.edu/sites/default/files/2019-01/vacant-lots-to-vibrant-plots.pdf>>. Accessed on: Oct 4th, 2023.

The above figure gives a view of the panorama of multiple possibilities urban agriculture offers as an alternative food system. While they are more socially relevant and environmentally sustainable than the agri-industrial food system, alternative agricultural methods still face certain constraints, including land access, property rights, and the expenses associated with implementation and maintenance. Consequently, the quest for means to promote the human right to adequate food in urban areas through no or low-tech, cost-effective solutions directs our attention toward a different approach to urban agriculture, the Public Access Urban Community (Edible/Vegetable) Gardens or **Community Gardens**.

2.7 Chapter highlight

This chapter sets the stage for a comprehensive analysis of urban crises mitigation strategies in the subsequent chapter, aligning with the broader objective of understanding the right to food addressed by community gardens' urban food sharing activities in Berlin and Rio de Janeiro. In this sense, the *assessment of the precedents and current crises of urban food and land relations in the search for the pillars of their social-ecological transformation* (specific objective "a") reveals three important standards. The first is the common property and management, postulated from the Greek Classical and Roman Antiquity to the Modern Ages. However, this has been reduced by the progressive rise of private property and capital accumulation, turning land and food into commodities to be explored and generate profit, especially in the Late Modern Period. This process includes the progressive remoteness of agriculture and the formation of urban vacant land as one of the maintainers and generators of socio-spatial inequalities and violation of (human) rights in the city. This is an invitation to investigate the commons in the urban context, the **urban commons**. From the universe of these violated rights, this research focuses on the **human right to adequate food**, the second standard. To promote it, the idea is the re-entry of agriculture in the city (urban agriculture). Given the lack of land, the strategy is to use the vacant urban land for **community gardens**, the third standard. Each pillar will be detailed in the next chapter.

3 THE HUMAN RIGHT TO ADEQUATE FOOD, URBAN COMMONS, AND COMMUNITY GARDENS: COMBINED APPROACH TOWARDS A SOCIAL-ECOLOGICAL TRANSFORMATION

This study aims to examine food sharing activities of community gardens in Berlin and Rio de Janeiro, focusing on their connection to the human right to adequate food and analysing, within and between cities, the reasons for these connections' similarities and differences. A crucial step for that was done in Chapter 2 by defining pillars of their social-ecological transformation based on assessing the precedents and current crises of urban food and land relations (specific objective "a"). This resulted in three standards: the human right to adequate food, urban commons, and community gardens. Subsequently, this Chapter aims to *detail them and present their potential as complementary approaches toward a social-ecological transformation of urban land and food (specific objective "b")*.

This is done in four sections. The first concerns the human right to adequate food concept, the identification of responsibilities, and how the right to food is connected to other human rights. The second section develops the concept of commons and its application for the cities, the urban commons. The third section covers the worldwide community gardens overview of different possibilities, including motivation details, territorial highlights, gardeners' profiles, and activities. This last topic is better investigated in its part, the urban food sharing activities. The final part reunites the most relevant elements of each standard to set a homogenous theoretical stage. This makes possible an empirical investigation of the profile of territory, gardeners, and experts related to community gardens in Berlin and Rio de Janeiro and the urban food sharing activities connected to food availability, accessibility, acceptability, and sustainability (specific objective "c"). This is a crucial part of answering the central research question.

3.1 The right to food standard

The **Human Right to Adequate Food** (right to food) is settled in Article 25 of the United Nations Universal Declaration of Human Rights as part of the right to a standard of living,²⁵⁸ so it is important to ensure health and well-being and a way to fulfill other (human) rights.²⁵⁹ It goes much further than charity or a restrictive sense of hunger prevention,²⁶⁰ and according to its **legal** background, it is accomplished when every person²⁶¹, alone or in a community, has physical and continuous economic access to adequate and culturally acceptable

food produced and consumed sustainably, preserving access to food for future generations, or the means for its procurement (resources that will enable the person to make, earn or purchase) in dignity. [15] This statement has four essential and **combined** key components that the United Nations recognizes:²⁶²

- a) physical **availability** sufficient to satisfy the dietary needs [16] of individuals according to demand's interest, [17] and involving the freedom of choice regarding production (including food self-provision) and distribution (food available for sale in markets and shops).
- b) economic and physical **accessibility** stable over time, not affecting the satisfaction of human rights and basic needs or the resources for future generations, encompassing intangible qualities linked to food and its consumption, while also delving into the details regarding the availability of food resources.
- c) **acceptability** means food free from adverse substances for a dietary need according to age, living conditions, health, occupation, sex, etc. Additionally, it should be devoid of any impurities or remnants from industrial or agricultural practices, such as pesticides, hormones, or veterinary medications, and should align with cultural acceptability for consumption.
- d) economic, social, and environmental **sustainability**, representing long-term availability and accessibility. The food sustainability principles are:

Principle 1. Improving efficiency in the use of resources is crucial to sustainable agriculture; Principle 2. Sustainability requires direct action to conserve, protect, and enhance natural resources; Principle 3. Agriculture that fails to protect and improve rural livelihoods, equity, and social well-being is unsustainable; Principle 4. Enhanced people, communities, and ecosystems resilience is key to sustainable agriculture; Principle 5. Sustainable food and agriculture require responsible and effective governance mechanisms.²⁶³

These above key components of the right to food must be seen together. So, for example, the lack of access to natural resources is a problem that affects production, and without products, there is no or rare food availability. This triggers issues related to prices (accessibility) and acceptability and is challenging for the food chain's long-term perspective (sustainability). Then, the categorization is important to understand what part of the human right to food is observed by individuals and groups from society and government. Otherwise, when not followed, the human right to food is violated. It is also relevant to create specific laws and public policies to achieve the non-observed element that reverberates in other concepts, such as food insecurity and violation of food sovereignty.

3.1.1 Stakeholders and responsibilities

The international law establishes, in general terms, human rights as **individual rights**. Specifically, the right to food means that “every individual not only has the right to feed themselves and their family in dignity but also has the responsibility to do everything within their power to do so.”²⁶⁴ This represents access to resources, freedom to realize other human rights, and participation in discussions, decisions, and monitoring programs, policies, and actions.²⁶⁵ Even so, the “individual-rights approach may be insufficient to defend some crucial collective interests not only from a procedural point of view but also from a substantive one,”²⁶⁶ such as the indigenous people’s primary view of the collective right to food.²⁶⁷ As “collective,” they are ascribed to groups of people and can only be claimed by the joint entity and its authorized agents. Without excluding individual safeguarding of rights (with indirect and cumulative effects on the group), collective rights have a direct and additional value to joint protection.

Sometimes, it is even the case of a better appropriate concept than individual rights. For example, indigenous people “possess **collective rights which are indispensable for their existence, well-being, and integral development as peoples**”²⁶⁸ as the case of rights on lands, territories, and resources, and subsistence-based activities carried out collectively that are part of their cultural identity, and usually the only source of existence. It would be hard to respect an individual perspective. Thus, the collective right “may be the expression of the collective dimension of a corresponding individual right (e.g., the right to collective property), or it may be inherently collective – new and different in comparison to the rights of the individual (e.g., the right of peoples to self-determination, right to culture, right to development).”²⁶⁹

Just after “every individual,” the Universal Declaration of Human Rights affirms that “**every organ of society**” promotes respect, recognition, and observance of human rights.²⁷⁰ To organize the general provision, the first presented element is the States in the concept of nations that are duty-bearers with legal obligations according to international treaties they have ratified. To implement the right to adequate food at the national level is necessary, States must

To **respect** existing access to adequate food requires States parties not to take any measures that result in preventing such access; To **protect** requires efforts by the State to ensure that enterprises or individuals do not deprive individuals of their access to adequate food; To **fulfill** (facilitate) or pro-actively engage in activities intended to strengthen people's access to and utilization of resources, and means to ensure their livelihood, including food security; To **fulfill** (provide) the right directly when an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal. This also applies to victims of natural or other disasters.²⁷¹

Thus, States cannot be inactive. They must take steps to maximize their available resources for the **progressive realization** “by all appropriate means, including the adoption of **legislative measures** and the full effectiveness.”²⁷² For example, the right to food is **constitutionally** applicable by (i) “explicit and direct recognition as a human right in itself or as part of another, broader human right; (ii) the right to food implicit in a broader human right; (iii) explicit recognition of the right to food as a goal or directive principle within the constitutional order; and (iv) indirect recognition, through interpretation of other human rights by the judiciary.”²⁷³ [18] Although, there is no legal protection, enforcement, or applicability in many countries. Thus, to be effective, the right to adequate food should extend beyond the confines of constitutional law. [19] **Brazil** is a highlighted case study by the United Nations²⁷⁴ because it has explicit constitutional provisions on the right to food regarding direct and general statements involving specific groups connected to the standard of living and as directive principles. In contrast, in broader rights, **Germany** has implicit constitutional provisions on the right to food.

On the topic of obligations, there are four **immediate effects** under the International Covenant on Economic, Social and Cultural Rights:

The elimination of discrimination in access to food and related resources based on race, color, sex, language, age, religion, political or other opinion, national or social origin, property, birth, disability, or other status, and the adoption of measures to eradicate discrimination on these grounds. **Obligation to “take steps”**: While the full realization of the right to food may be achieved progressively, steps towards that goal must be taken within a reasonably short time. Such efforts should be deliberate, concrete, and targeted as clearly as possible, using all appropriate means and resources. [20] **Prohibition of retrogressive measures**: States cannot allow the existing level of fulfillment of the right to food to deteriorate unless there are strong justifications. [21] **Protection of minimum essential story of the right to food**: For the right to food, States have to ensure the satisfaction of, at the very least, the minimum necessary level required to be free from hunger, even in times of natural or other disasters. Suppose a State fails to meet these obligations owing to resource restraints. In that case, it must demonstrate that it has made every effort to use all available resources to satisfy these core obligations as a matter of priority. Even if the resources at its disposal are inadequate, the Government must still introduce low-cost and targeted programs to assist those most in need so that its limited resources are used efficiently and effectively.²⁷⁵

The State is also responsible for government, laws, policymakers, and inspectors at national and local levels, making isolated or cumulative attitudes to implement, monitor, and enforce the right to food.²⁷⁶ For example, adopting **economically related** measures regarding public budget, household income, food prices, remuneration of labor (wages), expatriated profits that remunerate foreign investors, money transfer (such as pensions or social protection payments), financial incentives, credit lines, taxes exemptions, taxes on international transactions and trade policies (imports and exports), taxes from the production sectors (indirect taxes, net of subsidies), households (income, consumption taxes) and enterprises (corporate taxes). Another way is by the **public management** to promote work, health, education (and other human rights related to the right to food) and public services (including water, gas, and electricity), community kitchens and restaurants, street fairs with agroecological products, restaurants to low-income people, schools' food menu, sanitary measures, society participation in the public budget construction, protection of vulnerable groups, use licensing processes to influence permitted food premises or what outlets are allowed to sell, verify if non-State actor is respecting the right to food, also, through **laws and regulations** of food production, distribution, consumption, and post-consumption, such as land-use policies and zoning laws to support and incentives nutritious foods food chain (including the security of land tenure, allowing urban agriculture, advertising restrictions, and restricting food retail and food service outlets), and imposing advertising limitations, or introducing taxes on sugary beverages. Instinctively, who applies the Law is also part of the right to food protection. Thus, to promote access to justice, judges and lawyers from internal, regional, or international law or court need to study the elements of the right to food in case the court demands.²⁷⁷

Moreover, globalization and interdependence require attention to **other actors** related to the right to food, such as intergovernmental and Non-Governmental Organizations (NGOs) (essential for advocacy, capacity building, and organizing marginalized target groups), responsibilities of States regarding people living in other countries, international organizations and transnational corporations. The multilateral organizations help “to design policies, strategies and programs, delivering assistance, or negotiating trade, finance and investment,”²⁷⁸ such as the United Nations World Food Program (WFP), Office of the United Nations High Commissioner for Refugees (UNHCR), United Nations Children’s Fund (UNICEF), United Nations Food and Agriculture Organization (FAO), United Nations Development Assistance Framework (UNDAF), United Nations International Fund for Agricultural Development (IFAD), International Monetary Fund (IMF), World Bank, and regional development banks.²⁷⁹

Although human rights obligations are not directly related to the private sector, the Human Rights Council and regional and international soft-law instruments recognize that corporations and other non-States should not disturb human rights enjoyment and apply effective measures if that happens. From local businesses to transnational corporations, the private sector has a substantial role because most food is produced, processed, distributed, and traded across borders by private entities. This can be positive through guaranteeing food security even if it is not a food-related business, e.g., respecting labor standards (minimum wages and pause time to eat), but also negative. For example, competition over land, resources or market access, contamination and eviction, sale of unsafe food or misleading information, distribution of healthy food to specific areas of the city, speculation in food and productive resources, and price of food.²⁸⁰

In summary, urban food's multiple challenges affect the enjoyment of the human right to adequate food. To act against that, the stakeholders have been doing different, individually or in cooperation, actions, programs, investments, and movements, from local to international. For instance, to promote food **availability**, charitable food services such as food banks and pantries play a crucial role in facilitating access to food for individuals and households. They serve as essential resources during emergencies, such as the COVID-19 pandemic, helping uphold food security and promote dietary quality for those in need.²⁸¹ In addition, to ensure fair prices for farmers and stabilize the domestic food supply, the Brazilian National Supply Company (Conab) utilizes the Acquisitions mechanism of the Federal Government to purchase food that will supply the cities. This practice not only guarantees the minimum price for agricultural products and supports farmers' income but also helps regulate internal supply, mitigating price fluctuations in the market, which tends to guarantee physical and economic food **accessibility**.²⁸² Various regulatory bodies engage in discussions and guidelines on international food standards on safety and quality to ensure food **acceptability**. These responsible organizations include the Codex Alimentarius Commission, which promotes global food labeling standards,²⁸³ and the European Commission of Food Safety.²⁸⁴ Furthermore, one example to encourage food **sustainability** is the FAO list of five key principles – previously approached – to build a common vision.²⁸⁵

Given the above actors and their responsibilities regarding the right to food, the center of attention of the following chapter is contextualizing the promotion of that human right through multiple urban agriculture. Later, the discussion's nucleus is on one of the expressions of urban agriculture, the community gardens, given the anchor theme of this research.

3.1.2 Interdependence and interrelation of the right to food to other human rights

Human rights are interdependent and indivisible, so the right to food is closely interconnected with other human rights (including those established after the Declaration of 1948). Naturally, food is a fundamental pillar of **life** experience and expectancy.²⁸⁶ Moreover, “when people cannot feed themselves and face the risk of death by starvation, malnutrition, or resulting illnesses, their right to life would also be at stake.”²⁸⁷ Also, food safe from adverse substances and nutritious food is essential to be **healthy**, body and mind functioning well, with immunological integrity, and reducing the chances of non-communicable diseases (such as diabetes). Also, “the stress of living with uncertain access to food and going periods without food can lead to physiological changes that can contribute to overweight and obesity.”²⁸⁸ Thus, food is not only essential but also necessary to seek an **adequate standard of living** and to **maintain other human rights**. A person can have it as a transfer or earned way (or both) in return for economic activities, like wage labor, self-employment, providing goods, services, or means of production, and social welfare transfer from the social security system based on the reason that a person’s other income is insufficient to provide for an adequate standard of living.²⁸⁹ Moreover, moderately food insecure people have uncertain access to food and might have to sacrifice different basic needs, affecting their dignity, to eat. And “when they do eat, it might be whatever is most readily available or cheapest, which might not be the most nutritious food.”²⁹⁰

Equality is another significant human right related to food. It means “being equal in dignity and rights to all other people while recognizing the right of all peoples to be different, to consider themselves different, and to be respected as such.”²⁹¹ From this statement, self-determination and non-discrimination must be highlighted the **self-determination** and **non-discrimination**. Discrimination is distinction, exclusion, or restriction based, for example, on race, color, sex, language, religion, opinion, national or social origin, property, birth, or another status. It has as cause and consequence to invalidate or weaken the equitable ability to enjoy or exercise essential liberties and entitlements granted to humans. This phenomenon is associated with the relegation of certain demographic groups and is typically the underlying cause of significant disparities in societal structures.²⁹² On the other hand, any prejudicial treatment regarding the ability to obtain food or the resources necessary to acquire it is considered an infringement of human rights. However, non-discrimination and equality do not imply that every situation requires the same treatment. Instead of respecting self-determination,

governments must acknowledge and accommodate various groups' requirements and exceptional circumstances, particularly those facing the greatest marginalization, disadvantage, and dissimilar dietary needs or cultural practices.²⁹³ It is the right of all people to go after their economic, social, and cultural development without outside interference or prejudice, primarily not to deprive means of subsistence.²⁹⁴ It also requires prior and informed consent in government plans and actions.²⁹⁵

Self-determination and non-discrimination must consider each **culture**. UNESCO has defined the concept of culture as the “distinctive traits, including the total spiritual, material, intellectual and emotional traits that characterize a society or social group, and that includes, in addition to arts and literature, their ways of life, the manner, in which they live together, their value systems, and their traditions and beliefs.”²⁹⁶ Thus, food selection, procurement, acquisition, preparation, and consumption are often an important part of culture, and cuisine is part of cultural heritage and identity.²⁹⁷ It means that food is not only part of the individual **recognition of a person as a holder of rights** that can be demanded in court but also part of the **personality's development in the community**. While society offers conditions for individuals to follow their aspirations in life, people contribute in different ways to the community, such as through **food sharing initiatives**.

Additionally, an essential element of the right to food is the “substantive **freedom** of the individual and the family to establish ownership over an adequate amount of food, which can be done either by growing the food oneself (as peasants do), or by buying it in the market (as the nongrowers of food do).”²⁹⁸ Freedom can also be understood as **freedom of movement and residence**. This can be necessary to pursue the right to life in case of violation of the human right to **peace**, including conflicts regarding food or migration to seek new opportunities in life. In both cases, food is essential to guarantee the establishment in a new area.

In another sense, **freedom of opinion and expression** is crucial for full, active, free, meaningful, transparent, social, and political participation is essential in a **democracy**. Without it, there is no peaceful life in common.²⁹⁹ If a country's democracy is strengthened, it is less likely to experience famine. This is because democracy promotes various elements towards reducing poverty and hunger, such as freedom of the press, dissemination of information, and an open and responsible administration.³⁰⁰ People must be free to choose their government and take part in formulating and effectuating laws, regulations, and policies that affect them.³⁰¹ Consequently, the freedom of opinion and expression has three important links. The first is that **participation** should be ensured at all stages of development, design, implementation, and

monitoring of food and nutrition strategies, policies, programs, and all other relevant decisions to not miss out on the real needs of populations.³⁰² “Simply calling for participation is too vague and may even be counterproductive. Certain standards of participation must also be set and followed,”³⁰³ for example, by legislation to ensure adequate representation³⁰⁴ and the representation of vulnerable groups [22] in civil society mechanisms.³⁰⁵ The second is that **freedom of association** must be guaranteed because it is one of the possibilities to make civil voices be heard and their views reflected in public policies relevant to food so that their right to food will be protected.³⁰⁶ The third is that obtaining, transmitting, and receiving **information** without barriers is crucial to guarantee the freedom of opinion and expression and food security. Information “enables individuals to receive information on food and nutrition, on markets, and allocation of resources. It enhances people’s participation and free consumer choice.”³⁰⁷ For that, States should “collect and disseminate information to the public regarding food-borne diseases and food safety matters” and “adopt measures to protect consumers from deception and misrepresentation in the packaging, labeling, advertising, and sale of food and facilitate consumers’ choice by ensuring appropriate information on marketed food.”³⁰⁸

Even extremely relevant information must be connected to education to empower individuals to make informed choices about healthy food and handling. Enhancing education, particularly literacy rates among women is a powerful tool to combat hunger and malnutrition. Education prevents the disruption of schooling because of food insecurity and helps to break the cycle of need not only because of the school lunch but also out of school because it equips individuals with the skills to maintain a nutritious diet and secure food for their livelihood, promoting freedom from hunger and malnutrition.³⁰⁹ In addition, education drives development and opens doors to economic prosperity and dignified employment. Governments should invest in educational programs, adult literacy initiatives, and training opportunities to improve equal access to the labor market. Work serves to acquire food for sustenance, trade, or income to purchase other food items. Additionally, food provides the necessary physical and mental conditions to sustain the body for work. Labor rights play a vital role in establishing a connection between food production and respecting, protecting, and valuing the individuals involved in its production. The presence of hunger and malnutrition among children and teenagers renders them more vulnerable to extreme forms of child labor, including forced conscription as child soldiers, involvement in drug trafficking, or being vulnerable to sexual exploration for survival.³¹⁰

The right to food depends on the right to adequate **housing** in at least three senses. First, when a house lacks basic amenities, such as cooking or storing food, its residents' right to adequate food may be undermined. Also, when the cost of housing is too high, people may have to cut down on their food bills.³¹¹ Without **access to land and natural resources**³¹² [23] (soil, water, sun) in a **healthy environment, self-provision** of food cannot be possible. [24] For instance, the right to food cannot be realized if people lack access to safe drinking water for personal and domestic uses, defined as water for drinking, washing clothes, food preparation, and personal and household hygiene.³¹³

Finally, when there is a human rights violation, everyone has the right to an effective remedy by the competent national and international **tribunals** for acts violating the fundamental rights granted by the constitution or law. Thus, the right to food is connected to access to justice and order.³¹⁴

3.2 The urban commons standard

The “commons” do not have a unique sense. They have pre-existing contexts and concepts that vary according to the territory and time because “the commons are not static, passive and the same everywhere. They are malleable and adapted to the historical conditions of each time and generation,”³¹⁵ as presented in Chapter 2. In the United States of America and England, these forms of expression are referred to as “*commons*,” while in **Germany**, they are known as “*Allmende*,” in France, they are called “*biens communaux*,” in Mexico, they go by “*ejido*.” In **Brazil**, they were called “*rossio*.” In addition, the management of communal assets has responded reasonably well for centuries and millennia to the life aspirations of millions of people. Even today, most of the Earth’s surface and waters are collectively managed.³¹⁶

The commons have been established as a collective resource management alternative in the literature,³¹⁷ despite the critics favoring private property exploratory way. [25] However, in a world with decreasing resources to be dominated, the private property concept is losing its sense.³¹⁸

Moreover, the commons’ importance was recognized by the Nobel Prize in Economics to Elinor Ostrom in 2009. [26] From these studies, it is possible to understand that the commons have an important experimental protective role of common pool resources (CPR) [27] in the context of neoliberalism over-exploitation threats³¹⁹ and “predatory capitalist behavior.”³²⁰ Then, it is important to differentiate that the commons are not the resources, but social practices and community relations around a resource create them.³²¹ Given that the commons do “not

simply exist,”³²² commons are a human creation³²³ system based on collective sustainable governance further than a classical dichotomy of exploratory governance of public and private property in pure capitalist systems³²⁴ because this collaborative and sustainable governance can be applied to private,³²⁵ public, or common goods. [28]

This affirmation raises three crucial elements to understanding the commons. The first is that “**social practices and relations,**” *commoning*,³²⁶ include the participatory process of accessing, managing, and developing a resource.³²⁷ This way, the group can define shared norms, values, objectives, needs, interests, enforcement, and forms of collective identity. This allows **governance towards sustainability**,³²⁸ the second element, which is crucial in “**tackling social-ecological transition** concerns through experimentation with new provisioning systems.”³²⁹ The *commoning* happens in geographical and virtual spaces.³³⁰ The third part is that “**resource**” is a “material or immaterial [...] non-commodified means of supplying some good or service to the *commoners*.”³³¹ They are a “group of individuals involved in producing and reproducing commons” because they depend on this resource.³³² They are “organically formed and self-defined” and “responsible for collectively negotiating and enforcing the rules about how the commons resources are managed and used.”³³³ They have different scales, from a group of neighbors to global communities.³³⁴ In these communities, the essence is non-commercial.

The essence of the community, its heart and soul, is the **non-monetary exchange of value**: things we do and share because we care about others and the good of the place. The community is made up of things that we do not try to measure, that we do not keep on file, and that we do not ask for a reward for [...] like respect, tolerance, love, trust, and beauty - whose supply is unrestricted and unlimited. The non-monetary exchange of value does not just come from **altruistic motives**. It comes from the deep, intuitive, usually subconscious realization that self-interest is inseparably bound up with the interest of the community, that the individual good is inseparable from the general good, that somehow, generally beyond our comprehension, all things they are, at the same time, independent, interdependent and interdependent – of which the singular 'one' is simultaneously the plural 'one.' (...) Life is not a right. Life is a gift that brings a gift, which is the art of giving. And the community is where we can give our gifts and receive the gifts of others.³³⁵

Consequently, the commons represent an effort to combat the conversion of essential resources into private property,³³⁶ the commodification, such as the water fountain, that can be seen as public, free, and collective managed good, or economic, profitable, and market managed good.³³⁷ The same could happen to a river³³⁸ or the beach.³³⁹ In this sense of commons, “labor’s **use-value** is directed to the production of a community resource, and part of its capacity for surplus labor is returned to the commons.”³⁴⁰ In contrast, in commodities, the “labor’s use-

value is captured primarily as use-value for capital.”³⁴¹ In this way, the commons change the individual perception of itself.

In a world of commoning, people are quite **emotionally attached** to the “care-wealth” that they **love** and depend upon. They do not have relationships with commodities or resources but with things that belong to them in a deeper sense: ancient lands, beloved traditions, stable livelihoods, and a **sense of purpose and meaning**. People’s lives become somewhat more enmeshed with each other; new social circuits emerge and proliferate. **The iron grip of capital recedes, if only a bit, as people recover a sense of the local, affective, and collective**. Life becomes more relational and not merely transactional. Commoning becomes an enactment of Thomas Berry’s insight, “The universe is not a collection of objects, but a communion of subjects.”³⁴² **A sense of belonging and shared meaning emerges.**

Furthermore, the significance of commons extends to **empowering communities**³⁴³ that advocate for their pivotal role as policy instruments in addressing climate change adaptation and mitigation.³⁴⁴ Additionally, it serves as a political instrument to counteract capitalism’s divisive and marginalizing effects on communities.³⁴⁵ Illustrating that, despite inter and intra-ethnic differences, [29] land is uniformly held as commons by indigenous groups from the Amazonian context.³⁴⁶ Still, **quilombos** [30], indigenous, and other traditional communities generally have a particular culture regarding a “traditional way of living and the special relationship they enjoy with their land and natural resources.”³⁴⁷ This has a special sense in fighting against neoliberalism’s influence on nature, including **land grabbing** and incorporating genetic resources and traditional knowledge into the global market.³⁴⁸

For instance, the Tapajós National Forest (Flona), Brazil, is an environmental conservation area protected by federal law. More than a thousand families reside there, hunting, cultivating, and extracting natural resources solely for sustenance. In the surrounding areas of the Flona, the land adjacent to this conservation zone is utilized for growing soya bean crops. The stark contrast between these two landscapes extends beyond the varying shades of green, which define the scene separated by the asphalt of the federal highway. This dichotomy is further underscored when examining deforestation statistics: over three decades, Belterra, which encompasses a portion of the Flona Tapajós within its boundaries, witnessed 10% of its forest cover succumb to deforestation. Conversely, if we focus solely on the percentage of deforestation within the Flona, it stands at a mere 0.1%.³⁴⁹

Moving to a specific part of the commons, a crucial notion for this study is that they can also be related to the city, the **urban commons**.

The concept of urban commons is based on the idea that public spaces, urban land, and infrastructure ought to be accessible to and able to be utilized by urban communities to produce and support a range of goods and services important for the sustainability of those populations, particularly the most vulnerable people. The founding principles of this movement include sharing, collaboration, civic engagement, inclusion, equity, and social justice. Civic collaborations create and manage urban commons, including participants from local communities, government, business, academic, and nonprofit organizations. In this way, the city is a platform utilized and optimized by citizens from all backgrounds and social statuses.³⁵⁰

In that respect, the **urban commons** represent new possibilities for citizens to claim their **right to the city**³⁵¹ and **co-produce the social space** given the “articulation of new forms of urban citizenship based on the right to access and inhabit urban spaces and to imagine³⁵² and shape their future uses”³⁵³ as a “response to market and state failure in maintaining and constructing the infrastructures of social life.”³⁵⁴ Then, urban commons are “vectors of the **ecological transition** while at the same time advancing a new way of understanding capitalism based on resource reusability and abundance”³⁵⁵ “in an ecological understanding of urban land use”³⁵⁶ by a “vernacular law.”³⁵⁷ [31] This can be illustrated by the case of an environmental conservation park in Rio de Janeiro,³⁵⁸ where the natural resources from public land are sustainably used by *residents* for ecotourism (*visitants*), environmental education, and income generation.

This example expresses the meaning that commons occupy a “unique space in social organization”³⁵⁹ with an application in urban spaces³⁶⁰ due to the cooperation and involvement with *multiple urban actors* in resources **collaborative management**³⁶¹ (**polycentrism**, another crucial pillar of urban commons),³⁶² such as “social innovators, public authorities, businesses, civil society organizations, knowledge institutions, and urban residents.”³⁶³ They can have different levels of participation, such as event participants, members, core teams, and organizational forms, including informal groups, registered associations, cooperatives, and companies.³⁶⁴

In addition, another key concept within the realm of urban commons is the principle of **horizontal subsidiarity**, lying in legal terms for enabling citizens to engage in self-governance by themselves and their representatives.³⁶⁵ This provides “a progressive platform for active citizen engagement and formation of civil society organizations operating beyond the market logic of capitalism and alongside local government.”³⁶⁶ It is important to highlight that technology is crucial in providing and sharing knowledge and data to support engagement and communication.³⁶⁷

Embracing these characteristics could represent problems for the resource's collective management. For example, tensions can appear among users with different social backgrounds and goals.³⁶⁸ In this case, methods of conflict resolution are crucial. **Conflicts** can also happen between *commoners* (gardeners and municipalities) when there is a lack of public support and different views on resource management, bureaucracy, and legal barriers. Also, the urban commons must overcome the isolation. The exchange of experiences and methods depends on the network's expansion. Another issue is the lack of validation within the regulatory setup and surroundings. As one of the solutions, charters can be an effective way to dialogue with public bodies and neighborhoods.³⁶⁹

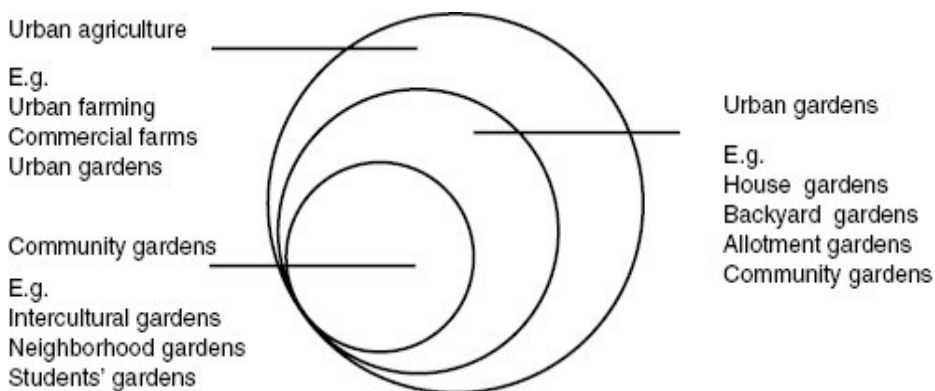
Moreover, the urban commons are defined as resources shared by the community and susceptible to rivalry and exclusion problems.³⁷⁰ Even so, the urban commons can also be highlighted as one of the strategies for **re-appropriating public spaces**,³⁷¹ a fight against city commodification. This is important because "urban public space remains the site where public life is consumed, and citizens' imagination and sense of identity are shaped."³⁷² The process includes "experiences of grassroots movements that give back subjectivity to widespread urban goods threatened by financial or real estate speculation."³⁷³ "Profoundly shaped by the scale of the city, neighborhood, or block,"³⁷⁴ these movements can rely on urban resources such as "squares, parks, **abandoned buildings, vacant lots**, and streets can be repurposed for a multitude of uses and functions by their users. They are renewable throughout their life cycle, remain flexible in usability and durability, and are thus far less exhaustible than natural resources would typically be."³⁷⁵

In summary, urban commons **goals** can be "civic (inherited for/by all urban citizens), community (created for a collective use), and club goods with commons-like features (created for personal use/profit)."³⁷⁶ They can be related to various **focus**, such as "ecological (natural processes and natural resource production), social (human process for equitability and human well-being), immaterial (connectivity, communication, and human development)."³⁷⁷ Housing, public spaces, labor and public services, artistic endeavors, and urban infrastructure can exemplify this.³⁷⁸ This investigation highlights the **community gardens** as **urban commons**.³⁷⁹

3.3 Community gardens standard

In the urban and peri-urban agriculture universe, **community gardens** are one of the urban gardens' subcategories. Around the world, there are many possibilities regarding location, actors, spatial division, institutional affiliation, and property regimes, such as neighborhood gardens, intercultural gardens (focusing on the migration background), or school gardens, as shown in Figure 03.

Figure 03 - Urban and peri-urban agriculture universe



Source: ROGGE, N.; THEESFELD, I. Categorizing Urban Commons: Community Gardens in the Rhine-Ruhr Agglomeration, Germany. *International Journal of the Commons*, vol. 12, no. 2, 2018, p. 255. Available on: < <https://www.jstor.org/stable/26511528>>. Accessed on: Aug 28th, 2023.

Regarding **land ownership**, they are developed in public or private areas. Usually, the occupation of **urban vacant land** (unused, underutilized, and unbuilt soil)³⁸⁰ has no specific spatial configuration (size and design).³⁸¹ Then, there are community gardens on streets' sidewalks, residential (rooftops, inside apartment complexes) or school buildings, “along railways and roads, under power lines, on the grounds of community centers, churches, and in public parks and other green areas.”³⁸²

In some cases, the gardens can be situated in vulnerable areas,

amid economically and socially fragile communities. Many of these lots were left vacant by demolishing buildings abandoned by their original owners or cleared but not redeveloped in the wake of defunct urban renewal programs and whose ownership was assumed by the city through tax foreclosure. These lots had often become “rivalrous” spaces overrun by drug users, car strippers, and illegal dumpers of all kinds of waste. They thus became safe havens for a host of criminal and other illicit activities.³⁸³

The transformation process “of these abandoned lots to community gardens emerged as a means of ‘self-help’ for citizens to address a variety of problems related to, and signified by,

vacant land in their communities.”³⁸⁴ For instance, “without this cooperation, many of these open, vacant lots would likely have remained blighted and dangerous, threatening the economic and social health of the community.”³⁸⁵ However, “often enough, these community gardens are temporary set-ups before the vacant lots are put under construction.”³⁸⁶

In general, the **gardener** is a volunteer that joins a self-organized group (neighborhoods, schools, churches, and Non-Governmental Organisations). Nevertheless, in some cases, there are hired professionals to organize the garden’s bureaucratic and financial issues or to promote agricultural and environmental education.³⁸⁷ “Communal gardens involve poor as well as higher income families, individuals, older people, and recent migrants, among others.”³⁸⁸ The gardener’s **background and socioeconomic status vary** greatly from local to local, even within the same country. For example, studies in the United States of America identify Black and poor communities as local gardeners in Washington, D.C. At the same time, other analyses presented in St. Louis showed the predominance of White people, women with high household income, and intermediate or high educational level.³⁸⁹ Additionally, further study identified a predominance of non-White women with lower income in Los Angeles and Newark, while in New York, there were more White men with high income.³⁹⁰ In Europe, “community gardeners will usually be residents, migrants and children without formal agricultural education.”³⁹¹ In Quito, Ecuador, a study demonstrated the predominance of female gardeners. They have low income and education and no immigration status.³⁹² In Global North, the gardeners can be associated with the image of “hip and bohemian citizens,”³⁹³ which dialogues with the “environmentalism of the rich” mentioned in the previous chapter. In addition, not only their backgrounds are multiple, but also the **motivations** for community gardening are diverse. This include

providing safe spaces for circumjacent residents and improving the neighborhood’s liveability by cleaning, shaping, and beatifying vacant, underutilized, neglected areas, (re)connection to nature, physical outdoor activities, and mental recreation, building social capital & developing a community spirit, educating people of all ages, participation on urban development and striving for public visibility.³⁹⁴

Non-profitable interests exist to achieve the above goals, even when organized as a business. However, the gardeners can adopt diverse bottom-up manifestations to finance the garden maintenance,³⁹⁵ such as renting plots through small fees or symbolic monetary contributions to courses and events. The creation, organization, development, and maintenance of a community garden happen with or without governmental support, and often there is no

specific legal regulation.³⁹⁶ In some cases there is total or partial top-down governmental funding, such as Hortas Cariocas program in *Rio de Janeiro*.

Not only the administration and maintenance responsibilities are shared, but also the social, economic, and environmentally sustainable use of resources like soil, water, tools, and knowledge. Given this, community gardens are **urban commons with an ecological focus, making the spatial production of social capital possible.**³⁹⁷ On the one hand, this means that they are created for a collective use community-oriented framework “with some forms of exclusion, but the maintenance and use of those commons are shared by a group of urban inhabitants that make up a community.”³⁹⁸ On the other hand, the ecological character is “focused on natural processes and natural resource production.”³⁹⁹ Consequently, urban commons are essential in mitigating climate change and socioeconomic inequalities.⁴⁰⁰

Regarding the **benefits** of the **human right to adequate food**, recent studies have focused on the potential of community gardens in addressing the lack of *food availability* in food deserts in low-income and Black neighborhoods⁴⁰¹ by utilizing vacant land.⁴⁰² Such initiatives offer benefits not only for individuals but also for the urban environment. Research has explicit results demonstrating that community gardens can enhance physical and economic *access* to fresh products, essential to combat food insecurity among various vulnerable social groups, including students and older adults.⁴⁰³ Additionally, studies have indirectly highlighted the importance of community gardens in promoting food *acceptability* by providing opportunities for education and cultural exchange.⁴⁰⁴ Moreover, precise evidence or results can be interpreted as the contribution of community gardens to food *sustainability* in three dimensions. Firstly, they can have positive impacts on biodiversity by supporting local ecosystems.⁴⁰⁵ Secondly, they can contribute to supplying local markets.⁴⁰⁶ Thirdly, community gardens can enhance equity and justice⁴⁰⁷ by providing equal access to nutritious food for marginalized communities.

On the other hand, investigations directly or indirectly presented the barriers, challenges, and negative effects of community gardens on the right to food. Current research on community gardens as a source of food *availability* has precisely highlighted the challenge of securing access to land and natural resources.⁴⁰⁸ This issue has become a major obstacle to establishing community gardens, particularly in urban areas, where open space is limited and competition for land is high. Also, studies on community gardens providing food *accessibility*

have accurately revealed the challenge of alienation in addressing food insecurity roots.⁴⁰⁹ Additionally, community gardens face the challenge of participation,⁴¹⁰ which can impact food acceptability as a side effect. Lack of community involvement and engagement can undermine the potential of community gardens to promote food culture and education, hindering their ability to contribute to food security. Furthermore, food *sustainability* in community gardens has been strictly linked to environmental, economic, and social dimensions. Soil contamination⁴¹¹ and gentrification⁴¹² are some challenges that can impact the long-term viability of community gardens.

Concerning the **activities** in the garden, “people grow trees and perennials, maintain lawns, and install specific features like benches, gazebos, and brick paths that allow people to spend time there and explore.”⁴¹³ The gardening can happen directly on soil or inside (suspended) containers (to avoid soil contamination). Ordinarily, the gardens are linked to **agroecology**,

an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system. Agroecology is not a new invention. It can be identified in scientific literature since the 1920s, and has found expression in family farmers’ practices, in grassroots social movements for sustainability and the public policies of various countries around the world. More recently, agroecology has entered the discourse of international and UN institutions. In guiding countries to transform their food and agricultural systems, to mainstream sustainable agriculture on a large scale, and to achieve Zero Hunger and multiple other SDGs, the following 10 Elements emanated from the FAO regional seminars on agroecology: Diversity; synergies; efficiency; resilience; recycling; co-creation and sharing of knowledge (describing common characteristics of agroecological systems, foundational practices and innovation approaches); Human and social values; culture and food traditions (context features); Responsible governance; circular and solidarity economy (enabling environment). The 10 Elements of Agroecology are interlinked and interdependent.⁴¹⁴

In community gardens, “food products such as vegetables, fruits, herbs, and occasionally small livestock are produced for home consumption, leisure, health, and educational purposes, or within the context of community development programs.”⁴¹⁵ However, not always the production includes food. In some gardens, there are only medicinal or decorative plants.⁴¹⁶ Even so, there is solid recognition of their importance for food security.⁴¹⁷ The products can have personal use, the common benefit of the gardens’ members, or be open to society.⁴¹⁸ Within this context, in community gardens, there are **urban food sharing activities**.

3.3.1 Urban food sharing activities

Urban Food Sharing means: “*having* a portion [of food] *with* another or others; *giving* a portion [of food] *to* others; *using, occupying or enjoying* food [and food related spaces to include the growing, cooking and/or eating of food] *jointly*; possessing an *interest* in food *in common*; or *telling* someone *about* food.”⁴¹⁹ This concept is embraced by the commons considering that **food should be a commons, not commodity**.⁴²⁰ This is *sociologically* relevant because “food sharing is undertaken for and with others; reshaping relations with both human and non-human entities and tangible and intangible resources.”⁴²¹ These relationships means commoning **social practices**. Sharing is a historical social practice that “has been identified as the bedrock of human civilization, a means through which sustenance is secured, labor divided, and social relations solidified within and beyond families.”⁴²² However, urban food sharing “has not been explicitly studied as a mechanism for achieving structural transformations toward sustainability.”⁴²³ Thus, regarding social practice,

sharing is not just what people do; it is a coordinated entity, ‘a temporally unfolding and spatially dispersed nexus of doings and sayings’⁴²⁴ and performance – a process of doing – through which sharing as an entity is perpetuated and potentially reshaped. [...] Food sharing demonstrates routinized ways ‘in which bodies are moved, objects are handled, subjects are treated, things are described, and the world is understood. [...] It is a “type” of behaving and understanding that appears at different locals and at different points of time and is carried out by different bodies/ minds’⁴²⁵, with the performative element of food sharing practice occurring around its enactment. It is only through the performance of food sharing that the interdependencies between elements of food sharing (that is, food sharing as an entity) are sustained or changed. Food sharing is a complex assemblage ‘of body-minds, things, knowledge, discourse, and structures carried by agents such as individuals, organizations, and institutions.’⁴²⁶

The expected consequence of investigating practices is the “examination of broad social and economic processes through the consideration of the actions and meanings associated with food sharing.”⁴²⁷ Consequently, it is possible to observe “cultural rituals and individual habits that determine (in part) what is deemed appropriate to share in different contexts and to the rules and forms of power and control that shape how food sharing takes place.”⁴²⁸ In other words, the individuals, organizations, and institutions also encompass the state and its *legal system* to regulate the social practices done by food sharing initiatives. These initiatives are a comprehensive term encompassing networks spanning informal sharing to profit-driven enterprises across local areas, multiple cities, or countries. They aim to facilitate exchanges of tangible food items and enclose intangible exchanges of knowledge, skills, and experiences.⁴²⁹

Further than in **community gardens**, they also happen in community kitchens and food banks.⁴³⁰

The practices there can be organized in a matrix (ANNEX A) composed of *sharing elements* – foodstuff (including seeds, plants, compost), food spaces (including sites for shared growing, areas for food redistribution), food skills (including sharing knowledge and experiences about food growing, eating, redistribution or disposal) – through different *sharing modes* – informal, illicit, or unorganized (IIU) activities (such as foraging, gleanings), gifting (“bestowing something voluntarily and without compensation”), bartering (“the exchange of goods or services for other goods or services without using money”), monetary exchange (“the exchange of goods or services for monetary payment, although not necessarily for profit”) for profit or not.⁴³¹

These activities aim social goals (“prosocial behavior among friends and family”), environmental goals (“themes emerging of food waste reduction, local produce and small scale agriculture, and improved **human connections with nature**”), economic goals (“recurring themes included the promotion of alternatives to the traditional market economy and reducing inequalities”), health goals (“**increasing access to fresh, healthy or nutritious food**”), and political goals (“goals which seek to change how power and **resources** are distributed”).⁴³²

Given that community gardens are *urban food sharing initiatives*, the urban food sharing typology⁴³³ can serve as a basis for identifying the *urban food sharing activities* in community gardens. The above matrix is a vanguardist and consolidated⁴³⁴ systematization of urban food sharing. After the adaptations explained in the methodological chapter, it will guide the answer to the central research question.

3.4 Chapter highlight

After the assessment of the precedents and current crises of urban food and land relations (specific objective “a”), it was possible to propose that the human rights, the commons, and urban agriculture as an combined approach towards a social-ecological transformation of the urban land and food. *This chapter detailed these pillars in three standards, the human right to adequate food, the urban commons, and the community gardens, as well presented their potential as a complementary approach towards a social-ecological change (specific objective “b”).*

Initially, it is important to mention that the **human right to adequate food** has four central and complementary components: food availability, accessibility, acceptability, and sustainability. Food *availability* embraces the freedom of choice regarding production, including self-provision and distribution. This is affected by restricted access to natural resources, such as land and water, and food deserts. The economic and physical food *accessibility* depends on stability over time, which can be irregular due to natural and human-related reasons, such as wars, diseases, and climate change. Food *acceptability* is regarding multiple cultural aspects but guarantees that the food is free of contaminants and residues from industrial or agricultural processes. Food *sustainability*, representing long-term availability and accessibility, is guided by resource use efficiency, inclusive well-being, the people, communities, ecosystems resilience, and responsible and effective governance mechanisms. Everybody is responsible for protecting and promoting the right to food, including the *government, non-governmental organizations, the private sector, and civil society*. These stakeholders have a role in the entire human rights system, given that the human right to food is connected to other human rights. In other words, additional requests can be affected when the right to food is violated. As explored in Chapter 2 and here, the human right to food is being infringed in terms of food and land as commodities. This has a higher impact on vulnerable individuals and communities but also brings issues to the entire (global) society.

Given the resource overexploitation based on capital accumulation of private property, the **commons** are an alternative approach composed of four crucial elements. The *social practices and relations (commoning)*, including establishing *governance towards sustainability*. The other fundamental elements are the *resource* (material or immaterial) to managed and a group of *people (commoners)* doing practices, developing the relation, and benefiting from the resource. The government can assist or forbid these practices of civil society and non-governmental agents. This can be related to *legal* reasons. Focusing on the use-value, the commons are important to fight the commodification of goods and empower fragile communities. Food and land are also common when understanding the city as a commons. Many forms of urban commons exist, such as streets, parks, and *community gardens*.

Moving to the third pillar, **community gardens** are new *urban commons* connected to urban agriculture. Around the world, there are many possibilities regarding location, design, landowner, agents, spatial division, institutional affiliation, and property regimes. The gardens generally occupy vacant urban land (wasteland, dump ground, unbuilt areas of parks and schools, etc.). The gardens can sometimes be situated in socially and economically vulnerable

areas. The gardener is an amateur or professional organized in a *group* of neighbors, schools, churches, and Non-Governmental Organisations. They have different socioeconomic and demographic backgrounds. Regarding food, the gardeners realize *commoning* activities, the **urban food sharing** of foodstuff, food spaces, and food skills through different sharing modes, informal, illicit, or unorganized activities, collecting, gifting, bartering, and selling for profit. These activities benefit the *human right to adequate food* guided by social, economic, and *ecological* purposes, variating among gardeners, gardens, cities, and countries.

Considering the above description, the combination of standards reveals a *theoretical* affirmation that **community gardens are urban commons transforming vacant land and food. During this process, the new relation to resources embraces people (commoners) developing food sharing activities (commoning) with social, economic, and environmental dimensions in connection to the human right to adequate food.** To *empirically* confirm this proposition, the specific objective “c” is to *characterize the profile of territory, gardeners, and experts related to Berlin and Rio de Janeiro community gardens and the urban food sharing activities connected to food availability, accessibility, acceptability, and sustainability.*

4 EMPIRICAL METHODOLOGICAL STRATEGY

This study's purpose is to examine urban food sharing activities of community gardens in Berlin and Rio de Janeiro, focusing on their connection to the human right to adequate food, and analyse, within and between cities, the reasons for these connections' similarities and differences. This has as background the urban crises concerning land and food, requiring urgent changes. The previous chapters explored this background and possible alternatives toward a social-ecological transformation (specific objective "a"). The theoretical result was highlighted as a combined approach of the human right to adequate food, urban commons, and community gardens (specific objective "b"). This chapter presents the methodological path to achieve the empirical part of the answer to the research question by the specific objective "c," to *characterize the profile of territory, gardeners and experts related to community gardens in Berlin and Rio de Janeiro, and the urban food sharing activities connected to food availability, accessibility, acceptability, and sustainability.*

This research⁴³⁵ has a predominantly⁴³⁶ **qualitative approach** [32] in developing an **exploratory investigation** [33] **with a mixed inductive and deductive approach**. Here, the **case study** is the **empirical methodological strategy** adopted. The reason for choosing the case study method is because case studies are indicated when the research question is related to "how" and "why" in investigating a contemporary real-life phenomenon.

Furthermore, community gardens are urban commons, [34] and a proper qualitative research method for investigating the collective action on commons is the case study. [35] This methodological strategy is important to "direct attention to the complexity of relationships between social and ecological systems"⁴³⁷ by "appreciating nonlinear and context-specific relationships between group characteristics and the prospects for collective action."⁴³⁸

Following this sense, a case study can be composed of nine phases:⁴³⁹ definition of the research problem, the definition of case units, case selection, determination of data collection techniques (including the elaboration of the research protocol), data collection, data organization, data analysis, and interpretation, reporting and discussing results, and recognizing limitations. Their application to this research is explained in the next sections.

4.1 Definition of the research problem

A preliminary literature review was guided by the original idea of investigating the relationship between community gardens and human rights. After deciding to focus on the human right to adequate food, a literature review (Chapter 1), a typical path for a case study,⁴⁴⁰ introduced a research gap (combined, straightforward, and unique cross-country study of community gardens based on the urban common's theory and involving *Berlin* and *Rio de Janeiro*) leading to the research main theme: the relation between community gardens' urban food sharing activities and human right to food. Consequently, there was the establishment of the research problem (central question): *How do notions of the human right to food connect to food sharing activities in Berlin and Rio de Janeiro community gardens, and how can these connections' similarities and differences within and between cities be explained?*

4.2 Definition of “the case”

To answer the central question, first, a theoretical foundation was developed to serve as basis for later empirical investigation. The theoretical framework brought light to two main issues set in Chapter 2: the land and food commodification, uses and disuses (vacant land), as well the consequences of this commodification to society, environment, and economy, highlighting the violation of the human right to food. In this way, it was possible to assess global urban food crises in the context of agrifood resource exploitation and urban land development conflicts, *specific objective “a.”*

Subsequently, a combined approach was proposed in the sense of a necessary social-ecological transformation to mitigate the effects of the food crises. This possible way was built by the study of **urban commons** (including **urban food sharing activities**), the **human right to adequate food** (Chapter 3), and urban agriculture, but focusing on **community gardens** (Chapter 4), as remarked by *specific objective “b.”*

As a result, it is possible to affirm that community gardens are urban commons, and there are urban food sharing activities related to the four central components of the human right to food (food availability, accessibility, acceptability, and sustainability). However, this relationship has various reasons, goals, benefits, and challenges. Moreover, the agents and the territories have homogeneous and heterogeneous socioeconomic and demographic profiles and backgrounds. This marks multiple urban agriculture possibilities towards the human right to food within equivalent realities and between societies from diversified parts of the Earth.⁴⁴¹

This combined approach gives rise to the **hypothesis** that *notions of the human right to food are differently connected to food sharing activities in Berlin's and Rio de Janeiro's community gardens.*

In this context, “**the case**” means *community gardens' urban food sharing activities connected to the human right to food.* Nevertheless, this research is a *multiple case study*,⁴⁴² so the hypothesis is analysed according to different socioeconomic and demographic perspectives within the same city and between two cities. This contrast is the reason for the research gap pointed out by the literature review. Furthermore, community gardens exhibit thematic complexity and variations in goals, designs, benefits, etc., between the Global North and Global South. The sampling of two cities is defined by the restricted human resources to develop a deeper investigation. Thus, the cases are the cities of *Berlin* and *Rio de Janeiro* (territorial limitation) of urban food sharing activities between 2021 and 2023 (temporal restriction according to the doctoral study's schedule).

The central **principle for contrasting** the cases was based on similarities and differences in urban food sharing activities in urban commons' initiatives (ANNEX A). This structure provided by the literature review represents a systematic and vanguardist organizational method for analysing the collective action done in food sharing initiatives, including community gardens.

Furthermore, the central research question required other parameters to render the empirical investigation possible. This time, it is about the agents (the commoners) of the urban-food sharing activities (the commoning): *gardeners* and *experts*. The “**experts**”⁴⁴³ *are professionals related to agriculture with or without work paid by/income related to a community garden, public agents, and researchers on community gardens, food systems, and similar topics.* The “**gardeners**” *are not included as “experts”; they did gardening or administrative activities in a community garden during the field visit, including volunteers and amateurs with financial support.*

4.3 Case selection

The empirical part concerns two cities, *Berlin* and *Rio de Janeiro*. The city level was chosen to be investigated not only because of the method's viability for a time-limited case study but also in view that the local government has an essential (not exclusive) role in

governance to face distortions, exclusions, and inequalities of food such as regulating and enforcing the use of urban soil, financing societal actions, and offering institutional support.⁴⁴⁴

Despite their differences, *Berlin* and *Rio de Janeiro* share similarities. They are participants of the Milan Urban Food Pact (international agreement of Mayors)⁴⁴⁵ and Sustainable Development Goals Agenda 2030. Further, Germany and Brazil⁴⁴⁶ adopted a constitutional social democratic welfare. Both states embraced a federalist mode of political organization and signed the Universal Human Rights Declaration and many agreements on the human right to food and environmental-related issues. More than that, both cities are catalogued as urban food sharing initiatives.⁴⁴⁷

What is crucial to note is that they represent **global cities facing problems connected to vacant land and right to food** (ANNEX C, D, E, F). To fight that, one of the **solutions presented** by them is the **land use repurposing** promoting urban and peri-urban agriculture, including **community gardens** as public policies.

This strategy means **food as social function of property and city**. This has been happening especially since the initial decade of the **21st Century**.

On the one hand, *Berlin* after **2009** the community gardens started to expand in the whole *Berlin*. Currently, there are more than 200 community gardens in *Berlin*'s urban areas – half of their locations can be noticed on a cartogram of 2013 (ANNEX C, Figure 08). The city government is developing a community gardens program to map and organize activities (*Gemeinschaftsgarten-Programm*).⁴⁴⁸ This follows an important historical case with urban agriculture tradition since the end of the 19th century by the *Kleingarten* system (in general, a rented allotment garden for private use).⁴⁴⁹

More than that, *Berlin* was selected as the research location due to the identified research gap highlighted in the literature review. The city has been a focal point for numerous cross-country investigations centered around European urban areas. In addition, several community gardens in *Berlin* were referenced in the literature, some of which have since ceased to exist or relocated, such as Himmelbeet and Peace of Land. Furthermore, certain studies in *Berlin* did not exclusively pertain to community gardens, leading to the amalgamation of interviews conducted for this research with other subjects of study, including allotment gardens and community kitchens. The city is the most populated city of Germany, with 3.645 million people (2019), and *Berlin* has a high development level⁴⁵⁰ in a German context of low food insecurity level.⁴⁵¹

On the other hand, *Rio de Janeiro* has a growing population of around 6.6 million inhabitants (2022)⁴⁵², of which 2.5 million live in extreme poverty.⁴⁵³ To reduce the intermediate food insecurity⁴⁵⁴ and poverty impacts, the city has a program of 56 community gardens in extremely poor urban areas, Hortas Cariocas.⁴⁵⁵ It has been organized and promoted by the city government since **2006**. In 2019, the program was elected by the United Nations as a **model** of action to achieve the Sustainable Development Goals (SDG).⁴⁵⁶ Additionally, in 2023, using vacant land under energy transmission lines etc., the city hall of *Rio de Janeiro* started to build “the biggest urban garden of the world” (11 hectares), from Madureira’s Park to Guadalupe, in a partnership with public (Embrapa) and private agents (Light, energy company).⁴⁵⁷ Furthermore, the literature review uncovered a limited number of publications related to *Rio de Janeiro*, and this city has yet to be included in any international comparative studies.

Considering the above and in line with the research question, these cities play a crucial role in conducting a cross-country analysis of a common societal phenomenon: community gardens. One perspective represents a Global North context, while the other represents a Global South context. This role aids in elucidating the links between concepts of the right to food and food sharing practices within and across these urban settings. Moreover, the similarities and disparities facilitate an exploration of socioeconomic inequalities, cultural dynamics, community engagement and organization, the right to food stakeholders’ involvement, and the methods and significance of realizing the human right to food.

4.4 Determination of data collection techniques and protocol

The selected qualitative techniques for data collection were the interview,⁴⁵⁸ sociodemographic questionnaire,⁴⁵⁹ and documental research on archives.⁴⁶⁰ The literature review (Chapter 1) supports this choice. After completing the specific objectives “a” and “b,” these techniques were developed under the focus of the beforementioned theoretical framework (Chapters 2 to 4) to provide the extraction of empirical evidence to confirm or deny the hypothesis. To achieve this, given the nature of the hypothesis (related to socioeconomic and demographic differences among cities), it is necessary to identify the community gardeners’ sociodemographic profile in *Berlin* and *Rio de Janeiro*, their urban food sharing activities related to food *availability, accessibility, acceptability, and sustainability*, along with their motivations for these activities (*specific objective “c”*).

This process requires a research **protocol**⁴⁶¹ (identification of the project, responsible researcher, sponsoring entity, period of realization, and place of the research) that was part of the Consent Term (APPENDIX C). Additionally, other parts of the protocol (introduction specifying the theoretical and practical relevance of the study, identification of the beneficiaries of the research, definition of the people who will be the object of the study, as well as the strategies to be used to obtain information; questions necessary for data collection; data analysis procedure) are presented during this doctoral thesis' introduction, and this chapter.

Initially, the **interview** is a traditional qualitative approach in the social sciences.⁴⁶² The interview (APPENDIX A) was semi-structured with thirty-one in-depth and open-ended questions organized into categories: personal experience and relation with the locals, to study the history of the place, how the person related to it and community gardens, such as routine and interests; social relations to understand the group relations; global connections, to explore how the interviewee situates themselves and their activities in the garden on worldwide perspectives, such as agri-industrial food system, and sustainability; in addition to local, and international legal issues, to comprehend the role of law and government. One extra methodological component was a photographic association exercise. Ten photos were to be described, aiming to understand the concept of urban community gardens. However, many participants in *Rio de Janeiro* had problems accessing the images in digital media. Consequently, this last part was not included in the results.

In addition to the interview, all participants responded to a sociodemographic **questionnaire** with closed-ended questions (APPENDIX B). The questionnaire comprised twenty-two personal questions related to their life and activities in the garden, such as age, gender, income, employment status, political affiliation, time living in the city, food habits, and products cultivated in the garden. This was important to provide a personal background of the interviewee, an important element in identifying the social aspects behind the practices and speeches. The questionnaire in *Berlin* did not include ethnic-racial identification to avoid ethical conflicts or triggers related to the Reich Citizenship Law (RBG)⁴⁶³ of 15 September 1935.

The information was impossible to obtain from the interviews and questionnaires, and the information required to discuss the results with previous studies was obtained by **the literature review** (secondary sources)⁴⁶⁴ and **documental research on archives** (primary sources).⁴⁶⁵

4.5 Data collection

The study included a field visit to pilot the interview and the questionnaire in *Berlin*. Following the test, there were corrections and attempts to schedule interviews by e-mail and telephone. Even so, the best way to find participants in *Berlin* was during the non-scheduled visits.

Regarding the **materials** in *Berlin*, after the test corrections, the protocol was designed to obtain necessary data from an interview and questionnaire: digital audio recorder, the printed version of the interview guidelines and the questionnaire, paper, pens for personal notes, and the interviewee fill the questionnaire, camera, and water. The observance of social distance measures, etc., as required during the pandemic. To approach potential participants, the first step was to briefly explain in a simple and accessible way about the researcher/interviewer and the project.

After demonstrating interest and availability to participate, the data was collected in a proper sitting place in the gardens or a café (when the weather was not adequate or the gardener had not enough time on the same day of the field visit). The first formal part was to request the signature to express their consent (APPENDIX C) to use the collected data for this doctoral investigation and future related products. All forty interviewees positively expressed their consent. The second moment was to read the interview procedure and record the oral responses. Later, there were sociodemographic questions. Finally, the closing part was to clarify the interviewees' doubts and request the contact of other possible participants (snowball sampling technique).⁴⁶⁶

The interview and questionnaire generally had the same questions between *gardeners* and *experts* in both cities. However, a few adaptations in formality, cultural context, and to overcome translation barriers were done. Also, the order of questions was modified when the answer was previously mentioned before the proper question sequence according to the interview guide. The main difference to *Rio de Janeiro's* empirical data collection is that the **material** was the computer for a voice or video call (according to the Internet connection quality), a digital audio recorder program, a digital version of the interview guidelines and questionnaire, paper, and pens. Moreover, in *Berlin*, the participants filled in the questionnaire by themselves. Nonetheless, the author filled in the online questionnaire in *Rio de Janeiro* because of interviewees' digital barriers/lack of know-how in using digital media.

The **target individuals** for interviews and questionnaires were the commoners, adults (over 18 years old) here organized as “**experts,**” and “**gardeners.**” They did not comprise a single collective tending to a shared community garden. Instead, they constituted a cohort

interviewed for a common research study. Among them were experts with backgrounds in gardening, agriculture, or urbanism, as well as public officials involved in community garden initiatives, researchers focusing on urban agriculture and food, or professionals engaged in paid work within community gardens. Conversely, the gardeners were individuals who did not fall into these specialized categories and participated in gardening activities as enthusiasts or amateurs.

Both views are equally valuable because they work in collaboration to co-produce the social space as urban commons based on sustainable governance of resources (mainly urban land and food, but also water, seeds, sunlight, knowledge, tools, human work, etc.). During this process, they develop social practices and relations (*commoning*) when accessing, managing, regulating, and developing the resources.

On territorial **sampling**, in *Berlin*, four gardens are detailed in the touristic information from the government,⁴⁶⁷ and the **universe** of community gardens is “over two hundred and thirty community gardens,”⁴⁶⁸ cited by the Senate of Berlin. The empirical part included sixteen community gardens, but interviews were collected about eight of them because of, among other reasons, the lack of people during the visit time, language barriers, or a few cases of no interest in participating due to the feel of not being able to contribute to the research. The territories to be investigated were selected based on the *Berlin* government’s information about community gardens in the city, digital media, and indications from interviewees and Flumen. There were sixteen community gardens investigated in *Berlin*, including two closed gardens.⁴⁶⁹

In *Rio de Janeiro*, there is no official data about the **universe** of community gardens, except for Hortas Cariocas’ gardens, forty-eight.⁴⁷⁰ Even so, this number was updated to fifty-six by the public agent interviewed and another source.⁴⁷¹ In addition, a collaborative map led by Horta do Vinil⁴⁷² had forty-four registers, including a few gardens from Hortas Cariocas, but mostly from civil society. This map was also not updated because it included an extinct garden (Children’s Garden, closed in 2017). The field visit was only possible in one garden in *Rio de Janeiro* because of the research re-scheduling and COVID-19 pandemic restrictions. Twelve community gardens, including a closed garden, were part of the study in Rio de Janeiro.

There is no official data about how many people are in community gardens in both cities. Nonetheless, in *Rio de Janeiro*, the media in 2023 announced 280 gardeners and experts in Hortas Cariocas.⁴⁷³ In this study, ten participants were from this program. There were **forty eligible participants**, twenty in person, in *Berlin*, and twenty online, in *Rio de Janeiro*. Moreover, before the pandemic, only one exploratory interview was conducted in person, in Morro da Formiga, *Rio de Janeiro*, to understand the Hortas Cariocas policy.⁴⁷⁴ The results did not include two in person interviews in *Berlin* because they were in/about an allotment garden

and a Community Supported Agriculture case. They are also urban agriculture, but not conceptually included in this study as community gardens. Consequently, in total, there were forty-two interviews. This number had a parameter of thirty-five interviews within five years of research about urban gardening in Philadelphia, the United States of America,⁴⁷⁵ and it was higher than the quantity observed in the literature review (usually around ten to twenty interviews for a study involving one city). Moreover, the “point of saturation”⁴⁷⁶ [36] was achieved.

Rio de Janeiro had one **purposive sample**⁴⁷⁷ from the city hall Environmental Secretary (Secretaria Municipal de Meio Ambiente da Cidade). The public agent indicated the contact of many participants. The other participants were from **random samples**⁴⁷⁸ from the field visits, indicated by who was already interviewed, or from the Brazilian National Council of Urban Agriculture (CNAU) and a workgroup on food sovereignty of civil society movement of Brazilian’s Cities (BR Cidades) Whatsapp group. The interviews were individual and happened between November 2022 and January 2023. Multiple field visits between August 2021 and November 2022 were conducted to find participants in *Berlin* by **random sample**. During the visits, the interviews were collected individually in the garden or scheduled for another day, in the same place, or in a café given weather conditions (rain, wind, snow) and lack of available time. In many cases, who was interviewed indicated the contact of another person to be interviewed. Moreover, there was one **purposive sample** from the Senate Department for Mobility, Transport, Climate Protection and the Environment (Senatsverwaltung für Mobilität, Verkehr, Klimaschutz und Umwelt) of *Berlin* to understand the point of view of the state.

In *Berlin*, three interviews were in Portuguese, and seventeen were in English. In *Rio de Janeiro*, all twenty participants spoke Portuguese. The data collection of each interview, including the questionnaire, lasted approximately one hour. For both cases, the data collected was stored, organized, and processed in the researcher’s personal Cloud.

Moreover, the **documentary** research had written and non-written sources. The **written** sources were from 1. municipal, state, and national *public archives* to find official documents (laws, reports), 2. *private archives* of (a) private institutions (political parties, churches, voluntary associations, newspapers) to find records, offices, correspondence, minutes, memorials, programs, communications, etc.; and (b) municipal, state, national and international public institutions in the search for international agreements, letters, reports, socioeconomic and demographic data. All situations aimed to search for charters, posts,

cartographies, and photos regarding the history of the garden, gardens' surroundings, activities, social events, the ethnic-racial composition, number of gardeners, physical structure, fees for the association, rules, working time, area division and size, quantity and destination of products, advertisement information, offered services and materials, presence of visitors (neighbors, tourists, etc.). Additionally, the **non-written sources** were images (prints, drawings, paintings, etc.), photographs, digital audiovisual media (videos available online), and cartographic material (maps) to observe the data not possible to collect due to limitations (described in section 5.9). When necessary, there was the translation of documents to English by the author.

4.6 Data organization

Each interview received a code to avoid identification to organize the interview and its related questionnaire data. In *Rio de Janeiro*, “RIOG” is for *gardeners*, and “RIOE” is for *experts*. In *Berlin*, “BERG” is for *gardeners*, and “BERE” is for *experts*. It is important to reinforce that the interviewees were distributed in multiple gardens and in the city hall. Then, they were not a unique group gardening in the same community garden, but a group of people interviewed for the same study. Each code was followed by a unique number representing a sequence of interviews. For example, RIOG7 meant the 7th interviewed gardener in *Rio de Janeiro*, while BERE3 meant the 3rd expert interviewed in *Berlin*. Moreover, the questionnaire data was organized on Excel sheets following the same logic.

Considering the amount of collected data, the limitation of time, and the lack of human resources, the complete audios were uploaded into MAXQDA qualitative data analysis⁴⁷⁹ software to facilitate the extraction of the *relevant* data. This means only the audio frames of themes linked to answer the central question and sub-questions according to the categories presented in the next section. The next step was the transcription of these relevant extracts. When necessary, they were translated into English by the author and adapted to preserve the expressions of the original language as much as possible. The noisy background, parallel talk, linguistic errors, repetition of words, and long pauses on the extraction were not considered during the transcription. Subsequently, there was the phase of data organization in Word files by groups. The data collected was ordered according to the codes “RIOG,” “RIOE,” “BERG,” and “BERE.”

Regarding documentary **material**, the data complemented the lack of information on gardens. The necessary information was separated by the garden to produce texts, tables, and

illustrations. Another possibility was to advance or illustrate the results, especially with photography.

In summary, the data collected was organized into data from interviews of *gardeners*, data from interviews of *experts*, data from questionnaires of *gardeners*, data from questionnaires of *experts*, and data from documents.

4.7 Data analysis

The strategy for data analysis was a combined approach between **case study**⁴⁸⁰ and **content analysis**⁴⁸¹ methods to produce information, insights, and arguments from the sources of evidence by combining deductive and inductive reasoning. This mix was necessary to overcome gaps generated by restrictively following just the case study analysis method (general analytical strategies, main methods of analysis, secondary methods of analysis)⁴⁸² for investigating data collected by the case study strategy. Also, the variant methodological approach is approved to investigate the commons.⁴⁸³ However, it is notable that the case study demands the definition of *units of analysis*⁴⁸⁴ to “offer an empirical interpretation of the theoretical subject of study.”⁴⁸⁵ It guides the discussion with previous studies with similar units of analysis to identify close or divergent results.⁴⁸⁶ They also generate the research validation.⁴⁸⁷ Moreover, “for collective action on the commons, the main unit of analysis can be defined as either the potential participants in collective action or the central objects of collective action.”

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In the similar meaning of coding of *register and context units*, the **content analysis method** proposes the **thematic analysis**, [37] where **thematic coding** [38] is a necessary step.⁴⁸⁹

In summary, the case study and content analysis are qualitative traditional proposals that follow the same crucial coding step differently. Integrating these views, terms, and processes, it was possible to systematically investigate empirical data to identify *patterns* in the coded data and build arguments to confirm or reject the hypothesis.

In light of that, the coding followed the division of the central research question (*How do notions of the human right to food connect to food sharing activities in community gardens in Berlin and Rio de Janeiro, and how can these connections' similarities and differences within and between cities be explained?*) in three sub-questions: 1. **What are the community gardeners' urban food sharing activities connected to the human right to adequate food?** 2. **In**

what ways are there similarities and divergences among these activities within each city and between them? 3. Why are there commonalities and distinctions among these activities within each city and between them? These sub-questions guided the search for evidence on the empirical data.

To answer the **first sub-question** (*What are the community gardens' urban food sharing activities connected to the human right to adequate food?*), a **deductive coding** was developed according to the integration of two pillars.

The first pillar was the conceptual legal framework of the key central components of the human right to food (section 3.2.1). This means an organization in four **themes**: 1. Food availability, 2. Food accessibility, 3. Food acceptability, and 4. Food sustainability, according to the concepts detailed in Chapter 3.

The second pillar, the **codes**, was **established** according to the adaptation of the urban food sharing activities in urban commons' initiatives⁴⁹⁰ (ANNEX A) to community gardens, given that it includes activities in community gardens not done in the exact same sense that is proposed ("providing spaces for supper clubs," "selling home-cooked food that generates income beyond the costs of production," and "providing opportunities for travelers to experience home-cooked meals with locals") because the list includes other initiatives, such as community kitchens, and food banks. Additionally, similar topics have a logic of division for the original study that makes no difference here, such as separating "providing skills around growing gifting" from "providing workshops around nutrition or growing" and "providing spaces for growing for free" to "providing spaces for people to grow food on a not-for-profit basis." Then, the original table is only helpful in dealing with the research question after some modification.

The conceptual integration and the table's adaptation generated the link of **1. Food availability** [39] to (a) transforming vacant land in (public) open spaces for growing on a not-for-profit basis, including the offer of acquiring food in exchange for labor; (b) establishment of a gardens' restaurant or café; and (c) learning and practicing nutrition, how to co-produce food, identifying places where gleaning or foraging might occur, and swapping seeds; **2. Food accessibility** [40] to (a) self-produced foodstuff, sharing it for free, buying it for a symbolic price, or acquiring it by swapping; and (b) income generation opportunities by gardening, social, administrative work, and vegetable sales; **3. Food acceptability** [41] to (a)

agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.), and (b) knowledge transfer about food culture, and **4. Food sustainability** [42] to (a) sharing of the excess foodstuff; (b) sharing of the excess foodstuff, gifting or swapping foodstuff; and (c) provision of (public) spaces for growing by the transformation of vacant land. This can be observed in the following Table 01.

Table 01 – Research sub-question 1

Theme (legal components of the human right to food)	Code (adaptation of community gardens' urban food sharing activities in urban commons' initiatives)	Result (integration and adaptation of theme and codes)
1. Food availability	(a) transforming vacant land into (public) open spaces for growing on a not-for-profit basis, including the offer of acquiring food in exchange for labor.	Community gardens' urban food sharing activities in relation to food availability
	(b) establishment of a garden restaurant or café.	
	(c) learning and practicing nutrition, how to co-produce food, identifying places where gleaning or foraging might occur, and swapping seeds.	
2. Food accessibility	(a) self-produced foodstuff, sharing it for free, buying it for a symbolic price, or acquiring it by swapping.	Community Gardens' urban food sharing activities in relation to food accessibility
	(b) income generation opportunities through gardening, social, administrative work, and vegetable sales.	
3. Food acceptability	(a) agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.)	Community gardens' urban food sharing activities in relation to food acceptability
	(b) knowledge transfer about food culture.	
4. Food sustainability	(a) sharing of the excess foodstuff.	Community gardens' urban food sharing activities in relation to food sustainability
	(b) sharing of the excess foodstuff, gifting, or swapping foodstuff.	
	(c) provision of (public) spaces for growing by transforming vacant land.	

Source: JARDIM, 2024.

The **second sub-question** (*In what ways are there similarities and divergences among urban food sharing activities connected to the human right to adequate food within each city and between them?*) originated from **deductive** reasoning based on the literature review affirmation of existing multiple possibilities related to community gardens that are similar and divergent from different cities⁴⁹¹ and the same city.⁴⁹² Then, based on interviews, questionnaires, and documents, the thematic analysis of each community garden's urban food sharing activity in relation to the right to food (theme) was conducted according to four codes of similarities/divergences within a city/between cities. Illustrating that, on food *availability*, there was study of the establishment of a gardens' restaurant or café. This activity was similar in *Berlin* and *Rio de Janeiro*. However, there were differences. In the case of *Berlin*, these

places offer non-profit sales of meals, such as in Prinzessinengarten,⁴⁹³ while in *Rio de Janeiro*, there is no sale, just gifting in public schools.⁴⁹⁴

Differently from the previous sub-questions, in reply to the **third sub-question** (*Why are there commonalities and distinctions among these activities within each city and between them?*), there was an **inductive** reasoning from the collected empirical material and the theoretical framework. The explanation for this change is that a deductive coding system would be imprecise or not embrace the multiple motivations for numerous similarities and divergences in a way that generated patterns, as required by a thematic analysis.⁴⁹⁵ Then, the inductive study was done based on the theoretical framework, interviews, questionnaires, and documents. For instance, following the previous example, the possible reason for the similarity of establishing a garden restaurant or café could be the nutritional role of a community garden. At the same time, the difference could have ground on the funding origin/institutional relations. On the one hand, the gardens with that type of establishment in *Berlin* are a private non-profit organization. On the other hand, in *Rio de Janeiro*, the gardens in schools offering meals have public funding.

4.8 Reporting and discussing the results

The results (Chapter 5) initially presented an overview of the community gardens' territory and participants included in the empirical study. After that, one section (Urban food sharing activities' relation to the human right to food's key components) is divided into four topics (food availability, accessibility, acceptability, and sustainability). Within each topic, the generic argument's structure is composed of an urban food sharing activity happening in both cities, the evidence (interview extract, photography, data from public documents, theoretical framework, etc.) that each case realizes the activity, and a reason for the similitude within the same city, and between cities. Moreover, the presentation includes eventual differences within the same city and between cities, along with their possible reasoning. The arguments are also exploring the previous sources of evidence.

The insights were interpreted in the context of the theoretical framework, [43] trends, or ruptures to existing literature to provide unprecedented contributions to Law and Sociology. This generated generic insights that can be applied in different contexts beyond *Berlin* and *Rio de Janeiro*.

4.9 Limitations, alerts, and quality control

Naturally, the study had some **limitations**, so it is important to declare that this study do **not** represent all urban food sharing activities in the totality of community gardens in *Rio de Janeiro* and *Berlin*; nor was it possible to generalize to the entire urban and peri-urban agriculture or assume it as the reality of the whole Global North and Global South. The reason is that the sample did not have a quantitative large-scale regarding participants and territories investigated. The sample did not include other stakeholders (real estate market, neighbors), and only a few public agents were available or answered the request for an interview. In some cases, the participants did not completely fill out the questionnaire. In some visited gardens in Berlin, no interview was conducted because of restricted access, such as the payment of an entrance fee in Klunkerkranich, or there were no gardeners on the spot. In a few cases, there was no interest or responsibility for an interview in English (Möchenpark and FriedaSüd), or the garden was not in the address informed online (Himmelbeet).

The period included intense empirical difficulties, such as the **COVID-19 pandemic** lockdown and travel restrictions, and the autumn/winter season in Germany (between October and March), when it is hard to find gardeners or the gardens are closed. Consequently, the empirical data collection was affected many times, and this required objectives and methodological modifications, including the change of the plans to produce empirical data in person in Rio de Janeiro.

Other issues were the lack of digital data in many gardens and language barriers to translating interview extracts from English to Portuguese. Also, there were obstacles to non-native English speakers translating their experiences, feelings, and attitudes into English. Although more economical (no costs of accommodation, food, transport), paper saver, and silent background than an interview in person, the online interview had many negative points, such as technical issues (unstable Internet connection, interviewees' uncharged mobile), delays, cancellations without notice, and difficult to find participants. In contrast, during the in person interviews, the participants were more focused.

Finally, regarding the methodology, it is important to note that the subjective data comprehension could be based on different reflexivity and background between researchers, so the interpretation of the data may also differ from others, potentially causing divergent results.

Because of that, to avoid it and guarantee the quality control of the interview guide (APPENDIX A) [44] and sociodemographic questionnaire (APPENDIX B), it is important to mention that they were developed with the support of the researchers of Mentalities in Flux

Junior Research Group (Flumen),⁴⁹⁶ at the Friedrich-Schiller University, in Jena, Germany. This was done in observation of their previous experience. The preliminary literature review and theoretical framework also assisted this construction. After developing these materials, the research project was submitted and approved by the **ethics committee** of *Plataforma Brasil* (Process Id. CAAE P 49263021.4.0000.5282) (ANNEX B), as required by Brazilian law for the interviews in Brazil.⁴⁹⁷

Furthermore, to understand the starting point of **subjective perspective**, the author declares to be born and raised in Brazil, male, cisgender, gay, lower middle class, without political or religious affiliation, starting doctoral studies at 24 years old, with a bachelor's degree in Law, and a master's degree in Urban Development. Moreover, it is important to announce the lack of gardening experience and no participation in any community gardens' decision processes, nor being an official member of any garden association. Finally, it is pertinent to cite the one year living in *Rio de Janeiro* (2019) and no period as *Berlin's* inhabitant, just some short field visits of a few days.

However, despite these research limitations, it was possible to generate results that were interpreted and led to conclusions, as presented in the next chapters.

5 RESULTS AND DISCUSSION

The theoretical framework pointed out that community gardens are urban commons transforming vacant urban land. During this process, the new relation to land and food (resources) embraces people (commoners) doing food sharing activities (commoning) with social, economic, and environmental dimensions developed in connection to the human right to adequate food. To confirm this, the specific objective “c” is to *characterize the profile of territory, gardeners, and experts related to Berlin and Rio de Janeiro community gardens and the urban food sharing activities connected to food availability, accessibility, acceptability, and sustainability*. For that, a methodological approach to develop an empirical case study was detailed in Chapter 4.

This chapter presents and discusses the findings. It begins with two significant sections for each city under investigation. The first section provides an overview of the pertinent socioeconomic and urbanistic data required for the analysis. This is followed by an exploration of the territorial, socioeconomic, and demographic details concerning community gardens, gardeners, and the experts who took part in the empirical research. Subsequently, the chapter delves into a section dedicated to urban food sharing activities related to each of the key components of the human right to food, encompassing food availability, accessibility, acceptability, and sustainability. Finally, there is the chapter resume.

5.1 Community gardens, gardeners, and experts

The following sections resume the territories investigated and the participants (*commoners*) of interviews and questionnaires. Nonetheless, before presenting and discussing the results, it is relevant to point out that they were not one group gardening together in the same community garden, but rather a group of people interviewed for the same study. The *experts* were those who had graduated or had technical education related to gardening, agriculture, or urbanism, who were public agents related to community gardens, who developed or were developing research about urban agriculture, community gardens, and food, or who had professional relations with paid work in a community garden. The *gardeners* were the people who did not fit into these categories, so they were doing the activity as amateurs.

5.1.1 Overview of socioeconomic and urbanistic data relevant to the case of Berlin

Socioeconomic data reveals low food insecurity and poverty in Germany.⁴⁹⁸ On the one hand, regarding **poverty**, [45] “17.3 million people were affected in 2022. 14.7% of the population were at risk of poverty, 6.1% were affected by severe material and social deprivation, and 9.7% were living in a household with very low work intensity.”⁴⁹⁹ Then, poverty exists, “albeit less spectacular and less visible⁵⁰⁰ forms than in the Global South.”⁵⁰¹ On the other hand, “**food insecurity** could be an intermittent reality for some 7% of Germany’s population. The number of food banks in Germany increased from 480 in 2005 to 916 in 2013, and 60,000 volunteers currently serve food to 1.5 million so-called ‘regular customers’.”⁵⁰² No specific data was identified about poverty and food insecurity in *Berlin*, but an indicator of food insecurity⁵⁰³ is that 74,000 people monthly have the support of a charity food bank (Berliner Tafel and Berliner Kirchengemeinden Ausgabestellen).⁵⁰⁴ Additionally, there is generic information about **food deserts** in Germany, including in *Berlin*.⁵⁰⁵ Food affordability is consolidated in Germany. Moreover, quality and safety, as well as sustainability and adaptation, are at good levels. In contrast, food availability calls attention due to a moderate level (ANNEX E).⁵⁰⁶

The **COVID-19** incidence was homogenous among the neighborhoods,⁵⁰⁷ and official data reports a growing city economy rapidly recovering from the COVID-19 pandemic economic effects.⁵⁰⁸ Nevertheless, the “COVID-19 crisis and the effects of inflation have deepened the chasm between rich and poor”⁵⁰⁹ and affected the food banks (temporarily closed).⁵¹⁰ In 2023, there is a 3.2% **unemployment** rate in Germany,⁵¹¹ while in *Berlin*, it is an 8.7% rate.⁵¹² “The social integration of specific vulnerable groups (migrants, disabled, older people at risk of poverty, drug addicts)”⁵¹³ is a challenge in *Berlin*. This city has an elevated city development index (ANNEX C, Figure 05). Nonetheless, there are regional disparities (ANNEX C, Figure 06) [46], including Neukölln, one of the poorest areas of Germany.⁵¹⁴ This neighborhood had the stigma of a slum, and it is currently under gentrification.⁵¹⁵

Regarding **vacant land**, during World War II, many buildings, especially in the eastern inner-city districts, were damaged and left unrepaired. After the fall of the Berlin Wall in November 1989, the public housing policy neglected the old stock, and planned construction projects failed, leading to empty lots. Moreover, there was a complex process for the restitution of dispossessed properties in former East Berlin, so they remained unused and in disrepair for years. Furthermore, economic changes led to the closure of industries in both East and West Berlin, leaving behind empty industrial spaces. In the 1990s and 2000s, the construction of

office buildings generated a surplus of vacant office space.⁵¹⁶ However, the vacant land scenario is decreasing. There were 11.2% vacant areas in 2010 (ANNEX C, Graph 01).⁵¹⁷ Recently, the concept was updated to “**fallow area**,”⁵¹⁸ [47] and it is part of different neighborhoods (ANNEX C, Graph 02).

According to the Inventory of Green and Open Spaces of *Berlin* (2020),⁵¹⁹ **agriculture** happens in the **outskirts** of the city (illustrated by the ANNEX C, Figure 07), and **urban agriculture** has as visible important expressions the allotment gardens.

Areas used for agricultural purposes, which account for almost 9 % of the inventory of open space, are found particularly in the northeastern area (Pankow and Weißensee). Other agricultural areas are located on the remaining outskirts. **Allotment gardens**, which account for some 8 % of the open space inventory, are found almost exclusively outside the City Rail Circle Line, albeit still in the vicinity of the city center in some cases. Often, they are located near canals, rivers, and railway lines. The currently unused fallow areas are distributed throughout the entire urban area, particularly along railway lines and bodies of water. They account for some 9 % of the total open space. The few remaining **Tree nurseries and horticultural areas** are found predominantly on the outskirts, while areas of the categories.⁵²⁰

In addition, **community gardens** are also representative (ANNEX C, Figure 08) despite the unclear official data about them. The government program for community gardens (Berliner Gemeinschaftsgarten-Programm) is part of the Berlin Senate Department for Mobility, Transport, Climate Protection, and the Environment. The concept of community gardens adopted by the city government is that.

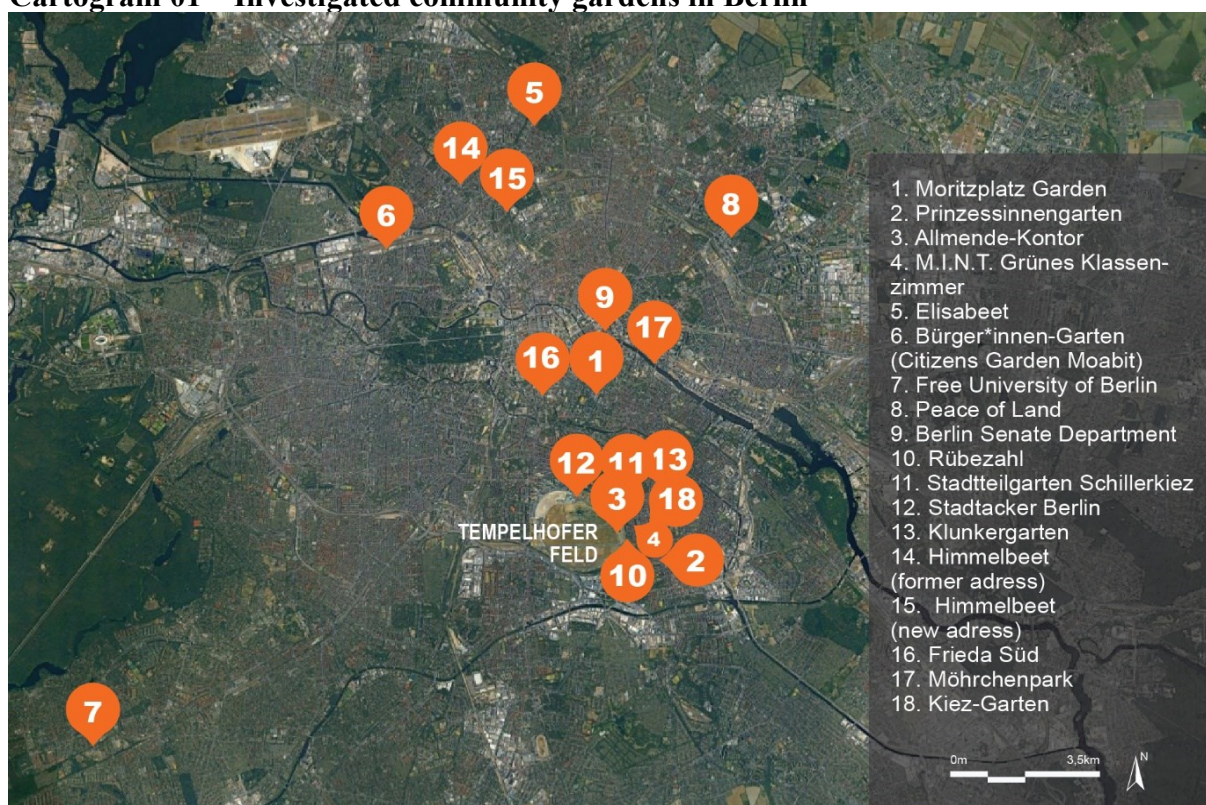
In Germany today, many community gardens are about joint design, participation, and an active commitment to the environment. In contrast to allotment gardens, community gardens are collectively managed gardens that usually occupy a smaller area of land shared by all gardeners and are managed according to the criteria of organic farming. In almost all cases, community gardens are run by an open, regular plenary session or an elected board. Many community gardens pursue socially integrative goals and, in addition to gardening in the narrower sense, are also committed to passing on environmental knowledge.⁵²¹

Urban agriculture is under pressure for other uses, such as housing and leisure,⁵²² especially considering the reduction of available land (fallow area) in the last years due to the construction of new buildings.⁵²³ This has been raising the dispute for land.

5.1.2 Territorial, socioeconomic, and demographic information of community gardens investigated in Berlin

There were sixteen community gardens investigated in *Berlin*: Moritzplatz, Prinzessinnengarten, Allmende-Kontor, Mathematik, Informatik, Naturwissenschaft und Technik (M.I.N.T.) Grünes Klassenzimmer, Elisabeet, Bürger*innen-Garten (Citizens Garden), Freie Universität Berlin (Free University of Berlin), Peace of Land, Rübezahl, Stadtteilgarten Schillerkiez, Stadtacker Berlin, Klunkergarten, Himmelbeet, Frieda Süd, Möhrchenpark, Kiez-Garten. There was also an interview and questionnaires with a representative from the Senate of Berlin. The total representation of field visits on the city level can be observed in the following Cartogram 01, while the individual view is presented in Appendix D and E.

Cartogram 01 – Investigated community gardens in Berlin



Source: JARDIM, 2023.⁵²⁴

These gardens were former **vacant land** with various past uses (store, part of a cemetery, side area of a train station, side area of a riding hall linked to a university, porcelain factory, closed airport, mall rooftop, sports area, and public square, former flower market). They only became community gardens after **2009**. The land was mostly owned by the State but managed by civil society through voluntary associations. Some gardens had fees for

maintenance or renting plant beds. A security deposit was required to access the land for more than half of the gardens. A few gardens experienced stressful situations such as forced or voluntary moves. (Table 04, APPENDIX D).

Interviewees mentioned 36 different garden products, with container-based cultivation being common. Plots are mostly collectively shared, with varying numbers of people in the core team (7-30) and gardeners (10-300). This information can be observed in Appendix D.

There were 20 participants (*commoners*) in interviews and questionnaires, nine *gardeners* and 11 *experts*.

Table 02 - Interviews and questionnaires participants in Berlin (2021-2022)

CATEGORY	STAKEHOLDER	CONNECTION TO COMMUNITY GARDEN	QUANTITY	
Gardener	Civil society	Non-professional, non-researchers, and non-public agents	9	
Expert	Civil society	Professional	6	11
		Researcher	4	
	Public sector	Public Agent	1	
TOTAL			20	

Source: JARDIM, 2023.

The participants' average age was 33, and most were female. They were well-educated (undergraduate and graduate) and mostly had no religious or political affiliations, although some expressed interest in left-wing, socialist, or green political parties. The average monthly household income was 891 Euros (around 943 United States Dollars). In terms of origin, Germans were the prevalent nationality. However, there were also some participants from other countries (United Kingdom, France, Luxembourg, Belgium, Italy, Brazil, and the United States of America), including those with dual citizenship, and very few were born and raised in *Berlin*.

Most of them lived in apartments, and about half of them had access to a green area. Their food diet was mostly vegetarian, with little reliance on meat. The group comprised people who received some income from the garden (hired as professionals or volunteers with symbolic financial support); a major part were volunteers without financial support.

On average, they were gardening for 4.4 years, with less than half of the interviewees being involved with the garden since its foundation (including the move to a new address). For half of the interviewees, the garden where the interview took place was their first contact with community gardening. They consumed products from the garden, although their diet was not solely dependent on it as they mostly bought food from supermarkets. The products were sold to non-profits to contribute to the project's maintenance in a few cases. They lived about 3 km from the garden, with more than half of them preferring bikes as a mode of transportation.

The monthly hours spent in the garden varied greatly between seasons. Less than half of the interviewees mentioned the relation of food production to ancestral practices and knowledge. For the future, they mostly had positive expectations of the community gardening activity growth but also desired more governmental support and changes in the society's mentalities and practices.

Most of the interviewees did gardening activities (watering, planting, harvesting, caring for graves, offering information, selling products, cleaning the material from the last season and not want green, preparing compost, filling the water tanks, pruning, maintaining plant beds, painting), and social activities (talking to neighbors, talking to gardeners, meeting friends, making new friends, neighborhood, enjoy the community, community care, meet new people). The administrative activities (moderating events, organizing events, coordinating volunteers, supporting other gardens, checking contracts and finances) were shared between *gardeners* and *experts*.

When observing the internal distribution of *gardeners* and *experts* in *Berlin*, it was possible to note that they shared **similarities** in terms of age, gender and nationality distribution, absence of religious or political affiliations, food diet mostly without meat, proximity from home to the garden, mobility options to reach the garden, and mentions of food production about ancestral practices and knowledge. Moreover, the *gardeners* and *experts* were doing gardening, administrative and social activities. However, one notable **difference** is that, among the *gardeners*, there were "gender-diverse" interviewees, but the same could not be seen among the *experts*. In addition, *experts* had a monthly household income of around 1,057 Euros (approximately 1.127 United States Dollars), while *gardeners* had a revenue of about 742 Euros (about 790 United States Dollars). The gap between them was 315 Euros (approximately 336 United States Dollars). Also, more *gardeners* missed green areas in their apartments. The core team (co-leaders, co-organizers) had more *experts* than *gardeners*, and only a few interviewees rented a plant bed.

5.1.3 Overview of socioeconomic and urbanistic data relevant to the case of Rio de Janeiro

Regarding 2022, **socioeconomic data** indicates that in Brazil, the **extreme poverty** (under 208,73 Reais per monthly income, around 40 United States Dollars) rate was 6,4%, while the **poverty** rate was 33% (under 665,02 Reais per monthly income, around 129 United States Dollars).⁵²⁵ The city economy is growing.⁵²⁶ However, in 2021, Rio de Janeiro State had around 1.2 million people in **extreme poverty** and 2.8 million people in **poverty**.⁵²⁷ In 2023, the **unemployment** rate in Brazil is 8%,⁵²⁸ and in the city of *Rio de Janeiro*, it is 9.3%.⁵²⁹

Food insecurity in Brazil is moderate (ANNEX D, Graph 03),⁵³⁰ and the **COVID-19 pandemic** raised the insecurity levels (ANNEX F).⁵³¹ The **COVID-19** incidence in the city of *Rio de Janeiro* was higher in low-development neighborhoods.⁵³² There are **food deserts** in *Rio de Janeiro* city. In low-income areas, health food establishments sell fresh and mixed foods. The same is true for unhealthy food establishments selling ultra-processed foods. However, even richer areas can face problems of lack of access to healthy food establishments.⁵³³ The access to street fairs of organic food is restricted (ANNEX D, Figure 05). Food affordability, availability, sustainability, and adaptation are moderate, while food quality and safety have very good levels (ANNEX F).

The city of *Rio de Janeiro* has a low **city development** index (ANNEX D, Figure 06), and within it, there are many development disparities (ANNEX D, Figure 07), especially considering that “the territorial and socioeconomic structure of the city presents characteristics very specific, with the existence of poorer regions within more developed areas of the city.”⁵³⁴ The Census 2010 informed that 19,28% of 2,352,594 houses were part of **Favelas and Urban Communities** (low-income areas) (ANNEX D, Cartogram 31).⁵³⁵ The city **population** is around 6.7 million people. 1,4 million residents in Favelas and Urban Communities, and around 65% of them were registered as **Black and Brown** people.⁵³⁶ The city has violence (ANNEX D, Figure 08) and illegal housing constructions (ANNEX D, Figure 09).

Concerning **vacancy** of housing units, there is a rising level in the city of *Rio de Janeiro*.⁵³⁷ From 2010 (193,682 vacant properties) to 2022 (388,345 from a total of 2,920,302), the rate grew by 100,5%. “Experts point to reasons such as high prices, pandemic, migration due to violence and growth in the number of housing units.”⁵³⁸ There are strong correlations between abandoned establishments and protected properties (historical and cultural value) and socioeconomic factors, such as income, rental value, and distance to the center.⁵³⁹ For instance, in the city center, the city hall identified 60 vacant properties, prioritizing 40 of them for future

actions.⁵⁴⁰ In summary, the phenomenon represents the “reminiscences of large urban interventions, restrictive legislation regarding uses or works on land, overlapping of powers and interests and displacement to the south zone of investments.”⁵⁴¹ The city has vacant land spread on the entire territory (ANNEX D, Cartogram 32).

Agriculture happens in the **outskirts** of the city, focusing on the western zone⁵⁴² (ANNEX D, Cartogram 33), and **urban agriculture** has as important expressions the traditional and family farming. In addition, there are **community gardens**. The city hall program (Hortas Cariocas, Environmental Secretariat) has 56 gardens in low-income neighborhoods and schools (ANNEX D, Figure 10). Moreover, the city has around 45 other initiatives mapped by the civil society (ANNEX D, Cartogram 34).

5.1.4 Territorial, socioeconomic, and demographic information of community gardens investigated in Rio de Janeiro

There were 12 community gardens investigated in *Rio de Janeiro*: Horta Carioca Morro do São Carlos, Horta Carioca Morro da Formiga, Horta Carioca Morro do Borel, Horta Carioca Nação Rubro Negra, Horta Carioca Comunidade Palmeirinha (Madureira’s Park), Horta Carioca Jardim Sulacap, Horta Carioca Dirce Teixeira (Jardim do Anil), Horta Carioca Escola Joaquim Fontes (Cidade de Deus), Horta Carioca do Morro do Salgueiro, Federal University of Rio de Janeiro, Quilombo Dona Bilina, Quilombo das Caboclas. In addition, there was an interview with a representative from the city hall and from Advice and Services for Alternative Agriculture Projects (Assessoria e Serviços a Projetos em Agricultura Alternativa, AS-TPA). The total representation on the city level can be observed in the following Cartogram 02, while the individual level is presented in Appendix D and F.

In general, before **2006**, these territories were **vacant land** with different former usages (dumping ground in a demolished prison area, wasteland in a public space, a place in a public school and university, a green area threatened by illegal housing construction or under energy transmission line, abandoned private house, a private popular museum). The state mostly owned the land they occupied, but the civil society almost completely handled the possession. There was no fee to do the gardening activity or access the land (security deposit) (Table 05, APPENDIX D).

Cartogram 02 – Investigated community gardens in Rio de Janeiro



Source: JARDIM, 2023.⁵⁴³

Since the foundation, less than half of the gardens have suffered from a stress situation. This can be exemplified when a garden was voluntarily and permanently closed, a garden was voluntarily closed and recreated in another place, a garden was threatened to be closed by criminal agents (militia/drug dealers), and a garden lost part of the territory for illegal agents. Additionally, more than half of the gardens had a stress situation related to all gardens, such as unsure maintenance of public funding in Hortas Cariocas.

The participants cited 66 different garden products. All these products mostly came from ground-based cultivation directly on (regenerated) soil. All plots were collectively cultivated. There was no case of a rented plant bed. The number of people in the core team varied between 1-5, while the regular gardeners varied between 1-10. Just a few pieces of information were available online about these gardens.

There were 20 participants (*commoners*) in interviews and questionnaires: 11 *gardeners* and nine *experts*.

Table 03 - Interviews and questionnaires participants in Rio de Janeiro (2022-2023)

CATEGORY	STAKEHOLDER	CONNECTION TO COMMUNITY GARDEN	QUANTITY	
Gardener	Civil society	Non-professional, non-researchers, and non-public agents	11	
Expert	Civil society	Professional	3	9
		Researcher	3	
	Public sector	Public Agent	3	
TOTAL			20	

Source: JARDIM, 2023.

The median age of participants was approximately 52 years old. Among them, there was a slight gender imbalance. There were a few more participants who self-registered as men. No interviewee registered as gender-diverse. Mostly had high- or medium-level (finished high school) education. According to the ethnic-racial self-identification, there was a balance (the same amount) of answers to "Black or Brown" and "White." However, there was an underrepresentation of "Indigenous." The few cases of political affiliations were linked to left-wing parties. Regarding nationality, the group was almost entirely composed of Brazilians born and raised in Rio de Janeiro. Most were living in houses, while a few lived in apartments. A small number of interviewees were living in slums. Almost all participants reported having green areas at home. Regarding their food diet, half of the participants ate meat regularly (omnivorous or pescatarian), a few did not eat it (vegan or vegetarian) and avoided it (flexitarian). From the whole group, more than half of the participants received income related to community gardens through the Hortas Cariocas program or by offering technical assistance to urban agriculture. The core team (co-leaders, co-organizers) had more gardeners than experts. No gardener or expert from the core team had certified education or professional skills directly related to agriculture or gardening. There were no plant bed tenants nor fee payments for land access.

Their community gardening experience time medium was approximately eight years. A significant part of co-founded gardens. For most gardeners, the garden where they work was the first contact with community gardening. The experts mostly did not work with a specific community garden. They all ate products from the garden, but their diet did not depend exclusively on the garden. The whole group often bought food in supermarkets but preferred buying from street fairs. Most interviewees mentioned exchanging products, seeds, cutting, and knowledge with gardeners and experts from the same garden. All interviewees reported that the

outcomes of the garden were gifted, mostly for poor neighbors, visitants, and schools (students, teachers, workers, and parents of students). A few interviewees expressed that their garden sold part of the products, but by symbolic prices such as 2 Reais (in United States dollars, 40 cents) for any product to reinvest in the project (seeds, materials) and increase the financial support from Hortas Cariocas. Many interviewees (14/20) complained about the lack of biodiversity or physical and economic access (food segregation) to organic food in supermarkets or street fairs for themselves or other people.

The participants lived around 1 km from the garden. Their most used mobility option to go to the garden was by feet. There were just a few answers to other possibilities (public transport, by bike, and by car). The monthly hours spent in the garden did not fluctuate between seasons. More than half of the participants mentioned the relation of food production to ancestors' practices and knowledge, especially ancestors that migrated from other areas of Brazil (States of Minas Gerais, Rio Grande do Sul, Ceará, Paraíba) or during early childhood in other countries, Germany and Portugal.

Most of the *gardeners* did gardening activities (watering, planting, harvesting, care of graves, offering information, selling products, cleaning the material from the last season and not wanted green, preparing compost, filling water tanks, pruning, beds maintenance, painting), and social activities (talking to neighbors, talking to gardeners, meeting friends, making new friends, enjoying the community, community caring, meeting new people), while the *experts* were focusing on social, and administrative activities. This included coordinating gardeners, mediating conflicts among gardeners, requesting material for the city hall (Hortas Cariocas), soliciting donations, and crowdfunding (other gardens not from Hortas Cariocas).

Between *Rio de Janeiro's gardeners* and *experts*, there were **similarities** in age, distribution of gender and nationality, no political affiliation, food diet with meat, distance from home to garden, mobility options to go to the garden, and number of mentions of the food production's relation to practices and knowledge of ancestors, and destination of products (self-consume, and donation). Furthermore, *gardeners* and *experts* did social activities. However, the **difference** was that *experts* (medium of approximately 46 years old) were younger than *gardeners* (medium of roughly 58 years old); *expert* was a group composed of people with high levels of education, while *gardeners* had more people with medium education. Additionally, there were more *experts* without religion than *gardeners*. About ethnic-racial profiles, *experts* were mostly composed of people who self-declared "White." At the same time, *gardeners* were mostly reported to be "Black and Brown" people; it was the only group with an Indigenous

representative. In addition, *experts* had a monthly household income of around 10,760 Reais (approximately 2,190 United States Dollars), while *gardeners* had a gain of roughly 3,250 Reais (about 661 United States Dollars). The gap between them was 7,510 Reais (approximately 1,530 United States Dollars), so the *gardeners* earned almost four times less than the *experts*. Almost exclusively, the *gardeners* reported complementing their monthly income (from retirement pension or another job) with the garden income. Finally, *gardeners* were focused on gardening, while *experts* centered on administrative activities.

5.1.5 Preliminary discussion

Considering the **literature**, the results match the occupation of urban vacant land (unused, underutilized, and unbuilt soil) (APPENDIX D) without specific spatial configuration (size and design) (APPENDIX E, F), highlighting social, economic and environmentally vulnerable areas in *Rio de Janeiro*.⁵⁴⁴ Moreover, the results also identified people related to community garden has socioeconomic status that varies greatly from local to local, even within the same country,⁵⁴⁵ despite the differences being less expressive in *Berlin*.

In addition, the results indicated the same possibilities for motivation as those already identified by previous studies,⁵⁴⁶ the ones benefiting socialization and environmental purposes in *Berlin*, while in *Rio de Janeiro*, there is a special contribution to food security and ecological regeneration/preservation. Despite that, in *both cities* the data reveals the **connection human-nature, the sense of belonging to a group, and the altruistic motivations** related to urban commons.

An important contribution to previous research is that more than gardening and social activities⁵⁴⁷, administrative activities are also crucial elements of community gardens. The unexpected result was regarding community gardens in cemeteries in *Berlin* (Prinzessinnengarten and Elisabeet).

Given the above information, this research offers valuable **insights** to support more research and public policies based on the diverse universe of community gardens in *Berlin* and *Rio de Janeiro*, focusing on socioeconomic, demographic, and legal dynamics, practices, and the profiles of participants.

5.2 Urban food sharing activities' relation to the human right to food's key components

The following sections are organized into four parts according to the human right to food's key components and their respective urban food sharing activities.

5.2.1 Food availability

The theoretical framework and the empirical evidence indicate that urban food sharing activities in the investigated community gardens of *Berlin* and *Rio de Janeiro* have a relation to food availability. This can be observed when considering that physical availability means fulfillment of nutritional requirements of individuals based on demand, allowing for the freedom of choice in production (including self-sufficiency) and distribution (being accessible for purchase in markets and stores).

In this sense, a **common** activity in *both cities* is **transforming vacant land into (public) open spaces for growing on a not-for-profit basis, including the offer of acquiring food in exchange for labor**. This mostly depends on the governmental structure and city regulation, but *both cities* also have gardens in private areas. For instance, this is institutionally organized in *Rio de Janeiro's* city hall as Agroecology and Organic Production Management. At the same time, *Berlin's* government has an Editorial Platform called Productive Urban Green – Community Gardening. This raises a **common** point between these cities: the territorial conflicts before establishing a community garden. Even so, these problems are related to **different** agents and (il)legal relations that can hinder the successful establishment and maintenance of community gardens.

Initially, interviewees reported that community gardens in *Berlin* faced challenges in navigating complex bureaucratic administrative processes and regulations related to land use or permissions. Even when the land access was authorized, there were complicated and restrictive rules. Also, there was a lack of guidance from public authorities and the core team for newcomers about how to get involved, what is expected of them, how the garden operates, etc., and missing participation in the city hall's decisions affecting the garden was more often mentioned in *Berlin*. The **motivation** can be related to the insufficient number of employees on the city hall and the garden's core team considering the number of gardens and *gardeners*, including the ones doing the activity in a temporary or non-associated form. Also, an *expert* mentioned the pandemic as a barrier to popular participation.⁵⁴⁸ Other reasons affecting participation can be the lack of available digital information on many gardens and the language

barriers (half of the interviewed *gardeners* were not Germans) impeding effective communication and collaboration among community garden participants or between the garden and local authorities.

For the interviewees, a singular case of opening a growing space in *Berlin* was extremely relevant. It is the referendum about the new land use for Tempelhofer Feld. The airport closed in 2008, where five of the investigated community gardens in this study are situated (APPENDIX D). The citizens claimed to access the area and organized demonstrations. As a result, there were conflicts with the police in 2009.⁵⁴⁹ According to the interviewees and the literature, the reason for the dispute on land use can be found in urban land commodification.⁵⁵⁰ “The gardens are very vulnerable to neoliberal policies because voluntary practices are seen as temporary.”⁵⁵¹ In this sense, a *gardener* pointed out that with temporary land use contracts, after contributing to the co-production of a better neighborhood and the rise of the land value,⁵⁵² obstacles such as increased land mortgage for a new contract already caused a garden’s forced moving.⁵⁵³ In the case of Tempelhofer Feld, the area is central, wide, and equipped with infrastructure, a possible “gold mine.”

This inspired the imagination of transforming the urban land from the perspective of the real estate market,⁵⁵⁴ resulting in political conflicts. Despite the citizen’s choice in the referendum of 2014, in 2019, the Free Democratic Party (FDP), Social Democratic Party of Germany (SPD), and Christian Democratic Union of Germany (CDU) planned a new referendum to approve a peripheral development that has been repeatedly discussed against the background of the lack of housing in the city. The idea was to build 12,000 apartments for moderate development combined “with social housing.”⁵⁵⁵ The Alternative for Germany (AfD) and Left and Greens coalition partners are against the housing plan, arguing that “the approval comes from the real estate and business sectors.”⁵⁵⁶ Some interviewees realized the above project would face the risk of elevating the area’s gentrification.⁵⁵⁷

Moreover, community gardens may be vulnerable to exploitation by entities looking to appear environmentally conscious (greenwashing) without genuinely supporting the garden’s mission.

These practices [community gardens] are related to gentrification, but there is also something else: greenwashing use in the image. But even though these green infrastructures are also sometimes transformed into sports areas, etc., there is enormous and increasing pressure on the ground in Berlin. This has been happening since the fall of the wall.⁵⁵⁸

Even so, the public housing company of *Berlin*, Dewego, has been responsible for opening a few community gardens inside communal areas of its social housing buildings, such

as in Kiez-Garten. This was in partnership with residents and technical support of Prinzessinnengarten.

A corporate housing company owns this place. They thought that together, with a social part of the administration, it would be nice to have a community garden here, and they made a call. We applied for that call, and today, it was the first time we announced to the neighbors that there would be a community garden here. Then, our job is to help them if they want it, to have it, to run it, to imagine it, and to build a community garden. Our job is to help give that garden birth, but today was the first time people knew about it. There was not a community here beforehand. Who said we want a garden? So, we will check what people want. They might not need a garden if they want to have a place to play with their children. This is a beautiful place for a garden. I think it could work. And I think there are enough people who are kind of interested. I think it is not an easy place here. We found some needles in the morning. There was someone sleeping in the bushes. [...] The people who are supposed to run the community garden need to feel a sense of ownership before the garden, which I think we can only really do by letting them decide and not having an idea already and then trying to bring it to the people. Just really giving our experience, not deciding what is going to happen.⁵⁵⁹

During the inauguration day of Kiez-Garten (2022), it was possible to observe the participatory panel for decision-making. An expert created the categories because of her experience in Prinzessinnengarten and other gardens. They were just an example of the possibilities that the garden could offer. Any person could pin on the board as many red dots as they wished. So far, the garden did not have a proper name because it was going to be decided collectively during the event (that is why the title of this topic is more generic). They also voted for other possibilities for the garden, such as culture offers, relaxing areas, and a hotel for bees.⁵⁶⁰ This reveals the **social co-production of the space** of urban commons.

In *Berlin*, as a barrier to creating food growing spaces, interviewees also reported episodes of prejudice regarding urban agriculture and racism from district managers (responsible for green areas) against community garden initiatives and gardeners in general. For instance, in one of the cases, a district manager was “from a right-wing political party that tried to keep us out by bureaucracy reasons.”⁵⁶¹ This represents legal ways to create discriminatory obstacles to opening a growing space. One of the **motivations** can be based on the number of non-German gardeners using the space as a social activity, as registered by the sociodemographic questionnaire of this research and in the literature.⁵⁶²

Moving to the topic of starting public growing space in *Rio de Janeiro* by the local government (Hortas Cariocas), it is important to mention the initiation of a garden project occurs when an individual or a group submits a formal request to the Environment Secretariat at City Hall. After conducting a thorough feasibility assessment, if the project is granted approval, a specific budget is created to provide financial support to gardeners, which includes

appointing a leader for each garden and acquiring the necessary materials and tools. Once the grant recipients are selected and the required equipment is procured, the actual implementation of the garden project commences. This phase involves the allocation of funds and continuous technical supervision.⁵⁶³

Consequently, the lack of participation in decisions was not a relevant problem for the participants. The motivation is probably because the Hortas Cariocas gardens depended on the neighbors' request, a strategy of permanence, and local acceptance of the garden. In the garden, the gardeners have the freedom to decide many food growing issues (what, when, and where to plant, etc.) horizontally and democratically,⁵⁶⁴ as illustrated by a gardener: "Even though the other gardeners have more time here, we always work in harmony, right? If something is wrong, I hold a meeting, and we get together and discuss the garden. 'What do you think could be done?' everyone gives a suggestion, and we choose the best one, right? [...] Everyone suggests something, everyone should give their opinion."⁵⁶⁵ This is a demonstration of the democratic process during the governance of commons.

Nonetheless, *gardeners* did not feel they participated in the choice of the Agroecology and Organic Production Management administrator, a position held by a person appointed by a politician and, consequently, vulnerable to political pressure. The politicians also influence whether a garden (land access) is open according to financial and electoral interests,⁵⁶⁶ but the same influence does not apply to a garden closure.

Regarding the guidance for newcomers, the gardens in private areas are in quilombos, where knowledge sharing is part of their tradition. At Hortas Cariocas, newcomers are taught by a leader in each garden. Even so, some *experts* reported Hortas Cariocas' limited human and financial resources to support all gardens. Concerning language, only two foreigners were interviewed in *Rio de Janeiro*, one from Portugal and one from Germany, but the latter had lived in Brazil for decades and was fluent in Portuguese. Therefore, unlike the scenario in Berlin, the language barrier is not listed as an issue related to the public authorities or core team.

Furthermore, a clear **difference** between *both cities*' growing spaces is the location, the surrounding urban infrastructure of the former vacant area, and the landowner. In *Berlin*, the gardens are usually central, in areas with easy access via paved streets, availability of different modes of public transport, electric lighting, sewage system, and afforestation. Flat, well-defined quadrilateral terrains of public parks and plazas or private cemeteries exist (APPENDIX E).

Rio de Janeiro's gardens are more on the city's outskirts, usually improvised in public green areas close to the Tijuca Forest, plazas, and schools, without the previously mentioned

urban infrastructure. There is a variation of flat and inclined terrains due to the local geography where most of the slums are situated as alternative solutions for the housing crisis, and the plots have quadrilateral and triangular designs (APPENDIX F), given the occupation of vacant land, wherever it is.

One more **divergence** regarding spaces for growing is that in *Berlin*, there are some cases of gardener's membership fees to use a plot (from 15 to 150 euros, as can be observed in APPENDIX D), and some plots for individual or collective rent. In the opposite direction, in *Rio de Janeiro*, there is no fee in any case and no plots for rent. The possible **explanation** for this difference is the funding. In *Berlin*, one of the state's requirements to allow land access in some cases was a deposit, as identified by interviewees of Moritzplatz, Allmende-Kontor, M.I.N.T. Grünes Klassenzimmer, and Himmelbeet (in this last case, 60,000 euros⁵⁶⁷). Also, many gardens have no funding source other than association fees, plot fees, events, or, in rare cases, a store or restaurant. In *Rio de Janeiro*, the funding comes from public resources (city hall for Hortas Cariocas) and self-funding (such as selling products on a non-profit basis for the other gardens, donations, and institutional funds).

Sharing for free, selling on a non-profit basis, and swapping foodstuff “liberated,” foraged, or gleaned is common in *both cities*. In *Berlin*, this can be noticed in the interviews' citation: “When do you need, you can come here and collect food. Everybody is welcome.”⁵⁶⁸ Another gardener shares this: “If someone is hungry and plants grow, they can eat. It is their right to go there and get their potatoes out of the soil.”⁵⁶⁹ In *Rio de Janeiro*, food gifting is one of the purposes of the Hortas Cariocas program,⁵⁷⁰ and the sense of exchanging foodstuff and skills between gardeners from the same garden or between different gardens was registered by the questionnaires of almost all participants.

The **reason** for the similar foodstuff sharing, including seeds, soil, water, tools, etc., can be theoretically linked to the nature of community gardens as urban commons, especially to its founding principles (sharing, collaboration, civic engagement, inclusion, equity, and social justice). In addition, urban commons pay attention to sustainability, particularly for the most vulnerable populations. A clear proof of that is a garden's name in *Berlin*, the Allmende-Kontor, a commons office, where “a **commons** are an ancient novelty, a jointly managed public space, a ‘gift to all.’ ”⁵⁷¹ In light of that, a *gardener* stated that

Here are concepts of common use, which is an idea that still needs to be even more integrated into what we call sustainability, but I think that the basis of Allmende-Kontor, and it is even in the name of this garden, comes from inspiration from use common spaces, non-privatization of resources and collective care. So, in that sense, I think this garden is well connected with the idea that only a life where things are shared and not privatized is sustainable.⁵⁷²

A *gardener* in *Rio de Janeiro* also expressed this view:

There are a lot of people who come here and say, “I do not understand this garden. What do you mean by ‘we can take it’?” So, I reply: “It is simple: we can take it!” Also, sometimes those already planting and coming weekly to care for the garden say, “But the person did not even plant anything, and can they take it away?” So, I answer, “Yes, they can take it. Community comes from what is common, so it is okay if they take it today and come to plant another day. No problem.”⁵⁷³

Besides that, the empirical investigation’s participants demonstrated shared concerns about the urban crises. The **distinction** is that in *Berlin*, this is more related to **environmental issues**, such as climate change, land grabbing, pollution, deforestation, lack of green areas, and **socialization concerns** (the garden as social space to overcome the self-isolation, even before the pandemic), while in *Rio de Janeiro* the focus is on the **fight against food insecurity**. For instance, some *gardeners* who recently moved to *Berlin* from others declared that they use the garden as a potential place to make new friends.⁵⁷⁴ Regarding environmental concerns, another gardener in *Berlin* stated that

we can produce food here very locally, which is one aspect of battling climate change and also for climate justice. We can experiment here with plants that have a bigger potential to change the systems, the exploitative systems that we are in so far because normal agriculture with annual plants is really exporting the ground, and it is going to lead to more and more land-grabbing everywhere, and taking lands from people in other parts of the world just to produce food for us here in the industrialized countries, which is really fucked up, like, how many spaces we are using.⁵⁷⁵

An important interview citation from a gardener on social vulnerability in *Rio de Janeiro* exists.

Human beings have the right to eat – as the president [Lula] says, “at least three times a day” –. Without food, what do you do? You do not do anything! You do not work, develop, think, study, love, play, smile! How will a hungry person produce? And without quality food, it is very difficult too. And what else does Brazil have? It is called the world’s great granary... It is the world’s greatest poison granary! And it is a country where people still go hungry and go hungry in big cities, for example, Rio de Janeiro. I think it is unbelievable! When you think about human rights, the first thing that comes to mind is food. Then come the other means: right to health, right to school, right to leisure, right to education, right to security... so if you think about human rights, you start to think about which ones we all have, following our Constitution, we have many rights, equal according to the Constitution, we are all equal before the law... when in fact this is not true! But I think the minimum is the right to food. It is for you to stand up, for you to think and do other things. A hungry individual is unable to do anything else, including primary things. He only thinks about food. I think when you think about food and quality food, which are two different things, I think we need to review this urgently so that no one goes hungry anymore. It is absurd that you are eating and thinking that there might be someone next to you who is hungry, and you are doing nothing. I cannot accept it!⁵⁷⁶

An *expert* can illustrate the same view:

I am a person who has always had a bad feeling seeing people starving on the street. So this was also an awakening of trying to improve in some way what I can help to improve because as I am already a public servant, I earn the same thing practically stamping paper and being the manager of a program like this, you know? So, it was more of a life choice, of changes in quality of life too, of cool things to do, and I made this decision to really change this outlook, you know? It is more of a look. Food also changes something, right? ⁵⁷⁷

However, it is important to highlight that interviewees in *Rio de Janeiro* also pay attention to **income generation** and **environmental issues**, pillars of Hortas Cariocas.⁵⁷⁸ Representing this last view, a *gardener* stated that “Community agriculture is the manifestation of the community in the fight for its fundamental rights, for better reframing of the environment, fight against the aggressive environment that has been built in cities with the unbridled advancement of construction and land occupation, without proper public administration.”⁵⁷⁹ This is a clear illustration of the **regenerative character of urban commons**.

One possible cause for these different central concerns is that *Berlin* has higher city development than *Rio de Janeiro*. [48] In addition, *Germany* has fewer inequalities than *Brazil*. [49] Illustrating that the prevalence of moderate or severe food insecurity in the population levels (2020 - 2022) in *Germany* (3.5%, representing 3.2 million people) is much lower than in *Brazil* (32.80%, representing 70.3 million people),⁵⁸⁰ where the number of daily explicit historical emergence for basic needs (aggravated by the COVID-19 pandemic) can be seen on the streets of cities, like in *Rio de Janeiro*.⁵⁸¹

Moreover, another possible **reason** is that the investigated *gardeners* in *Berlin* had a higher level of formal education than *gardeners* in *Rio de Janeiro*. In addition, the median income difference between *gardeners* and *experts* in *Berlin* was much lower than in *Rio de Janeiro*,⁵⁸² where, almost exclusively, the *experts* had access to a high level of education. With lower education and a lower income, many of the *gardeners* from *Rio de Janeiro* depended on the community garden’s income to **supplement their central income** to pay their household bills, including a few retired interviewees. In this sense, when a garden offers paid work, as it happens in Hortas Cariocas, there is a potential way to tackle poverty and, consequently, part of the violations of the human right to food (a cycle observed on Figure 04).⁵⁸³

Figure 04 - Food insecurity, malnutrition, and poverty are interrelated.



Source: FAO, 2008, p. 3.⁵⁸⁴

Also, the concern about food insecurity can be related to food apartheid⁵⁸⁵ (Chapter 2, section 2.2), given that a significant number of interviews (14/20) in *Rio de Janeiro* expressed the lack of biodiversity in the supermarkets and the absence of street fairs of organic products in their neighborhood or surrounds. Participants in *Berlin* did not notice this.

In addition, to provide more food availability in *Rio de Janeiro*, *gardeners* and *experts* were doing urban food sharing activities to benefit people in social, economic, and environmental vulnerability. For instance,

community urban agriculture is more for donation. If you know that someone is in need and you make a donation... this has no price! No price! Young wives of men in jail have 2 or 3 kids but no conditions to care for the family. So, we are who take care of them. I send some food straight to house a specific person that I know that is in need. The person does not need to come here to the garden to collect food.⁵⁸⁶

Consequently, another **contrast** between cities is what is done with the products. In *Berlin*, the products are mostly for self-consumption since eating organic products brings a great deal of satisfaction: “For me, it is a great pleasure to be there and be able to collect something that I will take home and eat. It makes a lot of difference and is a kind of prize. Even though I still do not depend on it to feed me, it is like a reward for my work. Eating organic and harvesting, planting, sowing by myself, this whole process.”⁵⁸⁷ In another case, many interviewees in *Rio de Janeiro* also expressed the pleasure of eating fresh and healthy self-produced food and having contact with nature. However, the main reason was to feed the local community (gardeners, neighbors, students, health units) by gifting or selling food for symbolic prices. This resulted in good feelings. For instance, a *gardener* in *Rio de Janeiro* reinforced that

sense: “I eat organic products without pesticides; it helps with my diet, and what I like most is donating. I like to donate. This gives me joy!”⁵⁸⁸

Literature can also explain the multiple ways in which one can be connected to food growing. Previous studies reported an “environmentalism of the poor,” (as noticed on the final part of 2.4 topic) finding solutions to daily problems in nature,⁵⁸⁹ while rich people would use nature for individual hedonistic purposes when using community gardening “as a trend - created and lived out solely by hip and bohemian citizens.”⁵⁹⁰

Another possible urban sharing activity for the destination of products is the **establishment of a garden restaurant or café**. However, the **difference** is that in *Rio de Janeiro*, these spaces were registered only in association with the kitchens of public schools (Hortas Cariocas) as food nutrition and culture. There was no aim to generate income, even on a non-profit basis, like in some cases in *Berlin*. The gardens’ restaurants/café in *Berlin* are not only to support the funding for materials but also have the **purpose** of bringing/attracting more people to contribute to the garden, guaranteeing the payment of workers. For instance, in 2008, the Moritzplatz garden in *Berlin* was not economically sustainable by selling vegetables, so the solution was to incorporate a restaurant.⁵⁹¹ Nevertheless, it was seen as a “business mindset,”⁵⁹² running away from common sense and uninviting people. A possible **logic** for this contrast is that most studied gardens in *Rio de Janeiro* were from Hortas Cariocas, and this public policy does not aim to offer prepared meals in a restaurant or café for guests. These structures are not easy to find in *Berlin*, except in Prinzessinnengarten, Peace of Land (closed), Klunkergarten, Himmelbeet (closed), Frieda Süd, and Möhrchenpark. A restaurant or café requires electric, hydraulic, and sanitary installations and authorizations, many hours of work, and money to cover the costs of maintenance and payment of workers; it could also become a source of income for the garden.⁵⁹³

Finally, food availability can also happen through **learning and practicing nutrition, how to co-produce food, identifying places where gleaning or foraging might occur, and swapping seeds**. In *both cities*, this includes knowledge regarding medicinal and wild food. For example, in *Berlin*, there was in Piece of Land the Wilderness & Survival School Walk on the Wildside, while Prizessinnengarten still offered the Wild Kitchen, where people “discover - admire - feel - smell – taste”⁵⁹⁴ herbs and berries collected on the garden, harvesting or preparing them on a camping stove. Nonetheless, unlike *Rio de Janeiro*, *Berlin* has more specific events, courses, and workshops. A possible **reason** for that is that the gardens offer environmental education and transformation in *Berlin*, and there is more space for events

(parties, courses, workshops, etc.), reinforcing the social and educational benefits of community gardens.⁵⁹⁵

In addition, the events with voluntary monetary contributions can support the projects. In another sense, many gardens from Hortas Cariocas in *Rio de Janeiro* have no proper structure for events. They are in areas of difficult access (sometimes controlled by criminality and no public transport in the neighbourhood), which is unattractive for visitors. Furthermore, even when an event happens, the learning and practicing are usually for free, such as the organic and native seeds exchange meetings.

Closing this section, it is relevant to discuss that several reports have shown that food availability can be connected to community gardens in *both cities* by **providing (public) open spaces for growing food**. What is ordinary among these scenarios is the utilization of vacant land as a strategic approach, primarily not centered on food-related purposes but rather aimed at transforming or preventing the creation of wastelands and dumpsites⁵⁹⁶ and on social justice and environmental sustainability.⁵⁹⁷ However, in *Rio de Janeiro*, there was an additional concern about curtailing drug-related activities, including sales, purchases, and consumption, and preventing further housing construction.⁵⁹⁸

In conclusion, as indicated in the literature, the physical **food accessibility** varies across *both cities*. In *Berlin*, gardens serve as a symbolic addition to people's daily food intake over time.⁵⁹⁹ Conversely, in *Rio de Janeiro*, several studies explicitly analyse how community gardens contribute to alleviating, though not completely resolving, food insecurity issues stemming from the absence of markets and street fairs and the economic constraints Black communities face (food apartheid).⁶⁰⁰

The results presented here are coincident with that, except for the findings about *Rio de Janeiro* focused on food-related goals. This contrast can be **explained** in the sense that most of the gardens investigated in *Rio de Janeiro* are part of Hortas Cariocas, where food security is one of the central pillars. Out of this public policy, the garden at Quilombo Dona Bilina exemplifies a garden's creation due to the food insecurity related to the COVID-19 pandemic, a scenario just recently added to the literature. Even so, a note of caution is due here since it is possible that these results may not be generalizable to a broader range of community gardens in *Rio de Janeiro*, given this study's limitations in collecting empirical data.

Moreover, the results here presented expand the literature through the deeper investigation of food availability in *Berlin* and *Rio de Janeiro* by transforming vacant land into (public) open spaces for growing on a non-profit basis, including the offer of acquiring food in exchange for labor; establishment of a gardens' restaurant or café; and learning and practicing nutrition, how to co-produce food, identifying places where gleaning or foraging might occur, and swapping seeds.

5.2.2 Food accessibility

Further analysis shows a relation between urban food sharing activities in the investigated community gardens of *Berlin* and *Rio de Janeiro* and food **accessibility**. This concept encompasses consistent economic and physical accessibility over time without compromising the fulfillment of human rights, basic needs, or resources for future generations, the non-nutritional values associated with food and food consumption, and providing adequate information about the nature of available food supplies.

The concept can be noticed in *both cities* when economic savings happen on **self-produced foodstuff, sharing it for free, buying it for a symbolic price, or acquiring it by swapping**. The **contrast** is that these savings are unimportant in *Berlin* because of the “irrelevant”⁶⁰¹ amount of production (gardens with educational purposes), weather conditions, soil limitations, food insecurity levels, etc. For instance, an *expert* pointed out that “people come here, and they get two cucumbers, and yeah, they are not going to buy those two cucumbers at the supermarket. Ok. That is good, but it is only two cucumbers; it is not what will make things change. It would be an illusion to think that unless it is a massive scale.”⁶⁰² Complementing this, another *expert* expressed his view on the urban agriculture types.

I guess, basically, worldwide, there are two different types of urban gardening that one can distinguish. One is actually really for food production, and this is basically happening in areas where there are people with financial problems. Would be really poorer countries. But there are also examples, for example, from Detroit, the United States. Still, in the United States, there are people who need fresh products, especially as the price structure for vegetables is crazy in the United States. It is cheaper to buy meat, which is weird. The other type of gardening, which I would count in the Prinzessinnengarten, is basically for social and pedagogic aspects, I would say so. It is people. When I learn something about vegetable production, we want to know something about old varieties of vegetables. Up to now, roughly 80 to 90% of the existing types are already extinct. It is basically hybrids that are grown nowadays, especially in the cities; many people are not really connected to food production and are looking for a space to come together with other people to do something meaningful.⁶⁰³

It is interesting to note that the above citation dialogue with the literature review regarding the central role of urban agriculture in the Global North and Global South. The North emphasizes the positive impacts on social connections, health, emotional well-being, and education, while in the South, it has a crucial role in meeting food security and nutritional requirements.

In *Rio de Janeiro*, savings were mentioned by many participants because even the symbolic financial contribution matters for people in economic vulnerability. In this sense, a *gardener* stated, “By producing food, you are saving money to buy bread, vegetables, or

anything else.”⁶⁰⁴ Furthermore, receiving organic food as a donation or buying it as a symbolic price is relevant given its representation of another relation to the food system than the agro-industrial system, a **social-ecological transformation**. For instance, a *gardener* pointed out that.

Look how this organic food is different from everything industrially produced, with pesticides, preservatives, chemical preservatives... that the person has money, goes into the supermarket, goes to the shelf and picks it up... then buys it, which comes by the bag, by the kilo, he pays, he knows it is food. However, food also kills and causes him illness.⁶⁰⁵

This **contrast** between cities can be associated with the income issue discussed in the food availability section and the nature of community gardens as urban commons. What can be added is that the problems of the COVID-19 pandemic have brought more social inequalities and vulnerability to *Brazil*,⁶⁰⁶ including *Rio de Janeiro*, affecting the purchasing power of many people and the lives of low-income communities.⁶⁰⁷ At the same time, most of the interviewees in *Berlin* said that the pandemic affected only their social life, and one of the city hall program’s concerns is to activate community gardens as a strategy to access shared areas, which is connected to freedom. This has a special role “in times of crisis like the COVID-19 pandemic.”⁶⁰⁸ As a result, the food insecurity levels in *Rio de Janeiro* increased,⁶⁰⁹ and *Brazil* returned to FAO hunger map (2022). Tackling this problem, during most of the COVID-19 pandemic, 100% of the production of Hortas Cariocas was gifted, despite the program guideline of 50% of output for donation and 50% for sale, except in schools, where 100% of the food is donated.⁶¹⁰ For instance, there was a total of 22 tons of food donated between April and December 2020. Later, still on the effects of the pandemic, during the initial half of 2022, the gardens yielded approximately 35 tons of produce. Specifically, the gardens generated 107,000 seedlings and 7.2 tons of food in June 2022. Out of this total, 3.1 tons were sold, and 4.1 tons were donated.⁶¹¹ Around 50,000 families are involved with the program.⁶¹²

Additionally, the garden of Quilombo Dona Bilina was created to supplement the diet of hungry people during the pandemic because the donated food was only industrialized.⁶¹³ Also, the Quilombo das Caboclas community organization was essential to survive the pandemic,⁶¹⁴ as observed in the following interview extract from an *expert*: “I think I grew a lot during the pandemic. I saw a lot. It affected the poorest and Black families cruelly... we have the right to life, life with food, and the garden provides that.”⁶¹⁵

In another economic sense, community gardens can provide job opportunities *in both cities*. The **difference** is that in *Berlin*, there were more forms of generating income (volunteering with financial subsidies and hiring professionals) to develop administrative activities, and *experts* occupied these paid work positions. For instance, an *expert* affirmed that “producing food is not the main goal. It is not contributing too much to my diet; it is my work.”⁶¹⁶ In *Rio de Janeiro*, the only registered option to volunteer in gardening activities with financial subsidy was on Hortas Cariocas, a position occupied by *gardeners*. The *experts* were paid not because of the garden but given other reasons (e.g., be a professor at university, a public agent from city hall, or a technical assistant from a Non-Governmental Organization).

The possible **explanation** for this divergence is that the most interviewed *gardeners* in *Rio de Janeiro* were from Hortas Cariocas, which has as one of the principles to provide remunerated opportunities for people in social vulnerability but without employment ties.⁶¹⁷ The subsidy is worth 500 Reais (around 104 United States dollars) for 180 gardeners,⁶¹⁸ 630 Reais (around 130 United State Dollars) for 56 garden managers (responsible for each garden, who are in direct contact with the program management), and 1,000 Reais (around 206 United State Dollars) for the five community integrators (who carry out mobilization work and dissemination of practices between multiple gardens).

This study indicates the same findings regarding the economic relevance (even symbolic, in *Rio de Janeiro*) or not (in *Berlin*) of the **self-produced foodstuff, sharing it for free, buying it for a symbolic price, or acquiring it by swapping**.

Additionally, the findings presented in this study contribute to the existing literature by conducting a more in-depth examination of food economic accessibility in *Berlin* and *Rio de Janeiro* by exploring the community gardens as a source of **income generation opportunities through gardening, social, administrative work, and vegetable sales**. However, caution must be applied with a small sample size, as the findings might be limited. The reason is that *both cities* face funding problems and have gardens based on voluntary actions, such as at Freie Universität *Berlin* and in Quilombo Dona Bilina in *Rio de Janeiro*.

5.2.3 Food acceptability

Turning now to the experimental evidence on the relation of urban food sharing activities in community gardens in *Berlin* and *Rio de Janeiro* to food **acceptability**, it is important to mention that this key component of the right to food entails activities promoting food devoid of harmful substances, and meeting specific dietary requirements based on factors like age, living circumstances, health, occupation, gender, and more. Furthermore, it should be devoid of contaminant residues from industrial or agricultural practices, such as pesticides, fertilizers, hormones, or veterinary drugs, while aligning with cultural consumption norms.

Following that, in *both cities*, there was **agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.)**. This rule was usually written and exposed on boards or orally transmitted between the commoners, gardeners, and experts. All interviewees were strongly against the industrial agri-food system (intensive and exploratory monoculture, using artificial products, genetically modified seeds, related to land grabbing etc.). The **reason** for that can be found in the principles of urban commons focusing on sustainability and the agroecological way to produce food in community gardens, in contrast to conventional agriculture. This can be illustrated in *Berlin* by an *expert's* interview extract:

I guess this place has a role in sustainability. First, because it's about growing food locally, you must use plants in this area. If you are able to produce enough food to sustain an entire community, that would mean that it would cut down transportation, and yeah, that is also an organic garden, so there is no chemical pesticide or fertilizers. They try to reuse all the plant waste as, for example, composts. It's a kind of circular production of vegetables.⁶¹⁹

In *Rio de Janeiro*, the Hortas Cariocas slogan announces the agroecological practices (chemical-free). This was reaffirmed by **all** interviewees related to the program. They are informed to use traditional knowledge and natural pesticides (e.g., plants and oils that keep plagues away).

Furthermore, *both cities* had examples of urban food sharing activity based on **knowledge transfer about food culture**. A possible **explanation** is the proposal of food as a common resource, not a commodity.⁶²⁰ For example, a *gardener* in *Berlin* stated that the garden “is a place to relax after work, to put my hand on the earth and cultivate the land, whatever it is, pruning, watering, planting is a time for me of distress, in short, of energy discharge, energy recharge, so I come alone with pleasure too, to be thinking.”⁶²¹ Other *gardener* expressed that “everybody needs a connection with nature somehow, even if are you living in the city. [...]

Find a place where you can have a bit of peace when the city is loud and moving all the time. It is good to be able to slow down.”⁶²²

Additionally, by studying the empirical data, it is possible to observe that the participants are doing the resumption of a familiar tradition done in the countryside during their childhood. For example, in *Berlin*:

I did gardening when I was a kid. My grandmother grew plants and vegetables for us to eat, so I am very used to having fruits from my garden. There is some knowledge that I remember from early childhood, for example, composting and the names of plants that you can use and which ones you should avoid.⁶²³

In *Berlin*, the knowledge transfer has interesting examples of food culture, such as in Café Ukraine, in Frieda Süd garden, where language meetings and workshops have a key role for immigrants (beekeeping, language café) that goes beyond food: “Every Saturday afternoon, people from all over the world, with and without a migration biography, meet in the language café on the premises of the Kreuzberg workshop. They cook together, play games, and talk to each other and learn German: easily accessible, sociable and open.”⁶²⁴ Another interesting offer is the meeting place for the Narcotics Anonymus, a community where drugs have become a major problem. There are sessions in English, Farsi, Russian and Polish. The group also offers special interest meetings for men, women, and people from the LGBTQ* community.

In *Rio de Janeiro*, the familiar food culture can be illustrated by a *gardener*:

The garden belonged to my great-grandmother, and this garden was not a community garden; it was a family garden. [...] So, in a family way, we always produced: my father was a farmer, we worked at the fair as teenagers, I always weeded, I always planted, I always liked to plant, I always liked to eat the things I plant, but I could not imagine one day doing a community garden. There were about 5 or 6 plant beds for the family that we produced. It was me, the children, sometimes a nephew, sometimes a neighbor. Before the pandemic, we never thought about gardening; everybody, together with the community, I never did. But it is a very good experience!⁶²⁵

Further than nutrition, food culture was a special topic cited by another *gardener*.

Community urban agriculture does not guarantee your complete nutrition, but it expands your concept of what food is, and it adds knowledge about food and nutrition that gives you more autonomy to manage your access to food. So, I think it goes beyond what you physically eat and the product you are going to eat. I think that the garden is part of human rights.⁶²⁶

Given that food culture relates to ethnic background,⁶²⁷ among other factors, the **difference** between *Berlin* and *Rio de Janeiro* is that in *Berlin*, the general profile of *gardeners* and *experts* was composed of White people. [50] In *Rio de Janeiro*, there was a strong influence

of Black culture (e.g., Quilombo Dona Bilina and Quilombo das Caboclas) and some participation of Indigenous culture. Still, these ethnicities were almost exclusively among *gardeners*. Most *experts* in *Rio de Janeiro* declared themselves as White people. The possible **explanation** for the dissimilarity can be found in each country's historical and ethnic construction.

In conclusion, prior studies have noted evidence of food acceptability in community gardens in both cities. In *Berlin*, this connection revolved around disseminating information and education about food culture, focusing on imparting knowledge about food preparation and consumption, especially for children.⁶²⁸ It also encouraged the preservation of culinary traditions and allowed individuals to cultivate plants native to their countries or cities of origin.⁶²⁹ *Rio de Janeiro*'s cultural linkage centered on ancestral wisdom concerning medicinal plants.⁶³⁰

This study found evidence reinforcing the literature on the **knowledge transfer about food culture**. The surprising finding was to identify the elements of the literature of *Berlin* in *Rio de Janeiro* and *vice versa*. On the one hand, this means the citations in *Berlin* to ancestral wisdom on plants and growing techniques. On the other hand, there was evidence of food education for children and adults in *Rio de Janeiro*. The results also expanded the literature on ethnical and migratory backgrounds and relevant factors to differentiate food cultures. On behalf of that, the case of *Berlin* was more associated with a German and White background, despite many migrants from other parts of Europe. Even so, there is space for more diversity.⁶³¹ The case of *Rio de Janeiro* had a mixed ethnical background, with a strong Black influence among *gardeners*.

Nonetheless, it is important to consider the possible bias in these responses. The reason is the limitation of the data collection. For instance, there was no ethnic identification in the *Berlin* questionnaires; in this city, there are community gardens focused on migrants' integration (Intercultural Gardens), but not visited. Also, in *Rio de Janeiro*, there are community gardens not included in the empirical investigation but with a White ethnic background. Further than that, the investigated gardens in *Rio de Janeiro* were inside or close to low-income communities and quilombos, areas mostly composed of Black people.⁶³²

Furthermore, the results presented here enlarge the existing literature in *Berlin* and *Rio de Janeiro* by researching food acceptability also being realized through a common activity of **agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.)**. This is a positive finding that can be generally applied to community gardens because of their link to sustainable food production respecting nature.

5.3.4 Food sustainability

The final part of the analysis indicates a relationship between the investigated urban food sharing activities in *Berlin* and *Rio de Janeiro* community gardens and economic, social, and environmental food **sustainability** (long-term food availability and accessibility). The efficiency in resource utilization guides sustainable agriculture, proactive efforts to preserve, safeguard, and enrich natural resources, protection and enhancement of rural livelihoods, equity, and social well-being, strengthening the resilience of individuals, communities, and ecosystems, and responsible and effective governance mechanisms.

In *both cities*, the **sharing of the excess foodstuff** avoids food waste, representing better efficiency in resource utilization. The **difference** between them is that in *Berlin*, excess of products is not a regular fact due to conditions already discussed on food availability, especially in recreative or experimental individual plots, where there is not much space for growing food. In *Rio de Janeiro*, the foodstuff “excess” is easily absorbed because of an already mentioned high demand and favorable food growing conditions. For example, in the gardens within a school, children can bring home fresh food.

In **common** among the investigated cities, there is also long-term food availability and accessibility to **gifting or swapping foodstuff**. These activities are an alternative to foodstuff commodification and support maintaining local food traditions. The **deviation** is that in *Berlin*, the gardens have less interconnection than in *Rio de Janeiro*. Illustrating this, *Berlin*’s participants almost did not register for food or seed swapping. Even so, it is possible to affirm that the exchange breaks a garden’s isolation of skills in courses or workshops or supports common causes with other gardens, such as those related to climate justice or against closing a garden, which are not daily activities.

In **contrast**, in *Rio de Janeiro*, almost all participants registered food exchanging foodstuff and food skills between gardens. One possibility to **explain** this difference is that most of the studied gardens are under the same management and goals of Hortas Cariocas. Then, getting in touch with other gardens directly or using the support of an integrator agent is easier. This is useful to overcome daily difficulties, such as the delay of the city hall in providing material or finding a solution for plagues, so the solution can be found in solidarity and sharing. For instance, when there is a problem with an insect in a garden, this person learns how other gardens are dealing with that to share the knowledge as a common resource. In many cases, the request for help or the offer of overproduction happens through social media (WhatsApp group). For instance, they also share discoveries to improve the irrigation system or soil

quality.⁶³³ This also occurs among gardens unrelated to the city hall within the different networks for daily activities and common interests, such as legal creations and bureaucratic problems. The local examples are the Carioca Network of Urban Agriculture (Rede Carioca de Agricultura Urbana, or Rede CAU),⁶³⁴ West Zone Solidarity Network (Teia de Solidariedade da Zona Oeste),⁶³⁵ and Advice and Services for Alternative Agriculture Projects (AS-PTA – Assessoria e Serviços a Projetos em Agricultura Alternativa).⁶³⁶

Moreover, in *both cities*, there is the **provision of (public) spaces for growing by the transformation of vacant land**, which is a crucial sustainability tool from three points of view: economy, society, and environment.

Concerning *social sustainability*, there is the case of community building and a sense of belonging.⁶³⁷ This is crucial for integrating new residents in *Berlin*, especially during the COVID-19 pandemic. For example, a gardener reported, “I spend significantly more time in the garden, and I felt very connected to the place because it was the only place I could meet up with people. We could be outside and have a distance between each other. The pandemic affected my relationship with the garden, but of course, the relationship to everything in my life.”⁶³⁸ The sense of connection to the resource and belonging to the common land across neighborhoods was noticed in *Rio de Janeiro*.

Many women in the agroecology movement did not understand why we would plant in gardens from other neighborhoods. “Wow, what are we going to do?” they asked, and I answered, “We are going to plant like we plant in our region.” Then, we started to provoke the agroecology movement by looking at this issue. Why do we think we do not have any relation to the other neighborhood? Why do we think that the people in the favela face the police in one way, and we face it in another way? Why do we think there are different issues? And that is the question, right? They are Black and poor women, too; our land is the same land they plant. The soil color is black here and there. The mother who suffers from a shooting and sees her son on the ground bloody, killed by the police is the same mother who suffers here with the son who also suffers violence from the police. It is the same mother, it is the same soil, it is the same people. And then, we start to encourage the agroecology movement to think about urban agriculture in a much broader way from the perspective of Black women.⁶³⁹

The above citation is also notable and relevant for being a surprising result related to **gender empowerment**. In Quilombo das Caboclas, there are only female gardeners, and they created a network to prevent and report violence against women.

An *expert in Rio de Janeiro* illustrated another example of social sharing of the same goal:

I see political empowerment as a huge advantage of the garden for people to see themselves a little more represented and to be able to see things that bring effective changes. [...]. It greatly strengthens individuals and collectives in the territories. I think it is the beginning of a process. Once, we started a vegetable garden, agroforestry, in a square in Campo Grande, and many people arrived to get involved. The plants also did not cause confusion between political parties; different people sometimes got together and started a relationship based on that common goal of building something.⁶⁴⁰

In *both cities*, there is a dispute against the commodification of resources. This includes the food,⁶⁴¹ as illustrated by a *gardener* in *Berlin*: “Everything that we grow is communal. So, nobody has their private vegetable or something. Buy, yeah, if one goes to these regular days, like, on Mondays, there is a raised bed day, and wherever there is something to harvest, usually it gets shared between the people working.”⁶⁴² There is also the view that community gardens are common land, as exposed by an *expert* in *Berlin*.

He [the district manager of parks] refused to speak about community gardens in public parks. He said, “This is privatization of land. I will not do it. Never ever this will happen to me.” So, in the end, he was posted somewhere else, but only last year or this year. I think, and now there is a new manager, which is completely different. He is more open to it, of course. He has some limits to his action also, but he is now saying, “OK, yeah, a community garden can be part of the public park on public green land because this is a benefit or the people want it, they go there, they enjoy it. That is what the public green should be for.” Of course, we have to speak about rules like opening times, do you have to pay for things there, or these questions about the public infrastructure, but he is open to doing something, so a change of person sometimes changes a lot.⁶⁴³

In addition, community gardens are fighting the privatization of public space (commodification).⁶⁴⁴

Urban community gardens create new green places and access to urban nature; they enable participation in urban design. They encourage self-organization and healthy eating and promote communication and cooperation between gardeners, the administration, research, and politics. Urban community gardens are outdoor neighborhood centers and can be shelters for people in need. They are a counter-argument to the increasing privatization of public space. The gardens preserve values for the city that are difficult to measure in monetary terms. So they are hardly competitive when it comes to inner-city areas. Too many gardens are threatened, and creating new community gardens can be difficult.⁶⁴⁵

Furthermore, from the long-term perspective, gardens in *both cities* had to deal with the social barrier of acceptance of the garden’s value, which is representatively broken by vandalism, stolen materials, and irregular waste disposal.

On *economic sustainability*, there is the case of savings to maintain the area, and the place becomes an area to generate income and work. For instance, in *Berlin*, the Evangelische

Friedhofsverband Berlin Stadtmitte (EVFBS) is the landowner of a 7.5-hectare cemetery, the New St. Jacobi Friedhofs. With a decreasing number of funerals and religious affiliations (resulting in less income from taxes or donations and fewer human resources) in the last decades, the cemetery was closed in 2016. Maintaining the area clean and safe was difficult, so the space was open for different uses, such as the Prinzessinengarten.⁶⁴⁶ A similar process happened with Elisabeet Garden, located in St.-Elisabeth-Friedhof II, owned by the Evangelische Friedhofsverband Berlin Stadtmitte (APPENDIX D and E).

In *Rio de Janeiro*, work opportunities were already debated on the topic of food accessibility. However, it is important to consider that the long-term economic perspective of Hortas Cariocas depends on public funding and monetary compensation due to damages to nature.⁶⁴⁷ Moreover, the political administration is crucial due to the lack of legal guarantees specific to Hortas Cariocas.⁶⁴⁸ In addition to the city hall payment, the extra income for selling vegetables depends not only on nature but also on seeds, clean water accessibility, soil health, tools, etc.

Regarding *environmental sustainability*, there is the case of preserving or creating green areas, environmental education, resource regeneration (compost for soil), and attention to waste (water).⁶⁴⁹ This was observed by Allmende-Kontor, *Berlin*, during daily care to water and by experiments. From 2017 to 2021, the “Water Management Experiment” was carried out in the garden by the Working group Brandenburg-Berlin Water Management (Arbeitsgemeinschaft Brandenburgische-Berliner Wasserver) and Humboldt University.⁶⁵⁰ There were also experiments with soybeans and beekeeping.⁶⁵¹

In *Rio de Janeiro*, one of the program’s pillars of Hortas Cariocas is preventing deforestation by avoiding the illegal and unsafe occupation of green areas as housing alternatives for low-income families. Following the same logic, an *expert* stated that one of the garden’s areas “had rubble, a lot of rubbish, hundreds of stolen burnt-out cars lying around. The city council collected all that material, and we cleaned the space and transformed it there.”⁶⁵²

According to a *gardener*, there is a mentality change with community gardens.

Changes are happening. The colonialist process that took place in the country involved more than 500 years of destruction of forests. Gardens are part of raising people’s awareness about this aggression that the environment has been suffering. I believe we can work to raise people’s awareness to better observe nature and the environment in which they live.⁶⁵³

Finally, it is important to note that these three dimensions of sustainability are not excluding each other. Given this, as an *expert* in *Berlin* exposed that

In producing the like, these small green dots in the city are important for climate change adaptation. We are facing heavy, heavy rain and hot summers in Berlin. For that we need places where water can be stored and, for example, in the garden soil and we also need small places where it is where you cool down the neighborhood, so this is, for example, the contribution of gardens and with more guns, more, more effect of course for the social sustainability. It brings people together. It makes people more resilient against personal crises and so on to have these local networks. So, economic sustainability can create or be part of local economic networks. There are community gardens that are having, like, yeah, we are part of the local economic circles, and even though there is not a big production of food.⁶⁵⁴

One of the **contrasts** of providing (public) spaces for growing by transforming vacant land in *Berlin* and *Rio de Janeiro* is the long-term maintenance of the gardens. In *Berlin*, there is the threat of conflicting interests on land use, such as the ones resulting in the forced move of Himmelbeet and Peace of Land. Attending political interests, the gardens gave space for future sportive installations.

Rio de Janeiro had multiple registers on territorial disputes with criminal agents (militia/drug dealers), resulting in the garden's temporary or permanent closing and loss of territory. The **reason** would be that with the gardens, people can have an opportunity to be far from drugs, earn some money, and change their lives, as pointed out by a *gardener*:

Homeless people also need to work. If you need it, we put it to work. Instead of being on the street doing something bad, the person is doing something good, right? The person is working, helping people, leaving marginalization, earning that money, being away from drugs, etc... So I think these gardens are changing people.⁶⁵⁵

An *expert* in *Rio de Janeiro* also noticed the sense of a relation between garden and peace: "Sometimes some residents have the initiative and the desire to put a vegetable garden there to, let's say, ease these tensions, urban violence."⁶⁵⁶ This was noticed by the literature⁶⁵⁷ and reported by the media⁶⁵⁸ on Hortas Cariocas of Manguinhos.

According to the news from 2022, the garden was a starting point for police interventions against drug dealers. Then, the criminals decided to build houses as a barrier to mobility and use concrete on the soil to promote parties. With the size of four football camps, the urban garden is famous for being the biggest in Latin America. It is responsible for supporting 800 families and producing around 3 tons of food annually, but the criminal action has already reduced 20% of the production.⁶⁵⁹

As mentioned in the literature review, **food sustainability** (long-term *food availability* and *accessibility*) can be identified in community gardens of *both cities*. Nevertheless, the emphasis in *Berlin* was on the *social*⁶⁶⁰ and *environmental*⁶⁶¹ *sustainability* dimensions. In

Berlin, the sustainable upkeep of a food cultivation site faced jeopardy when the state, often as the landowner, developed new interests in land use, typically for recreational purposes, leading to impending threats and compulsory relocations.⁶⁶² In *Rio de Janeiro*, previous studies present the importance of *social, economic, and environmental sustainability* dimensions as food security and a peaceful approach to facing risks due to criminality.⁶⁶³

This research indicates similar results in *both cities* by **sharing the excess foodstuff, gifting or swapping foodstuff, and providing (public) spaces for growing by transforming vacant land**. The unexpected findings were in *Berlin* the relation to many citations to job opportunities as contributing to *economic sustainability*, and in *Rio de Janeiro*, the *social sustainability* by gender empowerment in the case of Quilombo das Caboclas. However, given the limited sample, these findings cannot be extrapolated to all gardens.

5.3 Chapter resume

Given the amount of information presented and discussed in this chapter, this section presents a resume to the answer to the research question⁶⁶⁴ in four parts:

a. The **similar** community gardens' urban food sharing activities related to **food availability** in *Berlin* and *Rio de Janeiro* are (a) transforming vacant land in (public) open spaces for growing on a not-for-profit basis, including the offer of acquiring food in exchange for labor; (b) establishment of a gardens' restaurant or café; and (c) learning and practicing nutrition, how to co-produce food, identifying places where gleaning or foraging might occur, and swapping seeds.

From the above result, it is important to note that *both cities* have community gardens as public policy (*Gemeinschaftsgarten-Programm* in *Berlin* and *Hortas Cariocas* in *Rio de Janeiro*) institutionally situated in the Environmental office. Also, they faced territorial conflicts before and after establishing a community garden.

What is **different** is the policy's purpose and the challenges related to opening a space. In *Berlin*, the program aims to "secure existing gardens and promote new gardens."⁶⁶⁵ The community gardens are seen through the lens of social, educational, and environmental contributions. Given this, the food availability is regarding the freedom of self-production. *Rio de Janeiro* aims to offer the "service of technical assistance and promotion of urban agriculture initiatives in the city."⁶⁶⁶ Their gardens are a source of food to sell (income generation) and to eat (nutrition) by food gifting to gardeners and neighbors or complementing meals at the school

kitchen. Given that, further than the freedom of choice to self-produce food, there is an important contribution to food availability in the sense of supplementing dietary needs and food distribution.

The possible **explanation** for the difference is that Berlin's gardens have "irrelevant" production. In contrast, Germany has low food insecurity and high city development, and the interviewees did not mention difficulties finding food in the supermarkets. In *Rio de Janeiro*, there is a large amount of food production but also high demand in unequal city development, and it is situated in a country with intermediate food insecurity. Moreover, segregation on food *availability* and *access* is a serious problem widely identified in the empirical data collected.

Regarding food availability, the **literature** proposes using unoccupied land as a strategic method, primarily *not focused* on food-related objectives but rather on converting or averting the formation of wastelands and dumping sites⁶⁶⁷ and on social justice and environmental sustainability.⁶⁶⁸ In *Rio de Janeiro*, these are combined motivations when discussing the suppression of drug-related operations, encompassing sales, acquisitions, consumption, and illegal house constructions in green areas.⁶⁶⁹

The results regarding *Berlin* and many cases in *Rio de Janeiro* presented **coincident lines to the literature**, **except** for the part where the findings about *Rio de Janeiro* pointed out that community gardens *focus* on food-related goals. A possible **motivation** for the variant result is that most of the places investigated in *Rio de Janeiro* are part of Hortas Cariocas, where food security is a central pillar, and gardens unrelated to the city hall share the same goal. Nonetheless, it is important to exercise **caution** in drawing broad conclusions, as these findings may not necessarily apply to a wider array of community gardens in *Rio de Janeiro* due to the limitations in gathering empirical data within this study.

In summary, this research underscores the multifaceted role of community gardens in urban environments and the contextual variations in their goals and impacts. The **implications** highlight the significance of recognizing and supporting community gardens to address food accessibility and other urban challenges while also acknowledging the uniqueness of each city's circumstances and policy objectives.

b. The **similar** community gardens' urban food sharing activities related to **food accessibility** in *Berlin* and *Rio de Janeiro* are (a) eating self-produced food, sharing foodstuff for free, buying foodstuff for a symbolic price, or acquiring foodstuff by swapping, and (b) income generation opportunities by gardening, and administrative work, and vegetable sales.

The interesting **contrast** among cities is that economic savings in *Berlin* were just mentioned by a few interviewees, and when it happened, it was related to inexpressive savings. In *Rio de Janeiro*, the savings were also mentioned as symbolic. Still, some interviewees expressed that it was relevant for the household income of unemployed people and those living in food insecurity. The **justification** could have the same socioeconomic ground already mentioned regarding food availability. The additional scenario is the COVID-19 pandemic. The crisis brought more social inequalities and vulnerability to *Brazil*,⁶⁷⁰ including *Rio de Janeiro*,⁶⁷¹ affecting many people's purchasing power and low-income communities' lives.⁶⁷² Consequently, food insecurity levels in *Rio de Janeiro* rose,⁶⁷³ and *Brazil* reappeared on the FAO hunger map (2022). At the same time, most of the interviewees in *Berlin* said that the pandemic affected only their social life, and one of the city hall program's concerns is to activate community gardens as a strategy to access shared areas, allowing freedom, "especially in times of crisis like the COVID-19 pandemic."⁶⁷⁴

On income generation, the **dissimilarity** is that in *Berlin*, the work payment was related to undertaking administrative tasks typically filled by *experts*. Conversely, in *Rio de Janeiro*, the registered income generation options were selling vegetables and receiving financial support for gardening activities in Hortas Cariocas, primarily occupied by *gardeners*. *Gardeners* in *Berlin* were usually volunteers without any financial subsidy, and *experts* in *Rio de Janeiro* were not paid for their work in gardening but for other roles, such as being university professors, city hall employees, or technical assistants at non-governmental organizations. This discrepancy's **elucidation** can be attributed to most interviewed *gardeners* in *Rio de Janeiro* who were part of Hortas Cariocas, a program dedicated to providing remunerative opportunities for individuals facing social vulnerability (lacking formal employment ties) in a city.⁶⁷⁵

The **previous studies** on physical and economic food accessibility indicated that in *Berlin*, the gardens serve as a symbolic addition to people's daily food intake over time by subsistence gardening.⁶⁷⁶ On the other hand, in *Rio de Janeiro*, the literature⁶⁷⁷ examines the role of community gardens in mitigating, though not eliminating, food insecurity challenges arising from the absence of markets and street fairs, as well as due to the economic hardships, especially experienced by Black communities (referred to as food apartheid).⁶⁷⁸ This research **contradicts** only the part regarding the "subsistence character" of agriculture in *Berlin*. The argument is grounded on the information that all questionnaire's participants in this city revealed to **buy food** from supermarkets, and they are not dependent on the garden for daily nutritional needs.

Furthermore, this study **adds value to the current body of literature** through a comprehensive investigation of food accessibility due to the potential income-generating opportunities within community gardens of *both cities*. Nevertheless, it is essential to consider the potential for **bias** resulting from the relatively limited sample size, which could restrict the broader applicability of the results. This limitation arises from funding constraints in both cities, where gardens exclusively rely on voluntary efforts.

In conclusion, this research provides valuable **insights** into the role of community gardens in addressing food accessibility and income generation, highlighting their significance in urban environments. The **implications** emphasize the need for supportive policies and tailored approaches that consider local conditions and challenges to maximize the positive impact of community gardening initiatives.

c. The **similar** community gardens' urban food sharing activities related to **food acceptability** in *Berlin* and *Rio de Janeiro* by (a) agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.) and (b) knowledge transfer about food culture. The most engaging aspect of the data is the ethnic background **distinction** in each city. This is relevant to understand what particular culture the food sharing is about. In *Berlin*, the general profile of *gardeners* and *experts* was composed of White people, while in *Rio de Janeiro*, there was a strong influence of Black people and some participation of Indigenous ethnicities, but almost exclusively among *gardeners*. Most *experts* in *Rio de Janeiro* declared themselves as White people. The dissimilarity between the countries can be **attributed** to their unique historical and ethnic compositions.

So far, very little has been found in the literature on the acceptability of food within community gardens. In *Berlin*, this connection primarily revolved around disseminating information and education about food culture, with a particular emphasis on imparting knowledge about food preparation and consumption, especially among children.⁶⁷⁹ It also promoted the preservation of culinary traditions and enabled individuals to grow plants native to their countries or cities of origin.⁶⁸⁰ In contrast, *Rio de Janeiro*'s cultural connection centered on the ancestral wisdom of medicinal plants.⁶⁸¹

This study discovered **corroborative** evidence supporting the existing **literature** regarding the food acceptability by chemical pesticide disuse and the knowledge transfer about food culture. A remarkable discovery of this study was identifying elements from the literature of *Berlin* in *Rio de Janeiro* and *vice versa*. On the one hand, this included data's reference in

Berlin to ancestral wisdom related to plants and cultivation techniques. On the other hand, there was evidence of food education programs for both children **and adults** in *Rio de Janeiro*. The research findings also **contributed to the broader literature** on ethnic backgrounds and migration, shedding light on significant factors that differentiate food cultures. Nevertheless, it is crucial to acknowledge the potential **biases** inherent in these responses due to limitations in our data collection methods. Notably, the absence of ethnic identification in the *Berlin* questionnaires is a significant constraint. *Berlin* hosts community gardens promoting the integration of migrants, such as Intercultural Gardens, which were not included in this doctoral study. Additionally, in the case of *Rio de Janeiro*, the empirical investigation primarily had access to community gardens within areas predominantly inhabited by Black communities (Favelas and Urban Communities).

To sum up, the research sheds light on the complex interplay of cultural factors within the context of community gardens and their impact on urban food sharing activities. It **indicates** the significance of understanding the role of ethnicity and cultural backgrounds in shaping food practices and highlights the importance of robust data collection and interdisciplinary research perspectives.

d. The **similar** community gardens' urban food sharing activities concerning **food sustainability** in *Berlin* and *Rio de Janeiro* are (a) sharing of the excess foodstuff, (b) sharing of the excess foodstuff, gifting or swapping foodstuff; and (c) provision of (public) spaces for growing by the transformation of vacant land.

The most important result was social, economic, and environmental sustainability perspectives of providing (public) spaces for growing by transforming vacant land. During this process, in *both cities*, there is the *social* development of the belonging sense, community integration, and the **fight against commodification of resources and the city**. They also face problems in social relations with non-gardeners, such as vandalism and acceptance of the garden's importance from neighbors and politicians. The **difference** is that political disputes already resulted in gardens being forced to move to *Berlin*, while in *Rio de Janeiro*, the land tenure issue is related to peace infringement involving militia, drug dealers, and police. The possible **explanation** is the conflict of interest on the urban land with particularities in each city. On *economic* findings, in addition to the job creation, *Berlin's* cases of community gardens in former or current cemeteries are unexpected data related to saving costs with the maintenance of vacant areas. *Rio de Janeiro* calls attention to the fact that the public funding for Hortas

Cariocas depends on political decisions, and no specific law regulates the program. Regarding the environmental dimension data, *both cities* preserve or create green areas, develop environmental education, resource regeneration (compost for soil), and pay attention to waste (water).

As highlighted in the **literature**, both cities' community gardens exhibit characteristics of food sustainability. However, *Berlin's* gardens emphasize the *social* and *environmental* dimensions of sustainability. In the case of *Berlin*, the sustainable maintenance of food cultivation sites has been jeopardized when the state, often acting as the landowner, shifts its interests towards alternative land use, frequently for recreational purposes. This shift results in imminent threats to the gardens and necessitates compulsory relocations.⁶⁸² Conversely, in *Rio de Janeiro*, prior research underscores the significance of multiple sustainability dimensions, including *social, economic, and environmental* aspects, as essential components of food security and a peaceful strategy for mitigating risks associated with criminality.⁶⁸³

This study yields **approximate** findings to **prior research** on food sustainability and goes a bit further. In the case of *Berlin*, the **contribution** is regarding the *economic* aspect of garden work. In *Rio de Janeiro*, the literature improvement concerns the social dimension of gender empowerment. Nevertheless, the restricted sample size makes it impossible to generalize these findings to all community gardens.

Finally, this research provides valuable **insights** into community gardens' role in promoting community integration, resistance against commodification, job positions (gardening as professional work), and alternative resource management (urban commons). These insights can inform policy development regarding the scenario in each city.

CONCLUSIONS

To conclude the study, this chapter is organized into three parts. The first aim is to integrate the theoretical and empirical findings. The second part introduces the research limitations, contributions of this study, and recommendations for future research. Finally, there is a review of the answer to the research question and last insights.

Initially, as observed in the **theoretical** construction, during the city's expansion, agriculture has increasingly moved to far away from the urban center to give space for social functions such as housing, commerce, mobility, etc., or even no use. One of the reasons for the **agricultural remoteness** is the social and spatial division of the space based on capital accumulation. This process continuously searches for the more profitable land **exchange-value**, affecting the spatial organization. This turns **urban vacant land** (unused, underutilized, and unbuilt soil) into one of the city's fundamental pillars of exchange-value. Chasing exchange-value, the private property took place in collective ownership and use of resources, including food and land.

Consequently, the land and food became objects to be exploited as much as possible. This has ramifications such as differential access to **land, food, and rights** (human rights, right to the city) among individuals based on **socioeconomic and demographic factors and particularities of each city**. Then, land and food urban crises vary according to each local context. Still, in general, they can be related to *socioeconomic effects*, including land-grabbing, violation of rights/devaluation of agricultural work, rural migration, growth of the urban population, urban infrastructure overload, food overpriced, food desert, food swamps, food apartheid, food diet-related diseases, and food insecurity. Moreover, there is the alienation between humans, nature, food, and land, which constitutes a metabolic rift. In this sense, the *environmental repercussions* can be exemplified by deforestation, loss of biodiversity, natural resources degradation/scarcity, lack of green areas, and climate change. Given that, the city's social-ecological transformation of food and land is urgent.

In **Berlin**, agricultural activity is almost exclusively in the city outskirts, as illustrated by the cases of Community Supported Agriculture close to Brandenburg city. Also, there are multiple allotment gardens, especially in periphery areas. The privatization of common land happened centuries ago. Even so, the allotment gardens – when regulated as public land with private use – must deal with the growing privatizing interests from the market. Regarding vacant lands – and food as a human right –, it is important to remember that the Wars had a special role in their formation. On the remaining spots, the urban land dispute – especially after the fall of the Berlin Wall – uses political, economic, and legal instruments to dominate it. In

addition, the imbalance in resource access is less outlier among the territory. With high and homogenous city development, the variant mentioned above access has consequences but is not so visible daily. The demand for green and open areas for socialization and leisure drives attention in the post-industrial city. This demand is not democratically covered by allotment gardens amount, and the panorama increased during the COVID-19 pandemic.

In **Rio de Janeiro**, the multiple phases of urbanization of rural areas resulted in the focus of the western zone on agricultural production. Nonetheless, the gentrification of traditional agricultural communities (Indigenous and Black communities, family farming, subsistence agriculture) is an ongoing process due to the real estate market advancement. The vacant land formation is related to multiple urbanistic projects to reorganize the city, stringent land-use regulations, political and economic interests, and the shift of investments to the southern zone. In the areas still available, the conflict over urban land persists. The particularity is that more than political, economic, and legal instruments, there are criminal agents as urban agents interested in territorial use. Along with other causes, this results from the city's fragmented and hierarchized development. Consequently, the lack of access to land and food is spread in the city in various forms, including the formation of slums, homeless people, extreme poverty, hunger, and little or no access to healthy and fresh organic food in low-income communities. The COVID-19 pandemic worsened this scenario as well.

Considering the above crises, among possibilities, a theoretical path toward social-ecological transformation can be a combined approach involving the human right to food, urban commons, and community gardens.

Regarding the first dimension, human rights are a cross-border guide for Earth's common future, including food, because peace and human development should be a **common interest** to all. The **human rights** approach is also relevant due to its connection to all other human rights which must be provided in the city and to the **Right to the City**. Legal responsibilities exist for human rights stakeholders, such as governments and companies. Still, civil society and non-governmental organizations can also contribute by enforcement and by reporting infringements. Specifically, the **human right to adequate food** can be understood as a composition of four notions: *availability, accessibility, acceptability, and sustainability*. Land and food urban crises' socioeconomic and environmental repercussions connect to these elements. Then, mitigating the crises' effects must observe these notions when aiming to guarantee the right to food.

Concerning the second dimension, the commons is a **sustainable**, polycentric, and horizontal co-governance system based on three elements: 1) a **resource** to be managed, 2)

social practices and relations (*commoning*) defining rules, responsibilities, and identity, and 3) the group of individuals (*commoners*) commoning. The commons focus on **use-value**, so they have a contrast to the worldwide agri-food system and capital accumulation logic based on private property overexploitation. Concentrating on the use-value, the commoners can be emotionally and collectively attached not to the resource but to their deeper meaning, such as ancestralism, tradition, sense of purpose, and belonging. This is crucial to alleviate the metabolic rift. The commons can be analysed in the urban context, the **urban commons**. They significantly promote democratic access to urban resources, such as streets, parks, forests, and **community gardens**, representing one of the points of view regarding the right to the city. The city can be understood as a commons. This line of reasoning highlights the role of urban commons in collectively re-structuring the urban space, focusing on use-value and sustainability, essential to change **vacant land** and, consequently, socially and ecologically transform food and land in the city. This indicates a relation to right to food and Right to the City.

The third important dimension manifests practically through urban agriculture, specifically **community gardens**. These gardens typically involve the temporary use of urban **vacant land**, symbolizing agriculture's resurgence in both public and private urban spaces. They come in various sizes and can be found in diverse locations, including sidewalks, rooftops, residential areas, school buildings, alongside transportation routes, and within community centers, parks, and other green spaces. They can be located in socioeconomically and environmentally vulnerable areas. Despite their nonprofit orientation, some may operate with a business structure. These gardens can thrive autonomously without significant government support and often exist without specific legal regulations. They serve as a resistance against the pressures of exchange-value and act as sanctuaries amidst the challenges of climate change.

The *gardeners* and *experts* are **commoners** caring for the urban land and food as shared resources. Volunteers or professionals develop gardening, social, and administrative activities in a community garden association. Their **socioeconomic and demographic status vary** greatly from local to local, even within the same country. Then, commoners face challenges encompassing skepticism, sociocultural biases, and institutional limitations. These are compounded by restricted access to resources, inputs, financial resources, and the unique risks associated with urban gardens. Additionally, organizational hurdles include human resource constraints.

The **commoning** activities in community gardens can be dedicated to social, environmental, economic, health, and political goals. Community gardens must not be related to food (they can be ornamental, etc.), but when it happens, **urban food sharing activity** is characterized. These social activities are a contrast to commodification and exclusion. They benefit the **human right to adequate food** by promoting food *availability*, which tackles food segregation, especially in low-income and Black neighborhoods. Also, physical and economic *access* to fresh products is enhanced. Furthermore, they generate food *acceptability* by prohibiting artificial chemicals, fertilizers, and pesticides and culturally transferring food/environmental education. In addition, community gardens can support food social, economic, and environmental *sustainability*. Given that, they have a role in fighting food segregation and the city's social-ecological transformation of food and land.

In **empirical** terms, this study identified many similar **urban food sharing activities** (*commoning*) done by gardeners and experts (*commoners*) related to the **right to food** in **community gardens** (*urban commons*) in *Berlin* and *Rio de Janeiro*. Even so, these relations sometimes vary within a city, such as having a garden café or not, and between the cities, such as the ways of income generation. In multiple activities, the uses and goals of community gardens could be justified by socioeconomic factors (e.g., food insecurity, poverty, unemployment) and other city particularities (e.g., criminality) that guide each city's needs and dynamics.

The only completely compatible commoning activity – in other words, urban food sharing without any exception or dissimilarity – among all investigated gardens is the **agroecological food production (regarding no use of artificial chemicals, fertilizers, pesticides, etc.)**. This implies that the perfect link between *both cities* is (only) one activity related to *food acceptability*. This also means that the socioeconomic background and the city's particularities are *irrelevant* in this very specific situation.

Another **interesting finding** was that transforming vacant land into spaces for growing food (*food availability*) was mostly based on public land, which demonstrates the importance of the governmental role. In addition, deserves attention the result that in *Berlin*, the motivation for gardening among the interviewed commoners was focused on socialization and environmental issues, while in *Rio de Janeiro*, it was primarily about food security, followed by ecological themes and economic reasons.

In addition, an **unexpected result** is the role of work opportunities as *food accessibility* and the economic dimension of *food sustainability* in *Berlin*. Also, there were gardens in a

former airport and a former cemetery. In *Rio de Janeiro*, remarkable outcomes are the case of a garden's use as a gender empowerment tool, and the link to the education of adults.

The study had several **limitations** that must be acknowledged. Firstly, it is essential to recognize that this study may not fully represent all activities within the community gardens in Rio de Janeiro and Berlin. Moreover, the findings cannot be generalized to encompass the entire spectrum of urban and peri-urban agriculture or be considered determinants of the Global North and Global South realities. The primary reason for these limitations is the sample's relatively small and non-quantitative nature regarding participants and territories investigated. The data collection process was also significantly impacted by the COVID-19 pandemic due to lockdowns and travel restrictions. Additionally, the weather conditions affected field visits. Furthermore, there were issues related to the availability of digital data in many gardens and challenges in translating interview extracts from English to Portuguese. Language barriers also made it difficult for non-native English speakers to articulate their experiences, emotions, and attitudes accurately in English. Finally, it is crucial to recognize that subjective data interpretation could be influenced by the researchers' perspectives and backgrounds, potentially leading to differing interpretations and outcomes. This subjectivity should be considered when assessing the study's results and conclusions.

This study has multidisciplinary **contributions to Law and Sociology**. This is because public policies regarding community gardens have the potential to intersect with the legal obligations of the state in ensuring human rights and fostering inclusive urban development. The form can promote social and environmental justice and equity by facilitating greater access to fresh food and green spaces in disadvantaged areas. In addition, the interplay between legal frameworks and sociocultural factors may either advance or hinder the realization of Sustainable Development Goals, including the eradication of hunger (Goal #2), the development of sustainable cities and communities (Goal #11), and the promotion of responsible consumption and production (Goal #12). Furthermore, this research reinforces the essential multidisciplinary role of human rights in society, contributing to more arguments for their promotion and protection from the local to international level. Also, there were contributions to analysing urban crises from the perspective of land and food and their similar roots in commodifying goods. Concerning their future perspectives, this investigation is important to reinforce **food as a social function of the city and urban property** (expanding the Right to the City concepts and practices). In addition, urban commons were expanded concerning human rights and the possibility of resource regeneration.

Specifically relevant to **Law**, this study is *theoretically* appropriate to detail the human right to food concept, present stakeholders, and their responsibilities, as well the interdependence and interrelation of the right to food to other human rights, which means the

importance of the right to food in fulfilling other basic needs. This is useful for legal demands, especially contributing to adequate legal protection for individuals and vulnerable groups, in addition to creation, adaptation, extinction, and application of laws from the local to the international level. As well, the *practical* importance is that the right to food requires developing and implementing policies, monitoring systems, and regulations, and the research indicated community gardens as one of the possible approaches to achieve it. Moreover, the study is important to urbanistic law perspectives in fighting against urban vacant land. It lights up the discussion on master plans, construction licenses and regulations, land use and zoning law, and land tenure to open and maintain community gardens in urban areas. Another possibility is new research on civil law regarding property regimes and how it can dialogue with the commons. In addition to human rights studies, enforcing environmental law is also part of the resource's governance towards sustainability.

In the field of **Sociology**, the research presented a generic profile of groups practicing and benefiting from community gardens from different perspectives of the same human right to food. This is *practically* relevant to support the development of public policies. The investigation also indicated the gardens as a possible way to mitigate food apartheid when there is a lack of physical and economic access within a reasonable distance to healthy and fresh food for Black, Indigenous, and low-income communities. Consequently, there is a *conceptual* discussion on the role of urban commons and community gardens for different ethnic and socioeconomic backgrounds. Another highlight is that social relations are developed in community gardens during the creation, maintenance, and enforcement of rules collectively established, which sets a path for future investigations into these relations. More than social benefits regarding social integration and inclusion of people from different backgrounds, their research is also relevant to illuminate problematic issues, such as territorial loss for criminality due to political conflict. One more recommendation for the next research is to investigate the sexual diversity profile of gardeners, given the data gap. Additionally, food insecurity and food deserts in *both cities* have unclear/lack of data.

Moreover, it is possible to affirm that this research contributed to **diminishing the research gap** pointed out by the literature review of a unique international examination of the connection between community gardens' urban food sharing and the human right to adequate food, with a special focus on *Berlin* and *Rio de Janeiro*.

This study also contributed to the **expansion of the literature** regarding the Right to Food, the Right to the City, and the role of urban agriculture in each city. On the one hand, the results validated the logic that in the Global North, the focus is on sustainability and social integration, while in the Global South, usually the center is on food needs, but with social, economic, and environmental benefits. On the other hand, there is a suggestion of contributions

of economic benefits to *Berlin* and of a gender perspective for social benefits to *Rio de Janeiro*. In this sense, there is an initial stigma breaking regarding the “environmentalism of the rich” in *Berlin*. Additionally, there is a suggestion for policymakers and gardeners to notice the possibility of using community gardens as a tool to reduce violence against women and promote social integration of migrants and people resocializing during and after prison.

Finally, how do notions of the right to food connect to food sharing activities in Berlin and Rio de Janeiro community gardens, and, within and between cities, how do we explain these connections’ similarities and differences? The answer can be summarized by the **confirmation of the hypothesis**. *This means that urban food sharing activities in community gardens can be connected to food availability, accessibility, acceptability, and sustainability. Still, the relations may differ within and between cities based on specific socioeconomic contexts and unique urban challenges.*

However, there is one **exception** concerning the **agroecological food production** (regarding no use of artificial chemicals, fertilizers, pesticides, etc.). What could explain this is the ordinary agroecological *action* in community gardens and the application of theoretical background *knowledge* of urban commons governance towards sustainability. Moreover, given that community gardens are an *empowerment* tool to change the worldwide conventional agrifood system, this result suggests that one **step towards the social-ecological transformation of food and land in the city has been consolidated since the beginning of this century**. It is almost like an *unwritten* [51] international and interpersonal agreement – a form of law based on collective trust among and between commoners – focusing on use-value of resources and fighting city commodification. Then, promoting community gardens and protecting them from public and private threats means the long-term maintenance of the steps already achieved and the solidification of a stage for the new ones.

NOTES

[1] For instance. The search for “ ‘community garden’ AND ‘Rio de Janeiro’ on the Web of Science has no results while substituting the city for “Berlin,” there are 12 studies. In ScienceDirect, following the same terms, there are 41 results regarding Rio de Janeiro, and 241 research regarding Berlin.

[2] “Agriculture is the most comprehensive word used to denote the many ways in which crop plants and domestic animals sustain the global human population by providing food and other products. The English word agriculture derives from the Latin *ager* (field) and *colo* (cultivate) signifying, when combined, the Latin *agricultura*: field or land tillage. But the word has come to subsume a very wide spectrum of activities that are integral to agriculture and have their own descriptive terms, such as cultivation, domestication, horticulture, arboriculture, and vegetable culture, as well as forms of livestock management such as mixed crop-livestock farming, pastoralism, and transhumance. Also agriculture is frequently qualified by words such as incipient, proto, shifting, extensive, and intensive, the precise meaning of which is not self-evident. Many different attributes are used too to define particular forms of agriculture, such as soil type, frequency of cultivation, and principal crops or animals. The term agriculture is occasionally restricted to crop cultivation excluding the raising of domestic animals, although it usually implies both activities.” HARRIS, D.; FULLER, D. *Agriculture: Definition and overview*. Jan, 2014. Available on: <https://www.researchgate.net/publication/301345493_Agriculture_Definition_and_Overview/fullTextFileContent>. Accessed on: Aug 17th, 2023. The discussion in this doctoral thesis aligns with this comprehensive interpretation but excludes the animal’s creation.

[3] “None has a field restricted or owned by them, but the magistrates and the principals assign each year to the people and kindred, who live in common as much field space to plow, as and where it seems convenient, and oblige them in the following year to move to another part. There are many reasons given for this use, such as: – not to change, driven by habit, the warrior ardor for agriculture, not to seek to expand each one his field, the more powerful at the cost of the weaker, not to occupy themselves in constructions own to keep them from the cold and calm, not to give birth among them the ambition of money, whence factions and discords proceed, and to contain the plebs by a principle of equity, seeing each one equal in wealth to the most powerful.” CÉSAR, C. J. *Comentários: De Bello Gallico*. São Paulo: Ebooks Brasil, 2006. E-book. Available on: <<http://www.ebooksbrasil.org/eLibris/cesarP.html>>. Accessed on: feb 7th, 2023.

[4] “Counter to common sense notions, society is not the sum of all individuals and social groups, or of their actions. In theoretical terms, it is more adequately conceived as a structured totality of relations between people, other people and extra-human nature, and since those relations only exist through their constant practical (re)production, ought to be seen as the dynamic outcome of processes of ‘societalization.’ EVERSBURG, D. et al. Social relationships with nature: elements of a framework for socio-ecological structure analysis. *Innovation: The European Journal of Social Science Research*, v. 35, i. 3, p. 389–419, 3 jul. 2022. Available on: <<https://www.tandfonline.com/doi/full/10.1080/13511610.2022.2095989>>. Accessed on: Aug 17th, 2023.ä

[5] Originated from the general theory of land income in the works of David Ricardo (*Principles of Political Economy*, 1817), Karl Marx, and Friedrich Engels (*The Capital*, vol. III, 1895). Despite focusing on rural areas, Marx briefly analyzed the role of income in urban land for construction, and it would be characterized as: “1) by the decisive influence of localization on differential income; 2) by the owner’s exploitation of the progress of social development to which nothing contributes and in which nothing risks; 3) by the predominance of the monopoly price. Urban land income would be high by the rapid and intense population growth in large cities, and by the consequent growing need for housing resulting therefrom and by the implementation of fixed capital that would be incorporated into the land (such as buildings, railways, highways, warehouses, manufacturing and commercial establishments, docks, etc.). In high-growth cities, what would be the main object of speculation in the real estate sector would not be the property built, but the land income charged by the owners.” BOTELHO, A. Urban land rent: a still valid analysis category. *GEOgraphia*, v. 10 (19), 2010, p. 24-45. Available on: <<https://periodicos.uff.br/geographia/article/view/13551/8751>>. Accessed on: Jun 09th, 2023; MARX, Karl. *The capital*, v. III. Rio de Janeiro: Bertrand Brasil, 1989. Other applications of urban land income can be classified as follows: “a) Absolute Income: results from the difference between the market price and the prices of the housing production, b) Differential Income I: generated by the supplementary profit obtained by the production of housing (sometimes identical) under different conditions of accessibility and reduced expenses, c) Differential Income II: generated by urban zoning, enabling certain areas to demand more investments - here understood as work - than others, because they need, according to the demands of capital, to be more luxurious and/or larger and better equipped. For Differential Income II, we consider the price of constant spatial production, where the increase in income goes parallel to the development of the mode of production, and d) Monopoly Income: is the determinant of urban land price measures, achieved through monopoly prices, resulting in the power conferred on those who own the land in establishing prices.” GONZALES, Suely. Urban land rent: hypotheses to explain its role in the evolution of the city. In: FARRET, Ricardo (Org.). *The space of the city: contribution to urban analysis*. São Paulo: Projeto, 1985. p. 93-114; LIPIETZ, Alain. *Capital and its space*. 2nd. ed. São Paulo: Nobel, 1988. 209 p.; SOUZA, Maria Adélia Aparecida de. *The identity of the metropolis*. São Paulo: Editora Hucitec, 1994. 257 p.

[6] “Before food reaches our plates, it travels a long way. And every stage of that journey makes up our agrifood systems. But what are agrifood systems? They are a set of actions that are interlinked. Farming, harvesting, fishing, livestock-rearing, storing, processing, transporting, selling, buying, eating, and disposing of our food are all part of these complex systems. Sustainable agrifood systems can offer a variety of sufficient nutritious, safe food at an affordable price to everyone. The systems also include all the non-food products that come from agriculture like cotton and forest products. Our actions and choices can help these systems become more sustainable. The food and products we choose make all of us an integral part of the way an agrifood system works. If we make these systems more sustainable, we can achieve better production, better nutrition, a better environment and a better life, for all. We can all be food heroes.” FAO. Available on: <<https://www.youtube.com/watch?v=eEH2TvJRsa4/>>. Accessed on: Aug 19th, 2023.

[7] “The ‘land grabbing’ has many different definitions but what they all have in common is the idea that it involves the large-scale acquisition of land for commercial or industrial purposes, such as agricultural and biofuel production, mining and logging concessions, big infrastructure development or tourism.⁶ Most definitions agree that it involves acquiring more than 200 hectares, with some pushing for a threshold of 1,000 hectares, many involving more than 10,000

hectares and several more than 500,000 hectares.⁷ In any case, it concerns large-scale land acquisition. It also involves land being acquired by investors rather than producers, very often foreign investors.” GILBERT, J. *Land Grabbing, Investments & Indigenous Peoples’ Rights to Land and Natural Resources: Case Studies and Legal Analysis*, 2017. Available on: <<https://www.iwgia.org/images/publications/new-publications/land-grabbing-indigenous-peoples-rights.compressed.pdf>>. Accessed on: July 5th, 2023.

[8] Urban population growth is often confused with urbanization but is a distinct concept. Urban growth can take place without any urbanization if urban and rural areas are both growing at the same rate. Urban growth is the increase in the absolute number of people living within defined urban areas. It is defined as “the increase in the proportion of the urban population over time as part of the whole population. Urban growth comes from demographic growth and international and internal migration. World Migration Report. *Migrants and Cities: New Partnerships to Manage Mobility*, 2015. Available on: <<https://www.iom.int/sites/g/files/tmzbd1486/files/country/docs/syria/IOM-World-Migration-Report-2015-Overview.pdf>>. Accessed on: Aug 20th, 2023.

[9] There is no agreed upon definition of a “food desert”. The USDA defines it as: “a low-income census tract where either a substantial number or share of residents has low access to a supermarket or large grocery store. “Low income” tracts are defined as those where at least 20 percent of the people have income at or below the federal poverty levels for family size, or where median family income for the tract is at or below 80 percent of the surrounding area’s median family income. Tracts qualify as “low access” tracts if at least 500 persons or 33 percent of their population live more than a mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles) UNITED STATES OF AMERICA. Department of Agriculture. Food Desert Locator. Release No. 0191.11, 2017. Available on: <<https://www.fns.usda.gov/tags/food-desert-locator>>. Accessed on: Aug 20th, 2023.

[10] “Activist and community organizer Karen Washington has been battling for food justice for three decades. She is opposed to using the expression “food desert”, she prefers “food apartheid, “which brings us to the more important question: What are some of the social inequalities that you see, and what are you doing to erase some of the injustices? “Food apartheid” looks at the whole food system, along with race, geography, faith, and economics,” Karen says. ‘When we say ‘food apartheid’, the real conversation can begin’.” GCAP UCR. *Environmental Justice: Food Deserts*. Available on: <<https://www.gcapucr.com/environmental-justice-food-deserts>>. Accessed on: Aug 20th, 2023.

[11] The war in Ukraine is currently exerting pressure on the world economy, causing disruptions in supply chains and impacting global prices for grains, fertilizers, and energy. This situation has resulted in shortages and is contributing to a further increase in inflation rates. Global prices for both food and energy are skyrocketing, reaching levels that have not been witnessed in decades. FAO, 2022, *op. cit.*, p. 53.

[12] The projection from June to September 2022 is 20 countries or situations (including two regional clusters) with acute food insecurity (called hunger hotspots) related to one or more key problems. FAO, 2022, *loc. cit.*

[13] “Movement and transport restrictions led to shortages in agricultural labor and inputs, affecting food production and processing. Limited mobility as well as restricted access to and

operation of markets and retail disrupted food supply and increased food loss and waste, especially for perishable products. Remote areas dependent on food imports were especially affected by food shortages due to border closures and limited transportation. Moreover, restaurants, canteens, markets, and street traders were shut down in many cities. Many producers and agri-food businesses were not able to recover from the lockdown restrictions. Confined to their area, urban dwellers dependent on local markets and informal traders in their neighbourhoods experienced limited access to food. Food supply challenges and panic buying led to spikes in food prices in many parts of the world. In addition, the most vulnerable population dependent on school meals and food banks suffered from school closures and disruptions in food relief programmes. While income losses and unemployment led to significant increases in demand for food relief, food banks received fewer donations and movement restrictions limited support by volunteers.” FAO. *Cities and local governments at the forefront in building inclusive and resilient food systems: key results from the FAO survey “Urban Food Systems and Covid-19”*, 2020. Available on: <<https://www.fao.org/3/cb0407en/CB0407EN.pdf>>. Accessed on: July 5th, 2023.

[14] “The principles of the National Urban and Peri-Urban Agriculture Program are: the human right to adequate food; the right to health; the right to the city; popular and social participation; the popular and solidarity economy; cooperativism and associations; agroecology and organic production; healthy and sustainable food systems; short marketing circuits; the sustainable use of soil, water, ecosystems and agro-sociobiodiversity; respect for socio-environmental and cultural diversity; food as a cultural and social practice; the bioeconomy.” BRASIL, *op. cit.*, Art. 4.

[15] “There are emergency situations – wars, natural disasters – and persons – disabled, sick or orphaned – who cannot feed themselves and need assistance. People in those circumstances must receive assistance, whether food aid, cash, or any other form.” FAO. *Right to Food and HIV /AIDS*, 2007. Available on: <https://www.fao.org/3/a1611e/a1611e.pdf>>. Accessed on: June 28th, 2023. “Adequate food must be accessible to everyone, including physically vulnerable individuals, such as infants and young children, elderly people, the physically disabled, the terminally ill, and persons with persistent medical problems, including the mentally ill. Victims of natural disasters, people living in disaster-prone areas, and other especially disadvantaged groups may need special attention and sometimes priority consideration with respect to the accessibility of food. A particular vulnerability is that of many indigenous population groups whose access to their ancestral lands may be threatened.” UNITED NATIONS. *General Comment N° 12: The Right to Adequate Food (Art. 11 of the Covenant)*, Committee on economic, social and cultural rights (CESCR), May 12th, 1999, p. 4. Available on: <<https://www.refworld.org/docid/4538838c11.html>>. Accessed on: June 28th, 2023,

[16] “Dietary needs implies that the diet as a whole contains a mix of nutrients for physical and mental growth, development and maintenance, and physical activity that are in compliance with human physiological needs at all stages throughout the life cycle and according to gender and occupation. Measures may, therefore need to be taken to maintain, adapt, or strengthen dietary diversity and appropriate consumption and feeding patterns, including breastfeeding, while ensuring that changes in availability and access to food supply, as a minimum, do not negatively affect dietary composition and intake.” UNITED NATIONS, 1999, *loc. cit.*

[17] “Free from adverse substances sets requirements for food safety and for a range of protective measures by both public and private means to prevent contamination of foodstuffs

through adulteration and/or through bad environmental hygiene or inappropriate handling at different stages throughout the food chain; care must also be taken to identify and avoid or destroy naturally occurring toxins.” UNITED NATIONS, 1999, *loc. cit.*

[17a] “In fact, the Declaration of Atitlán states ‘that the content of the right to food of indigenous peoples is a collective right.’ Both the United Nations Declaration on the Rights of Indigenous Peoples and the Inter-American Commission on Human Rights (IACHR) Draft Declaration on Indigenous Rights as well as the ILO Convention No. 169 acknowledge certain collective rights.” FAO, 2009, *op. cit.*, p. 18.

[18] “Currently, 56 constitutions protect the right to food either implicitly or explicitly as a justiciable right, or explicitly in the form of a directive principle of state. In addition, through the direct applicability of international treaties, the right to food is directly applicable, with a higher status than national legislation, in at least 51 countries, 84 thus reaching a total of 106 countries in which the right to food is applicable. Finally, ten countries have already adopted a framework law on the right to food or food security recognizing the right to food, and a further nine countries are in the process of drafting such legislation.” FAO, 2010, *op. cit.*

[19] “45 countries have recognized the right to adequate food in their constitutions, and almost 30 countries have an explicit recognition of the right to sufficient food in their constitutions.” FAO, 2022b, *op. cit.*

[20] Examples of such steps are: “Assessing the state of enjoyment of the right to food, including ensuring adequate mechanisms to collect and assess relevant and suitably disaggregated data; Formulating strategies and plans, incorporating indicators, benchmarks and time-bound targets, which are achievable and designed to assess progress in the realization of the right to food; Adopting the laws and policies necessary for the realization of the right to food or revising the laws and policies which may negatively affect it; Establishing the institutional mechanisms necessary for coordinating multi-sectoral efforts to realize the right to food; Regularly monitoring the progress made in the realization of the right to food; Establishing recourse mechanisms which can provide remedies for violations of the right to food.” FAO, 2010, *op. cit.*

[21] For example, “withdrawing without justification existing services vital for smallholders, such as extension services or support to access productive resources, could constitute a retrogressive measure. To justify it, a State would have to demonstrate that it adopted the measure only after carefully considering all the options, assessing the impact and fully using its maximum available resources.” FAO, 2010, *loc. cit.*

[22] States should “promote the participation of the poor in economic policy decisions” (Guideline 2.6) and “promote women’s full and equal participation in the economy” (Guideline 8.6). Particularly, in developing poverty reduction strategies, “States are encouraged to consult with civil society organizations and other key stakeholders at national and regional levels, including small-scale and traditional farmers, the private sector, women and youth associations, with the aim of promoting their active participation in all aspects of agricultural and food production strategies.” (Guideline 3.8). FAO, 2005, *op. cit.*, p. 22-23.

[23] Land is not a human right per se, but “several instruments cover aspects that are relevant to land, either directly or indirectly, such as, for instance, issues of ownership, management and administration of property, access to and utilization of natural resources, food production, access to agricultural credit and loans, and agrarian reform.” They are important “to improve

methods of production, conservation and distribution of food.” FAO. *Responsible governance of land tenure: an essential factor for the realization of the right to food*. 2010a. Available on: <<https://www.fao.org/3/AL382E/al382e.pdf>>. Accessed on: Feb. 7th, 2023.

[24] The right to food cannot be realized if people lack access to safe drinking water for personal and domestic uses, defined as water for drinking, washing clothes, food preparation, and personal and household hygiene. FAO, 2010, *loc. cit.*

[25] In 1968, Garrett Hardin argued the “tragedy of the commons.” HARDIN, G. *The Tragedy of the Common*. v. 162, i. 3859, p. 1243-1248, Dec 13th, 1968. Available on: <<https://www.jstor.org/stable/1724745>>. Accessed on: feb 7th, 2023. According to him, individuals driven by self-interest were seen as likely to deplete shared resources through excessive use. Consequently, proponents of the “neoliberal consensus advocated for private property rights and individual self-interest aligned with profit motives,” arguing that this approach would mitigate the risk of human failure associated with commons-based governance. GUTTMANN, *op. cit.*, p. 186. Nevertheless, different studies contradicted this theory in total or partially. BURKE, B. “*Hardin Revisited: A Critical Look at Perception and the Logic of the Commons.*” Available on: <<https://www.jstor.org/stable/46034>>. Accessed on: Aug 28th, 2023; FEENY, D. *et. al. The Tragedy of the Commons: Twenty-Two Years Later*. Human Ecology. v. 18, i. 1, p. 1–19, Mar. 1990. Available on: <<https://www.jstor.org/stable/4602950>>. Accessed on: Aug 28th, 2023; FRISCHMANN, B. M.; MARCIANO, A.; RAMELLO, G. B. Retrospectives: Tragedy of the Commons after 50 Years. *The Journal of Economic Perspectives*, v. 33, i. 4, p. 211–228, 2019. Available on: <<https://www.jstor.org/stable/26796843>>. Accessed on: Aug 28th, 2023.

[26] “Conventional wisdom says that common ownership is a bad idea. ‘That which is owned by all is cared for by none.’ Therefore, all scarce resources should either be owned privately by individuals or be regulated by central authorities. Or should they? Elinor Ostrom rejects that conventional wisdom. She concludes that common property is often well tended, based on numerous empirical studies of user-managed fish stocks, pastures, woods, lakes, and groundwater basins. Elinor Ostrom identifies seven keys to successful cooperation: Rules clearly define entitlements; Conflict resolution mechanisms are in place; Duties stand in reasonable proportion to benefits; Monitoring and sanctioning is carried out either by the users themselves or by someone who is accountable to the users; Sanctions are graduated, mild for a first violation and stricter as violations are repeated; Decision processes are democratic; and the rights of users to self-organize are clearly recognized by outside authorities”. *The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2009*. Available on: <<https://www.nobelprize.org/prizes/economic-sciences/2009/illustrated-information/>>. Accessed on: Aug 28th, 2023.

[27] “Common pool resources are resource systems that can produce resource units by nature. Those resource units are appropriated by individuals. But their appropriation is managed through collective action among other resource users. Therefore, the resource system would contain collectively managed rules and rights of use that make commons persistent, autonomously organized, and self-regulated.” GUTTMANN, A. *Plateformes de développement urbain, villes de la connaissance et développement durable: l’économie politique des biens communs urbains dans le contexte du changement climatique*. 2023, p. 36. Available on: <<https://theses.hal.science/tel-04160619/document>>. Accessed on: Sep 13th, 2023.

[28] In public and common goods, everybody has the right to use it without exclusion and without affecting other's use. They can accommodate multiple uses without conflict, such as the air or public lighting. However, the commons goods, when considered the finite and unsustainable character of some resources, introduce certain level of rivalry and exclusivity and open space for the commons' governance. GUTTMANN, *op. cit.*, p. 48.

[29] A similar element from the concept of commons' past and in nowadays is the "interpersonal agreements concluded between different social groups. They ranged from family relationships and passed through dispositions of rural villages, rules of professional associations, religious groups, and tribal confederations." RELLY, Eduardo. *Sob a sombra dos commons: capital social, meio ambiente e imigração alemã no Brasil meridional*. São Leopoldo: Oikos, 2022, p. 17.

[30] In Brazil, "during its existence, the Quilombo served as a symbol for ethnic and political resistance. As an institution, it retains unique characteristics from its African model. As political practice, it proclaims liberal, emancipatory ideas, which resist the distortions imposed by hegemony at moments of national crisis. For Black people, often figured as docile and subservient, the figure of heroism fortifies everyday struggles against oppression and social inequality. Quilombo is a powerful tool in the process of recognizing a Black Brazilian identity and in moving towards deeper self-affirmation as Black and Brazilian. Alongside other practices which strengthen cultural identity, the history of Quilombo as an actually existing breach in the system of oppression of Black people offers hope that similar institutions can have a similar effect today." NASCIMENTO, B. The Concept of Quilombo and Black Cultural Resistance. *Afrodiaspora* 3/6–7, 1985 p. 41–49. Translated by Christen Smith, Archie Davies, and Bethânia Gomes. Available on: <<https://www.hkw.de/en/programme/o-quilombismo/the-concept-of-quilombo-and-black-cultural-resistance>>. Accessed on: 29th September, 2023.

[31] "In effect, commoning is itself a form of law. It serves to organize people into orderly wholes to achieve shared ends. People are able to generate consensual rules, practices, and ethical norms that preserve both shared wealth and the community. This form of law and governance could be called Vernacular Law, a term inspired by Ivan Illich's celebration of vernacular practice as a way to re-humanize people caught up in systems of institutional domination." BOLLIER, D. *The Commoner's Catalog for Changemaking*. Massachussets: Schumarcher Center for New Economics, 2021, p. 67. Available at: <<https://www.commonerscatalog.org/books/the-commoners-catalog-for-changemaking?page=69>>. Accessed on: 24 Aug. 2023. In addition, "Vernacular Law," it will be recalled, is the term we use to distinguish informal or unofficial law from what we call "State Law." Vernacular Law originates in the informal, unofficial zones of society and is a source of moral legitimacy and power in its own right." BOILLIER, D.; WESTON, B. *Green Governance: ecological survival, human rights, and the law of the commons*. Cambridge: Cambridge University Press, 2014, p. 104.

[32] "Qualitative research presupposes the establishment of one or more objectives, the selection of information, and the carrying out of field research. Then, if necessary, hypotheses are constructed that will explain the identified problem and the field and everything that will be needed to collect the data are defined. Once the data has been collected, we move on to the analysis phase. However, unlike quantitative research, in qualitative research the process is not sequential; the researcher advances to the next phases, but constantly goes back to previous phases, for reformulations, always looking for deep meanings. [...] The qualitative study

develops in a natural situation, offering a wealth of descriptive data, as well as focusing on reality in a complex and contextualized way.” MARCONI, *op. cit.*, p. 302.

[33] “Exploratory research’s main purpose is to develop, clarify and modify concepts and ideas, with a view to formulating more precise problems or researchable hypotheses for subsequent studies. Of all types of research, these are the ones with the least rigidity in planning. They usually involve bibliographic and documentary research, non-standardized interviews and case studies. Sampling procedures and quantitative data collection techniques are not usually applied in these surveys. Exploratory research is developed with the aim of providing an approximate overview of a given fact. This type of research is carried out especially when the chosen topic is little explored and it becomes difficult to formulate precise and operational hypotheses about it.” GIL, A. *Métodos e técnicas de pesquisa social*. São Paulo: Atlas, 2008, p. 27.

[34] GUTTMANN, A. *Plateformes de développement urbain, villes de la connaissance et développement durable: l’économie politique des biens communs urbains dans le contexte du changement climatique*. 2023. Available on: <<https://theses.hal.science/tel-04160619/document>>. Accessed on: Sep 13th, 2023. ROGGE, N.; THEESFELD, I. Categorizing Urban Commons: Community Gardens in the Rhine-Ruhr Agglomeration, Germany. *International Journal of the Commons*, vol. 12, no. 2, 2018, p. 255. Available on: <<https://www.jstor.org/stable/26511528>>. Accessed on: Aug 28th, 2023.

[35] “The case study method refers to a research strategy of focusing intensively on individual cases to draw insights about causal relationships in a broader population of cases. Close examination of individual cases offers opportunities to develop concepts and theory, identify the limits of general relationships and disprove deterministic hypotheses, control for confounding effects through within-case comparisons, and disentangle causal processes. The case study method is especially appealing when trying to make sense of complex processes. It is the only option for empirical field-based research when cross-case data are not readily available. Key disadvantages relate to limited external validity, problems of indeterminacy, and the difficulty of replication.” POTEETE; JANSSEN; OSTROM, *Working Together: Collective Action, The Commons, and Multiple Methods in Practice*. 2009, p. 78.

[36] “In qualitative research, data collection typically occurs to the point of saturation. Essentially, this means that researchers continue interviews to the point where little new information is shared by participants. In other words, people continue reporting essentially the same ideas and the law of diminishing returns is at work in the information-gathering procedure. Collecting more data, at that point, does not produce novel results.” FIRMIN, M. Themes. In: *The SAGE Encyclopedia of Qualitative Research Methods*, v. 1 & 2. California: University of Alberta, 2008, p. 869. Available on: <<http://www.yanchukvladimir.com/docs/Library/Sage%20Encyclopedia%20of%20Qualitative%20Research%20Methods-%202008.pdf>>. Accessed on: 01 Jun. 2023.

[37] Thematic analysis is the “data reduction and analysis strategy by which qualitative data are segmented, categorized, summarized, and reconstructed in a way that captures the important concepts within the data set. Thematic analysis is primarily a descriptive strategy that facilitates the search for patterns of experience within a qualitative data set; the product of a thematic analysis is a description of those patterns and the overarching design that unites them.” AYRES, L. Thematic coding and analysis. In: *The SAGE Encyclopedia of Qualitative Research Methods*, v. 1 & 2. California: University of Alberta, 2008, p. 867. Available on:

<<http://www.yanchukvladimir.com/docs/Library/Sage%20Encyclopedia%20of%20Qualitative%20Research%20Methods-%202008.pdf>>. Accessed on: 01 Jun. 2023.

[38] “Thematic coding is the strategy by which data are segmented and categorized for thematic analysis. Thematic coding is a strategy of data reduction [...]. In thematic coding, the analyst frequently begins with a list of themes known (or at least anticipated) to be found in the data. When data for thematic analysis are collected through semi-structured interviews, some themes will be anticipated in the data set because those concepts were explicitly included in data collection. Codes may also come from a beginning conceptual model, the review of the literature, or professional experience. At this stage of the analysis, coding categories are more heuristic than analytic; that is, coding categories serve as a receptacle for promising ideas. Promising ideas become coding categories through a rigorous process of analytic induction that includes both within- and across-case comparisons. First, an idea must show importance within an individual account. In coding, portions of data are separated from their original context and labeled in some way so that all data bearing the same label can be retrieved and inspected together.” AYRES, *op. cit.*, *loc. cit.*

[39] Physical availability sufficient to satisfy the dietary needs¹ of individuals according demand’s interest,¹ and involving the freedom of choice regarding production (including self-provision), and distribution (be available for sale in markets and shops). UNITED NATIONS. *General Comment N° 12: The Right to Adequate Food (Art. 11 of the Covenant)*, Committee on economic, social and cultural rights (CESCR), May 12th, 1999. Available on: <<https://www.refworld.org/docid/4538838c11.html>>. Accessed on: June 28th, 2023.

[40] Economic and physical accessibility stable over time, not affecting other the satisfaction of human rights and basic needs or the resources for future generations, encompassing the perceived non-nutrient-based values associated with food and food consumption, as well as addressing the information about the nature of available food supplies. UNITED NATIONS, 1999, *loc. cit.*

[41] Acceptability, which means food free from adverse substances for a dietary need according to age, living conditions, health, occupation, sex, etc. Also, it must be free of contaminants residues from industrial or agricultural processes, such as pesticides, hormones or veterinary drugs, and needs to be acceptable for consume according to each culture. UNITED NATIONS, 1999, *loc. cit.*

[42] Economic, social and environmental sustainability, which represents the long-term availability and accessibility. UNITED NATIONS, 1999, *loc. cit.* The food sustainability principles are: Principle 1. Improving efficiency in the use of resources is crucial to sustainable agriculture; Principle 2. Sustainability requires direct action to conserve, protect and enhance natural resources; Principle 3. Agriculture that fails to protect and improve rural livelihoods, equity and social well-being is unsustainable; Principle 4. Enhanced resilience of people, communities and ecosystems is key to sustainable agriculture; Principle 5. Sustainable food and agriculture requires responsible and effective governance mechanisms. FAO. *Building a common vision for sustainable food and agriculture: Principles and approaches*. Rome, 2014. Available on: <<https://www.fao.org/3/i3940e/i3940e.pdf>>. Accessed on: Aug 28th, 2023.

[43] “The use of theory, when carrying out case studies, not only represents an immense help in defining the research project and collecting adequate data, but also becomes the main vehicle for generalizing the results of the case study.” YIN, *op. cit.*, p. 54.

[44] Because the interview is an exchange of communication, the researcher is aware of a whole series of procedures that make the interrelationship effective, to obtain a quality testimony. You can, for example, use a simple script that guides you through the main topics, if you are a beginner, considering, however, that the qualitative interview is flexible and open. Open interviews are based on a general guide with a non-specific theme; In them, the interviewer enjoys the flexibility to manipulate him. MARCONI, 2022, *op. cit.*, p. 320.

[45] “Poverty is a multidimensional problem that encompasses monetary, social, and cultural aspects. In a wealthy country such as the Federal Republic of Germany, being poor means above all: Being indigent or ridden with debt due to a limited capacity to work, a dearth of job opportunities, or low wages; Experiencing a persistent shortage in the possessions perceived as necessary to lead a more or less “normal” life; Being disadvantaged in multiple arenas such as work, housing, leisure, and sport; Being excluded from (good) education and from the (high) cultural and social networks that are necessary for social inclusion; Facing increased existential risks, health deficiencies, and diminished life expectancy; Experiencing a loss of social status and social respect, and by extension frequently losing self-confidence; Experiencing powerlessness or the inability to wield influence in all key spheres of society (the economy, politics, governance, knowledge production, and mass media). It is important to differentiate here between absolute, extreme, or existential poverty on the one hand and relative poverty on the other. Absolute poverty affects people who cannot meet their basic needs: not enough to eat, no safe drinking water, no appropriate (warm) clothing, no housing, and no access to medical care. Those suffering relative poverty, in contrast, are able to meet their basic needs but cannot afford the extras that others consider normal, such as occasionally eating a restaurant meal or going to the movies or the theater. Moreover, people in this situation participate minimally socially, culturally, and politically. In Germany, absolute poverty mainly takes the form of homelessness. The designation of the “unhoused” (*wohnungslos*) refers to those who do not own or rent their own living space and who instead live at shelters or bunk with friends or acquaintances. In contrast, the “unsheltered” (*obdachlos*) are those who live on the streets and, for example, sleep on park benches. The people most at risk of being unhoused or unsheltered and who are truly impoverished are serious drug addicts, “street children”—mostly adolescents—unaccompanied refugee minors, citizens of EU member states with no access to social services, and illegal migrants.” BUTTERWEGGE, C. Poverty and Homelessness in Germany after the COVID-19 Pandemic. Center for European Studies. Available on: <<https://www.europenowjournal.org/2023/07/07/poverty-and-homelessness-in-germany-after-the-covid-19-pandemic/>>. Accessed on: 9th Oct. 2023

[46] “Areas in which social disadvantages are concentrated to an above-average extent require a special urban development policy focus and are identified in the MSS as “areas in need of special attention”. They are defined as areas with very low social status or low social status with negative dynamics at the same time. In total, this group includes 56 of the 536 planning areas considered (10 percent).” BERLIN. Government. Senatsverwaltung für Stadtentwicklung, Bauen und Wohnen. *Bericht Monitoring Soziale Stadtentwicklung Berlin 2021*. Available on: <<https://www.berlin.de/sen/sbw/stadtdaten/stadtwissen/monitoring-soziale-stadtentwicklung/bericht-2021/>>. Accessed on: 9th Oct. 2023.

[47] “A Fallow area is an area that is not in use or maintained at the time of recording, on which variegated stands of vegetation can often develop undisturbed, which is, however, subject to great pressure of use and change. A distinction is made between a Fallow area free of vegetation on the one hand, which includes mostly excavations, soil or rubble dumps, or demolition areas, where no vegetation has yet taken root, due to the fact that their utilisation has only recently been abandoned. In some cases, the site conditions ensure that no vegetation will enter the area for some time. These may be brownfields where little vegetation grows due to the very high degree of imperviousness, or else sand dunes and beaches, on which spontaneous growth of vegetation occurs only very slowly, due to a lack of nutrients, or due to regular disturbances.” BERLIN, 2020, *op. cit.*

[48] “The City Development Index is based on three main domains (i.e., social, economic, and cultural) and their sub-dimensions. These three domains correspond to the three main structures upon which all cities throughout history have been built and that ensure the continuity of a city’s social reality. In addition, these three basic domains also have their own dimensions. Ideally, urban development basically depends on the harmony among these three elements and the balanced distribution of their measurable sub-indicators.” CITY INDEX. Available on: <<https://cdindex.net/>>. Accessed on: Aug 18th, 2023. The index includes 55 cities (2020). By this system, *Berlin*’s score is 57.21, occupying the 9th position. *Rio de Janeiro*’s score is 37.65, on the 45th position. The best score is of Prague (61.9), while the worst is Lagos (26.4).

[49] On the Poverty and Inequality Platform from the World Bank, “the Gini index measures the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.” Concerning the last available data, Germany’s index is 31.72% (2019), and Brazil’s index is 52.92% (2021). WORLD BANK. Glossary. Available on: <[\[50\] The racial identification was not a data collected by the questionnaire in *Berlin*. Even so, the lack of people non-European and non-White was noticed during the field visits, photos published by gardens on social media, and by the interviewees. For example, BERE9 stated that “most of the team is German and White.” Indeed, an estimate from United Nations is around one million people with “African roots” in Germany, more than 1% of the population. UNITED NATIONS. Statement to the media by the United Nations’ Working Group of Experts on People of African Descent, on the conclusion of its official visit to Germany, 20-27 February 2017. 2017. Available on: <<https://www.ohchr.org/en/statements/2017/02/statement-media- united-nations-working-group-experts-people-african-descent>>. Accessed on: May 16th, 2023.](https://databank.worldbank.org/metadataglossary/gender-statistics/series/SI.POV.GINI#:~:text=Metadata%20Glossary&text=The%20Gini%20index%20measures%20the,of%20100%20implies%20perfect%20inequality./>”. Accessed on: Aug 18th, 2023.</p>
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[51] “Knowledge + Action = Power. The future is unwritten.” FAIREY, Shepard, *KNOWLEDGE + ACTION*, 2018. Available on: <<https://obeygiant.com/prints/knowledge-action/>>. Accessed on: 06 Oct. 2023.

REFERENCES

- ¹ DAVIES, A. *et al.* Fare sharing: interrogating the nexus of ICT, urban food sharing, and sustainability. *Food, Culture & Society*, 2018, p. 18. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/15528014.2018.1427924>>. Accessed on May 16th, 2023.
- ² VICTOR, L. *Systematic reviewing*. Social research Update, i. 54. University of Surrey, 2008. Available on: <<https://sru.soc.surrey.ac.uk/SRU54.pdf>>. Accessed on May 4th 2023.
- ³ “The retraction of an article is the removal of an already published article from a journal. This decision may be made by the journal's editor and/or editorial board. Retractions do not happen because of small editorial errors.” Library Guide to Academic Publishing: Journal Article Retraction. Available on: <<https://academicguides.waldenu.edu/library/academicpublishing/retraction>>. Accessed on 08th Oct. 2023.
- ⁴ MAGALHÃES, Mariano J. Hortas comunitárias in the favelas of Rio de Janeiro: How New Ideas Are Adopted and Spread Across Communities. In: TRAPANI, F. *et al.* (ed.) *Advanced Studies in Efficient Environmental Design and City Planning*. Cham: Springer International Publishing, 2021. Available on: <https://link.springer.com/chapter/10.1007/978-3-030-65181-7_21>. Accessed on May 20th, 2023.
- VÉRON, O. ‘We’re Just an ambulance at the bottom of the cliff’: Strategies and (a)politics of change in Berlin’s community food spaces. *Environment and Planning A: Economy and Space*, 19 Feb. 2023. Available on: <<https://journals.sagepub.com/doi/10.1177/0308518X231158101>>. Accessed on May 26th, 2023.
- ⁵ REKOW, L. Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro. *Field Actions Science Reports*, vol. 8, 2015. Available on: <<https://journals.openedition.org/factsreports/pdf/4009>>. Accessed on May 16th, 2023.
- ⁶ MAGALHÃES, *op. cit.*
- ⁷ REKOW, *op. cit.*
- ⁸ MAGALHÃES, *op. cit.*
- ⁹ FERRARI, E. *et al.* Towards an integrated garden. Gardeners of all types, unite! *Urban Forestry & Urban Greening*, v. 81, 2023. Available on: <<https://www.sciencedirect.com/science/article/pii/S1618866723000286>>. Accessed on May 26th, 2023.
- ¹⁰ HALDER, S. *Gemeinsam die Hände dreckig machen: Aktionsforschungen im aktivistischen Kontext urbaner Gärten und kollektiver Kartierungen*, 2017 Dissertation an der Freien Universität Berlin. Available on: <<https://katalog.dnb.de/EN/resource.html?hit=2&t=gemeinsam+Landwirtschaft+&fD=fmt.hss&key=all&sp=dnb&th=5&tk=F83EFEEC49340E77BD8177FD0B844C927AD17C35&pr=0&sortA=bez&sortD=-dat&v=plist>>. Accessed on May 23th, 2023.
- STEUR, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture’s potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg (HCU), 2022. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steur-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.
- ¹¹ BECK, V. Iniciativas urbano sustentáveis no Rio de Janeiro: a experiência da horta carioca do Jardim Anil. In: CORREIA, Arícia Fernandes. (Org.). *Direito da Regularização Fundiária Urbana Sustentável*. Pesquisa, teoria e prática em torno da Lei Federal n. 13.465/2017. 1ed. Juiz de Fora-MG: Editar, 2018, v. 1, p. 9-383. Available on: <<https://nepec-uerj.com.br/wp->

content/uploads/2021/12/Direito-Regularizac%CC%A7a%CC%83o-Fundia%CC%81ria-Final-com-capa.pdf>. Accessed on May 23th, 2023.

LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <

<https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.

SINISCALCHI, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: <<https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF>>. Accessed on May 23th, 2023.

ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 mar. 2016. Available on: <<https://tede.ufrj.br/handle/jspui/1397>>. Accessed on MAY 23th, 2023.

¹² GOBSTER, P. H.; STEWART, S. I.; BENGSTON, D. N. The social aspects of landscape change: protecting open space under the pressure of development. *Landscape and Urban Planning*. v. 69, i. 2, p. 149–151, 15 ago. 2004. Available on:

<<https://www.sciencedirect.com/journal/landscape-and-urban-planning/vol/69/issue/2>>.

Accessed on May 23th, 2023.

¹³ KARGE, T. *Neue urbane Landwirtschaft: Eine theoretische Verortung und Akteursanalyse der Initiative Himmelbeet im Berliner Wedding*. Berlin:

Universitätsverlag der TU Berlin, 2015. Available on: <<https://d-nb.info/1156274923/34>>.

Accessed on May 23th, 2023.

¹⁴ MAGALHÃES, *op. cit.*

SILVA, S. H. C. *et al. Plantas medicinais: tradições e saberes de mulheres de uma comunidade urbana do Rio de Janeiro, RJ, Brasil*. 2014. Available on:

<<https://www.arca.fiocruz.br/handle/icict/11037>>. Accessed on May 23th, 2023.

¹⁵ COLDING, J. *et al. Urban Green Commons: Insights on Urban Common Property Systems*. *Global Environmental Change*. v. 23, i. 5, p. 1039–1051, 1 oct. 2013. Available on:

<<https://www.sciencedirect.com/science/article/abs/pii/S0959378013000800?via%3Dihub>>.

Accessed on May 16th, 2023.

¹⁶ GOBSTER, *et al., op. cit.*

¹⁷ OCHOA, J. *et al. Sustainable Community Gardens Require Social Engagement and Training: A Users' Needs Analysis in Europe*. *Sustainability*. v. 11, i. 14, Jan. 2019. Available on:

<<https://www.mdpi.com/2071-1050/11/14/3978>>. Accessed on May 16th, 2023.

¹⁸ GÖTTL, I.; PENKER, M. Institutions for Collective Gardening: A Comparative Analysis of 51 Urban Community Gardens in Anglophone and German-Speaking Countries.

International Journal of The Commons. v. 14, i. 1, p. 30–43, 17 Feb. 2020. Available on:

<<https://thecommonsjournal.org/articles/10.5334/ijc.961>>. Accessed on May 16th, 2023.

¹⁹ JACKISCH, J. *Cultivating Well-Being. A study on Community Gardening and Health in Berlin and Paris*. Master thesis. Department of Medical and Health Sciences, Health and Society. Linköping University, 2012. Available on: <

<http://liu.diva-portal.org/smash/record.jsf?pid=diva2%3A579216&dswid=-4110>>.

Accessed on May 16th, 2023.

²⁰ FOX-KÄMPER, R. *et al. Urban Community Gardens: An Evaluation of Governance*

Approaches and Related Enablers and Barriers at Different Development Stages. *Landscape*

and *Urban Planning*, n. 1, v. 170, p. 59–68, 1 Feb. 2018. Available on:

<<https://www.sciencedirect.com/science/article/pii/S0169204617301615?via%3Dihub>>.

Accessed on May 16th, 2023.

²¹ DAVIES, A. R.; CRETELLA, A.; FRANCK, V. Food Sharing Initiatives and Food Democracy: Practice and Policy in Three European Cities. *Politics and Governance*, v. 7, i. 4, p. 8–20, 28 oct. 2019. Available on:

<<https://www.cogitatiopress.com/politicsandgovernance/article/view/2090>>. Accessed on May 26th, 2023.

²² REKOW, *op. cit.*

REKOW, L. Urban Agriculture in the Manguinhos Favela of Rio de Janeiro: Laying the Groundwork for a Greener Future. In: Leal Filho, W., Pociovalisteanu, DM., Al-Amin, A. (eds) *Sustainable Economic Development*. World Sustainability Series. Springer, Cham.

Available on: <https://link.springer.com/chapter/10.1007/978-3-319-45081-0_10>. Accessed on May 16th, 2023.

²³ BIAZOTI, A.R. *et al.* The Impact of COVID-19 on Urban Agriculture in Sao Paulo, Brazil. *Sustainability*, São Paulo, Brazil, v. 13, i. 11, Jun 2021. Available on:

<<https://www.webofscience.com/wos/woscc/full-record/WOS:000660719100001>>. Accessed on May 16th, 2023.

²⁴ NAGIB, G.; NAKAMURA, A.C. Urban agriculture in the city of Sao Paulo: New spatial transformations and ongoing challenges to guarantee the production and consumption of healthy food. *Global food security-agriculture policy economics and environment*. v. 26, no pagination, Sep 2020. Available on: <<https://www.webofscience.com/wos/woscc/full-record/WOS:000603578100007>>. Accessed on May 16th, 2023.

²⁵ AMATO-LOURENCO, L.F. *et al.* Building knowledge in urban agriculture: the challenges of local food production in Sao Paulo and Melbourne. *Environment development and Sustainability*. v. 23, i. 2, p. 2785–2796, Feb 2021. Available on:

<<https://www.webofscience.com/wos/woscc/full-record/WOS:000520070800001>>. Accessed on May 16th, 2023.

²⁶ VISONI, C.; NAGIB, G. Reappropriating Urban Space through Community Gardens in Brazil. *Field Actions Science Reports*, i. 20, p. 88–91, 24 Sep. 2019. Available on:

<<https://journals.openedition.org/factsreports/5778>>. Accessed on May 16th, 2023.

²⁷ DEFLORIAN, M. Crowdsourcing infrastructures of green everyday life: how sustainable sharing, swapping and gardening initiatives in Vienna tackle the lack of transformative agency in eco-politics. *Environmental politics*, 2022. Available on:

<<https://www.tandfonline.com/doi/full/10.1080/09644016.2022.2164212>>. Accessed on May 26th, 2023.

²⁸ MAYRHOFER, R. Co-Creating Community Gardens on Untapped Terrain – Lessons from a Transdisciplinary Planning and Participation Process in the Context of Municipal Housing in Vienna. *Local Environment*, v. 23, i. 12, p. 1207–1224, Dec. 2nd., 2018. Available on: <<https://sci-hub.hkvisa.net/10.1080/13549839.2018.1541345>>. Accessed on May 16th, 2023.

²⁹ DAVIES, Anna R.; LEGG, Robert. Fare sharing: interrogating the nexus of ICT, urban food sharing, and sustainability. *Food, Culture & Society*, 2018, p. 18. Available on:

<<https://www.tandfonline.com/doi/abs/10.1080/15528014.2018.1427924>>. Accessed on May 16th, 2023.

³⁰ DAVIES, *et al.*, 2018, *op. cit.*

³¹ DAVIES, *et al.*, 2018, *op. cit.*

³² PERNES, F. G.; OLIVEIRA, A. J.; CIPOLLA, C. M. *Design de serviços para inovação social e sustentabilidade: um estudo sobre as hortas comunitárias no Rio de Janeiro*. Rio de

Janeiro, 2019. 131 f. Dissertação de Mestrado – Departamento de Artes e Design, Pontifícia Universidade Católica do Rio de Janeiro. Available on: < <https://www.maxwell.vrac.puc-rio.br/46572/46572.PDF> >. Accessed on May 16th, 2023.

VIRIATO, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: < <https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF> >. Accessed on May 16th, 2023.

³³ KARGE, *op. cit.*

ROSOL, M. Community Volunteering as Neoliberal Strategy? Green Space Production in Berlin. *Antipode*, v. 44, i. 1, 2012, p. 239-257. Available on: <<https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-8330.2011.00861.x>>. Accessed on May 26th, 2023.

³⁴ CHEN, W. *op. cit.*

LANDMAN, T.; SILVERMAN, B. W. Globalization and Modern Slavery. *Politics and Governance*. v. 7, i. 4, p. 275–290, 25 Nov. 2019. Available on: <<https://www.cogitatiopress.com/politicsandgovernance/article/view/2233>>. Accessed on May 26th, 2023.

³⁵ ZANOTTO, *op. cit.*; PERNES, *et al., op. cit.*; KARGE, *op. cit.*; HALDER, *op. cit.*

³⁶ DAVIES, *et al., op. cit.*

³⁷ HARRIS, D.; FULLER, D. *op. cit.* Available on:

<https://www.researchgate.net/publication/301345493_Agriculture_Definition_and_Overview#fullTextFileContent>. Accessed on Aug 17th, 2023.

³⁸ MAZOYER, M.; ROUDART, L. *History of agriculture in the world: from the Neolithic to the contemporary crisis*. São Paulo: Editora UNESP; Brasília, DF: NEAD, 2010, p. 131.

³⁹ BENEVOLO, L. *City History*. 3. ed. São Paulo: Editora Perspectiva, 2001, p. 16.

⁴⁰ MAZOYER; ROUDART, *op. cit.*, p. 44.

⁴¹ ARISTOTLE. *Ethics to Nicomachus*. 4. ed. Brasília: University of Brasilia, 2001, p. 93.

⁴² ARISTOTLE. *Politics*. São Paulo: Martins Fontes, 2002, p. 19-31.

⁴³ BRITO, M. *The justification of private property in a constitutional democracy*. Coimbra: Almedina, 2007. p.73.

⁴⁴ MOTA, M. *Theoretical foundations of the social function of property: property in Thomas Aquinas*. *Revista Jurídica da Presidência*, v. 10, n. 92, 2009, p. 14. Available on: <<https://revistajuridica.presidencia.gov.br/index.php/saj/article/view/210>>. Accessed on 20 jun. 2023.

⁴⁵ BRITO, *op. cit.*, p. 88.

⁴⁶ MOTA, *op. cit.*, p. 16.

⁴⁷ BENEVOLO, *op. cit.*, p. 143.

⁴⁸ VERÁS NETO, F. Classical Roman law: its legal institutes and its legacy. In: *Fundamentals of the History of Private Law*. 2008, p. 128.

⁴⁹ VERÁS NETO, *op. cit.*, p. 133; WOLKMER, A. C. *Fundamentos de história do direito*. 4. ed. Belo Horizonte: Editora Del Rey, 2008.

⁵⁰ MAZOYER; ROUDART, *loc. cit.*

⁵¹ BENEVOLO, *op. cit.*, p. 252.

⁵² BENEVOLO, *op. cit.*, p. 256.

⁵³ BENEVOLO, *loc. cit.*

⁵⁴ MOTA, *op. cit.*, p. 21.

⁵⁵ THOMAS OF AQUINO, Saint. A theological suma II. II. v. 6 [ca. 1265-1273].

- ⁵⁶ COULANGES, Denis. *The ancient city*. São Paulo: Martins Fontes, 1987.
- ⁵⁷ DE MOOR, T. The silent revolution: a new perspective on the emergence of commons, guilds, and others forms of corporate collective action in western Europe. *International review of social history*, n. 53, p. 179-212, 2008.
- ⁵⁸ LE GOFF, J. *As raízes medievais da Europa*. 2. ed. São Paulo: Vozes, 2007.
- ⁵⁹ DE MOOR, *op. cit.*
- ⁶⁰ BRAKENSIEK, S. The management of common land in northwestern Germany. In: DE MOOR, Martina; TAYLOR, L; WARDE, P. The management of common land in north-west Europe, c. 1500-1850. Turnhout, Bélgica: Brepols, 2002. p. 225-245.
- ⁶¹ BENEVOLO, *op. cit.*, p. 255-256.
- ⁶² BENEVOLO, *op. cit.*, p. 259-263.
- ⁶³ BENEVOLO, *op. cit.*, p. 552.
- ⁶⁴ MAZOYER; ROUDART, *loc. cit.*
- ⁶⁵ CRUZ, C. E. S. *Desenvolvimento e periferia: análise sobre possibilidade de eficácia de instrumentos de política urbana em periferias intramunicipais*. Rio de Janeiro: 2019. 186 f. p. 18. Dissertação de Mestrado – Centro de Ciências Sociais, Faculdade de Direito, Universidade do Estado do Rio de Janeiro. Available on: <<https://www.bdtd.uerj.br:8443/bitstream/1/9508/1/Carlos%20Eduardo%20Souza%20Cruz%20%20TOTAL%20PROTEGIDO.pdf>>. Accessed on Jun 09th, 2023.
- ⁶⁶ RELLY, E. A experiência dos “commons” como via para desenvolver uma ecologia política. [Entrevista concedida a] João Vitor Santos. Instituto Humanitas Unisinos. Oct. 06th 2022. Available on: <<https://www.ihu.unisinos.br/622765-propriedade-comunal-na-alemanha-pre-moderna-a-experiencia-de-cooperacao-social-e-uso-comum-da-terra-que-pode-inspirar-a-producao-em-nosso-tempo-entrevista-especial-com-eduardo-relly>>. Accessed on Jun 09th, 2023.
- ⁶⁷ ALFONSIN, B. de M., et al. Do cercamento das terras comuns ao Estatuto da Cidade: a colonialidade do direito de propriedade como obstáculo para a efetivação do direito à cidade no Brasil. *Revista de Direito da Cidade*, 15 (1), 2023, p. 294–330. Available on: <<https://www.e-publicacoes.uerj.br/index.php/rdc/article/view/64045>>. Accessed on Jun. 09th, 2023.
- ⁶⁸ BEUCHOT, M. *Oeuvres Voltaire*, v. 14. Paris: Lefèvre, 1833, p. 122.
- ⁶⁹ MONTESQUIEU, 1973: 74-75
- ⁷⁰ ROUSSEAU, 1978, p. 35-36
- ⁷¹ SMITH, A. *The Wealth of Nations*, 16 Dec. 2014.
- ⁷² FRANCE. Declaration of the Rights of Man and of the Citizen. Paris: National Constituent Assembly, 1789.
- ⁷³ SOUZA, 2004, p. 39.
- ⁷⁴ *Rerum Novarum: On the condition of workers*. Roma, 1891. Available on: <https://www.vatican.va/content/leo-xiii/pt/encyclicals/documents/hf_l-xiii_enc_15051891_rerum-novarum.html>. Accessed on Jun 09th, 2023.
- ⁷⁵ BENEVOLO, *op. cit.*, p. 567.
- ⁷⁶ FOSTER, J. B. Marx’s Theory of Metabolic Rift: Classical Foundations for Environmental Sociology. *American Journal of Sociology*, v. 105, n. 2, p. 366–405, 1999. Available on: <<https://www.jstor.org/stable/10.1086/210315>>. Accessed on Aug 17th, 2023.
- ⁷⁷ ANGELIS, M. *The beginning of history: Value Struggles and Global Capital*. London: Pluto Press, p. 152, 2007. Available on: <http://www.lamarre-mediaken.com/Site/COMS_630_files/Beginning%20of%20History.pdf>. Accessed on Oct. 3rd, 2023.

- ⁷⁸ MAZOYER; ROUDART, *op. cit.*, p. 508.
- ⁷⁹ MAZOYER; ROUDART, *op. cit.*, p. 420.
- ⁸⁰ BENEVOLO, *op. cit.*, p. 574.
- ⁸¹ MAZOYER; ROUDART, *op. cit.*, p. 421.
- ⁸² BRAKENSIEK, *op. cit.*
- ⁸³ SILVA, H. Entre o amor ao Brasil e ao modo de ser alemão. São Leopoldo: Oikos, 2006.
- ⁸⁴ RELLY, *op. cit.*
- ⁸⁵ RELLY, *op. cit.*, p. 38.
- ⁸⁶ ENGELS, F. A marca. *Crítica Marxista*, Campinas, n. 17, p. 147-163, 2003. Available on: <www.unicamp.br/cemarx/criticamarxista/critica17-D-engels.pdf>. *apud* RELLY, *op. cit.*, p. 42.
- ALFONSIN, *op. cit.*
- ⁸⁷ LEFEBVRE, H. *The Urban Revolution*. Minnesota: University of Minnesota Press, 1999.
- ⁸⁸ OLIVEIRA, M. R. N. Land rent and its somersaults: a discussion on urban land rent, soil as a commodity and the centrality of Iguatemi. *GeoTextos*, v. 1, 2005. Available on: <<https://periodicos.ufba.br/index.php/geotextos/article/view/3029>>. Accessed on Jun 09th, 2023.
- ⁸⁹ SANTOS, Boaventura de Sousa. The State, the law and the urban question. *Revista Crítica de Ciências Sociais*. 9 (1982) 9-86, p. 43. Available on: <<https://estudogeral.uc.pt/handle/10316/10792?locale=en>>. Accessed on Jun 09th, 2023.
- ⁹⁰ CRUZ, C. E. S. *Development and periphery: analysis on the possibility of effectiveness of urban policy instruments in intra-municipal peripheries*. Rio de Janeiro: 2019. 186 f. p. 45-74. Dissertação de Mestrado – Centro de Ciências Sociais, Faculdade de Direito, Universidade do Estado do Rio de Janeiro. Available on: <<https://www.bdtd.uerj.br:8443/bitstream/1/9508/1/Carlos%20Eduardo%20Souza%20Cruz%20%20TOTAL%20PROTEGIDO.pdf>>. Accessed on Jun 09th, 2023.
- ⁹¹ BARRETO, C. G. P. *Land rent, urban legislation, land use dispute: the transformation of Avenida 17 De Agosto into a commercial axis over the last decade*. Master (thesis) in Urban Development. Universidade Federal de Pernambuco. Recife: 2013, p. 88. Available on: <<https://repositorio.ufpe.br/bitstream/123456789/17709/1/DISSERTA%c3%87AO%20Claudia%20Paes%20Barreto.pdf>>. Accessed on Jun 09th, 2023.
- ⁹² MARICATO, E. *Housing and city*. 7. ed. São Paulo: Atual, 1997
- HARVEY, D. *Social justice and the city*. São Paulo: Hucitec, 1980.
- ⁹³ PAGANI, E.; ALVES, J.; CORDEIRO, S. *Socio-spatial segregation and real estate speculation in urban space Argumentum*, Vitória (ES), v. 7, n.1, p. 167-183, Jan./Jun. 2015. Available on: <https://www.academia.edu/71780234/Socio_spatial_segregation_and_property_speculation_in_the_urban_space>. Accessed on 20th June 2023.
- ⁹⁴ BASU, D. *Marx's Analysis of Ground-Rent: Theory, Examples and Applications*, 2018. UMASS Amherst Economics Working Papers. 241 p. 3. Available on: <https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1242&context=econ_workingpaper>. Accessed on June 09th, 2023.
- ⁹⁵ CRUZ, *op. cit.*, p. 34.
- ⁹⁶ ROLNIK, R. *What is city*. 3. ed. São Paulo: Editora Brasiliense, 2004. Available on: <<https://arquiteturaurbanismosite.files.wordpress.com/2016/03/rolnik-raquel-o-que-c3a9-cidade-livro-completo.pdf>>. Accessed on Jun 09th, 2023.
- ⁹⁷ HALL, P. Megaciudades, ciudades mundiales y ciudades globales. In: *Lo urbano en 20 autores contemporáneos*. Angel Martin Ramos (org.), 2004, págs. 117-132.

⁹⁸ BOTELHO, *op. cit.*, p. 29.

⁹⁹ MOURA, E. *A função social como elemento estruturante da teoria do domínio público: o dever de funcionalização dos bens públicos*. 2017. 353 f. Tese (Doutorado em Direito Civil Constitucional; Direito da Cidade; Direito Internacional e Integração Econômica; Direi) - Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2017. Available on: <<https://www.bdt.d.uerj.br:8443/handle/1/9365>>. Accessed on Aug 19th, 2023.

BORDE, Andréa de Lacerda Pessoa. *Vazios urbanos: perspectivas contemporâneas*. 2006. Tese (Doutorado em Arquitetura e Urbanismo) – Faculdade de Arquitetura e Urbanismo, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2006, p. 14. Available on: <<http://www.prourb.fau.ufrj.br/integrantes/andrea-de-lacerda-pessoa-borde/>>. Accessed on Aug 19th, 2023.

¹⁰⁰ EMERSON, R. G. *Problems of vacant land in the in-town area*. Dartmouth College. Massachusetts Institute of Technology, 1942. Available on: <<https://dspace.mit.edu/bitstream/handle/1721.1/74376/28952000-MIT.pdf?sequence=2>>. Accessed on Oct 3rd, 2023.

¹⁰¹ SONG, XQ. *et al.* Urban vacant land in growing urbanization: An international review. *Journal of Geographical Sciences*, v. 30, i. 4, April 2020, p. 669-687. Available on: <<https://www.webofscience.com/wos/woscc/full-record/WOS:000528559600010>>. Accessed on Aug 19th, 2023.

¹⁰² JARDIM, Felipe. *IPTU progressivo no tempo ou arrecadação de bem vago abandonado?: aplicabilidade de instrumentos jurídico-urbanísticos em imóveis ociosos do bairro do Recife*. Mestrado em Desenvolvimento Urbano – UFPE, Recife, 2018. Available on: <<https://repositorio.ufpe.br/handle/123456789/32193>>. Accessed on Aug 19th, 2023.

CLEMENTE, J. *Vazios urbanos e imóveis subutilizados no centro histórico tombado da cidade de João Pessoa - PB*. 2012. Dissertação de mestrado. Universidade Federal da Paraíba. Programa de pós-graduação em engenharia urbana e ambiental. João Pessoa. Available on: <<https://repositorio.ufpb.br/jspui/handle/tede/5472?mode=full>>. Accessed on Aug 19th, 2023.

BORDE, *op. cit.*
SOUSA, C. *Do cheio para o vazio: metodologia e estratégia na avaliação de espaços urbanos obsoletos*. Mestrado em Arquitetura. Universidade Técnica de Lisboa. Lisboa, 2010. Available on:

<https://fenix.tecnico.ulisboa.pt/downloadFile/395142195938/DO%20CHEIO%20PARA%20O%20VAZIO_versao%20final.pdf>. Accessed on Aug 19th, 2023.

¹⁰³ SONG, *op. cit.*

¹⁰⁴ KELLEHER, C. *et al.* Urban vacant lands impart hydrological benefits across city landscapes. v. 11, i. 1, Mar 26th, 2020. Available on: <<https://www.webofscience.com/wos/woscc/full-record/WOS:000522450900002>>. Accessed on Aug 19th, 2023.

¹⁰⁵ TURO, KJ. *et al.* *Conservation in post-industrial cities: How does vacant land management and landscape configuration influence urban bees?* v. 58, i. 1, pag. 58-69, Jan 2020. Available on: <<https://www.webofscience.com/wos/woscc/full-record/WOS:000576543600001>>. Accessed on Aug 19th, 2023.

¹⁰⁶ NÉMETH, J. LANGHORST, J. Rethinking urban transformation: Temporary uses for vacant land. *Cities*, v. 40, Part B, October 2014, p. 143-150.

¹⁰⁷ JARAMILLO, Samuel. *Hacia una teoría de La renta Del solo urbano*. 2ª.ed. Bogotá: Ediciones uniandes, 2010, p. 178.

¹⁰⁸ TEIXEIRA, V. M. de L.; PEREIRA, C. S.; SILVA, C. F. da. Social division of space and socio-spatial fragmentation. *Mercator*, Fortaleza, v. 21, nov. 2022. Available on:

<<https://www.scielo.br/j/mercator/a/X4mCHxhdMgP7Qy6LcVkRdNz/>>. Accessed on Aug 19th, 2023.

¹⁰⁹ BOTELHO, *loc. cit.*

¹¹⁰ CRUZ, *op. cit.*, p. 34; PAGANI, *op. cit.*, p. 167-183.

¹¹¹ TEIXEIRA, *op. cit.*

¹¹² SANTOS, Angela Moulin Simões Penalva. *et al. O município e os desafios da política urbana em aglomerados urbanos: a experiência da metrópole fluminense*. Rio de Janeiro. Feb, 2020. Available on: <<https://www.e-publicacoes.uerj.br/index.php/geouerj/article/view/47268/32232>>. Accessed on Aug 19th, 2023.

¹¹³ TEIXEIRA, *op. cit.*

¹¹⁴ OLIVEIRA, Ney. Favelas and Ghettos: Race and Class in Rio de Janeiro and New York City. *Latin American Perspectives*, vol. 23, i. 4, 1996, p. 72. Available on: <<http://www.jstor.org/stable/2634130>>. Accessed on Sep 28th, 2023.

¹¹⁵ BIEHL, J. A expansão irregular dos municípios como forma de degradação ambiental: a necessidade de planejamento para ocupação e uso do solo. In: *Função socioambiental da propriedade – vol. II – Marcia Andrea Bühring*. Available on: <<https://www.ucs.br/site/midia/arquivos/ebook-funcao-ambiental.pdf>>. Accessed on Aug. 19th, 2023.

¹¹⁶ BARROS, Juliane de Lima. *Racismo ambiental e direito ao lazer no espaço público: um estudo sobre o Parque Santana Ariano Suassuna*. 2019. Dissertação (Mestrado em Desenvolvimento Urbano) - Universidade Federal de Pernambuco, Recife, 2019. Available on: <<https://repositorio.ufpe.br/handle/123456789/39968?locale=es>>. Accessed on Aug. 19th, 2023.

¹¹⁷ SANTOS, Angela Moulin Simões Penalva; CRUZ, Carlos Eduardo de Souza. Regularização Fundiária: de seu avanço institucional à reprodução crescente do problema que a originou. In: *Direito da regularização fundiária urbana sustentável: pesquisa, teoria e prática sobre a Lei Federal nº 13.465/2017*. Arícia Fernandes Correia (org.) Juiz de Fora: Editar Editora Associada Ltda, 2018, p. 40. Available on: <<https://nepec-uerj.com.br/wp-content/uploads/2021/12/Direito-Regularizac%CC%A7a%CC%83o-Fundia%CC%81ria-Final-com-capa.pdf>>. Accessed on Oct. 3rd, 2023.

¹¹⁸ UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME. *The challenge of slums global report on human settlements*. London, 2003, p. vi. Available on: <<https://unhabitat.org/sites/default/files/download-manager-files/The%20Challenge%20of%20Slums%20%20Global%20Report%20on%20Human%20Settlements%202003.pdf>>. Accessed on Oct. 3rd, 2023.

¹¹⁹ UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME, *loc. cit.*

¹²⁰ UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME, *loc. cit.*

¹²¹ DAVIS, M. *Planeta de favelas: A involução urbana e o proletariado informal*. São Paulo: Boitempo Editorial, 2006, p. 202. Available on: <https://edisciplinas.usp.br/pluginfile.php/4126351/mod_resource/content/1/Mike%20Davis%20-%20Planeta%20de%20Favelas.pdf>. Accessed on Oct 3rd, 2023.

¹²² DAVIS, *op. cit.*

¹²³ IBGE. Favelas e Comunidades Urbanas. Available on:

<<https://biblioteca.ibge.gov.br/visualizacao/livros/liv102062.pdf>>. Accessed on March 3rd, 2024.

¹²⁴ FILHO, A. P. de Q. Sobre as origens da Favela. *Mercator*, v. 10, i. 23, p. 33-48, nov. 17, 2011.

- ¹²⁵ IBGE. Favelas e Comunidades Urbanas. Available on: <<https://www.ibge.gov.br/geociencias/organizacao-do-territorio/tipologias-do-territorio/15788-aglomerados-subnormais.html?=&t=o-que-e>>. Accessed on Oct 3rd, 2023.
- ¹²⁶ SCHONARDIE, E. F. A concretização dos direitos humanos e a questão dos aglomerados subnormais nas cidades brasileiras. *Revista de Direito da Cidade*, 9 (3), 2017, p. 1363–1382. Available on: <<https://doi.org/10.12957/rdc.2017.27166>>. Accessed on Oct 3rd, 2023.
- ¹²⁷ OLIVEIRA, Ney., 1996, *op. cit.*, p. 74.
- ¹²⁸ OLIVEIRA, Ney., 1996, *op. cit.*
- ¹²⁹ OLIVEIRA, Samuel Silva Rodrigues de. Informalidade urbana, classe trabalhadora e raça no Rio de Janeiro: a história dos censos de favelas (1948-1960). *Revista de História*, n. 180, p. 1–27, 21 jul. 2021. Available on: <<https://www.revistas.usp.br/revhistoria/article/view/170643>>. Accessed on Oct 3rd, 2023.
- ¹³⁰ OLIVEIRA, Ney., 1996, *op. cit.*
- ¹³¹ FIGUEIRA, L.; COSTA, P. *Deslocamentos urbanos involuntários e a remoção da favela Metrô-Mangueira*: a produção do espaço a partir das noções de centro e periferia. Involuntary urban displacements and the removal of metrô-Mangueira slum: the production of the space considering the ideas of downtown and outskirts. *Revista de Direito da Cidade*, v. 10, i. 4, p. 2143–2163. dec. 18, 2018. Available on: <<https://www.e-publicacoes.uerj.br/rdc/article/view/31597>>. Accessed on Oct 3rd, 2023.
- LIRA, R. Remoção de favelas / Removal of slums. *Revista De Direito Da Cidade*. v.9, i.3, p. 1383–1932. Available on: <<https://www.e-publicacoes.uerj.br/rdc/article/view/29022>>. Accessed on Oct 3rd, 2023.
- OLIVEIRA, Natália Sales de. *Produção capitalista racista da espacialidade carioca: uma análise a partir de conflitos fundiários urbanos*. 2023. 192f. Tese. (Doutorado em Direito) – Faculdade de Direito, Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2023.
- ¹³² OLIVEIRA, Natália Sales de. Gentrificação e moradia social: como a política urbana pode atuar. 2016. 23 f. Dissertação (Mestrado em Direito) - Universidade do Estado do Rio de Janeiro, Rio de Janeiro, 2016. Available on: <<https://www.btd.uerj.br:8443/handle/1/9769>>. Accessed on Oct 3rd, 2023.
- ¹³³ OLIVEIRA, Natália Sales de, 2023, *op. cit.*
- ¹³⁴ OLIVEIRA, Ney, 1996, *op. cit.*
- ¹³⁵ UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME, *op. cit.* p. 6.
- ¹³⁶ WERMUTH, M.; CAMPOS, P. *Livrai-nos de todo mal: medo, controle social e segregação espacial*. *Revista De Direito Da Cidade*. v. 14, i. 4, p. 2608–2636, 2022. Available on: <<https://www.e-publicacoes.uerj.br/index.php/rdc/article/view/60193>>. Accessed on Oct 3rd, 2023.
- ¹³⁷ AMOROSO, M. *Nunca é tarde para ser feliz? A imagem da favela pelas lentes do Correio da Manhã*. Dissertação de Mestrado – Universidade Fluminense, Departamento de História. (História Social). Niterói: 2006, p. 164. Available on: <<https://www.historia.uff.br/academico/media/aluno/1167/projeto/Dissert-mauro-henrique-de-barros-amoroso.pdf>>. Accessed on Oct 3rd, 2023.
- ¹³⁸ AMOROSO, M. A tropa e a cidade: a Polícia Militar no Rio de Janeiro durante a abertura e seus impactos negativos futuros para a consolidação de um universo de direitos para as favelas. *Tempo e Argumento*, v. 11, i. 27, p. 129–157, jul. 24th, 2019. Available on: <<https://revistas.udesc.br/index.php/tempo/article/view/2175180311272019129>>. Accessed on Oct 3rd, 2023.

- ¹³⁹ MOURA, E. *A função social como elemento estruturante da teoria do domínio público: o dever de funcionalização dos bens públicos*. jun. 14th, 2017. Available on: <<https://www.bdttd.uerj.br:8443/handle/1/9365>>. Accessed on Oct 3rd, 2023.
- ¹⁴⁰ LE CORBUSIER, The Athens Charter, 1933. Available on: <https://jasonsedar.files.wordpress.com/2011/03/the_athens_charter.pdf>. Accessed on Aug 19th, 2023.
- ¹⁴¹ GERMANY. *BKleingG – Bundeskleingartengesetz*, 1983. Available on: <<https://www.gesetze-im-internet.de/bkleingg/BJNR002100983.html>>. Accessed on Oct 3rd, 2023.
- ¹⁴² STOETZER, B. Ruderal Ecologies: Rethinking Nature, Migration, and the Urban Landscape in Berlin. *Cultural Anthropology*, v. 33, p. 295–323, may 30th, 2018. Available on: <https://www.researchgate.net/publication/325460611_Ruderal_Ecologies_Rethinking_Nature_and_Migration_and_the_Urban_Landscape_in_Berlin>. Accessed on Oct 3rd, 2023.
- ¹⁴³ NILSEN, M. *The Working Man's Green Space: Allotment Gardens in England, France, and Germany, 1870–1919*. Available on: <<https://doi.org/10.1016/j.jhg.2015.08.009>>. Accessed on Oct. 3rd, 2023.
- ¹⁴⁴ FERRARI, E. *et al.* Towards an integrated garden. Gardeners of all types, unite! *Urban Forestry & Urban Greening*, v. 81, p. 127857, mar 1st, 2023. Available on: <<https://www.sciencedirect.com/science/article/abs/pii/S1618866723000286>>. Accessed on Oct. 3rd, 2023.
- ¹⁴⁵ BOBBIO, N. *Da Estrutura à Função: Novos Estudos da Teoria do Direito*. Barueri: Manole, 2007, p. 92.
- ¹⁴⁶ UNITED NATIONS. *Universal Declaration of Human Rights*. 1948. Available on: <<https://www.un.org/en/about-us/universal-declaration-of-human-rights>>. Accessed on Aug. 28th, 2023.
- ¹⁴⁷ SARLET, I. *Conceito de direitos e garantias fundamentais*. Enciclopédia jurídica da PUC-SP. ed. 2. São Paulo: Pontifícia Universidade Católica de São Paulo, 2022. Available on: <<https://enciclopediajuridica.pucsp.br/verbete/67/edicao-2/conceito-de-direitos-e-garantias-fundamentais>>. Accessed on Aug 28th, 2023.
- ¹⁴⁸ UNITED NATIONS, 1948, *op. cit.*
- ¹⁴⁹ SEN, A. Elements of a Theory of Human Rights. *Philosophy and Public Affairs*, Fall 2004, 32, 4. Available on: <<http://www.mit.edu/~shaslang/mprg/asenETHR.pdf>>. Accessed on Aug 28th, 2023.
- ¹⁵⁰ UNITED NATIONS. *The human right to a clean, healthy and sustainable environment*: Available on: <<https://digitallibrary.un.org/record/3982508?ln=en>>. Accessed on Aug 28th, 2023.
- ¹⁵¹ NUSSBERGER, A. *Os direitos humanos História, filosofia, conflitos*. Porto Alegre: Editora Fundação Fênix, 2022. Available on: <https://www.fundarfenix.com.br/_files/ugd/9b34d5_b1199b1f46824dc1a0f99379c7848107.pdf>. Accessed on Aug 18th, 2023.
- ¹⁵² Carta Mundial pelo Direito à Cidade. Artigo II, item 1.1 Available on: <<https://www.suelourbano.org/wp-content/uploads/2017/08/Carta-Mundial-pelo-Direito-%C3%A0-Cidade.pdf>>. Accessed on Aug 28th, 2023.
- ¹⁵³ BENHABIB, S. *The Claims of Culture: Equality and Diversity in the Global Era*. Princeton University Press, 2002. Available at: <<https://doi.org/10.2307/j.ctv346pnd>>. Accessed on Aug. 28th, 2023.

- MUTUA, Makau w. *Savages, victims, and saviors: the metaphor of human rights*. *Harvard International Law Journal*, 42, 201, 2001. Available on: <https://digitalcommons.law.buffalo.edu/journal_articles/570>. Accessed on Aug 28th, 2023.
- BAXI, U. *The future of human rights*. New Delhi: Oxford University Press India, 2012.
- ¹⁵⁴ MOYN, S. *The last utopia: Human rights in history*. Harvard University Press, Mar 5th, 2012.
- ¹⁵⁵ DONNELLY, J. *Universal human rights in theory and practice*. New York: Cornell University Press, 2013.
- ¹⁵⁶ ANAYA, S. *Indigenous peoples in international law*, Oxford univ press, 2004.
- ¹⁵⁷ LEFEBVRE, H. *Le droit a la ville*. Paris: Anthropos, 1968.
- LEFEBVRE, H. *The production of space*, 1991. Oxford: Blackwell.
- ¹⁵⁸ CASTELLS, M. *The Informational City: Information Technology, Economic Restructuring, and the Urban-Regional Process*, 1989. Oxford: Basil Blackwell.
- CASTELLS, M. (1996–1998) *The Information Age: Economy, Society and Culture, Vol. 1: The Rise of the Network Society; Vol. 2: The Power of Identity; Vol. 3: End of Millennium*. Oxford: Blackwell.
- ¹⁵⁹ ROLNIK, R. *O que é cidade*. São Paulo: Editora Brasiliense, 1988. Available on: <https://edisciplinas.usp.br/pluginfile.php/4405239/mod_resource/content/1/O%20que%20%C3%A9%20Cidade%20parte%201.pdf>. Accessed on Aug. 19th, 2023.
- ROLNIK, R. *Guerra dos Lugares*. São Paulo: Boitempo Editorial, 2019.
- MARICATO, E. *Direito à terra ou direito à cidade?* Petrópolis: Editora Vozes, v. 89, i. 6, p. 405-411, 1985. Available on: <https://www.academia.edu/42297879/Direito_%C3%A0_terra_ou_direito_%C3%A0_cidade>. Accessed on Aug 19th, 2023.
- ¹⁶⁰ HARVEY, D. *The right to the city*. Available on: <<https://newleftreview.org/issues/ii53/articles/david-harvey-the-right-to-the-city>>. Accessed on Aug. 19th, 2023.
- ¹⁶¹ JÚNIOR, N. S.; LIBÓRIO, D. C. Questões chave sobre a noção jurídica do direito à cidade. *Revista De Direito Da Cidade*, v. 13, i.3, p. 1466–1494, 2021. Available on: <<https://www.e-publicacoes.uerj.br/rdc/article/view/43832>>. Accessed on Oct 3rd, 2023.
- ¹⁶² FOLCHI, M. Ecologismo de los pobres: conflictos ambientales y justicia ambiental. In: *Social-ecological Systems of Latin America: Complexities and Challenges* Publisher: Springer Nature Switzerland, 2019. Available on: <https://www.researchgate.net/publication/337224098_Ecologismo_de_los_pobres_conflictos_ambientales_y_justicia_ambiental>. Accessed on Aug. 19th, 2023, p. 96.
- ¹⁶³ FOLCHI, *op. cit.*
- ¹⁶⁴ ALIER, J. *El ambientalismo de los pobres, una agenda de supervivencia*. Buenos Aires: La capital, 2010. Available on: <<https://www.lacapital.com.ar/economia/el-ambientalismo-los-pobres-una-agenda-supervivencia-n343751.html>>. Accessed on Aug 19th, 2023.
- ¹⁶⁵ ALIER, J. The environmentalism of the poor. *Geoforum*, v. 54, p. 239–241, Jul 1st, 2014. Available on: <<https://www.sciencedirect.com/science/article/pii/S0016718513000912>>. Accessed on Aug. 19th, 2023.
- ¹⁶⁶ ALIER, *op. cit.*, 2014.
- ¹⁶⁷ ALIER, J. *De la economía ecológica al ecologismo popular*. Icaria Editorial, 1994.
- ¹⁶⁸ BECK, U. *Risk Society: Towards a New Modernity*. Jul. 30th, 1992.
- ¹⁶⁹ Food and Agriculture Organization of the United Nations. *Declaration on World Food Security*, Rome. Nov 13th, 1996. Available on: <<https://www.fao.org/3/w3613e/w3613e00.htm>>. Accessed on Oct 4th, 2023.

¹⁷⁰ GILBERT, *loc. cit.*

¹⁷¹ GILBERT, *loc. cit.*; BACKHOUSE, M.; LEHMANN, R. New ‘renewable’ frontiers: contested palm oil plantations and wind energy projects in Brazil and Mexico. *Journal of Land Use Science*, vol. 15, no. 2–3, 2019, pp. 373–388. Available on: <<https://doi.org/10.1080/1747423X.2019.1648577>>. Accessed on July 5th, 2023.

¹⁷² BACKHOUSE, M.; LÜHMANN, R.; LORENZEN, K.; PUDER, J.; RODRÍGUEZ, F.; TITTOR, A. Contextualizing the Bioeconomy in an Unequal World: Biomass Sourcing and Global Socio-Ecological Inequalities. In: Backhouse *et al.* (eds.), *Bioeconomy and global inequalities: socio-ecological perspectives on biomass sourcing and production*, 1st ed, 2021, p. 3.

¹⁷³ BACKHOUSE, M.; LÜHMANN, M.; TITTOR, A. Global Inequalities in the Bioeconomy: Thinking Continuity and Change in View of the Global Soy Complex. *Sustainability*, 14, 5481, 2022. Available on: <<https://www.mdpi.com/2071-1050/14/9/5481/pdf>>. Accessed on July 5th, 2023; BACKHOUSE, M.; LORENZEN, K.: Knowledge production and land relations in the bioeconomy. A case study on the Brazilian sugar-bioenergy sector. In: *Sustainability*, vol. 13, no. 8, 4525, 2021. Available on: <<https://doi.org/10.3390/su13084525>>. Accessed on July 5th, 2023; BACKHOUSE, M. The knowledge-based bioeconomy in the semi-periphery. A case study on second-generation ethanol in Brazil, Working Paper No. 13, *Bioeconomy & Inequalities*, Jena, 2020. Available on: <<https://www.bioinequalities.uni-jena.de/sozbedmedia/wp/workingpaper13.pdf>>. Accessed on July 5th, 2023.

¹⁷⁴ FAO. Right to Food and Bioenergy, 2007, p. 1. Available on: <<https://www.fao.org/3/a1614e/a1614e.pdf>>. Accessed on July 5th, 2023.

¹⁷⁵ PUNGAS, L. Invisible (bio)economies: a framework to assess the ‘blind spots’ of dominant bioeconomy models. Invisible (bio)economies: a framework to assess the ‘blind spots’ of dominant bioeconomy models. *Sustain Sci*, 18, 689–706, 2023. Accessed on <<https://link.springer.com/article/10.1007/s11625-023-01292-6>>. Accessed on July 5th, 2023.

¹⁷⁶ FAO, 2007, *loc. cit.*

¹⁷⁷ FAO, 2017, *op. cit.*

¹⁷⁸ FAO. Land Tenure, Investments and the Right to Food. 2011. Available on: <<https://www.fao.org/3/i2418e/i2418e.pdf>>. Accessed on July 5th, 2023.

¹⁷⁹ FAO. The future of food and agriculture - Trends and challenges. 2017. Available on: <www.fao.org/3/a-i6583e.pdf>. Accessed on July 5th, 2023.

¹⁸⁰ FAO, Intergovernmental Technical Panel on Soils, Global Soil Biodiversity Initiative, Convention on Biological Diversity & European Commission. 2020. State of knowledge of soil biodiversity: Status, challenges and potentialities. Report 2020. Rome, FAO. *State of knowledge of soil biodiversity - Status, challenges and potentialities*. Available on: <<https://www.fao.org/documents/card/en/c/cb1928en>>. Accessed on July 5th, 2023. FAO, 2020a. Available on: <<https://www.fao.org/3/cb9910en/cb9910en.pdf>>. Accessed on July 5th, 2023.

¹⁸¹ ELISABETH VOGEL, E. *et al.* *The effects of climate extremes on global agricultural yields - IOPscience*. Available on: <<https://iopscience.iop.org/article/10.1088/1748-9326/ab154b/meta>>. Accessed on Aug 20th, 2023.

¹⁸² PORTER *et al.* 2014. Food security and food production systems. In: IPCC. Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 485–533. Available on: <

www.ipcc.ch/pdf/assessmentreport/ar5/wg2/WGIIAR5-Chap7_FINAL.pdf>. Accessed on July 5th, 2023.

¹⁸³ PORTER *et al.*, *loc. cit.*

¹⁸⁴ HOFFMAN, M. T. Climate Change Impacts on African Rangelands, 2012. Available on: <https://www.researchgate.net/publication/305199366_Climate_Change_Impacts_on_African_Rangelands>. Accessed on Aug 20th, 2023.

¹⁸⁵ FAO, 2011, *op. cit.*

¹⁸⁶ UNITED NATIONS. Paris Agreement. 2016. Available on: <<https://unfccc.int/process-and-meetings/the-paris-agreement>>. Accessed on Aug 20th, 2023.

¹⁸⁷ UNITED NATIONS, 2016, *op. cit.*

The Special Rapporteur on the right to food has indicated that climate change poses a serious threat to the enjoyment of the right to food and threatens all aspects of food security, with 600 million additional people potentially vulnerable to malnutrition by 2080 (A/70/287, para. 82). UNITED NATIONS. *Right to food*. 5 Sep. 2015. Available on:

<<https://www.ohchr.org/sites/default/files/Documents/Issues/Food/A-70-287.pdf>>. Accessed on Aug 20th, 2023.

¹⁸⁸ VUUREN, V. *et al.* 2012. A proposal for a new scenario framework to support research and assessment in different climate research communities. *Global Environmental Change*, 22(1): 21–35. Available on: <<https://doi.org/10.1016/j.gloenvcha.2011.08.002>>. Accessed on July 5th, 2023.

¹⁸⁹ FAO. *The State of Food and Agriculture 2018: Migration, agriculture and rural development*. Rome, 2018, p. xvii. Available on: <<https://www.fao.org/documents/card/en/c/I9549EN>>. Accessed on Aug 20th, 2023.

¹⁹⁰ FAO, 2018, *loc. cit.*

¹⁹¹ FAO, 2018, *op. cit.*, p. xix.

¹⁹² FAO. *Framework for the Urban Food Agenda: Leveraging sub-national and local government action to ensure sustainable food systems and improved nutrition*. Rome, 2019. Available on: <<https://www.fao.org/3/ca3151en/ca3151en.pdf>>. Accessed on Aug 20th, 2023.

¹⁹³ UNITED NATIONS. *Habitat Brief on Migration and Cities*. Types of migration, 2018. p. 3. Available on: <https://unhabitat.org/sites/default/files/documents/2019-05/migration_brochure_10122018.pdf>. Accessed on Aug 20th, 2023.

¹⁹⁴ FAO. *Alternative pathways to 2050*. Rome, 2018a, p. 7. Available on: <<https://www.fao.org/3/I8429EN/i8429en.pdf>>. Accessed on Aug 20th, 2023.

¹⁹⁵ FAO, 2018a, *op. cit.*, p. 12.

¹⁹⁶ FAO. *The State of Food Security and Nutrition in the World 2020: Transforming food systems for affordable healthy diets*. Rome, 2020, p. 128. Available on: <<https://www.fao.org/documents/card/en/c/ca9692en>>. Accessed on Aug 20th, 2023.

¹⁹⁷ FAO, 2017, *op. cit.*

¹⁹⁸ FAO, 2017, *op. cit.*

¹⁹⁹ FAO. *Food loss and waste and the right to adequate food: Making the connection*, 2018b, p. 4. Available on: <<https://www.fao.org/3/ca1397en/CA1397EN.pdf>>. Accessed on Aug 20th, 2023.

²⁰⁰ FAO, 2018b, *loc. cit.*

²⁰¹ FAO, 2018b, *loc. cit.*

²⁰² FAO, 2018b, *loc. cit.*

²⁰³ FAO, 2018b, *loc. cit.*

- ²⁰⁴ UNITED STATES OF AMERICA. Department of Agriculture. Food Desert Locator. Release No. 0191.11, 2017. Available on: <<https://www.fns.usda.gov/tags/food-desert-locator>>. Accessed on Aug 20th, 2023.
- ²⁰⁵ FAO. *The State of Food Security and Nutrition in the World, 2022*. Available on: <<https://www.fao.org/documents/card/en/c/cc0639en>>. Accessed on Aug 20th, 2023.
- ²⁰⁶ UNITED STATES OF AMERICA. Department of Agriculture. *Food Access Research Atlas*. Available on: <<https://www.ers.usda.gov/data/fooddesert/>>. Accessed on Aug 20th, 2023.
- ²⁰⁷ BARKER, C. *et al.* *Unshared Bounty: How Structural Racism Contributes to the Creation and Persistence of Food Deserts*. New York Law School. Unshared Bounty, June 2012. Available on: <https://digitalcommons.nyls.edu/cgi/viewcontent.cgi?article=1002&context=racial_justice_project>. Accessed on Aug 20th, 2023.
- ²⁰⁸ GCAP UCR. *Environmental Justice: Food Deserts*. Available on: <<https://www.gcapucr.com/environmental-justice-food-deserts>>. Accessed on Aug 20th, 2023.
- ²⁰⁹ FAO, 2011, *op. cit.*, p. 14.
- ²¹⁰ ALIER, J. *et al.* Is there a global environmental justice movement?, *The Journal of Peasant Studies*, 2016. Available on: <<https://www.tandfonline.com/doi/full/10.1080/03066150.2016.1141198>>. Accessed on Aug 20th, 2023.
- ²¹¹ FAO, 2018, *loc. cit.*
- ²¹² FAO, 2007, *loc. cit.*
- ²¹³ FAO, 2007, *loc. cit.*
- ²¹⁴ FAO. The State of Food Security and Nutrition in the World 2020: Transforming food systems for affordable healthy diets. Rome, 2020, p. 128. Available on: <<https://www.fao.org/3/ca9692en/ca9692en.pdf>>. Accessed on July 4th, 2023.
- ²¹⁵ FAO, 2017, *op. cit.*
- ²¹⁶ GBD 2016. Global, regional, and national comparative risk assessment of 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *The Lancet*, 388 (10053), 2016, p. 1659–1724. Available on: <[https://doi.org/10.1016/S0140-6736\(16\)31679-8](https://doi.org/10.1016/S0140-6736(16)31679-8)>. Accessed on July 4th, 2023.
- GBD 2016. Global, regional, and national disability-adjusted life-years (DALYs) for 333 diseases and injuries and healthy life expectancy (HALE) for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 2016. Available on: <[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32130-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32130-X/fulltext)>. Accessed on Aug 20th, 2023.
- ²¹⁷ FAO. *The State of Food Security and Nutrition in the World 2017: Building resilience for peace and food security*. Rome, 2017a. Available on: <<https://www.wfp.org/publications/2017-state-food-security-and-nutrition-world-sofi-report>>. Accessed on Aug 20th, 2023.
- ²¹⁸ FAO, 2017a, *op. cit.*
- ²¹⁹ FAO, 2022, *op. cit.*, p. vi.
- ²²⁰ BRAND, Ulrich. How to Get Out of the Multiple Crisis? Contours of a Critical Theory of Social-Ecological Transformation. *Environmental Values*, 25 (5), 2016, p. 503–525. Available on: <[doi:10.3197/096327116X14703858759017](https://doi.org/10.3197/096327116X14703858759017)>. Accessed on Aug 20th, 2023.
- MOORE, M. *et al.* Studying the complexity of change: toward an analytical framework for

- understanding deliberate social-ecological transformations. *Ecology and Society*, 19 (4), 2014. Available on: < <http://dx.doi.org/10.5751/ES-06966-190454>> Accessed on Oct 4th, 2023.
- WESTLEY, F. R., *et al.* A theory of transformative agency in linked social-ecological systems. *Ecology and Society* 18(3): 27, 2013. Available on: <<http://dx.doi.org/10.5751/ES-05072-180327>> Accessed on Oct 4th, 2023.
- OLSSON, P., *et al.* Boonstra. 2014. Sustainability transformations: a resilience perspective. *Ecology and Society* 19(4): 1, 2014. Available on: <<http://dx.doi.org/10.5751/ES-06799-190401>> Accessed on Oct 4th, 2023.
- MASTERSON, V. A., *et al.* The contribution of sense of place to social-ecological systems research: a review and research agenda. *Ecology and Society* 22(1):49, 2017. Available on: <<https://doi.org/10.5751/ES-08872-220149>> Accessed on Oct 4th, 2023.
- PATTERSON, J. *et al.* Exploring the governance and politics of transformations towards sustainability. *Environmental Innovation and Societal Transitions*, volume 24, 2017, p. 1-16. Available on: <<https://www.sciencedirect.com/science/article/pii/S2210422416300843>>. Accessed on Oct 4th, 2023.
- ²²¹ MOTTA, Renata. Food for Justice: Power, Politics and Food Inequalities in a Bioeconomy. Preliminary Research Program. *Food for Justice Working Paper Series*, no. 1. Berlin: Food for Justice: Power, Politics, and Food Inequalities in a Bioeconomy, 2021. Available on: <https://refubium.fu-berlin.de/bitstream/handle/fub188/32086/WP_%231.pdf?sequence=1&isAllowed=y> Accessed on Oct 4th, 2023.
- ²²² GUTTMANN, A. *Plateformes de développement urbain, villes de la connaissance et développement durable: l'économie politique des biens communs urbains dans le contexte du changement climatique.* Sociology. Université Paris-Nord - Paris XIII, 2022p. 38. Available on: < <https://theses.hal.science/tel-04160619>>. Accessed on Oct 4th, 2023.
- ²²³ MOTTA, R., *op. cit.*
- PLOMWOOD, V. *Gender, eco-feminism and the environment.* In: *Controversies in environmental sociology.* Rob White (ed.). Cambridge: Cambridge University Press, 2004. Available on: <<https://ebin.pub/urban-food-production-for-ecosocialism-cultivating-the-city-1nbsped-9780367674175-9780367674182-9781003131281.html>> Accessed on Oct 4th, 2023.
- ²²⁴ CORTEZ, R. P. *et. al.* *Beyond urban-rural linkages, the defense of territories and cities for life.* Barcelona, 2022. Available on: <https://www.right2city.org/wp-content/uploads/2022/11/07_Right-to-the-City-Rural_EN_OK2.pdf>. Accessed on Aug 20th, 2023.
- FAO. Consumer organizations and the right to adequate food – Making the connections. Rome, 2021. Available on: <<https://www.fao.org/3/cb3685en/cb3685en.pdf>>. Accessed on July 5th, 2023.
- MCGREEVY, S. R. *Sustainable agrifood systems for a post-growth world*, July 28th, 2021. Available on: <<https://www.nature.com/articles/s41893-022-00933-5>>. Accessed on Aug 20th, 2023.
- WESTON, B.; BOLLIER, D. Universal Covenant affirming a human right to commons- and rights-based governance of Earth's natural wealth and resources. *Journal of Human Rights and the Environment*, Vol. 4 No. 2, September 2013, pp. 215–225. Available at: <<https://www.elgaronline.com/view/journals/jhre/4-2/jhre.2013.02.05.xml>>. Accessed on Aug 20th, 2023.
- WESTON, B; BOLLIER, D. *Green governance: ecological survival, human rights, and the law of the Commons.* Cambridge university press. New York, 2013. p. 87. Available on: < http://students.aiu.edu/submissions/profiles/resources/onlineBook/K9S4V4_Green_Governan

ce_Ecological_Survival-_Human_Rights-_and_the_Law_of_the_Commons.pdf>. Accessed on Aug 26th, 2023.

²²⁵ The New Charter of Athens 2003: The European Council of Town Planners' Vision for Cities in the 21st century. Available on: <<http://www.itc.cnr.it/ba/re/Documenti/The%20New%20Charter%20of%20Athens%2003.htm>>. Accessed on Aug 19th, 2023.

²²⁶ World Charter for the Right to the City. *Right to the city*. Porto Alegre, 2001. Available on: <<https://www.right2city.org/document/world-charter-for-the-right-to-the-city/>>. Accessed on Aug 19th, 2023.

²²⁷ World Charter for the Right to the City, 2001, *op. cit.*

²²⁸ UNITED NATIONS. *Habitat III: New Urban Agenda*. Quito, 2017. Available on: <<https://habitat3.org/wp-content/uploads/NUA-English.pdf>>. Accessed on Sep 1st, 2023.

²²⁹ FAO. *The future of food and agriculture: Trends and challenges*. Rome, 2020. Available at: <<https://www.fao.org/3/i6583e/i6583e.pdf>>. Accessed on Sep 1st, 2023.

²³⁰ OPITZ, I. *et. al. Contributing to food security in urban areas: Differences between urban agriculture and peri-urban agriculture in the global North. Agriculture and Human Values*, v. 33, p. 341–358, 2016. Available on: <<https://link.springer.com/article/10.1007/s10460-015-9610-2>>. Accessed on Sep 1st, 2023.

CLINTON, N. *et. al. A global geospatial ecosystem services estimate of urban agriculture, IN: Earth's Future*, v.6, 2018. Available on: <<https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017EF000536>>. Accessed on Sep 1st, 2023.

WALSH, L.; *et. al. Potential of urban green spaces for supporting horticultural production: A national scale analysis. Environmental Research Letters*, v. 17, i.1, 2022. Available on: <<https://iopscience.iop.org/article/10.1088/1748-9326/ac4730>>. Accessed on Sep 1st, 2023.

²³¹ PEARSON, L. J., PEARSON, L.; PEARSON, C. J. Sustainable urban agriculture: Stocktake and opportunities. *International Journal of Agricultural Sustainability*, v. 8, p. 7-19, 2010. Available on: <https://www.researchgate.net/publication/233555575_Sustainable_urban_agriculture_Stocktake_and_opportunities>. Accessed on Sep 1st, 2023.

SMIT, J.; NASR, J.; RATTA, A. *Cities that feed themselves: Food jobs and sustainable cities*. 1 ed., United Nations Development Programme, 2001. Available on: <<http://jacsmi.com/book/Chap01.pdf>>. Accessed on Sep 1st, 2023.

²³² FAO, 2020, *op. cit.*

²³³ Food and Agriculture Organization of the United Nations. *The State of Food Security and Nutrition in the World. Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum*. p. 250. Rome, 2023. Available on: <<https://www.fao.org/3/cc3017en/cc3017en.pdf>>. Accessed on Sep 1st, 2023.

BARRETT, C.; REARDON, T.; SWINNEN, J.; ZILBERMAN, D. 2022. Agri-food value chain revolutions in low- and middleincome countries. *Journal of Economic Literature*, v. 60, i.4. p. 1316–1377. Available on: <<https://doi.org/10.1257/jel.20201539>>. Accessed on Sep 1st, 2023.

²³⁴ MCELLOWNEY, J. *Urban agriculture in Europe: Patterns, challenges and policies*. Dec, 2017. Available on: <[https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA\(2017\)614641_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA(2017)614641_EN.pdf)>. Accessed on Oct 4th, 2023.

²³⁵ MCELLOWNEY, *op. cit.*

- ²³⁶ FAO. *The State of Food Security and Nutrition in the World 2023: Urbanization, agrifood systems transformation and healthy diets across the rural–urban continuum*. p. 250, Rome. Available on: <<https://www.fao.org/3/cc3017en/cc3017en.pdf>>. Accessed on Oct 4th, 2023.
- BARRETT, C. *et al.* Agri-food value chain revolutions in low- and middle-income countries. *Journal of Economic Literature*, 2022. v. 60, i.4, p. 1316–1377. Available on: <<https://doi.org/10.1257/jel.20201539>>. Accessed on Oct 4th, 2023.
- ²³⁷ For instance, in Brazil, the 2022 Census also counted 11.4 million vacant permanent private homes, representing 12.6% of the total number of permanent private homes – an increase compared to 2010, 9.0%.
- IBGE. *Censo Demográfico 2022: População e domicílios*, 2022. p. 27. Available on: <<https://biblioteca.ibge.gov.br/visualizacao/livros/liv102011.pdf>>. Accessed on Oct 4th, 2023.
- ²³⁸ FRANCE 24. Chinese ghost town of mansions reclaimed by farmers. 20 July 2023. Available on: <<https://www.france24.com/en/live-news/20230720-chinese-ghost-town-of-mansions-reclaimed-by-farmers>>. Accessed on Oct 4th, 2023.
- ²³⁹ FAO, 2023, *loc. cit.*; BARRETT, *op. cit.*
- ²⁴⁰ STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: Tapping urban agriculture’s potential as a tool for sustainable development*. HafenCity Universität Hamburg, 2022, p. 52-79. Available on: <<https://repos.hcu-hamburg.de/handle/hcu/650>>. Accessed on Oct 4th, 2023, p. 134.
- FAO. COVID-19 and the role of local food production in building more resilient local food systems. Sep 18th, 2020, p. 7. Available on: <<https://www.fao.org/3/cb1020en/CB1020EN.pdf>>. Accessed on Oct 4th, 2023.
- ²⁴¹ ANDRÉS, J. *Can urban agriculture become a planning strategy to address social-ecological justice?* KTH Royal Institute of Technology School of Architecture and the Built Environment. Degree Project in Environmental Strategies, Second Cycle. Available at: <<https://www.diva-portal.org/smash/get/diva2:1153064/FULLTEXT01.pdf>>. Accessed on Oct 4th, 2023.
- ²⁴² BECK, V. Iniciativas urbano sustentáveis no Rio de Janeiro: a experiência da horta carioca do Jardim Anil. In: CORREIA, Arícia Fernandes. (Org.). *Direito da Regularização Fundiária Urbana Sustentável*. Pesquisa, teoria e prática em torno da Lei Federal n. 13.465/2017. 1ed. Juiz de Fora-MG: Editar, 2018, v. 1, p. 9-383.
- HAMILTON, A. J. *et al.* Give peas a chance? Urban agriculture in developing countries: a review. *Agronomy for Sustainable Development*, 2014, 34(1): 45–73. Available at: <<https://link.springer.com/article/10.1007/s13593-013-0155-8>>. Accessed on 04 September 2023.
- LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <<https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.
- ORSINI, F., *et al.* Urban agriculture in the developing world: a review. *Agronomy for Sustainable Development*, 2013, 33(4): 695–720. Available at: <<https://link.springer.com/article/10.1007/s13593-013-0143-z>>. Accessed on 04 September 2023.
- POULSEN, M. N. *et al.* A systematic review of urban agriculture and food security impacts in low-income countries. *Food Policy*, 2015, 55: 131–146. Available

at:<<https://www.sciencedirect.com/science/article/abs/pii/S0306919215000809>>. Accessed on 04 September 2023.

SINISCALCHI, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: <<https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF>>. Accessed on May 23th, 2023.

SMIT, J., NASR, J. & RATTA, A. Constraints to Urban Agriculture. In: J. Smit, J. Nasr & A. Ratta (Eds.), *Urban Agriculture - Food, Jobs and Sustainable Cities*. New York: The Urban Agriculture Network, 2001,.

STEURI, B; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Master's thesis on Resource efficiency in architecture and planning. Hamburg University, 2015. p. 55. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuir-bettina_vignola-gionatan_masterarbeit.pdf/>. Accessed on Sep 13th, 2023.

TAGUCHI, M.; SANTINI, G. Urban agriculture in the Global North & South: A perspective from FAO. *Field Actions Science Reports*. Institut Veolia: Aubervilliers, France, 2019; Available at: <<http://journals.openedition.org/factsreports/5610>>. Accessed on 04 September 2023.

ZEZZA, A.; TASCIOTTI, L. Urban agriculture, poverty, and food security: empirical evidence from a sample of developing countries. *Food Policy*, 2010, 35(4): 265–273.

Available at:

<<https://www.sciencedirect.com/science/article/abs/pii/S0306919210000515>>. Accessed on 04 September 2023.

ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 mar. 2016. Available on: <<https://tede.ufrjr.br/handle/jspui/1397>>. Accessed on May 23th, 2023.

²⁴³ BRASIL. Governo Federal. Decreto Nº 11.700, de 12 de Setembro de 2023. Institui o Programa Nacional de Agricultura Urbana e Periurbana e o Grupo de Trabalho do Programa Nacional de Agricultura Urbana e Periurbana. 2023. Available on:

<http://www.planalto.gov.br/ccivil_03/_ato2023-2026/2023/decreto/D11700.htm>. Accessed on Sep. 23th, 2023.

²⁴⁴ IBGE. Censo agropecuário, 2017. Available on:

<<https://www.ibge.gov.br/estatisticas/economicas/agricultura-e-pecuaria/21814-2017-censo-agropecuario.html?=&t=conceitos-e-metodos>>. Accessed on Oct 4th, 2023.

²⁴⁵ MACHADO, A. Agricultura urbana. Embrapa. Available on:

<<https://www.embrapa.br/busca-de-publicacoes/-/publicacao/565842/agricultura-urbana>>. Accessed on Oct 4th, 2023.

²⁴⁶ MACHADO, *op. cit.*, p. 23.

²⁴⁷ G. KEEFFE, 'Hardware software interface – A strategy for the design of urban agriculture' in R. Roggema (ed.), *Sustainable urban agriculture and food planning*, Routledge, 2016. p. 15-37.

²⁴⁸ MCELLOWNEY, *op. cit.*, p. 6.

²⁴⁹ CERTOMÀ, C. “Critical Urban Gardening.” *RCC Perspectives*, n. 1, 2015, p. 13. *JSTOR*, Available on: <<http://www.jstor.org/stable/26241301>>. Accessed on Aug 27th, 2023.

²⁵⁰ MCELLOWNEY, *op. cit.*

²⁵¹ KEEFFE, *loc. cit.*

- ²⁵² TITARELLI, F. *et al.* Food Citizenship as an Agroecological Tool for Food System Re-Design. Available on: <<https://www.mdpi.com/2071-1050/14/3/1590>>. Accessed on Oct 4th, 2023.
- ²⁵³ MCCLINTOCK, N. *Why farm the city?* Theorizing urban agriculture through a lens of metabolic rift. v. 3, i. 2, p. 191-207, Jul 2010. Available on: <<https://academic.oup.com/cjres/article/3/2/191/441835?login=true>>. Accessed on Oct 4th, 2023.
- ²⁵⁴ STEURI, *et al.*, *op. cit.*, p. 56.
- ²⁵⁵ WEGELIN, E. & BORGMAN, K. Options for municipal interventions in urban poverty alleviation. *Environment and Urbanization*, 7 (2): 1995, p. 131-152. Available on: <<https://journals.sagepub.com/doi/pdf/10.1177/095624789500700219>>. Accessed on Oct 4th, 2023.
- ²⁵⁶ STEURI, *et al.*, *op. cit.*, p. 59-79, 121.
- ²⁵⁷ SANTO, R.; PALMER, A.; KIM, B. *Vacant lots to vibrant plots*. John Hopkins Center for Liveable Future. May 2016. Available on: <<https://clf.jhsph.edu/sites/default/files/2019-01/vacant-lots-to-vibrant-plots.pdf>>. Accessed on Oct 4th, 2023.
- ²⁵⁸ NATIONS, U. *Universal Declaration of Human Rights*, 2023. Available on: <<https://www.un.org/en/about-us/universal-declaration-of-human-rights>>. Accessed on Aug 28th, 2023.
- ²⁵⁹ SEPÚLVIDA, M. *et al.* *Human Rights Reference Handbook*. San Jose: Mundo gráfico, 2004. Available on: <<https://www.corteidh.or.cr/tablas/23861.pdf>>. Accessed on June 28th, 2023.
- FAO, 2007a. Available on: <https://www.fao.org/3/i0093e/i0093e.pdf>>. Accessed on June 28th, 2023.
- ²⁶⁰ UNITED NATIONS. *General Comment N°. 12: The Right to Adequate Food (Art. 11 of the Covenant)*, Committee on economic, social and cultural rights (CESCR), May 12th, 1999. Available on: <<https://www.refworld.org/docid/4538838c11.html>>. Accessed on June 28th, 2023.
- ²⁶¹ FAO, *op. cit.*, 2007.
- ²⁶² UNITED NATIONS, 1999, *loc. cit.*
- ²⁶³ FAO. *Building a common vision for sustainable food and agriculture: Principles and approaches*. Rome, 2014. Available on: <<https://www.fao.org/3/i3940e/i3940e.pdf>>. Accessed on Aug 28th, 2023.
- ²⁶⁴ FAO. What is the right to food? 2007c. Available on: <<https://www.fao.org/3/i0094e/i0094e.pdf>>. Accessed on July 2nd, 2023.
- ²⁶⁵ FAO, 2007c, *loc. cit.*
- ²⁶⁶ UNITED NATIONS. United Nations declaration on the rights of indigenous peoples, 2007. Available on: <https://social.desa.un.org/sites/default/files/migrated/19/2018/11/UNDRIP_E_web.pdf>. Accessed on Aug 28th, 2023.
- ²⁶⁷ “In fact, the Declaration of Atitlán states ‘that the content of the right to food of indigenous peoples is a collective right.’ Both the United Nations Declaration on the Rights of Indigenous Peoples and the Inter-American Commission on Human Rights (IACHR) Draft Declaration on Indigenous Rights as well as the ILO Convention No. 169 acknowledge certain collective rights.” FAO, 2009, *op. cit.*, p. 18.
- ²⁶⁸ UNITED NATIONS, 2007, *loc. cit.*
- ²⁶⁹ FAO, 2009, *loc. cit.*

- ²⁷⁰ UNITED NATIONS. Universal Declaration of Human Rights, 1948. Available on: <<https://www.un.org/en/about-us/universal-declaration-of-human-rights>>. Accessed on Aug 28th, 2023.
- ²⁷¹ The Committee on Economic, Social and Cultural Rights in General Comment No. 12 also defined the obligations that States must fulfill in order. UNITED NATIONS, 1999, *op. cit.*
- ²⁷² According to Article 2.1 of the International Covenant on Economic, Social and Cultural Rights. UNITED NATIONS General Assembly resolution 2200A, 1966. Available on: <<https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-economic-social-and-cultural-rights>>. Accessed on Aug 28th, 2023.
- ²⁷³ “Currently, 56 constitutions protect the right to food either implicitly or explicitly as a justiciable right, or explicitly in the form of a directive principle of state. In addition, through the direct applicability of international treaties, the right to food is directly applicable, with a higher status than national legislation, in at least 51 countries, 84 thus reaching a total of 106 countries in which the right to food is applicable. Finally, ten countries have already adopted a framework law on the right to food or food security recognizing the right to food, and a further nine countries are in the process of drafting such legislation.” FAO, 2010, *op. cit.*
- ²⁷⁴ LANDIVA, N. *et al. Human Rights: A strategy for the fight against hunger*. Mar 2012. Available on: <<https://www.fao.org/3/ap560e/ap560e.pdf>>. Accessed on July 4th, 2023.
- ²⁷⁵ FAO, 2010, *loc. cit.*
- ²⁷⁶ FAO, 2011, *op. cit.*; FAO, 2020, *op. cit.*
- ²⁷⁷ FAO, 2011, *op. cit.*; FAO. *The Right to Food and Access to Justice: Examples at the national, regional and international levels*. Rome, 2009. Available on: <<https://www.fao.org/3/k7286e/k7286e.pdf>>. Accessed on July 4th, 2023; FAO. *The State of Food Security and Nutrition in the World 2021: Transforming food systems for food security, improved nutrition and affordable healthy diets for all*. Rome. Available on: <<https://www.fao.org/3/cb4474en/cb4474en.pdf>>. Accessed on July 4th, 2023.
- ²⁷⁸ FAO, 2007c, *op. cit.*
- ²⁷⁹ UNITED NATIONS, 1999, *op. cit.*; FAO, 2010, *op. cit.*
- ²⁸⁰ FAO, 2010, *op. cit.*
- ²⁸¹ BERTMANN, F. *et al. The Food Bank and Food Pantries Help Food Insecure Participants Maintain Fruit and Vegetable Intake During COVID-19*. v. 6, Aug 06th, 2021. Available on: <<https://www.frontiersin.org/articles/10.3389/fnut.2021.673158/full>>. Accessed on Aug 28th, 2023.
- ²⁸² ALMEIDA, D. *Após 6 anos, Conab retoma política de estoques públicos de alimentos: Governo comprará 500 mil toneladas de milho para garantir preço mínimo*. Agência Brasil. Jun 29th, 2023. Available on: <<https://agenciabrasil.ebc.com.br/economia/noticia/2023-06/apos-6-anos-conab-retoma-politica-de-estoques-publicos-de-alimentos>>. Accessed on Aug 28th, 2023.
- ²⁸³ FAO. Protecting health, facilitating trade, 2023. Available on: <<https://www.fao.org/fao-who-codexalimentarius/en/>>. Accessed on Aug 28th, 2023.
- ²⁸⁴ European Commission. *Food safety*. Available on: <https://commission.europa.eu/strategy-and-policy/food-safety_en>. Accessed on Aug 28th, 2023.
- ²⁸⁵ FAO, 2014, *op. cit.*
- ²⁸⁶ DIAS, J.; ROCHA, S.; NEVES, N. Legal and institutional frameworks for the Right to Food and Nutrition. FIAN Internacional Portugal, 2022. Available on: <https://www.fian.org/files/is/htdocs/wp11102127_GNIAANVR7U/www/files/Module_1_En_english.pdf>. Accessed on July 5th, 2023.

- ²⁸⁷ FAO, Geneva, 2010, p. 5. Available on: <<https://www.ohchr.org/sites/default/files/Documents/Publications/FactSheet34en.pdf>>. Accessed on July 5th, 2023.
- ²⁸⁸ FAO. Hunger and food insecurity, 2023. Available on: <<https://www.fao.org/hunger/en/>>. Accessed on July 5th, 2023.
- ²⁸⁹ Circle of Rights. *Economic, Social and Cultural rights activism: A training resource. The Right to Adequate Food*. Available on: <<http://hrlibrary.umn.edu/edumat/IHRIP/circle/modules/module12.htm>>. Accessed on July 5th, 2023.
- ²⁹⁰ FAO. Hunger and food insecurity, 2023. Available on: <<https://www.fao.org/hunger/en/>>. Accessed on July 5th, 2023.
- ²⁹¹ FAO, 2010, *op. cit.*, p. 20.
- ²⁹² FAO, 2010, *loc. cit.*
- ²⁹³ FAO, 2010, *loc. cit.*
- ²⁹⁴ FAO, 2011, *op. cit.*, p. 14-15.
- ²⁹⁵ DOSWALD-BECK, L. *The British Yearbook of International Law*. v. 57, i. 1, p. 371-372, 1986.
Available on: <<https://academic.oup.com/bybil/article-abstract/57/1/371/294342?redirectedFrom=fulltext>>. Accessed on Aug 28th, 2023.
- ²⁹⁶ FAO, 2008, *op. cit.*, p. 2.
- ²⁹⁷ FAO, 2008, *loc. cit.*
- ²⁹⁸ SEN, A. *Development as Freedom*. Oxford; New York: Oxford University Press, p. 161, 2001.
- ²⁹⁹ HARDT, Michel; NEGRI, A. *Multitude: war and democracy in the Age of Empire*. New York: The Penguin Press, 2004, p. xii.
- ³⁰⁰ FAO. *Women and the Right to Food: International Law and State Practice*. Rome, 2008b. p. 21. Available on: <<https://www.fao.org/3/ap549e/ap549e.pdf>>. Accessed on July 5th, 2023.
- ³⁰¹ FAO. *Voluntary guidelines: to support the progressive realization of the right to adequate food in the context of national food security*. Rome, 2005. Available on: <<https://www.fao.org/3/y7937e/y7937e.pdf>>. Accessed on Aug 28th, 2023.
- ³⁰² FAO. *The right to adequate food and indigenous peoples: How can the right to food benefit indigenous peoples?*, 2009, p. 30. Available on: <<https://www.fao.org/3/ap552e/ap552e.pdf>>. Accessed on July 2nd, 2023.
- ³⁰³ FAO, 2009, *loc. cit.*
- ³⁰⁴ FAO, 2009, *loc. cit.*
- ³⁰⁵ FAO, 2009, *loc. cit.*
- ³⁰⁶ FAO, 2010, *op. cit.* p. 5.
- ³⁰⁷ FAO, 2008b, *op. cit.*, p. 21-22.
- ³⁰⁸ Right to Food Guidelines 9.6 and 9.7. FAO, 2005, *op. cit.*; FAO, 2008b, *op. cit.* p. 5.
- ³⁰⁹ FAO, 2008b, *op. cit.*; FAO, 2010, *loc. cit.*
- ³¹⁰ FAO, 2010, *loc. cit.*
- ³¹¹ FAO, 2010, *loc. cit.*
- ³¹² FAO. *Responsible governance of land tenure: an essential factor for the realization of the right to food*. 2010a. Available on: <<https://www.fao.org/3/AL382E/al382e.pdf>>. Accessed on Feb. 7th, 2023.
- ³¹³ FAO, 2010, *loc. cit.*

- ³¹⁴ UNITED NATIONS. Universal Declaration of Human Rights, 1948. Available on: <<https://www.un.org/en/about-us/universal-declaration-of-human-rights>>. Accessed on Aug 28th, 2023.
- ³¹⁵ WARDE, P. Common rights and commons lands in southwest Germany, 1500- 1800. In: DE MOOR, Martina; TAYLOR, L.; WARDE, P. The management of common land in north-west Europe, c. 1500-1850. Turnhout, Bélgica: Brepols, 2002. p. 195-224
- ³¹⁶ MONTERROSO, I; CRONKLETON, P.; LARSON, A. Commons, indigenoues rights and governance. In: Hudson, B.; Rosenbloom, J.; Cole, D. (org.). Routledge Handbook of the Study of the Commons. Abingdon, Oxon, New York, NY: Routledge, 2019. p. 376-391.
- ³¹⁷ BURKE, B. Hardin Revisited: A Critical Look at Perception and the Logic of the Commons. *Human Ecology*, v. 29, n. 4, 2001. Available on: <<https://www.jstor.org/stable/4603411>>. Accessed on Aug 28th, 2023.
- FEENY, D. *et al.* *The Tragedy of the Commons: Twenty-Two Years Later*. *Human Ecology*. v. 18, i. 1, p. 1–19, Mar. 1990. Available on: <<https://www.jstor.org/stable/4602950>>. Accessed on Aug 28th, 2023.
- FRISCHMANN, B. M.; MARCIANO, A.; RAMELLO, G. B. Retrospectives: Tragedy of the Commons after 50 Years. *The Journal of Economic Perspectives*, v. 33, i. 4, p. 211–228, 2019. Available on: <<https://www.jstor.org/stable/26796843>>. Accessed on Aug 28th, 2023.
- OSTROM, E. *Governing the Commons: the Evolution of Institutions for Collective Action*. Cambridge University Press, 1990.
- OSTROM, E. *et al.* Revisiting the Commons: Local Lessons, Global Challenges. v. 284, Apr 9th, 1999. Available on: <https://www.laits.utexas.edu/~mbs31415/Ostrom_etal.pdf>. Accessed on Aug 28th, 2023.
- ³¹⁸ HARDT, M.; NEGRI, A. *Empire*. London: Harvard University Press, p. 302.
- ³¹⁹ JUNGE, B. Another commons is possible. *Focaal Journal of Global and Historical Anthropology*. v. 2010, i. 57, Jun. 2010. Available on: <<https://www.berghahnjournals.com/view/journals/focaal/2010/57/focaal570110.xml>>. Accessed on Aug 28th, 2023.
- GUTTMANN, *op. cit.*, p. 186.
- ³²⁰ GUTTMANN, *loc. cit.*
- ³²¹ GUTTMANN, *op. cit.*, p. 36.
- ³²² GUTTMANN, *loc. cit.*
- ³²³ HELFRICH, S. Common goods don't simply exist–They are created. In: D. Bollier and S. Helfrich (eds). *The Wealth of the Commons: A World Beyond Market and State*. Leveiler Press: Amherst, MA, 2012, 61-67.
- ³²⁴ GUTTMANN, *loc. cit.*
- ³²⁵ “When we mention the commons, we do refer also to a private property on which the non-owners have certain rights and uses.” ANTONUCCI, 2010, p. 194.
- ³²⁶ LINEBAUGH, P. *The Magna Carta Manifesto: Liberties and Commons for All*. University of California Press: Berkeley CA, 2008. Available on: <<http://www.jstor.org/stable/10.1525/j.ctt1pp4q2>>. Accessed on Aug 28th, 2023.
- HELFRICH, S. (2012). Common goods don't simply exist–They are created. In D. Bollier and S. Helfrich (eds). *The Wealth of the Commons: A World Beyond Market and State*. Leveiler Press: Amherst, MA, 61-67:
- MERETZ, S. 2012. The structural communality of the commons. In *The wealth of the commons: A world beyond market and state*, ed. David Bollier and Silke Helfrich, 28–34. Amherst: Leveilers.
- ³²⁷ DELLENBAUGH-LOSSE *et al.*, *op. cit.*, p. 7.

- ³²⁸ CORIAT, 2015 *apud* GUTTMANN, *op. cit.*, p. 38-39.
- ³²⁹ BAUWENS, M; RAMOS, J. Awakening to an Ecology of the Commons. In: *The great awakening: new models of life amidst capitalist ruins*. Anna Grear, David Bollier (ed.). Punctum books, 2020, p. 124.
- ³³⁰ CORIAT, 2015 *apud* GUTTMANN, *op. cit.*, p. 38-39.
- ³³¹ DELLENBAUGH-LOSSE, M; ZIMMERMANN, N; VRIES, N. The Urban Commons Cookbook: Strategies and Insights for Creating and Maintaining Urban Commons. p. 9. Available on: <<http://urbancommonscookbook.com/urbancommonscookbook.pdf>>. Accessed on Aug 28th, 2023.
- ³³² CORIAT, 2015 *apud* GUTTMANN, *op. cit.*, p. 38-39.
- ³³³ DELLENBAUGH-LOSSE *et al.*, *loc. cit.*
- ³³⁴ CORIAT, 2015 *apud* GUTTMANN, *op. cit.*, p. 38-39.
- ³³⁵ HOCK, D. *Nascimento Da Era Caórdica*. [s.l.] Editora Cultrix, 2000. Available on: <https://books.google.com.br/books?id=8i-TUQBjtYYC&pg=PA52&lpg=PA52&dq=#v=onepage&q&f=false_>. Accessed on Aug 28th, 2023.
- ³³⁶ BAKKER, Karen. The “Commons” Versus the “Commodity”: Alter-globalization, Anti-privatization and the Human Right to Water in the Global South." *Antipode*, vol. 39, no. 3, 2007, pp. 430-455. Available on: <<https://doi.org/10.1111/j.1467-8330.2007.00534.x>>. Accessed on Aug 20th, 2023.
- ³³⁷ BAKKER, *op. cit.*
- ³³⁸ NACUR, E. *O regime jurídico dos rios urbanos e a reforma urbanística na cidade capitalista: da exploração socioeconômica à racionalidade ambiental*; 2022. Dissertação (Mestrado em Direito da Cidade) - Universidade do Estado do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico. (on press)
- ³³⁹ COSTA, A. M. da; SAMPAIO, L. C. Transmutação da natureza jurídica de bens de uso comum em privados, em face da intervenção imobiliária na praia do Paiva do litoral pernambucano: aspectos jurídicos controversos. *Revista De Direito Da Cidade*, v. 12 i.1, 2021, p. 1–36. Available on: <<https://www.e-publicacoes.uerj.br/rdc/article/view/38799>>. Accessed on Aug 28th, 2023.
- ³⁴⁰ GIDWANI, V. Urban Commons, 2010, p. 43. Available on: <https://www.academia.edu/30124054/Urban_Commons_2010_>. Accessed on Aug 28th, 2023.
- ³⁴¹ GIDWANI, V. Urban Commons, 2010, p. 43. Available on: <https://www.academia.edu/30124054/Urban_Commons_2010_>. Accessed on Aug 28th, 2023.
- ³⁴² BERRY, T. *Evening Thoughts: Reflecting on Earth as a Sacred Community*. Berkeley: Counterpoint, 2015, p. 17.
- ³⁴³ ANGELIS, M. de. Does capital need a commons fix? *Ephemera*, 13 (3), 2013, p. 603.
- ³⁴⁴ GUTTMANN, *op. cit.*, p. 36.
- ³⁴⁵ GUTTMANN, *op. cit.*, p. 36.
- ³⁴⁶ LU, F. The Commons in an Amazonian Context. *Social Analysis: The International Journal of Social and Cultural Practice*, vol. 50, no. 3, 2006, pp. 187–94. Available on: <<http://www.jstor.org/stable/23182118>>. Accessed 3 Oct. 2023.
- LAURIOLA, V. M. Indigenous Lands, Commons, Juridical Pluralism and Sustainability in Brazil: Lessons from the Indigenous Lands of Raposa Serra Do Sol. *Journal of Latin American Geography*, vol. 12, no. 1, 2013, pp. 157–85. Available on: <<http://www.jstor.org/stable/24394847>>. Accessed 3 Oct. 2023.

- ³⁴⁷ FAO. Right to food and indigenous peoples, 2004, p.1. Available on: <<https://www.fao.org/3/a1603e/a1603e.pdf>>. Accessed on Aug 19th, 2023.
- TZUL, G. *Gobierno Comunal Indígena y Estado Guatemalteco: algunas claves críticas para pensar su tensa relación*. Ediciones Bizarras/Instituto Amaq': Ciudad de Guatemala, 2018.
- ³⁴⁸ GUETTA, M.; BENSUSAN, N. *Tutela dos conhecimentos tradicionais face à sua diversidade: A emergência dos protocolos comunitários*. In: Ungaretti, D.; Lessa, M. R.; Coutinho, D. R.; Prol, F. M.; Miola, I. Z.; Ferrando, T. (org.). *Propriedades em transformação: abordagens multidisciplinares*, São Paulo: Blucher, 2018. 328 p. ISBN 978-85-8039-327-9, p. 117-140.
- ³⁴⁹ DANTAS, C. Areas of the Amazon that should have 'zero deforestation' lose 6 cities in SP in three decades. G1. Mai. 21th 2019. Available on: <<https://g1.globo.com/natureza/desafio-natureza/noticia/2019/05/21/areas-da-amazonia-que-deveriam-ter-desmatamento-zero-perdem-6-cidades-de-sp-em-tres-decadas.ghtml>>. Accessed on Aug 19th 2023.
- ³⁵⁰ FOSTER, S. R.; IAIONE C. *Urban Commons*. Available on: <<https://www.oxfordbibliographies.com/display/document/obo-9780190922481/obo-9780190922481-0015.xml>>. Accessed on Aug 28th, 2023.
- ³⁵¹ FOLLMANN, A; VIEHOFF, V. A green garden on red clay: creating a new urban common as a form of political gardening in Cologne, Germany. v. 20 i. 10 p. 1148-1174, 2015. Available on: <https://www.right2city.org/wp-content/uploads/2021/10/Right-to-the-City-Bien-Comun_EN_OK_alta.pdf>. Accessed on Aug 28th, 2023.
- FERNANDES, E *The City as a Common Good: A Pillar of the Right to the City*, Barcelona, 2021. Available on: <https://www.right2city.org/wp-content/uploads/2021/10/Right-to-the-City-Bien-Comun_EN_OK_alta.pdf>. Accessed on Aug 20th, 2023.
- ³⁵² MESSINA, N. *A imaginação poética vivida no Jardim Secreto do Poço da Panela: ensaios de devaneio*. 2019. Dissertação (Mestrado em Desenvolvimento Urbano) – Universidade Federal de Pernambuco, Recife, 2019. Available on: <<https://repositorio.ufpe.br/handle/123456789/35890>>. Accessed on Aug. 19th, 2023.
- ³⁵³ MORROW, Oona. Sharing Food and Risk in Berlin'S Urban Food Commons. *Geoforum*, vol. 99, 2019, pp. 202-212. Available on: <<https://www.sciencedirect.com/science/article/pii/S0016718518302641?via%3Dihub#b0260>>. Accessed on 24 Aug. 2023.
- ³⁵⁴ BAUWENS, M; RAMOS, J. Awakening to an Ecology of the Commons. In: *The great awakening: new models of life amidst capitalist ruins*. Anna Grear, David Bollier (ed.). Punctum books, 2020, p. 124.
- ³⁵⁵ GUTTMANN, *op. cit.*, p. 397.
- ³⁵⁶ FOSTER, S. R. *The City as an Ecological Space: Social Capital and Urban Land Use*. *Notre Dame Law Review*, 2013, p. 528. Available at: <<https://scholarship.law.nd.edu/ndlr/vol82/iss2/1>>. Accessed on 24 Aug. 2023.
- ³⁵⁷ BOLLIER, D. *The Commoner's Catalog for Changemaking*. Massachussets: Schumarcher Center for New Economics, 2021, p. 67. Available at: <<https://www.commonerscatalog.org/books/the-commoners-catalog-for-changemaking?page=69>>. Accessed on 24 Aug. 2023.
- BOILLIER, D.; WESTON, B. *Green Governance: ecological survival, human rights, and the law of the commons*. Cambridge: Cambridge University Press, 2014, p. 104.
- ³⁵⁸ SINAY, L., et al. Parque Natural Municipal da Paisagem Carioca: ecoturismo e sustentabilidade. *Revista Brasileira De Ecoturismo*, 7(3), 2014. Available at: <<https://doi.org/10.34024/rbecotur.2014.v7.6388>>. Accessed on 24 Aug. 2023.
- ³⁵⁹ GUTTMANN, *op. cit.* p. 48.

- ³⁶⁰ ANTONUCCI, F. *From Urban Commons to commoning as Social Practice in: Cultural commons and urban dynamics a multidisciplinary perspective*. Cham: Springer, 2020. Available on: <https://www.academia.edu/44343601/From_Urban_Commons_to_commoning_as_Social_Practice_>. Accessed on Aug 28th, 2023.
- ³⁶¹ FOSTER, S.; IAIONE, C. The city as a commons. *Yale Law & Policy Review*, v. 34, i. 2, 2016. Available on: <<https://ylpr.yale.edu/city-commons>>. Accessed on Aug 28th, 2023.
- ³⁶² FLYNN, A. *Conceptualizing the urban commons: The place of Business Improvement Districts in city governance*. Working Papers, Allard School of Law, University of British Columbia, 2018. Available on: <https://commons.allard.ubc.ca/cgi/viewcontent.cgi?article=1477&context=fac_pubs>. Accessed on Aug 28th, 2023.
- ³⁶³ GUTTMANN, *op. cit.* p. 83.
- ³⁶⁴ DELLENBAUGH-LOSSE, M; ZIMMERMANN, N; VRIES, N. *op. cit.* p. 111-114. Available on: <<http://urbancommonscookbook.com/urbancommonscookbook.pdf>>. Accessed on Aug 28th, 2023.
- ³⁶⁵ While the vertical subsidiarity requires a policy from local or other level. BRETON, A., CASSONE, A. & FRASCHINI, A. Decentralization and subsidiarity: Toward a theoretical reconciliation. *University of Pennsylvania Journal of International Economic Law*. 19 (1), 1998, p. 21-51. *apud* GUTTMANN, *loc. cit.*
IAIONE, C. *City as a Commons*. Available on: <https://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/8604/iaione_prelversion.pdf?sequence=1&isAllowed=yord-iaione_city_as_a_commons_EN>. Accessed on Aug 28th, 2023.
- ³⁶⁶ GUTTMANN, *loc. cit.*
- ³⁶⁷ GUTTMANN, *op. cit.*, p. 98.
- ³⁶⁸ IAIONE, C. Governing the urban commons. *Italian Journal of Public Law*, Jan. 2015. Available on: <https://www.researchgate.net/publication/318393613_GOVERNING_THE_URBAN_COMMONS>. Accessed on Aug 28th, 2023 *apud* GUTTMANN, *op. cit.*, p. 398.
- ³⁶⁹ GUTTMANN, *op. cit.*, p. 381-98.
- ³⁷⁰ FOSTER, S. R. Collective Action and the Urban Commons. *Notre Dame Law Review*, 2013, p. 57. Available at: <<https://scholarship.law.nd.edu/ndlr/vol87/iss1/2/>>. Accessed on Aug 28th, 2023.
- ³⁷¹ ANTONUCCI, *op. cit.*, p. 198.
- ³⁷² ANTONUCCI, *loc. cit.*
- ³⁷³ ANTONUCCI, *op. cit.*, p. 197.
- ³⁷⁴ LINEBAUGH, P. *The Magna Carta Manifesto: liberties and commons for all*. 1. ed. [s.l.] University of California Press, 2008. Available on: <<http://www.jstor.org/stable/10.1525/j.ctt1pp4q2>>. Accessed on Aug 28th, 2023. *apud* GUTTMANN, *op. cit.*, p. 82.
- ³⁷⁵ GUTTMANN, *op. cit.*, p. 82.
- ³⁷⁶ GUTTMANN, *op. cit.*, p. 140.
- ³⁷⁷ GUTTMANN, *loc. cit.*
- ³⁷⁸ MULLER, A. *et al.* *Urban Commons: moving beyond state and market*. Basel, Switzerland: Birkhauser, 2015.
- ³⁷⁹ GUTTMANN, *loc. cit.*
- ³⁸⁰ JARDIM, Felipe. *IPTU progressivo no tempo ou arrecadação de bem vago abandonado?: aplicabilidade de instrumentos jurídico-urbanísticos em imóveis ociosos do bairro do Recife*.

- Mestrado em Desenvolvimento Urbano – UFPE, Recife, 2018. Available on: <<https://repositorio.ufpe.br/handle/123456789/32193>>. Accessed on Aug 28th, 2023.
- BORDE, A. *Vazios urbanos: perspectivas contemporâneas. Tese de doutorado*. Prourb, UFRJ. Rio de Janeiro, 2006. Available on: <<http://www.proureb.fau.ufrj.br/integrantes/andrea-de-lacerda-pessoa-borde/>>. Accessed on Aug 28th, 2023.
- CLEMENTE, J. C. *Vazios urbanos e imóveis subutilizados no centro histórico tombado da cidade de João Pessoa - PB*. Dissertação de mestrado. Programa de pós-graduação em Engenharia Urbana e Ambiental, UFPB. João Pessoa, 2012. Available on: <<https://repositorio.ufpb.br/jspui/handle/tede/5472?mode=full>>. Accessed on Aug 28th, 2023.
- SOUSA, C. *Do cheio para o vazio: metodologia e estratégia na avaliação de espaços urbanos obsoletos*. Mestrado em Arquitetura. Universidade Técnica de Lisboa. Lisboa, 2010. Available on: <https://fenix.tecnico.ulisboa.pt/downloadFile/395142195938/DO%20CHEIO%20PARA%20O%20VAZIO_versao%20final.pdf>. Accessed on Aug 19th, 2023.
- ³⁸¹ GUTTMANN, *op. cit.*, p. 122.
- ³⁸² FAO. *Urban and peri-urban agriculture sourcebook: from production to food systems*. Rome, 2022, p. 16. Available on: <<https://www.fao.org/3/cb9722en/cb9722en.pdf>>. Accessed on Sep 13th, 2023.
- ³⁸³ FOSTER, S. R. Collective Action and the Urban Commons. *Notre Dame Law Review*, v. 87, i. 1, Jan. 2011, p. 94. Available on: <<https://scholarship.law.nd.edu/cgi/viewcontent.cgi?article=1001&context=ndlr>>. Accessed on Sep 13th, 2023.
- ³⁸⁴ FOSTER, 2013, *op. cit.*, p. 540.
- ³⁸⁵ FOSTER, 2011, *op. cit.*, p. 95.
- ³⁸⁶ GUTTMANN, p. 122
- ³⁸⁷ PONSTINGEL, D. The governance of community gardens as commons and its role in the socio-ecological outcomes of gardening in Austin, Texas, USA. *Socioecol. Pract. Res.* 2022; 4 (4), p. 355-376. Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9651095/>>. Accessed on Sep 13th, 2023.
- ³⁸⁸ FAO, 2022, *op. cit.*, p. 16.
- ³⁸⁹ WONG, R; GABLE, L; RIVERA-NUNEZ, Z. Perceived benefits of participation and risks of soil contamination in St. Louis Urban Community Gardens. *Journal of community health*. N.I. v. 35, i.4, p. 809-822, Dec. 2018. Available on: <<https://pubmed.ncbi.nlm.nih.gov/29274067/>>. Accessed on May 16th, 2023.
- ³⁹⁰ DAS, K.; RAMASWAMI, A. Who Gardens and How in Urban USA: Informing Social Equity in Urban Agriculture Action Plans. v. 6, Jul 6, 2022. Available on: <<https://www.frontiersin.org/articles/10.3389/fsufs.2022.923079/full>>. Accessed on Sep 13th, 2023.
- ³⁹¹ MCELDOWNEY, J. *Urban agriculture in Europe: patterns, challenges and policies*. Available on: <[https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA\(2017\)614641_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA(2017)614641_EN.pdf)>. Accessed on Sep 13th, 2023.
- ³⁹² AUDATE, P. P. *et al.* The motivations of urban agriculture practitioners in deprived neighborhoods: A comparative study of Montreal and Quito. *Urban Forestry & Urban Greening*, v. 62, July 2021. Available on: <<https://www.sciencedirect.com/science/article/abs/pii/S1618866721001965>>. Accessed on Sep 13th, 2023

- ³⁹³ STEURI, B; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Master's thesis on Resource efficiency in architecture and planning. Hamburg University, 2015. p. 115. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf/>. Accessed on Sep 13th, 2023.
- ³⁹⁴ STEURI; VIGNOLA, *op. cit.*, p. 55
- ³⁹⁵ GUITART, D.; PICKERING, C.; BYRNE, J. Past results and future directions in urban community gardens research. *Urban Forestry and Urban Greening* 11(4), p. 364–373, 2012. Available on: <<https://www.sciencedirect.com/science/article/abs/pii/S1618866712000830>>. Accessed on Sep 13th, 2023.
- ³⁹⁶ JARDIM, Felipe; SANTOS, Angela; EVERSBERG; Dennis; MOURA, E. *How is a Community Urban Garden Program Related to the Law? Analysis of Hortas Cariocas (Rio de Janeiro, Brazil)*, *St. Thomas Journal of Law and Public Policy*, v. 16, i. 1, 2023. Available on: <<https://ir.stthomas.edu/ustjlp/vol16/iss1/9/>>. Accessed on Sep 13th, 2023.
- ³⁹⁷ FOSTER, 2013, *op. cit.*
- ³⁹⁸ GUTTMANN, *op. cit.*, p. 140
- ³⁹⁹ GUTTMANN, *loc. cit.*
- ⁴⁰⁰ GUTTMANN, *op. cit.*, p. 133.
- COLDING, Johan, *et al.* Urban Commons and Collective Action to Address Climate Change. *Social Inclusion*, v. 10.1, 2022, p. 103-114. Available on: <<https://www.cogitatiopress.com/socialinclusion/article/view/4862>>/. Accessed on Sep 13th, 2023.
- ⁴⁰¹ GRIPPER, A. Practices of Care and Relationship-Building: A Qualitative Analysis of Urban Agriculture's Impacts on Black People's Agency and Wellbeing in Philadelphia. *Int. J. Environ. Res. Public Health*, 20, 6, 2023 Available on: <<https://www.mdpi.com/1660-4601/20/6/4831>>. Accessed on May 13th, 2023.
- KRAJEWSKI, M. Reflections on the North Central Community Gardens Branch Out Project. *Journal of Agriculture, Food Systems, and Community Development*, v.10, i.4, p. 51-54, 2021. Available on: <<https://www.foodsystemsjournal.org/index.php/fsj/article/view/1015>>. Accessed on May 13th, 2023.
- ⁴⁰² DRAKE, L. Validating verdancy or vacancy? The relationship of community gardens and vacant lands in the US. *Cities*, v. 40, Oct. 2014, p. 133-142. Available on: <<https://www.sciencedirect.com/science/article/abs/pii/S0264275113001042>>. Accessed on May 13th, 2023.
- BEAM, D. R. Vacant lot to community garden conversion and crime in Milwaukee: a difference-in-differences analysis. *Inj Prev.*, v.27, i.5, Oct. 2021, p. 403-408. Available on: <<https://pubmed.ncbi.nlm.nih.gov/32912967/>>. Accessed on May 13th, 2023.
- ⁴⁰³ TIMS, K. *et al.* Gardening for change: Community giving gardens and senior food insecurity. *Journal of Agriculture, Food Systems, and Community Development* v.10, i.4, p. 85-101, 2021. Available on: <<https://www.foodsystemsjournal.org/index.php/fsj/article/view/1018#:~:text=Community%20giving%20gardens%2C%20like%20the,while%20building%20local%20food%20economies>>. Accessed on May 13th, 2023.
- THORMAN, A.; DHILLON, H. No Food for Thought: Documenting the Prevalence of Food Insecurity among Medical Students at One Western University. *Journal of Hunger & Environmental Nutrition*, v. 16, i.5, p. 643-649, Sep. 3, 2021. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/19320248.2021.1873885>>. Accessed on May 13th, 2023.

- ⁴⁰⁴ HEERINK, S. *et al.* Expanding field education: Hope Trust Community Garden. *Aotearoa New Zealand Social Work*, v. 33, i. 1, 2021, p. 112-115. Available on: <<https://anzswjournal.nz/anzsw/article/view/829>>. Accessed on May 13th, 2023.
- LLOYD, D. *et al.* Learning science locally: Community gardens and our future. *Front. Educ.*, v. 7, Aug. 8th 2022. Available on: <<https://www.frontiersin.org/articles/10.3389/feduc.2022.850016/full#:~:text=The%20wholistic%20nature%20of%20gardening,%E2%80%94knowing%2C%20feeling%2C%20connecting>>. Accessed on May 13th, 2023.
- ⁴⁰⁵ CHAN, J. *et al.* Social-ecological refuges: reconnecting in community gardens in Lincoln, Nebraska. *Journal of Ethnobiology*, v.16, i.4, Dec. 2016, p. 842-860. Available on: <<https://bioone.org/journals/Journal-of-Ethnobiology/volume-36/issue-4/0278-0771-36.4.842/Social-Ecological-Refuges--Reconnecting-In-Community-Gardens-In-Lincoln/10.2993/0278-0771-36.4.842.short>>. Accessed on May 13th, 2023.
- FELDERHOFF, J. *et al.* Vegetation complexity and nesting resource availability predict bee diversity and functional traits in community gardens. *Ecological Applications*, Volume 33, Issue 2, March 2023. Available on: <<https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.2759>>. Accessed on May 13th, 2023.
- ⁴⁰⁶ CHOW, E. *et al.* The Socioeconomic and Health Impacts of Community Gardens. *Pacific Northwest Medical Student Research Journal*, Oct. 2020. Available on: <<https://pnwmsrj.org/meta-analysis/2020/10/the-socioeconomic-and-health-impacts-of-community-gardens/>>. Accessed on May 13th, 2023.
- ⁴⁰⁷ BURT, K. A systematic, mixed studies review of the outcomes of community garden participation related to food justice. *Local Environment*, Volume 26, Issue 1, 2021. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/13549839.2020.1861589>>. Accessed on May 13th, 2023.
- BARRON, J. Community gardening: cultivating subjectivities, space, and justice. *Local Environment*, Volume 22, Issue 9, 2017. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/13549839.2016.1169518>>. Accessed on May 13th, 2023.
- ⁴⁰⁸ GLOWA, K. *et al.* Agroecologies of displacement: a study of land access, dislocation, and migration in relation to sustainable food production in the Beach Flats Community Garden. *Agroecology and Sustainable Food Systems*, v. 43, i.1, p. 92-115, Jan. 2019. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/21683565.2018.1515143>>. Accessed on May 16th, 2023.
- ⁴⁰⁹ BUTTERFIELD, K. Framing Food Access: Do community gardens inadvertently reproduce inequality?. *Health Educ. Behav.*, 2021 Apr.; 48 (2), p. 160-168. Available on: <<https://pubmed.ncbi.nlm.nih.gov/32806951/>>. Accessed on May 16th, 2023.
- ⁴¹⁰ BUTTERFIELD, K. *Modeling community garden participation: how locations and frames shape participant demographics. Agriculture and Human Values*, v. 10, 2022. Available on: <<https://link.springer.com/article/10.1007/s10460-022-10406-2>>. Accessed on May 16th, 2023.
- ⁴¹¹ WONG, *op. cit.*
- ⁴¹² BRASWELL, T. H. Fresh food, new faces: community gardening as ecological gentrification in St. Louis, Missouri. *Agriculture and human values*. v. 35, i.4, p. 809-822, Dec 2018. Available on: <<https://link.springer.com/article/10.1007/s10460-018-9875-3005>>. Accessed on May 16th, 2023.

⁴¹³ GUTTMANN, *op. cit.*, p. 122.

⁴¹⁴ FAO. *The 10 elements of agroecology: guiding the transition to sustainable food and agricultural systems*. 2018, p. 2. Available on: <<https://www.fao.org/3/i9037en/i9037en.pdf>>. Accessed on Sep 13th, 2023.

⁴¹⁵ FAO, 2022, *op. cit.*, p.16.

⁴¹⁶ OPITZ, I. et al. Contributing to Food Security in Urban Areas: Differences between Urban Agriculture and Peri-Urban Agriculture in the Global North. *Agriculture and Human Values*, v. 33, i. 2, p. 341–358, Jun. 1st, 2016. Available on:<<https://link.springer.com/article/10.1007/s10460-015-9610-2/>>. Accessed on Sep 13th, 2023.

⁴¹⁷ MAGALHÃES, M. J. Hortas comunitárias in the favelas of Rio de Janeiro: How New Ideas Are Adopted and Spread Across Communities. In: TRAPANI, F. *et al.* (ed.) *Advanced Studies in Efficient Environmental Design and City Planning*. Cham: Springer International Publishing, 2021. Available on: < https://link.springer.com/chapter/10.1007/978-3-030-65181-7_21>. Accessed on May 20th, 2023.

REKOW, L. Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro. *Field Actions Science Reports*, vol. 8, 2015. Available on: < <https://journals.openedition.org/factsreports/pdf/4009>>. Accessed on May 16th, 2023.

⁴¹⁸ FERRIS, J., *et al.* People, land and sustainability: Community gardens and the social dimension of sustainable development. *Social Policy*, 35 (5), 2001, p. 559–568. Available on: <<https://onlinelibrary.wiley.com/doi/10.1111/1467-9515.t01-1-00253>>. Accessed on May 16th, 2023.

BEILIN, R.; HUNTER, A. Co-constructing the sustainable city: How indicators help us “grow” more than just food in community gardens. *Local Environment*, 16 (6), 2011, p. 523–538. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/13549839.2011.555393>>. Accessed on May 16th, 2023.

ROSOL, M. Community gardens in Berlin: A new form of citizen participation. In *Perspectives in urban ecology: Studies of ecosystems and interactions between humans and nature in the metropolis of Berlin*, ed. W. Endlicher. Berlin: Springer, 2011, p. 263–270.

⁴¹⁹ OXFORD ENGLISH DICTIONARY. Oxford: Oxford University Press, 2014 *apud* DAVIES, A. *et al.* Making visible: Interrogating the performance of food sharing across 100 urban areas, *Geoforum*, volume 86, 2017, p. 136-149. Available on: <<https://www.sciencedirect.com/science/article/pii/S001671851730266X>>. Accessed on May 16th, 2023.

⁴²⁰ UNITED NATIONS UNIVERSITY. Why Food Should be a Commons Not a Commodity. 2013. Available on: <<https://ourworld.unu.edu/en/why-food-should-be-a-commons-not-a-commodity>>. Accessed on Aug 28th, 2023.

⁴²¹ AGYEMAN, J., *et al.* Briefing: Sharing cities. London: Friends of the Earth September, 2013, p. 1–32. *apud* DAVIES, A. *Urban food sharing*. Bristol: Policy Press Short Research, 2019. Available on: <<https://library.oapen.org/bitstream/handle/20.500.12657/25248/1/9781447349860.pdf>>. Accessed on May 16th, 2023.

⁴²² DAVIES, A. *et al.* Fare sharing: interrogating the nexus of ICT, urban food sharing, and sustainability. *Food, Culture & Society*, 2018, p. 18. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/15528014.2018.1427924>>. Accessed on May 16th, 2023.

⁴²³ DAVIES, A. *et al.*, 2018, *loc. cit.*

- ⁴²⁴ SCHATZKI, T. *Social practices: A Wittgensteinian approach to human activity and the social*. Cambridge: Cambridge University Press, 1996, p. 89 *apud* DAVIS, 2019, *op. cit.*, p. 9.
- ⁴²⁵ RECKWITZ, A. *Towards a theory of social practice*. London: Sage, 2002, p. 250 *apud* DAVIS, 2019, *op. cit.*, p. 9.
- ⁴²⁶ JONES, A. AND MURPHY, J. Practice and economic geography, *Geography Compass*, 4 (4), 2010, p. 319 *apud* DAVIS, 2019, *op. cit.*, p. 9.
- ⁴²⁷ DAVIES, A. *et al.* Making visible: Interrogating the performance of food sharing across 100 urban areas, *Geoforum*, 86, 2017, p. 136–149. Available on: <<https://www.sciencedirect.com/science/article/pii/S001671851730266X>>. Accessed on 01 Jun. 2023.
- apud* DAVIS, 2019, *op. cit.*, p. 9.
- ⁴²⁸ DAVIS, 2019, *op. cit.*, p. 9.
- ⁴²⁹ DAVIES, A. *et al.*, 2018, *loc. cit.*
- ⁴³⁰ MACKENZIE, S.; DAVIES, A. Share it: Co-designing a sustainability impact assessment framework for urban food sharing initiatives. *Environmental Impact Assessment Review*, Volume 79, November 2019. Available on: <<https://www.sciencedirect.com/science/article/pii/S0195925519301064?via%3Dihub>>. Accessed on 01 Jun. 2023.
- ⁴³¹ DAVIES, A. *et al.*, 2018, *loc. cit.*
- ⁴³² DAVIS, A. *et al.* Communicating Goals and Impacts of Urban Food Sharing. *Urban Agriculture magazine*, number 34, May 2018, p. 39. Available on: <<https://edepot.wur.nl/468052>>. Accessed on 01 Jun. 2023.
- ⁴³³ DAVIES, A. *et al.*, 2018, *loc. cit.*
- ⁴³⁴ MACKENZIE, S.; DAVIES, A. *op. cit.*
 DAVIES, A. *et al.* 2017, *op. cit.*
 DAVIES, A. *et al.*, 2018, *op. cit.*
 DAVIES, A.; EVANS, D. Urban food sharing: Emerging geographies of production, consumption and exchange. *Geoforum*, Volume 99, 2019a, p. 154-159. Available on: <<https://www.sciencedirect.com/science/article/pii/S0016718518303440?via%3Dihub>>. Accessed on 01 Jun. 2023.
- ⁴³⁵ Note: The following publication was essential for writing this study: Morley, J. *Academic Phrasebank*. Manchester: The University of Manchester, 2014. Available on: <<https://graduate.iupui.edu/doc/support/gmc/Academic-Phrasebank.pdf>>. Accessed on 8th Oct. 2023.
- ⁴³⁶ Given that “every qualitative phenomenon is also naturally endowed with quantitative faces and vice versa.” DEMO, P. *Pesquisa e informação qualitativa: aportes metodológicos*. São Paulo: Papirus, 2012, p. 8 *apud* MARCONI, M.; LAKATOS, E. *Metodologia Científica*, 8th Edition. Barueri: Atlas, 2022.
- ⁴³⁷ POTEETE; JANSSEN; OSTROM, *op. cit.*, p. 86.
- ⁴³⁸ POTEETE; JANSSEN; OSTROM, *op. cit.*, p. 77.
- ⁴³⁹ MARCONI, 2022, *op. cit.*, 307.
- ⁴⁴⁰ YIN, *op. cit.*, p. 28.
- ⁴⁴¹ TAGUCHI, M.; SANTINI, G. Urban agriculture in the Global North & South: A perspective from FAO. *Field Actions Science Reports*. Institut Veolia: Aubervilliers, France, 2019; Available at: <<http://journals.openedition.org/factsreports/5610>>. Accessed on 04 September 2023.
- ⁴⁴² YIN, *op. cit.*, p. 33.

- ⁴⁴³ PFDENHAUER, M. At eye level - the expert interview: a talk between expert and quasi-expert. In: *Interviewing experts*. Alexander Bogner, Beate Littig, and Wolfgang Menz (ed.). Hampshire: Palgrave Macmillan, 2009.
- TRINCZEK, R. How to Interview Managers? Methodical and Methodological Aspects of Expert Interviews as a Qualitative Method in Empirical Social Research. *Interviewing experts*. Alexander Bogner, Beate Littig, and Wolfgang Menz (ed.). Hampshire: Palgrave Macmillan, 2009.
- ⁴⁴⁴ WEGELIN, E. & BORGMAN, K. Options for municipal interventions in urban poverty alleviation. *Environment and Urbanization*, 7 (2): 1995, p. 131-152. Available on: <<https://journals.sagepub.com/doi/pdf/10.1177/095624789500700219>>. Accessed on Oct 4th, 2023.
- FAO. Cities and local policies, key to eradicate hunger and eliminate food waste. Oct. 20th 2017. Available on: <<https://www.fao.org/news/story/en/item/1045957/icode/>>. Accessed on Oct 4th, 2023
- ⁴⁴⁵ MILAN. Urban food policy pact. Berlin signature, 2019. Available on: <https://www.milanurbanfoodpolicypact.org/wp-content/uploads/2020/12/GOV-Berlin_2019.pdf>. Accessed on April 8th, 2023.
- ⁴⁴⁶ BRAZIL. Constitution of the Federative Republic of Brazil of 1988. Brasília: The Federal Senate, Special Secretariat for Printing and Publishing Undersecretariat of Technical Publications, 2013. Available on: <<https://www2.senado.leg.br/bdsf/item/id/243334/>>. Accessed on Mai 25th, 2023.
- ⁴⁴⁷ DAVIES, A. *et al.* Making visible: Interrogating the performance of food sharing across 100 urban areas, *Geoforum*, 86, 2017, p. 136–149. Available on: <<https://www.sciencedirect.com/science/article/pii/S001671851730266X>>. Accessed on 01 Jun. 2023.
- ⁴⁴⁸ BERLIN. Government. Gemeinschaftsgärten in Berlin. Available on: <<https://www.berlin.de/special/sharing/urban-gardening/4763927-7854814-gemeinschaftsgaerten.html>>. Accessed on Mai 25th, 2023.
- ⁴⁴⁹ BERLIN. Government. Senatsverwaltung für Mobilität, Verkehr, Klimaschutz und Umwelt. Kleingärten. Available on: <<https://www.berlin.de/sen/uvk/natur-und-gruen/stadtgruen/gaertnern-in-der-stadt/kleingaerten/>>. Accessed on Mai 25th, 2023.
- ⁴⁵⁰ CITY DEVELOPMENT INDEX. Index score. Available on: <<https://cdindex.net/world/list/>>. Accessed on Mai 25th, 2023.
- ⁴⁵¹ ECONOMIST IMPACT. Global Food Security Index 2022 Germany. Available on: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/germany>>. Accessed on Mai 25th, 2023.
- ⁴⁵² IBGE. Prévia da população calculada com base nos resultados do Censo Demográfico 2022 até 25 de dezembro de 2022. Available on: <https://ftp.ibge.gov.br/Censos/Censo_Demografico_2022/Previa_da_Populacao/RJ_POP2022.pdf>. Accessed on Mai 25th, 2023.
- ⁴⁵³ LUCENA, F. *Mais de 2 milhões de pessoas estão em situação de pobreza extrema no estado do RJ. Diário do Rio de Janeiro*, 18 jun. 2021. Available on: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/brazil>>. Accessed on Mai 25th, 2023.
- ⁴⁵⁴ ECONOMIST IMPACT. Global Food Security Index 2022 Brazil. Available on: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/germany>>. Accessed on Mai 25th, 2023.

- ⁴⁵⁵ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Mai 25th, 2023.
- ⁴⁵⁶ UNITED NATIONS. Hortas Cariocas (Urban Green Gardens). Available on: <<https://sdgs.un.org/partnerships/hortas-cariocas-urban-green-gardens>>. Accessed on Mai 25th, 2023.
- ⁴⁵⁷ DIARIO DO RIO. Com 110 mil metros quadrados, Parque Madureira terá a maior horta urbana do mundo. 28 Set. 2021. Available on: <<https://diariodorio.com/com-110-mil-metros-quadrados-parque-madureira-tera-a-maior-horta-urbana-do-mundo/>>. Accessed on Mai 25th, 2023.
- ⁴⁵⁸ GIL, *op. cit.*, p. 109; YIN, *op. cit.*, p. 112.
- ⁴⁵⁹ GIL, *op. cit.*, p. 121.
- ⁴⁶⁰ MARCONI, 2021, *op. cit.*, p. 204.
- ⁴⁶¹ YIN, *op. cit.*, p. 89.
- ⁴⁶² YIN, *op. cit.*, p. 112; MARCONI, 2022, *op. cit.*, p. 320.
- ⁴⁶³ It divided the German population into Reich citizens, “citizens of German or related blood”, on the one hand, and into “simple” nationals, “members of a non-racial nationality.”
- ⁴⁶⁴ LAKATOS, E. *Fundamentos de Metodologia Científica*. 9th Edition. São Paulo: Atlas, 2023, p. 202.
- ⁴⁶⁵ LAKATOS, 2023, *loc. cit.*
- ⁴⁶⁶ JALCA, A., *et al.* Adoption of Snowball Sampling Technique with Distance Boundaries to Assess the Productivity Issue Faced by Micro and Small Cocoa Producers in Cusco. In: Ahram, T., Tair, R., Colson, S., Choplin, A. (eds) *Human Interaction and Emerging Technologies*. Advances in Intelligent Systems and Computing, vol 1018, 2020. Available on: <https://link.springer.com/chapter/10.1007/978-3-030-25629-6_147>. Accessed on 01 Jun. 2023.
- ⁴⁶⁷ BERLIN TOURISMUS & KONGRESS GMBH. Urban gardening in Berlin. Available on: <<https://www.visitberlin.de/en/urban-gardening-berlin>>. Accessed on 01 Jun. 2023.
- ⁴⁶⁸ BERLIN. Der Regierende Bürgermeister. Senatskanzlei Senat beschließt Berliner Gemeinschaftsgarten-Programm. Available on: <<https://www.berlin.de/rbmskzl/aktuelles/pressemitteilungen/2023/pressemitteilung.1286947.php>>. Accessed on 01 Jun. 2023.
- ⁴⁶⁹ This inclusion was important to understand the factors threatening or disturbing the maintenance of a garden in *Berlin* and Rio de *Janeiro* and the reason why someone is not doing garden activities anymore. Given that a field visit in person was not possible, the gardens’ territories to be investigated were determined by the possibility to collect an interview.
- ⁴⁷⁰ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Mai 25th, 2023.
- ⁴⁷¹ INSTITUTO ESCOLHAS. Programa Hortas Cariocas. Available on: <<https://100politicasscolhas.org/estudo/programa-hortas-cariocas/>>. Accessed on 01 Jun. 2023.
- ⁴⁷² HORTA DO VINIL. Mapeamento Colaborativo das Hortas Comunitárias. Available on: <<https://www.google.com/maps/d/edit?hl=en&mid=1svtcToZW9affjTFpUpU73kFuEnqNAHU&ll=-22.92584760113528%2C-43.26246650922851&z=15>>. Accessed on 01 Jun. 2023.
- ⁴⁷³ G1. Funcionários do programa Hortas Cariocas, da prefeitura do Rio, denunciam falta de incentivos e corte de verbas. Jan. 2023. Available on: <<https://g1.globo.com/rj/rio-de-janeiro/rj1/video/funcionarios-do-programa-hortas-cariocas-da-prefeitura-do-rio-denunciam-falta-de-incentivos-e-corte-de-verbas-11227099.ghtml>>. Accessed on 01 Jun. 2023.

- ⁴⁷⁴ JARDIM, Felipe; SANTOS, Angela; EVERSBERG, Dennis; MOURA, E. *How is a Community Urban Garden Program Related to the Law? Analysis of Hortas Cariocas (Rio de Janeiro, Brazil)*, *St. Thomas Journal of Law and Public Policy*, v. 16, i. 1, 2023. Available on: <<https://ir.stthomas.edu/ustjlp/vol16/iss1/9/>>. Accessed on Sep 13th, 2023.
- ⁴⁷⁵ ROSAN, Christina D.; PEARSALL, Hamil. *Growing a Sustainable City?: The Question of Urban Agriculture*. Toronto: University of Toronto Press, 2017.
- ⁴⁷⁶ “In qualitative research, data collection typically occurs to the point of saturation. Essentially, this means that researchers continue interviews to the point where little new information is shared by participants. In other words, people continue reporting essentially the same ideas and the law of diminishing returns is at work in the information-gathering procedure. Collecting more data, at that point, does not produce novel results.” FIRMIN, M. Themes. In: *The SAGE Encyclopedia of Qualitative Research Methods*, v. 1 & 2. California: University of Alberta, 2008, p. 869. Available on: <<http://www.yanchukvladimir.com/docs/Library/Sage%20Encyclopedia%20of%20Qualitative%20Research%20Methods-%202008.pdf>>. Accessed on 01 Jun. 2023.
- ⁴⁷⁷ LAKATOS, 2023, *op. cit.*, p. 54.
- ⁴⁷⁸ LAKATOS, 2023, *loc. cit.*
- ⁴⁷⁹ Software program designed for computer-assisted qualitative and mixed methods data, text and multimedia analysis in academic, scientific, and business institutions. Available on: <<https://www.maxqda.com/>>. Accessed on 01 Feb. 2023.
- ⁴⁸⁰ YIN, *op. cit.*, p. 131.
- ⁴⁸¹ BARDIN, L. *Content Analysis*. São Paulo: Edições, 2011.
- ⁴⁸² YIN, *op. cit.*, *loc. cit.*
- ⁴⁸³ POTEETE, *op. cit.*, p. 78.
- ⁴⁸⁴ YIN, *op. cit.*, p. 133.
- ⁴⁸⁵ POTEETE, *op. cit.*, p. 79.
- ⁴⁸⁶ YIN, *op. cit.*, p. 46.
- ⁴⁸⁷ YIN, *op. cit.*, p. 56.
- ⁴⁸⁸ POTEETE, *op. cit.*, *loc. cit.*
- ⁴⁸⁹ AYRES, *op. cit.*, *loc. cit.*
- ⁴⁹⁰ DAVIES, A. *et al.* Fare sharing: interrogating the nexus of ICT, urban food sharing, and sustainability. *Food, Culture & Society*, 2018, p. 18. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/15528014.2018.1427924>>. Accessed on May 16th, 2023.
- ⁴⁹¹ GÖTTL, I.; PENKER, M. Institutions for Collective Gardening: A Comparative Analysis of 51 Urban Community Gardens in Anglophone and German-Speaking Countries. *International Journal of The Commons*. v. 14, i. 1, p. 30–43, 17 Feb. 2020. Available on: <<https://thecommonsjournal.org/articles/10.5334/ijc.961>>. Accessed on May 16th, 2023.
- JACKISCH, J. *Cultivating Well-Being. A study on Community Gardening and Health in Berlin and Paris*. Master thesis. Department of Medical and Health Sciences, Health and Society. Linköpings University, 2012. Available on: <<http://liu.diva-portal.org/smash/record.jsf?pid=diva2%3A579216&dswid=-4110>>. Accessed on May 16th, 2023.
- ⁴⁹² LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <

- <https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.
- ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 mar. 2016. Available on: <<https://tede.ufrj.br/handle/jspui/1397>>. Accessed on MAY 23th, 2023.
- SILVA, S. H. C. *et al. Plantas medicinais: tradições e saberes de mulheres de uma comunidade urbana do Rio de Janeiro, RJ, Brasil*. 2014. Available on: <<https://www.arca.fiocruz.br/handle/icict/11037>>. Accessed on May 23th, 2023.
- ⁴⁹³ PRINZESSINNENGARTEN KOLLEKTIV BERLIN. Prinzessinnengarten Café & Restaurant. Available on: <<https://prinzessinnengarten-kollektiv.net/gartencafe/>>. Accessed on Mai 25th, 2023.
- ⁴⁹⁴ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Mai 25th, 2023.
- ⁴⁹⁵ AYRES, *op. cit., loc. cit.*
- ⁴⁹⁶ GERMANY. BMBF. Junior research group “Mentalities in flux: imaginaries and social structure in modern circular bio-based societies.” Available on: <<https://www.flumen.uni-jena.de/en/flumen-en-2/>>. Accessed on Mai 25th, 2023.
- ⁴⁹⁷ BRAZIL. Plataforma Brasil. Research ethic committee. Available on: <<https://plataformabrasil.saude.gov.br/login.jsf;jsessionid=9922C437BDA704B9D802024E1E3E4F2E.server-plataformabrasil-srvjpdf132>>. Accessed on Mai 25th, 2021.
- ⁴⁹⁸ PFEIFFER, S., *et al.* Food Insecurity and Poverty in Germany. In: Biesalski, H., Drewnowski, A., Dwyer, J., Strain, J., Weber, P., Eggersdorfer, M. (eds.) *Sustainable Nutrition in a Changing World*. Springer, 2017. Available at: <https://link.springer.com/chapter/10.1007/978-3-319-55942-1_7>. Accessed on 9th Oct. 2023.
- ⁴⁹⁹ GERMANY. Federal Statistics Office. Just over one-fifth of Germany’s population at risk of poverty or social exclusion. May, 2023. Available on: <https://www.destatis.de/EN/Press/2023/05/PE23_190_63.html#:~:text=Just%20over%2017.3%20million%20people%20in%20Germany%20were,the%20survey%20on%20income%20and%20living%20conditions%20%28EU-SILC%29.>>. Accessed on 9th Oct. 2023.
- ⁵⁰⁰ VONBERG, J. *Germany’s hidden hunger: On the breadline in Europe’s richest country*. Available on: <<https://www.cnn.com/interactive/2017/09/world/germany-food-bank-cnnphotos/>>. Accessed on 9th Oct. 2023.
- ⁵⁰¹ BUTTERWEGGE, C. Poverty and Homelessness in Germany after the COVID-19 Pandemic. EuropeNow, Jul 12th, 2023. Available on: <<https://www.europenowjournal.org/2023/07/07/poverty-and-homelessness-in-germany-after-the-covid-19-pandemic/>>. Accessed on 9th Oct. 2023.
- ⁵⁰² PFEIFFER, S.; RITTER, T.; OESTREICHER, E. Food Insecurity and Poverty in Germany. Em: BIESALSKI, H. K. et al. (Ed.). *Sustainable Nutrition in a Changing World*. Cham: Springer International Publishing, 2017. p. 99–109. Available on: <https://link.springer.com/chapter/10.1007/978-3-319-55942-1_7>. Accessed on 9th Oct. 2023.
- ⁵⁰³ DEPA J, GYNGELL F, MÜLLER A, ELERAKY L, HILZENDEGEN C, Stroebel-Benschop N. Prevalence of food insecurity among food bank users in Germany and its association with population characteristics. *Prev Med Rep*. 2018;9:96–101. Available on: <[doi:10.1016/j.pmedr.2018.01.005](https://doi.org/10.1016/j.pmedr.2018.01.005)>. Accessed on 9th Oct. 2023.

- ⁵⁰⁴ TAFEL. Die berliner tafel feiert ihren 30. geburtstag. Berline tafel e. v. Available on: <<https://www.berliner-tafel.de/>>. Accessed on 9th Oct. 2023.
- ⁵⁰⁵ REIMER, B. Food Deserts Across Germany. Arcgis, 2020. Available on: <<https://storymaps.arcgis.com/stories/2a7e27f1e4564c4e846f12cf45a746b6/print>>. Accessed on 9th Oct. 2023.
- ⁵⁰⁶ THE ECONOMIST IMPACT. The Global Food Security Index, 2022. Available on: <https://impact.economist.com/sustainability/project/food-security-index/reports/Economist_Impact_GFSI_2022_Germany_country_report_Sep_2022.pdf>. Accessed on 9th Oct. 2023.
- ⁵⁰⁷ BERLIN. Government. Landesamt für Gesundheit und Soziales. *COVID-19 in Berlin, Verteilung in den Bezirken*. Available on: <<https://www.berlin.de/lageso/gesundheit/infektionskrankheiten/corona/tabelle-bezirke/>>. Accessed on 9th Oct. 2023.
- ⁵⁰⁸ BERLIN. Government. Senatsverwaltung für Wirtschaft, Energie und Betriebe. Abteilung Wirtschaft. *Wirtschaftsleistung*. 2023. Available on: <<https://www.berlin.de/sen/wirtschaft/konjunktur-und-statistik/wirtschaftsdaten/wirtschaftsleistung/>>. Accessed on 9th Oct. 2023.
- ⁵⁰⁹ BUTTERWEGGE, Christoph. Poverty and Homelessness in Germany after the COVID-19 Pandemic. *Europenow*, Jul 12th, 2023. Available on: <<https://www.europenowjournal.org/2023/07/07/poverty-and-homelessness-in-germany-after-the-covid-19-pandemic/>>. Accessed on 9th Oct. 2023.
- ⁵¹⁰ SIMMET, A.; STROEBELE-BENSCHOP, N. Food Bank Operations during the COVID-19 Pandemic in Germany. *Journal of Hunger & Environmental Nutrition*, v. 18, i. 3, p. 356–371, mai 4th, 2023. Available on: <<https://www.tandfonline.com/doi/full/10.1080/19320248.2021.1943590>>. Accessed on 9th Oct. 2023.
- ⁵¹¹ GERMANY. Federal Statistical Office. Employment up slightly in August 2023. Sep 29th, 2023. Available on: <https://www.destatis.de/EN/Themes/Labour/Labour-Market/Unemployment/_node.html>. Accessed on 9th Oct. 2023.
- ⁵¹² BERLIN. Government. Unemployment rate in Berlin falls to 8.7 percent. Available on: <<https://www.berlin.de/en/news/7478082-5559700-umemployment-rate-falls-8-percent.en.html>>. Accessed on 9th Oct. 2023.
- ⁵¹³ KRAMER, E. Economic, social and territorial situation of Berlin, Germany. 2013, p. 35,. Available on: <[https://www.europarl.europa.eu/RegData/etudes/note/join/2013/495864/IPOL-REGI_NT\(2013\)495864_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/note/join/2013/495864/IPOL-REGI_NT(2013)495864_EN.pdf)>. Accessed on 9th Oct. 2023.
- ⁵¹⁴ COUNCIL OF EUROPE. *Berlin Neukölln, Germany - Intercultural City - Intercultural cities programme*. Available on: <<https://www.coe.int/en/web/interculturalcities/berlin-neukolln>>. Accessed on 9th Oct. 2023.
- ⁵¹⁵ SOEDERBERG, S. Governing stigmatised space: the case of the ‘slums’ of Berlin-Neukölln. *New Political Economy*, v. 22, i. 5, sep 3rd, 2017, p. 478–495. Available on: <<https://www.tandfonline.com/doi/abs/10.1080/13563467.2017.1240671>>. Accessed on 9th Oct. 2023.
- ⁵¹⁶ MARIKO, I. *Temporary Use of Vacant Urban Spaces in Berlin: Three Case Studies in the Former Eastern Inner-city District Friedrichshain*. Tokyo, Japan. Oct 24th, 2017. Available on: <https://www.jstage.jst.go.jp/article/geogrevjapanb/91/1/91_910101/_pdf/-char/en>. Accessed on 9th Oct. 2023.

⁵¹⁷ BERLIN. Environmental Atlas. Actual Use of Built-up Areas: Inventory of Green and Open Spaces. 2020. Available on: <<https://www.berlin.de/umweltatlas/en/land-use/actual-land-use/2020/map-description/>>. Accessed on 9th Oct. 2023.

⁵¹⁸ “A Fallow area is an area that is not in use or maintained at the time of recording, on which variegated stands of vegetation can often develop undisturbed, which is, however, subject to great pressure of use and change. A distinction is made between a Fallow area free of vegetation on the one hand, which includes mostly excavations, soil or rubble dumps, or demolition areas, where no vegetation has yet taken root, due to the fact that their utilisation has only recently been abandoned. In some cases, the site conditions ensure that no vegetation will enter the area for some time. These may be brownfields where little vegetation grows due to the very high degree of imperviousness, or else sand dunes and beaches, on which spontaneous growth of vegetation occurs only very slowly, due to a lack of nutrients, or due to regular disturbances.” BERLIN, 2020, *op. cit.*

⁵¹⁹ BERLIN, 2020, *op. cit.*

⁵²⁰ BERLIN, 2020, *op. cit.*

⁵²¹ BERLIN. Government. Berliner Gemeinschaftsgärten. Plattform Produktives Stadtgrün. *Was sind Gemeinschaftsgärten?* Available on:

<<https://www.berlin.de/gemeinschaftsgaertnern/gemeinschaftsgaerten/was-sind-gemeinschaftsgaerten/artikel.879236.php/>>. Accessed on 9th Oct. 2023.

⁵²² DEUTSCHER STÄDTETAG. Urbane Landwirtschaft Positionspapier des Deutschen Städtetages. Deutscher Städtetag Berlin und Köln., November 2021, p. 5. Available on: <<https://www.staedtetag.de/files/dst/docs/Publikationen/Positionspapiere/2021/positionspapier-urbane-landwirtschaft-2021.pdf/>>. Accessed on 9th Oct. 2023.

⁵²³ BERLIN, 2020, *op. cit.*

⁵²⁴ Collaboration with Jéssica Lucena. Google Earth Data Basis. Illustrator Software.

⁵²⁵ IJSN. *Análise Especial: Pobreza e miséria nos estados brasileiros 2022*, Mai 2023. Available on: <https://ijsn.es.gov.br/Media/IJSN/PublicacoesAnexos/sumarios/IJSN_Especial_Pobreza_Estados_Brasileiros_2022.pdf/>. Accessed on 9th Oct. 2023.

⁵²⁶ RIO DE JANEIRO. Prefeitura. Indicador municipal mostra que economia do Rio cresceu 2,4% no primeiro trimestre deste ano. Prefeitura da Cidade do Rio de Janeiro, 2 jun. 2023. Available on: <<https://prefeitura.rio/desenvolvimento-economico-inovacao-simplificacao/indicador-municipal-mostra-que-economia-do-rio-cresceu-24-no-primeiro-trimestre-deste-ano/>>. Accessed on 9th Oct. 2023.⁵²⁶

⁵²⁷ IBGE. *Síntese de Indicadores Sociais: Uma análise das condições de vida da população brasileira 2022*. Rio de Janeiro, 2022. Available on: <<https://biblioteca.ibge.gov.br/visualizacao/livros/liv101979.pdf/>>. Accessed on 9th Oct. 2023.

⁵²⁸ IBGE. *Desemprego: O que é desemprego*. Available on: <

<https://www.ibge.gov.br/explica/desemprego.php/>>. Accessed on 9th Oct. 2023.

⁵²⁹ RIO DE JANEIRO. Prefeitura. *Cidade do Rio tem a menor taxa de desemprego em seis anos. Prefeitura da Cidade do Rio de Janeiro*, sep 19th, 2023. Available on: <<https://prefeitura.rio/desenvolvimento-economico-inovacao-simplificacao/cidade-do-rio-tem-a-menor-taxa-de-desemprego-em-seis-anos/>>. Accessed on 9th Oct. 2023.

⁵³⁰ THE ECONOMIST. Global Food Security Index 2022: Brazil. Available at: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/brazil>>. Accessed on 9th October 2023.

⁵³¹ VIGISAN. National Survey of Food Insecurity in the Context of the Covid-19 Pandemic in Brazil, 2021. Available on:

<https://olheparaafome.com.br/VIGISAN_AF_National_Survey_of_Food_Insecurity.pdf/>. Accessed on 9th Oct. 2023.

⁵³² MIRANDA, P. *et. al.* *Aspectos socioeconômicos da covid-19: o que dizem os dados do município do rio de janeiro?* Jul, 2010. Available on:

<https://www.ipea.gov.br/portal/images/stories/PDFs/nota_tecnica/200731_nt_diset_n_72.pdf>. Accessed on 9th Oct. 2023.

⁵³³ *Estudo Técnico Mapeamento Desertos Alimentares. Alimentos.* p. 20, 25. Available on: <<https://www.scribd.com/document/606102207/Estudo-tecnico-mapeamento-desertos-alimentares/>>. Accessed on 9th Oct. 2023.

⁵³⁴ MIRANDA, *op. cit.* p. 14.

⁵³⁵ *ArcGIS Web Application.* Available on:

<<https://dadosgeociencias.ibge.gov.br/portal/apps/webappviewer/index.html?id=67c70e701c624c63a6f1754a8b8bce4a/>>. Accessed on 9th Oct. 2023.

⁵³⁶ Instituto Brasileiro de Geografia e Estatística. Censo 2010. Universo Aglomerados subnormais, Rio de Janeiro, 2010. Available on: <<https://cidades.ibge.gov.br/brasil/rj/rio-de-janeiro/pesquisa/23/25359>>. Accessed on 9th Oct. 2023.

⁵³⁷ Instituto Brasileiro de Geografia e Estatística. Censo demográfico. Censo 2022. Available on: <<https://www.ibge.gov.br/estatisticas/sociais/habitacao/22827-censo-demografico-2022.html?edicao=37225&t=resultados>>. Accessed on 9th Oct. 2023.

⁵³⁸ GRINBERG, F.; CASTRO, M.; SCHMIDT, S. *Novo Censo: moradias vagas duplicam em 12 anos e chegam a um milhão no Estado do Rio.* Jul 7th, 2023. Available on: <<https://oglobo.globo.com/rio/noticia/2023/07/07/novo-censo-moradias-vagas-duplicam-em-12-anos-e-chegam-a-um-milhao-no-estado-do-rio.ghtml>>. Accessed on 9th Oct. 2023.

⁵³⁹ MONTEIRO, M. dos S. Reocupação de vazios urbanos como estratégia para cidades (mais) sustentáveis: um olhar sobre a cidade do Rio de Janeiro. Abr 28th, 2020. Available on: <<http://bibliotecadigital.fgv.br:80/dspace/handle/10438/29162>>. Accessed on 9th Oct. 2023.

⁵⁴⁰ RIO DE JANEIRO. Prefeitura. Instituto Rio Patrimônio da Humanidade. Projeto Vazios Urbanos, Rio de Janeiro. Available on: <<http://www.rio.rj.gov.br/dlstatic/10112/5333332/4139324/24VaziosUrbanosIRPH082014.pdf>>. Accessed on 9th Oct. 2023.

⁵⁴¹ NEVES, L. Vazios urbanos na área central do rio de janeiro preservação e reabilitação urbana. Universidade Federal do Rio de Janeiro (UFRJ). *Revista Impulso.* Available on: <https://antigo.mdr.gov.br/images/stories/ArquivosSNPU/Biblioteca/ReabilitacaoAreasUrbanas/Biblioteca_Vazios_Urbanos_Area_Central_RJ.pdf>. Accessed on 9th Oct. 2023.

⁵⁴¹ NEVES, *op. cit.*, p. 14.

⁵⁴² LIMA, C. *et. al.* *A rede carioca de agricultura urbana e o direito à cidade.* Embrapa, 2019. Available on: <<https://www.embrapa.br/busca-de-publicacoes/-/publicacao/1122603/a-rede-carioca-de-agricultura-urbana-e-o-direito-a-cidade>>. Accessed on 9th Oct. 2023.

⁵⁴³ Collaboration with Jéssica Lucena. Google Earth Data Basis. Illustrator Software.

⁵⁴⁴ FOSTER, S. R. Collective Action and the Urban Commons. *Notre Dame Law Review*, v.87, i. 1, Jan. 2011, p. 94. Available on: <<https://scholarship.law.nd.edu/cgi/viewcontent.cgi?article=1001&context=ndlr>>. Accessed on Sep 13th, 2023.

⁵⁴⁵ WONG, R.; GABLE, L.; RIVERA-NÚÑEZ, Z. Perceived Benefits of Participation and Risks of Soil Contamination in St. Louis Urban Community Gardens. *Journal of Community Health*, v. 43, i. 3, p. 604–610, jun 1st, 2018. Available on: <<https://link.springer.com/article/10.1007/s10900-017-0459-8/>>. Accessed on Sep 13th, 2023.

DAS, K.; RAMASWAMI, A. Who Gardens and How in Urban USA: Informing Social Equity in Urban Agriculture Action Plans. *Frontiers in Sustainable Food Systems*, v. 6, 06 July 2022. Available on:

<<https://www.frontiersin.org/articles/10.3389/fsufs.2022.923079/full/>>. Accessed on Oct 9th, 2023.

Who Gardens and How in Urban USA: Informing Social Equity in Urban Agriculture Action Plans

MCELDOWNEY, J. *Urban agriculture in Europe: Patterns, challenges and policies*. Dec, 2017. Available on:

<[https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA\(2017\)614641_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/IDAN/2017/614641/EPRS_IDA(2017)614641_EN.pdf)>. Accessed on Oct 4th, 2023.

AUDATE, P. P.; CLOUTIER, G.; LEBEL, A. *The motivations of urban agriculture practitioners in deprived neighborhoods: A comparative study of Montreal and Quito*. *Urban Forestry & Urban Greening*, v. 62, jul 1st, 2021. Available on:

<<https://www.sciencedirect.com/science/article/abs/pii/S1618866721001965?via%3Dihub>>. Accessed on Oct 4th, 2023.

⁵⁴⁶ STEURI, B; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. p. 55. Dec, 2015. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on Oct 9th, 2023.

⁵⁴⁷ GUTTMANN, A. *Plateformes de développement urbain, villes de la connaissance et développement durable: l'économie politique des biens communs urbains dans le contexte du changement climatique*. Sociology. Université Paris-Nord - Paris XIII, 2022p. 122. Available on: <<https://theses.hal.science/tel-04160619>>. Accessed on Oct 4th, 2023.

⁵⁴⁸ BERE3. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁵⁴⁹ FREUNDESKREIS VIDEOCLIPS. Aktion: Squat Tempelhof Airport / Tempelhofer Feld. Available on: <<https://www.youtube.com/watch?v=v-4SEp4X8cI>>. Accessed on Oct 9th, 2023.

⁵⁵⁰ MARICATO, E. *Housing and city*. 7. ed. São Paulo: Atual, 1997

HARVEY, D. *Social justice and the city*. São Paulo: Hucitec, 1980.

⁵⁵¹ BERE4. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁵⁵² BRASWELL, T. H. *Fresh food, new faces: community gardening as ecological gentrification in St. Louis, Missouri. Agriculture and human values*. [N.I.] v. 35, i.4, p. 809-822, Dec 2018. Available on: <<https://www.webofscience.com/wos/woscc/full-record/WOS:000447701800005>>. Accessed on May 16th, 2023.

STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg (HCU), 2022, p. 77.

Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.

⁵⁵³ BERG7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁵⁵⁴ BERARCURB. *Tempelhofer Feld*. May 26th, 2016. Available on:

<<https://www.architektur-urbanistik.berlin/index.php?threads/tempelhofer-feld.245>>. Accessed on Oct 9th, 2023.

- ⁵⁵⁵ KIESEL, VON. *Exklusiv FDP plant 12.000 Wohnungen: Initiative will neuen Volksentscheid zum Tempelhofer Feld* Geht es nach dem Willen der FDP, soll erneut über eine Bebauung des Tempelhofer Feldes abgestimmt werden. Ein Antrag wurde an den Innensenator verschickt. Available on: <<https://www.tagesspiegel.de/berlin/initiative-will-neuen-volksentscheid-zum-tempelhofer-feld-5047498.html>>. Accessed on Oct 9th, 2023. DER TAGESSPIEGEL ONLINE. Scharfe Kritik an Vorstoß der FDP: So reagiert die Berliner Politik auf die Idee eines neuen Tempelhof-Volksentscheids, 31 Dez. 2019. Available on: <<https://www.tagesspiegel.de/berlin/so-reagiert-die-berliner-politik-auf-die-idee-eines-neuen-tempelhof-volksentscheids-4678597.html>>. Accessed on Oct 9th, 2023.
- ⁵⁵⁶ KIESEL, VON. *Langer Weg bis zum Referendum: Dritter Tempelhof-Volksentscheid geplant*. Dez 29th, 2019. <https://www.tagesspiegel.de/berlin/dritter-tempelhof-volksentscheid-geplant-4131568.html>>. Accessed on Oct 9th, 2023.
- ⁵⁵⁷ BERG1, BERG7, BERG9, BERE4. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁵⁸ BERE4. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁵⁹ BERE10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁰ BERE9. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶¹ This topic was mentioned by two experts, but who mentioned it will be not identified, as requested by them.
- ⁵⁶² FAO. Urban and peri-urban agriculture sourcebook. Rome, 2022, p.16. Available on: <fao.org/3/cb9722en/cb9722en.pdf>. Accessed on Sep 13th, 2023.
- ⁵⁶³ JARDIM, Felipe; SANTOS, Angela; EVERSBERG; Dennis; MOURA, E. *How is a Community Urban Garden Program Related to the Law? Analysis of Hortas Cariocas (Rio de Janeiro, Brazil)*, *St. Thomas Journal of Law and Public Policy*, v. 16, i. 1, 2023. Available on: <<https://ir.stthomas.edu/ustjlp/vol16/iss1/9/>>. Accessed on Sep 13th, 2023.
- ⁵⁶⁴ RIOE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁵ RIOG4. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁶ RIOE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁷ BERE7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁸ BERG3. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁶⁹ BERG6. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷⁰ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁵⁷¹ ALLMENDE-KONTOR. FAQs - Unser Garten - ABC. Available on: <<https://www.allmende-kontor.de/der-garten/faqs/>>. Accessed on Aug 18th, 2023.
- ⁵⁷² BERG8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷³ RIOG10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

- ⁵⁷⁴ BERG2; BERG3. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷⁵ BERG1. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷⁶ RIOG10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷⁷ RIOE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁷⁸ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁵⁷⁹ RIOG8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁸⁰ GLOBAL ALLIANCE FOR FOOD SECURITY. Global food and nutrition security dashboard. Available on: <<https://www.gafs.info/country-profiles/?state=Advice&country=BRA&indicator=IPCC>>. Accessed on Aug 18th, 2023.
- ⁵⁸¹ LOPES, L.; BRÊTAS, P. “Eu e meus filhos comemos comida que estava há um mês vencida”: homem relata busca por sustento em caminhão de lixo. 10th Ago. 2022. Available on: <<https://extra.globo.com/economia-e-financas/eu-meus-filhos-comemos-comida-que-estava-ha-um-mes-vencida-homem-relata-busca-por-sustento-em-caminhao-de-lixo-25553698.html>>. Accessed on Aug 28th, 2023.
- Hora do Povo. Disputa por ossos no Rio expõe drama da fome. 30 set. 2021. Available on: <<https://horadopovo.com.br/disputa-por-ossos-no-rio-expoe-drama-da-fome-no-brasil-sob-bolsonaro/>>. Accessed on Aug 19th, 2023.
- ⁵⁸² The *experts* also had a higher monthly household income, with an average around 315 Euros (around 350 United States Dollars) more than *gardeners*. In *Rio de Janeiro*, the *experts* had an income more than 3 times higher than *gardeners*.
- ⁵⁸³ FAO. The right to adequate food. Geneva, 2010, p. 5. Available on: <<https://www.ohchr.org/sites/default/files/Documents/Publications/FactSheet34en.pdf>>. Accessed on July 5th, 2023.
- ⁵⁸⁴ FAO. An Introduction to the Basic Concepts of Food Security. Food Security Information for Action Practical Guides. 2008. Available on: <<https://www.fao.org/3/al936e/al936e00.pdf>>. Accessed on July 5th, 2023.
- ⁵⁸⁵ GCAP UCR. *Environmental Justice: Food Deserts*. Available on: <<https://www.gcapucr.com/environmental-justice-food-deserts>>. Accessed on Aug 20th, 2023.
- ⁵⁸⁶ RIOG1. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁸⁷ BERE5. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁸⁸ RIOG5. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁸⁹ MARTINEZ-ALIER, J. The environmentalism of the poor. *Geoforum*, v. 54, p. 239–241, Jul 1st, 2014. Available on: <<https://www.sciencedirect.com/science/article/pii/S0016718513000912>>. Accessed on Aug 19th, 2023.
- ⁵⁹⁰ STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture’s potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg

- (HCU), 2022, p. 115. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.
- ⁵⁹¹ BERE10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁹² BERG9. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁵⁹³ KARGE, T. *Neue urbane Landwirtschaft: Eine theoretische Verortung und Akteursanalyse der Initiative Himmelbeet im Berliner Wedding*. Berlin: Universitätsverlag der TU Berlin, 2015. Available on: <<https://d-nb.info/1156274923/34>>. Accessed on May 23th, 2023.
- ⁵⁹⁴ PRINZESSINNENGARTEN. Wolfundwaldkauz. Wolf und Waldkauz: Wilde Küche. Available on: <<https://prinzessinnengarten-kollektiv.net/wolf-und-waldkauz-wilde-kueche/>>. Accessed on Aug 22th, 2023.
- ⁵⁹⁵ GOBSTER, P. H.; STEWART, S. I.; BENGSTON, D. N. The social aspects of landscape change: protecting open space under the pressure of development. *Landscape and Urban Planning*. v. 69, i. 2, p. 149–151, 15 ago. 2004. Available on: <<https://www.sciencedirect.com/journal/landscape-and-urban-planning/vol/69/issue/2>>. Accessed on May 23th, 2023.
- KARGE, T. *Neue urbane Landwirtschaft: Eine theoretische Verortung und Akteursanalyse der Initiative Himmelbeet im Berliner Wedding*. Berlin: Universitätsverlag der TU Berlin, 2015. Available on: <<https://d-nb.info/1156274923/34>>. Accessed on May 23th, 2023.
- STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg (HCU), 2022. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.
- ⁵⁹⁶ MAGALHÃES, Mariano J. Hortas Comunitárias in the Favelas of Rio de Janeiro: How New Ideas Are Adopted and Spread Across Communities. In: TRAPANI, F. *et al. (ed.) Advanced Studies in Efficient Environmental Design and City Planning*. Cham: Springer International Publishing, 2021. Available on: <https://link.springer.com/chapter/10.1007/978-3-030-65181-7_21>. Accessed on May 20th, 2023.
- VÉRON, O. 'We're Just an ambulance at the bottom of the cliff': Strategies and (a)politics of change in Berlin's community food spaces. *Environment and Planning A: Economy and Space*, 19 Feb. 2023. Available on: <<https://journals.sagepub.com/doi/10.1177/0308518X231158101>>. Accessed on May 26th, 2023.
- ⁵⁹⁷ REKOW, L. Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro. *Field Actions Science Reports*, vol. 8, 2015. Available on: <<https://journals.openedition.org/factsreports/pdf/4009>>. Accessed on May 16th, 2023.
- ⁵⁹⁸ MAGALHÃES, *op. cit.*
- ⁵⁹⁹ HALDER, S. *Gemeinsam die Hände dreckig machen: Aktionsforschungen im aktivistischen Kontext urbaner Gärten und kollektiver Kartierungen*. Dissertation an der Freien Universität Berlin, 2017, p. 169. Available on: <<https://katalog.dnb.de/EN/resource.html?hit=2&t=gemeinsam+Landwirtschaft+&f>>

D=fmt.hss&key=all&sp=dnb&th=5&tk=F83EFEEC49340E77BD8177FD0B844C927AD17C35&pr=0&sortA=bez&sortD=-dat&v=plist>. Accessed on May 23th, 2023.

STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg (HCU), 2022. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_stauri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.

⁶⁰⁰ ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 Mar. 2016. Available on: <<https://tede.ufrj.br/handle/jspui/1397>>. Accessed on May 23rd, 2023.

SINISCALCHI, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: <<https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF>>. Accessed on May 23th, 2023.

LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <<https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.

⁶⁰¹ Prinzessinnengarten Kollektiv Berlin. Available on: <<https://prinzessinnengarten-kollektiv.net/ueber-uns/faq/>>. Accessed on Aug 19th, 2023.

⁶⁰² BERE7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁶⁰³ BERE1. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁶⁰⁴ RIOG10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁶⁰⁵ RIOG7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.

⁶⁰⁶ REGUEIRA, C. Número de pobres no RJ aumenta em 745 mil durante a pandemia e atinge 10,5% da população, diz FGV. Available on: <<https://g1.globo.com/rj/rio-de-janeiro/noticia/2021/02/25/numero-de-pobres-no-rj-aumenta-em-745-mil-durante-pandemia-e-atinge-105percent-da-populacao-diz-fgv.ghtml>>. Accessed on Aug 20th, 2023.

⁶⁰⁷ AGÊNCIA BRASIL. Covid-19: 87% dos moradores de favelas conhecem alguém que adoeceu. 30 Set. 2020. Available on: <<https://agenciabrasil.ebc.com.br/geral/noticia/2020-09/na-favela-quase-todo-mundo-conhece-alguem-que-teve-covid-19>>. Accessed on Jun 09th, 2023.

⁶⁰⁸ BERLIN. Government. Berliner Gemeinschaftsgarten Programm. Available on: <https://www.berlin.de/gemeinschaftsgaertnern/_assets/programm/gemeinschaftsgarten-programm.pdf?ts=1677511936>. Accessed on Aug 28th, 2023

⁶⁰⁹ OLIVEIRA, N.; GALDO, R. No Rio, o número de pessoas que não têm o que comer aumentou 400% nos últimos quatro anos. Available on: <<https://oglobo.globo.com/rio/noticia/2022/06/no-rio-o-numero-de-pessoas-que-nao-tem-o-que-comer-aumentou-400percent-nos-ultimos-quatro-anos.ghtml>>. Accessed on Jul 18th, 2023.

- ⁶¹⁰ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁶¹¹ RIO DE JANEIRO. Prefeitura. Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁶¹² CENTRO DE INTELIGÊNCIA EM ORGÂNICOS. Brazil will have the largest urban garden in the world by 2024. Aug. 2022. Available on: <<https://ciorganicos.com.br/noticia/brasil-tera-o-maior-horta-urbana-do-mundo-ate-2024/>>. Accessed on Aug 26th, 2023.
- ⁶¹³ RIOG10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶¹⁴ RIOE6. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶¹⁵ RIOG9. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶¹⁶ BERE7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶¹⁷ INSTITUTO ESCOLHAS. Políticas Públicas de Agricultura Urbana. São Paulo: 2022. Available on: <<https://100politicasescolhas.org/estudo/programa-hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁶¹⁸ RIO DE JANEIRO. Prefeitura. Prefeitura do Rio doa mil tilápias para a comunidade de Urucânia, em Paciência, 08 Mai 2020. Available on: <<https://coronavirus.rio/noticias/prefeitura-do-rio-doa-mil-tilapias-para-a-comunidade-de-urucania-em-paciencia/>>. Accessed on Aug 28th, 2023.
- ⁶¹⁹ BERE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²⁰ GORDILLO, G; JERÓNIMO, O. M. Food Security and Sovereignty. Canada, 2013. p. 4. Available on: <<https://www.fao.org/3/ax736e/ax736e.pdf>>. Accessed on July 2nd, 2023.
- ⁶²¹ BERG8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²² BERG2. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²³ BERG7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²⁴ BAUHÜTTE KREUZBERG. Willkommen Bei Der Bauhütte Kreuzberg. Available on: <<https://bauhuettenkreuzberg.de/>>. Accessed on Aug 18th, 2023.
- ⁶²⁵ RIOG10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²⁶ RIOG9. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶²⁷ BUTTERFIELD, K. *Framing Food Access: Do community gardens inadvertently reproduce inequality?* Available on: <<https://pubmed.ncbi.nlm.nih.gov/32806951/>>. Accessed on May 16th, 2023.

- ⁶²⁸ GOBSTER, P. H.; STEWART, S. I.; BENGSTON, D. N. The social aspects of landscape change: protecting open space under the pressure of development. *Landscape and Urban Planning*. v. 69, i. 2, p. 149–151, 15 ago. 2004. Available on: <<https://www.sciencedirect.com/journal/landscape-and-urban-planning/vol/69/issue/2>>. Accessed on May 23th, 2023.
- ⁶²⁹ KARGE, *op. cit.*
- ⁶³⁰ SILVA, S. H. C. *et al.* *Plantas medicinais: tradições e saberes de mulheres de uma comunidade urbana do Rio de Janeiro, RJ, Brasil*. 2014. Available on: <<https://www.arca.fiocruz.br/handle/icict/11037>>. Accessed on May 23th, 2023.
- ⁶³¹ BUTTERFIELD, *op. cit.*
- ⁶³² ZENKER, A. Negros são maioria nas favelas, segundo estudo do Ipea. 16 Dez. 2008. Available on: <<https://memoria.ebc.com.br/agenciabrasil/noticia/2008-12-16/negros-sao-maioria-nas-favelas-segundo-estudo-do-ipea>>. Accessed on May 16th, 2023.
- ⁶³³ RIOE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶³⁴ REDE CARIOCA DE AGRICULTURA URBANA. Rede CAU. Available on: <<http://ppad.org.br/coletivo/rede-cau-rede-carioca-de-agricultura-urbana>>. Accessed on Jun 13th, 2023.
- ⁶³⁵ WIKIFAVELAS. Teia de Solidariedade da Zona Oeste. 2023. Available on: <https://wikifavelas.com.br/index.php/Teia_de_Solidariedade_da_Zona_Oeste>. Accessed on Jun 10th, 2023.
- ⁶³⁶ AS-PTA - Agricultura Familiar e Agro-ecologia. Site institucional. Available on: <<http://aspta.org.br/>>. Accessed on Jun 11th, 2023.
- ⁶³⁷ GOBSTER, P. H.; STEWART, S. I.; BENGSTON, D. N. The social aspects of landscape change: protecting open space under the pressure of development. *Landscape and Urban Planning*. v. 69, i. 2, p. 149–151, 15 ago. 2004. Available on: <<https://www.sciencedirect.com/journal/landscape-and-urban-planning/vol/69/issue/2>>. Accessed on May 23th, 2023.
- KARGE, *op. cit.*
- STEURI *et al.*, *op. cit.*
- ⁶³⁸ BERG9. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶³⁹ RIOE6. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁴⁰ RIOE7. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁴¹ GORDILLO, G; JERÓNIMO, O. M. Food Security and Sovereignty. Canada, 2013. p. 4. Available on: <<https://www.fao.org/3/ax736e/ax736e.pdf>>. Accessed on July 2nd, 2023.
- ⁶⁴² BERG1. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁴³ BERE3. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁴⁴ COLDING, J. *et al.* Urban Green Commons: Insights on Urban Common Property Systems. *Global Environmental Change*. v. 23, i. 5, p. 1039–1051, 1 oct. 2013. Available on: <<https://www.sciencedirect.com/science/article/abs/pii/S0959378013000800?via%3Dihub>>. Accessed on May 16th, 2023.
- ⁶⁴⁵ ALLMENDE-KONTOR. Chronik. 2023. Available on: <<https://www.allmende-kontor.de/der-garten/allmende-kontor-chronik/>>. Accessed on May 29th, 2023.

- ⁶⁴⁶ PRINZESSINNENGARTEN. Der Neue St. Jacobi Friedhof. Available on: <<https://prinzessinnengarten-kollektiv.net/ueber-uns/standort/>>. Accessed on May 16th, 2023.
- ⁶⁴⁷ INSTITUTO ESCOLHAS. Políticas Públicas de Agricultura Urbana. São Paulo: 2022. Available on: <<https://100politicasescolhas.org/estudo/programa-hortas-cariocas/>>. Accessed on Aug 18th, 2023.
- ⁶⁴⁸ JARDIM, Felipe; SANTOS, Angela; EVERSBERG; Dennis; MOURA, E. *How is a Community Urban Garden Program Related to the Law? Analysis of Hortas Cariocas (Rio de Janeiro, Brazil)*, *St. Thomas Journal of Law and Public Policy*, v. 16, i. 1, 2023. Available on: <<https://ir.stthomas.edu/ustjlp/vol16/iss1/9/>>. Accessed on Sep 13th, 2023.
- ⁶⁴⁹ COLDING, *et al.*, *op cit.*; STEURI, *et al.*, *op cit.*
- ⁶⁵⁰ ALLMENDE-KONTOR, 2023, *op. cit.*
- ⁶⁵¹ DAVIES, Anna, *et al.* Food Sharing Initiatives and Food Democracy: Practice and Policy in Three European Cities. *Politics and Governance*, 7.4, 2019, p. 8-20. Available on: <<https://www.cogitatiopress.com/politicsandgovernance/article/view/2090>>. Accessed on May 26th, 2023.
- ⁶⁵² RIOE10. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁵³ RIOG8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁵⁴ BERE3. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁵⁵ RIOG4. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁵⁶ RIOE8. Doctoral dissertation study. [Interview to Felipe Jardim]. Berlin/Rio de Janeiro, 2024.
- ⁶⁵⁷ MAGALHÃES, Mariano J. Hortas Comunitárias in the Favelas of Rio de Janeiro: How New Ideas Are Adopted and Spread Across Communities. In: TRAPANI, F. *et al.* (ed.) *Advanced Studies in Efficient Environmental Design and City Planning*. Cham: Springer International Publishing, 2021. Available on: <https://link.springer.com/chapter/10.1007/978-3-030-65181-7_21>. Accessed on May 20th, 2023.
- REKOW, L. Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro. *Field Actions Science Reports*, vol. 8, 2015. Available on: <<https://journals.openedition.org/factsreports/pdf/4009>>. Accessed on May 16th, 2023.
- REKOW, L. Urban Agriculture in the Manguinhos Favela of Rio de Janeiro: Laying the Groundwork for a Greener Future. In: Leal Filho, W., Pociovalisteanu, DM., Al-Amin, A. (eds) *Sustainable Economic Development*. World Sustainability Series. Springer, Cham. 28 Set. 2016. Available on: <https://link.springer.com/chapter/10.1007/978-3-319-45081-0_10>. Accessed on May 16th, 2023.
- ⁶⁵⁸ LICHTERBECK, P. Uma horta que muda vidas. 17 Jul. 2021. Available on: <<https://www.dw.com/pt-br/uma-horta-que-muda-vidas/a-58194269>>. Accessed on May 26th, 2023.
- ⁶⁵⁹ G1. Vídeo Horta Comunitária está sendo tomada pelo tráfico em Manguinhos. Available on: <<https://g1.globo.com/rj/rio-de-janeiro/rj1/video/horta-comunitaria-esta-sendo-tomada-pelo-trafico-em-manguinhos-10992135.ghtml>>. Accessed on Jun 16th, 2023.
- ⁶⁶⁰ COLDING, J. *et al.* Urban Green Commons: Insights on Urban Common Property Systems. *Global Environmental Change*. v. 23, i. 5, p. 1039–1051, 1 Oct. 2013. Available on:

<<https://www.sciencedirect.com/science/article/abs/pii/S0959378013000800?via%3Dihub>>. Accessed on May 16th, 2023.

⁶⁶¹ GOBSTER, *et al.*, *op. cit.*

⁶⁶² DAVIES, A. R.; CRETELLA, A.; FRANCK, V. Food Sharing Initiatives, and Food Democracy: Practice and Policy in Three European Cities. *Politics and Governance*, v. 7, i. 4, p. 8–20, 28 Oct. 2019. Available on:

<<https://www.cogitatiopress.com/politicsandgovernance/article/view/2090>>. Accessed on May 26th, 2023.

⁶⁶³ REKOW, 2015, *op. cit.*

REKOW, 2016, *op. cit.*

⁶⁶⁴ How do notions of right to food connect to food sharing activities in community gardens in Berlin and Rio de Janeiro, and, within and between cities, how to explain these connections' similarities and differences?

⁶⁶⁵ GISEKE, U.; REIS L. MEES C. Berliner Gemeinschaftsgarten Programm. Available on: <https://www.berlin.de/gemeinschaftsgaertnern/_assets/programm/gemeinschaftsgarten-programm.pdf?ts=1677511936>. Accessed on Aug 28th, 2023.

⁶⁶⁶ Programas de Hortas Cariocas. Available on: <<https://carioca.rio/servicos/hortas-cariocas/>>. Accessed on Aug 19th, 2023.

⁶⁶⁷ MAGALHÃES, Mariano J. Hortas Comunitárias in the Favelas of Rio de Janeiro: How New Ideas Are Adopted and Spread Across Communities. In: TRAPANI, F. *et al.* (ed.) *Advanced Studies in Efficient Environmental Design and City Planning*. Cham: Springer International Publishing, 2021. Available on: <https://link.springer.com/chapter/10.1007/978-3-030-65181-7_21>. Accessed on May 20th, 2023.

VÉRON, O. 'We're Just an ambulance at the bottom of the cliff': Strategies and (a)politics of change in Berlin's community food spaces. *Environment and Planning A: Economy and Space*, 19 Feb. 2023. Available on: <<https://journals.sagepub.com/doi/10.1177/0308518X231158101>>. Accessed on May 26th, 2023.

⁶⁶⁸ REKOW, L. Fighting insecurity: experiments in urban agriculture in the favelas of Rio de Janeiro. *Field Actions Science Reports*, vol. 8, 2015. Available on: <<https://journals.openedition.org/factsreports/pdf/4009>>. Accessed on May 16th, 2023.

⁶⁶⁹ MAGALHÃES, *op. cit.*

⁶⁷⁰ SILVEIRA, D. Extrema pobreza bate recorde no Brasil em dois anos de pandemia, diz IBGE. Available on: <<https://g1.globo.com/economia/noticia/2022/12/02/extrema-pobreza-bate-recorde-no-brasil-em-dois-anos-de-pandemia-diz-ibge.ghtml>>. Accessed on Jun 19th, 2023.

⁶⁷¹ REGUEIRA, C. Número de pobres no RJ aumenta em 745 mil durante a pandemia e atinge 10,5% da população, diz FGV. Available on: <<https://g1.globo.com/rj/rio-de-janeiro/noticia/2021/02/25/numero-de-pobres-no-rj-aumenta-em-745-mil-durante-pandemia-e-atinge-105percent-da-populacao-diz-fgv.ghtml>>. Accessed on Aug 20th, 2023.

⁶⁷² Agência Brasil. Covid-19: 87% dos moradores de favelas conhecem alguém que adoeceu. Available on: <<https://agenciabrasil.ebc.com.br/geral/noticia/2020-09/na-favela-quase-todo-mundo-conhece-alguem-que-teve-covid-19>>. Accessed on Jun 10th, 2023.

⁶⁷³ OLIVEIRA, N.; GALDO, R. No Rio, o número de pessoas que não têm o que comer aumentou 400% nos últimos quatro anos. Available on: <<https://oglobo.globo.com/rio/noticia/2022/06/no-rio-o-numero-de-pessoas-que-nao-tem-o>>

que-comer-aumentou-400percent-nos-ultimos-quatro-anos.ghtml>. Accessed on Jul 18th, 2023.

⁶⁷⁴ GISEKE, U.; REIS L. MEES C. Berliner Gemeinschaftsgarten Programm. Available on: <https://www.berlin.de/gemeinschaftsgaertnern/_assets/programm/gemeinschaftsgarten-programm.pdf?ts=1677511936>. Accessed on Aug 28th, 2023.

⁶⁷⁵ Programa de Hortas Cariocas. Available on: <<https://100politicasscolhas.org/estudo/programa-hortas-cariocas/>>. Accessed on Aug 27th, 2023.

⁶⁷⁶ HALDER, S. *Gemeinsam die Hände dreckig machen: Aktionsforschungen im aktivistischen Kontext urbaner Gärten und kollektiver Kartierungen*. Dissertation an der Freien Universität Berlin, 2017, p. 169. Available on: <<https://katalog.dnb.de/EN/resource.html?hit=2&t=gemeinsam+Landwirtschaft+&fD=fmt.hss&key=all&sp=dnb&th=5&tk=F83EFEEC49340E77BD8177FD0B844C927AD17C35&pr=0&sortA=bez&sortD=-dat&v=plist>>. Accessed on May 23th, 2023.

STEURI, B.; VIGNOLA, G. *Towards productive and socio-natural urban landscapes: tapping urban agriculture's potential as a tool for sustainable development*. Hamburg: Universitätsbibliothek der HafenCity Universität Hamburg (HCU), 2022. Available on: <https://repos.hcu-hamburg.de/bitstream/hcu/650/2/2022-06-01_steuri-bettina_vignola-gionatan_masterarbeit.pdf>. Accessed on May 23th, 2023.

⁶⁷⁷ BECK, V. Iniciativas urbano sustentáveis no Rio de Janeiro: a experiência da horta carioca do Jardim Anil. In: CORREIA, Arícia Fernandes. (Org.). *Direito da Regularização Fundiária Urbana Sustentável*. Pesquisa, teoria e prática em torno da Lei Federal n. 13.465/2017. 1ed. Juiz de Fora-MG: Editar, 2018, v. 1, p. 9-383. Available on: <<https://nepec-uerj.com.br/wp-content/uploads/2021/12/Direito-Regularizac%CC%A7a%CC%83o-Fundia%CC%81ria-Final-com-capa.pdf>>. Accessed on May 23th, 2023.

LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <<https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.

SINISCALCHI, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: <<https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF>>. Accessed on May 23th, 2023.

ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 mar. 2016. Available on: <<https://tede.ufrj.br/handle/jspui/1397>>. Accessed on MAY 23th, 2023.

⁶⁷⁸ ZANOTTO, L. C. *Semeando o almoço na laje: manual de implementação de hortas urbanas em comunidades de baixa renda, uma alternativa frente a problemas de desigualdade social*. 29 Mar. 2016. Available on: <<https://tede.ufrj.br/handle/jspui/1397>>. Accessed on May 23rd, 2023.

SINISCALCHI, M. *Semeando o comum na metrópole contemporânea: as hortas urbanas comunitárias no Rio de Janeiro (RJ)*. 2020. 241 f. Dissertação de Mestrado - Departamento de Geografia e Meio Ambiente, Pontifícia Universidade Católica do Rio de Janeiro. Available on: <<https://www.maxwell.vrac.puc-rio.br/49639/49639.PDF>>. Accessed on May 23th, 2023.

LIMA, C. *Agriculturas na cidade do Rio de Janeiro: dicotomias e as especificidades da agricultura urbana*. 2019. 119 f. Dissertação (Mestrado em Desenvolvimento Territorial e Políticas Públicas) - Instituto de Ciências Sociais Aplicadas, Universidade Federal Rural do Rio de Janeiro, Seropédica, 2019. Available on: <

<https://tede.ufrj.br/jspui/bitstream/jspui/5596/2/2019%20-%20Caren%20Freitas%20de%20Lima.pdf>>. Accessed on May 23th, 2023.

⁶⁷⁹ GOBSTER, P. H.; STEWART, S. I.; BENGSTON, D. N. The social aspects of landscape change: protecting open space under the pressure of development. *Landscape and Urban Planning*. v. 69, i. 2, p. 149–151, 15 ago. 2004. Available on:

<<https://www.sciencedirect.com/journal/landscape-and-urban-planning/vol/69/issue/2>>. Accessed on May 23th, 2023.

⁶⁸⁰ KARGE, T. *Neue urbane Landwirtschaft: Eine theoretische Verortung und Akteursanalyse der Initiative Himmelbeet im Berliner Wedding*. Berlin: Universitätsverlag der TU Berlin, 2015. Available on: <<https://d-nb.info/1156274923/34>>. Accessed on May 23th, 2023.

⁶⁸¹ SILVA, S. H. C. *et al. Plantas medicinais: tradições e saberes de mulheres de uma comunidade urbana do Rio de Janeiro, RJ, Brasil*. 2014. Available on: <<https://www.arca.fiocruz.br/handle/icict/11037>>. Accessed on May 23th, 2023.

⁶⁸² DAVIES, A. R.; CRETELLA, A.; FRANCK, V. Food Sharing Initiatives, and Food Democracy: Practice and Policy in Three European Cities. *Politics and Governance*, v. 7, i. 4, p. 8–20, 28 Oct. 2019. Available on: <<https://www.cogitatiopress.com/politicsandgovernance/article/view/2090>>. Accessed on May 26th, 2023.

⁶⁸³ REKOW, 2015, *op. cit.*; REKOW, 2016, *op. cit.*

APPENDIX A – Interview guide

COMMUNITY URBAN AGRICULTURE – LOCAL RELATIONS BEFORE PANDEMIC

#	QUESTION
1	How is your experience with community urban agriculture (What activities?) Why?
2	How often?
3	Do you know the history of this place? What was happening here before the garden?
4	Alone or with others (who?)?
5	Do you see your gardening primarily as a hobby or as a contribution to your alimentation?
6	What are the biggest problems/obstacles for you regarding the practice of vegetable growing there?
7	Do you have animal breeding? If yes, which and why?
8	What are the advantages and disadvantages of the community urban agriculture?
9	What will be the future of community urban agriculture (next ten years)?
10	Should the city have more community urban agriculture areas?

ASSOCIATION – LOCAL RELATIONS BEFORE PANDEMIC

#	QUESTION
11	How was the relationship between your association members/organizers and you?
12	How often did you interact with the association?
13	What does the association provide in support of its members?
14	Would you say that your opinion is important for the garden group decisions?
15	Are there people from different ages/backgrounds/nationalities organized in your garden group?
16	What do you like about the way it is organized and what do you dislike about it?

COVID-19 PANDEMIC - GLOBAL RELATIONS

#	QUESTION
17	How have you experienced Covid pandemic so far? How has it changed your life?
18	In which way the pandemics affected your use of the garden?
19	In which way the pandemics affected your interaction with the association?

ENVIROMENTAL - GLOBAL RELATIONS

#	QUESTION
20	In your words, what is sustainability?
21	Do you believe that the community urban agriculture is a sustainability tool? Why?
22	Do you use the sustainability concept in your garden? What kind?
23	Do you believe in global climate change? If yes, do you believe that the community urban agriculture is a tool against global climate change?
24	What do you think about "conventional agriculture" (including monocultures, pollution, pesticides...)?

LAW – LOCAL AND GLOBAL RELATIONS

#	QUESTION
27	Are there rules regulating what you are allowed/obliged to do in your garden? If so, would you do something different if there were no rules concerning the planting, leisure, housing?
28	How is the enforcement of the rules?
29	Do you know what are human rights? Do you believe that the community urban agriculture has any relation to human rights? If yes, what rights and why?
30	What is the role of the government to community urban agriculture?

Source: JARDIM, 2023. [Collaboration with Flumen Junior Research Group]

APPENDIX B – Sociodemographic questionnaire

1 - PERSONAL

Name	
Age	
Gender	
Nationality	
Study level/area	
Profession	
Do you live in Berlin? If yes, how long?	
Which kind of place do you live (house/apartment)?	
What is the size (m ²) of your home?	
Does your home have a green area?	
Political arty affiliation? If yes, which?	
Religion	
Monthly household income	
E-mail (if you want to be notified about the results of this research)	
Food diet	<input type="checkbox"/> Vegetarian <input type="checkbox"/> Vegan <input type="checkbox"/> Flexitarian <input type="checkbox"/> Carnivorous

2 - ACTIVITY

How far (km) is it from your home?	
How do you go to the garden?	<input type="checkbox"/> By feet <input type="checkbox"/> Car <input type="checkbox"/> Public transport <input type="checkbox"/> Other
How many monthly hours are you in the community urban agriculture in:	
a) Spring	
b) Summer	
c) Fall	
d) Winter	
What kind of products do you have:	<input type="checkbox"/> fruits <input type="checkbox"/> vegetables <input type="checkbox"/> flowers <input type="checkbox"/> Non-Conventional Food Plants <input type="checkbox"/> medicinal plants <input type="checkbox"/> other
Can you give some examples of products?	
What do you do with your food production?	<input type="checkbox"/> self-consume in nature/recipes <input type="checkbox"/> exchange <input type="checkbox"/> donation <input type="checkbox"/> sell in nature/recipes
Do you still buy vegetables in the market/supermarket?	<input type="checkbox"/> yes <input type="checkbox"/> no
How do you grow vegetables/fruits there:	<input type="checkbox"/> use of artificial fertilizers <input type="checkbox"/> chemical pesticides <input type="checkbox"/> natural pesticides <input type="checkbox"/> aquaponics <input type="checkbox"/> application of traditional knowledge of the ancestors <input type="checkbox"/> use of machines moved by motor <input type="checkbox"/> handicraft garden tools <input type="checkbox"/> reuse of water <input type="checkbox"/> organic fertilizer <input type="checkbox"/> chemical fertilizer
What taxes and how much do you pay per year for maintain the garden?	

Source: JARDIM, 2023. [Collaboration with Flumen Junior Research Group]

APPENDIX C – Consent term

You are being invited to participate, as a volunteer, in the study entitled “**COMMUNITY URBAN AGRICULTURE FOR IMPLEMENTATION OF HUMAN RIGHTS: Contrasts of the right to the city between Rio de Janeiro and Berlin,**” conducted by Felipe Jardim da Silva. This study aims to identify the differences and similarities in the uses and meanings of community urban agriculture in Rio de Janeiro and Berlin for the realization of human rights during the Covid-19 pandemic.

You have been selected by contact/search indication on the Internet. Your participation is not mandatory. At any time, you may withdraw from participating and withdraw your consent. Your refusal, withdrawal or withdrawal of consent will not result in prejudice.

Your participation in the survey is not remunerated or will imply expenses for participants.

Your participation in this research will consist of answering the interview/form on community urban agriculture and its socioeconomic profile. The interviewer will be the researcher responsible, alone or accompanied by other students, teachers and, eventually, translators.

The interview can generate discomfort due to the duration or due to some questions. To combat this, a duration of approximately 1h30 (one hour and thirty minutes) was provided, and this time was alerted in the scheduling of the interview; it is also expressed here that there is no obligation to answer all questions.

The data obtained through this research will be confidential and will not be disclosed at the individual level to ensure the confidentiality of your participation.

The interview will be recorded for later transcription. In the dissemination of the results it will be necessary to use your image in photo and or video and/or the recording made in audio. You need to agree to this procedure.

The responsible researcher undertakes to make public in the academic and scientific circles the results obtained in a consolidated way without any identification of participating individuals.

If you agree to participate in this research, sign at the end of this document, which has two ways, one of which is yours, and the other by the responsible researcher/coordinator of the research. The following are the telephone numbers and the institutional address of the responsible researcher and the Research Ethics Committee - CEP, where you can ask your questions about the project and your participation in it, now or at any time.

Contacts of the responsible researcher:

Felipe Jardim da Silva

felipejardim@outlook.com

State University of Rio de Janeiro | Friedrich-Schiller Universität Jena

If you have difficulty contacting the researcher responsible, report this to the Research Ethics Committee of UERJ: Rua São Francisco Xavier, 524, room 3018, block E, 3rd floor, - Maracanã - Rio de Janeiro, RJ, e-mail: etica@uerj.br - Phone: (021) 2334-2180. Cep COEP is responsible for ensuring the protection of research participants and operates on Mondays, Wednesdays and Fridays from 10am to 12pm and 2pm to 4pm.

I declare that I understand the objectives, risks and benefits of my participation in the research, and that I agree to participate.

Berlin, _____

Participant signature: _____

Researcher signature: _____

Source: JARDIM, 2023.

APPENDIX D – Details of investigated community gardens

Table 04 – Investigated community gardens in Berlin (part 1)

ID.	GARDEN	ADDRESS	INTERVIEW	PREVIOUS USE OF THE AREA	STARTING YEAR	LEND TENURE STRESS	TYPE OF CULTIVATION	TYPE OF PLOT
1	Moritzplatz	Prinzenstraße 35-38, 10969	BERG9	Store	2009	2019 (voluntary move)	Container-based cultivation Ground-based cultivation	Individual or closed group Collective (mostly)
2	Prinzessinnengarten	Hermannstraße 99-105, 12051	BERG1 BERG2 BERG3 BERG4 BERE1 BERE2 BERE5 BERE9 BERE10	Part of a cemetery	2018	No register	Container-based cultivation Ground-based cultivation	Collective
3	Allmende-Kontor	Tempelhofer Feld	BERG8 BERE4 BERE6	Airport	2011	No register	Container-based cultivation	Individual or closed group (mostly) Collective
4	M.I.N.T. Grünes Klassenzimmer	Tempelhofer Feld	BERG7	Airport	2012	No register	Container-based cultivation	Collective
5	Elisabeet	Wollankstraße 66, 13359 Berlin	BERE7 BERE8	Part of a cemetery	2020	No register	Ground-based cultivation	Collective
6	Bürger*innen-Garten (Citizens Garden)	Siemensstraße 27, 10551 Berlin	BERG6	Side area of a train station	2012	No register	Ground-based cultivation Container-based cultivation	Individual or closed group
7	Freie Universität Berlin (Free University of Berlin)	Bibliothek, Oertzenweg 19B, 14163	BERG5	Side area of a riding hall	Less than ten years ago	No register	Container-based cultivation	Individual or closed group
8	Peace of Land	Am Weingarten 14, 10407 Berlin	BERE11	Porcelain Manufactory	2016	2022 (forced move)	Container-based cultivation Ground-based cultivation Forest gardening	Individual or closed group
9	Senate Department	Am Köllnischen Park 3, 10179	BERE3					
10	Rübezahl	Tempelhofer Feld	No	Airport	2010	No register	Container-based cultivation	No information
11	Stadtteilgarten Schillerkiez	Tempelhofer Feld	No	Airport	2010	No register	Container-based cultivation	No information
12	Stadtacker Berlin	Tempelhofer Feld	No	Airport	2011	No register	Container-based cultivation	No information
13	Klunkergarten	Karl-Marx-Straße 66, 12043	No	Mall rooftop	2016	No register	Container-based cultivation	No information
14	Himmelbeet	Gartenstraße/ Ecke Grenzstraße, 13355	No	Sports area (former address) and public square (new address)	Foundation in 2012, new address in 2022	2022 (forced move)	Ground-based cultivation (former address) Container-based cultivation (former and new address)	Individual or closed group (former and new address) Collective (former address)
15	Frieda Süd	Friedrichstraße 19, 10969	No	Flower market	2021	No register	Container-based cultivation	Collective (mostly)
16	Möhrchenpark	Holzmarktstraße 33, 10243	No	No information	2013	No register	Container-based cultivation	No information.
17	Kiez-Garten	Briesestraße S/N, 12053 Berlin	BERE9 BERE10	Square	2022	No register	Container-based cultivation	No information.

Source: JARDIM, 2023.

Table 04 – Investigated community gardens in Berlin (part 2)

ID.	GARDEN	LAND PROPERTY		LAND POSSESSION			FEE TO DO GARDENING	NUMBER OF INVOLVED PEOPLE
				TYPE OF REPRESENTANT	OF REPRESENTANT	FEE TO USE THE SPACE		
1	Moritzplatz	State	Public land	Common grounds e.V.	Voluntary association	Yes	No fee	Around ten co-organizers
2	Prinzessinnengarten	Private (church)	Evangelische Friedhofsverband Berlin Stadtmitte	Nomadisch Grün GmbH	Non-profit company	No information	No fee	Around 30 hired people
3	Allmende-Kontor	State	Public land	Allmende Kontor e.V.	Voluntary association	Yes	Annual fee for plant bed of 30-60 euros, and membership fee of 12 euros	Around 300 gardeners
4	M.I.N.T. Grünes Klassenzimmer	State	Public land	Familie e.V.	Voluntary association	Yes	Annual fee of 50 euros for costs, plus 15 euros for membership	Thirty parents vinculated, including the seven parents co-organizing. Around 60 children from the school
5	Elisabeet	Private (church)	Evangelische Friedhofsverband Berlin Stadtmitte	Himmelbeet gGmbH	Non-profit company	No information	No fee	Around ten co-organizers
6	Bürger*innen-Garten (Citizens Garden)	State	Public land	KUNSTrePUBLIK e.V.	Voluntary association	No information	Annual fee of 70 euros	No information
7	Freie Universität Berlin (Free University of Berlin)	State	Public land	Veterinary students and professors	Voluntary association	No	No fee	Around 20 gardeners
8	Peace of Land	State	Not identified	Peace of Land e.V.	Voluntary association	No information	Monthly contribution of 5 euros for costs, and annual membership fee of 30 euros	Around 10-15 coorganizers
9	Senate Department							
10	Rübezahl	State	Public land	Gemeinschaftsgarten Rübezahl e.V.	Voluntary association	No information	No information	No information
11	Stadtteilgarten Schillerkiez	State	Public land	Verein Teilhabe e.V.	Voluntary association	No information	No information	No information
12	Stadtacker Berlin	State	Public land	Albatros gGmbH	Non-profit company	No information	No information	No information
13	Klunkergarten	Private (mall)	Neukölln Arcaden	Horstwirtschaft eV	Voluntary association	No information	No information	No information
14	Himmelbeet	State	Public land (former and new address)	Himmelbeet gGmbH	Non-profit company	Yes	From 50 euros (collective) to 150 euros (individual) to rent a plant bed in the former address.	No information
15	Frieda Süd	State	Public land	Bauhütte Kreuzberg e.V.	Voluntary association	No information	No information	No information
16	Möhrchenpark	Private (cooperative)	Möhrchenpark e.V.	Möhrchenpark e.V.	Voluntary association	No information	Annual fee of 25 euros for membership	No information
17	Kiez-Garten	State	Degewo Aktiengesellschaft (Degewo)	Degewo Aktiengesellschaft	State house company	No	No fee	No information

Source: JARDIM, 2023.

Table 05 – Investigated community gardens in Rio (part 1)

ID.	GARDEN	ADDRESS	INTERVIEW	PREVIOUS USE OF THE AREA	STARTING YEAR	LEND TENURE STRESS	TYPE OF CULTIVATION	TYPE OF PLOT
1	Horta Carioca Morro do São Carlos	Laurindo Rabêlo, 57, Estácio - Rio de Janeiro, 20250-150	RIOG8	Dumping ground in a demolished prison area side to social housing area (Minha Casa Minha Vida)	2010	Generic	Ground-based cultivation	Collective
2	Horta Carioca Morro da Formiga	Paulino Nogueira S/N, Tijuca, 20530-100	RIOG1	Green area under energy transmission line	2006	Generic	Ground-based cultivation	Collective
3	Horta Carioca Morro do Borel	Not identified.	RIOG3	Wasteland in public area	2012	Criminality	Ground-based cultivation	Collective
4	Horta Carioca Nação Rubro Negra	Praça Nossa Sra. Auxiliadora, S/N - Leblon, 22441-050	RIOG7	Vacant area in a public school	2017	No register	Ground-based cultivation	Collective
5	Horta Carioca Comunidade Palmirinha (Madureira's Park)	Américo Rocha, 1602 - Mal. Hermes, 21555-300	RIOE10	Vacant land in public area. The park was a former wasteland	2012	No register	Ground-based cultivation	Collective
6	Horta Carioca Jardim Sulacap	Avenida Carlos Pontes S/N - Jardim Sulacap, 21741-340	RIOG5	Wasteland in public area	2016	Generic	Ground-based cultivation	Collective
7	Horta Carioca Dirce Teixeira (Jardim do Anil)	Estrada Curipos, 746 - Jacarepaguá, 22753-330	RIOG4	Green area threatened by illegal housing construction	2006	Generic	Ground-based cultivation Aquaponics	Collective
8	Horta Carioca Escola Joaquim Fontes (Cidade de Deus)	João Mafra, 85 - Cidade de Deus, 22775-690	RIOG2	Vacant area in a public school	2022	Generic	Ground-based cultivation	Collective
9	Horta Carioca do Morro do Salgueiro	Morro do Salgueiro S/N, Tijuca, 20510-050	RIOG6	Vacant land of abandoned private house	2019	Generic	Ground-based cultivation	Collective
10	Federal University of Rio de Janeiro (UFRJ)	Avenida Carlos Chagas Filho, 20 - Cidade Universitária da UFRJ, 21941-599	RIOE3	Vacant land in public university area	2018	No register	Ground-based cultivation	Collective
11	Quilombo Dona Bilina	Campo Grande 23017-390	RIOG10	Vacant area in a private popular museum	2020	No register	Ground-based cultivation	Collective
12	Quilombo das Caboclas	Estrada dos Caboclos	RIOE6	Vacant land in public area	2014	Two times, fire (racism, gender, and micro-political motivation)	Ground-based cultivation	Collective
13	Children's garden	Praça Saenz Peña, S/N - Tijuca, 20520-090	RIOG9	Vacant land in public area	2014-2015	Closed	Ground-based cultivation	Collective

Source: JARDIM, 2023.

NOTE: Many experts were not linked to one specific garden. They were connected to multiple gardens because their personal will or professional activities (RIOE1, RIOE3, and RIOE7), their agenda as public agent (RIOE2, and RIOE8), researcher (RIOE4, and RIOE5), and technical support (RIOE9).

Table 05 – Investigated community gardens in Rio (part 2)

ID.	GARDEN	LAND PROPERTY		LAND POSSESSION			FEE TO DO GARDENING	FUNDING	NUMBER OF INVOLVED PEOPLE
				TYPE OF REPRESENTANT	REPRESENTANT	FEE TO USE THE SPACE			
1	Horta Carioca Morro do São Carlos	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Around ten co-organizers
2	Horta Carioca Morro da Formiga	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Around three co-organizers
3	Horta Carioca Morro do Borel	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Usually one organizer
4	Horta Carioca Nação Rubro Negra	State	City government	Public school	Voluntary association	No	No	City hall	Usually two co-organizers
5	Horta Carioca Comunidade Palmeirinha (Madureira's Park)	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Not identified.
6	Horta Carioca Jardim Sulacap	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Not identified.
7	Horta Carioca Dirce Teixeira	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Not identified.
8	Horta Carioca Escola Joaquim Fontes	State	City government	Public school	Voluntary association	No	No	City hall	Not identified.
9	Horta Carioca do Morro do Sagueiro	State	City government	Neighbourhood association	Voluntary association	No	No	City hall	Not identified.
10	Federal University of Rio de Janeiro	State	Federal government	University project registered by a professor of undergraduation on Nourishment	Voluntary association	No	No	Professors Association	Not identified.
11	Quilombo Dona Bilina	Private land	Museum and house	Eco museum Quilombo Dona Bilina	Non-profit company	No	No	Self-funding	Around ten people on the core team
12	Quilombo das Caboclas	Private land	Not identified	Neighbourhood association	Voluntary association	No	No	Self-funding	Around five people on the core team
13	Children's garden	State	City government	Vivenciando Montessori Planta na Rua RJ	Voluntary association	No	No	Self-funding	Around one people on the core team

Source: JARDIM, 2023.

APPENDIX E – Cartograms of investigated community gardens in Berlin

Cartogram 03 - Moritzplatz



Source: JARDIM, 2023.⁵⁴³

Cartogram 04 - Prinzessinnengarten



Source: JARDIM, 2023.⁵⁴³

Cartogram 05 - Allmende-Kontor, M.I.N.T. Grünes Klassenzimmer, Rübezahl, Stadtteilgarten Schillerkiez, and Stadtacker Berlin



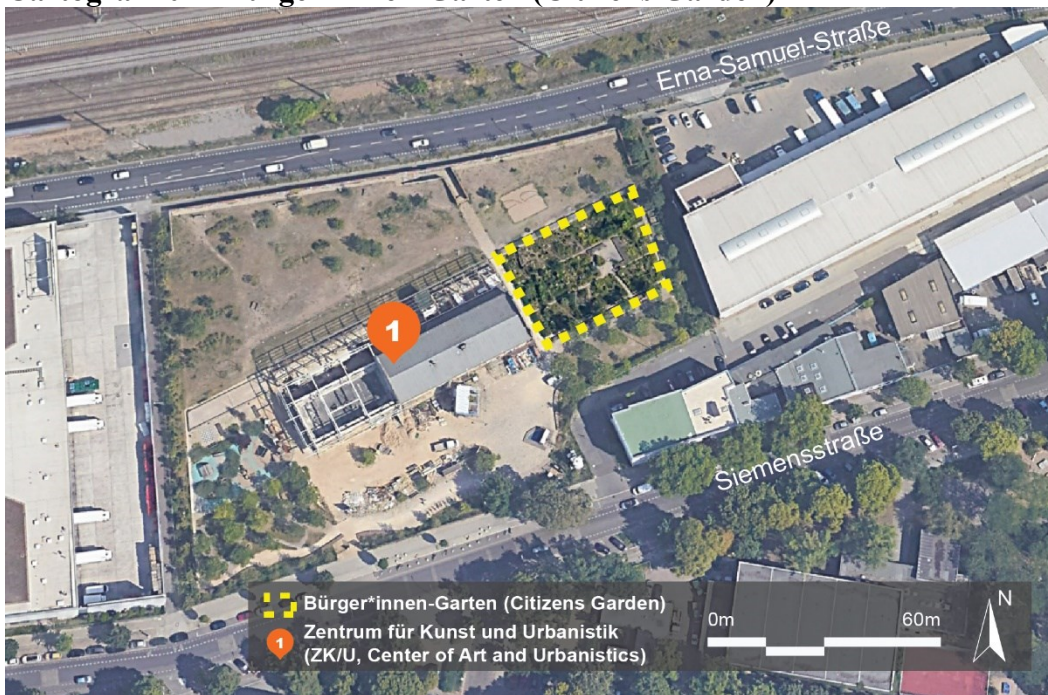
Source: JARDIM, 2023.⁵⁴³

Cartogram 06 - Elisabeet



Source: JARDIM, 2023.⁵⁴³

Cartogram 07 - Bürger*innen-Garten (Citizens Garden)



Source: JARDIM, 2023.⁵⁴³

Cartogram 08 - Freie Universität Berlin (Free University of Berlin)



Source: JARDIM, 2023.⁵⁴³

Cartogram 09 - Peace of Land



Source: JARDIM, 2023.⁵⁴³

Cartogram 10 - Klunkergarten



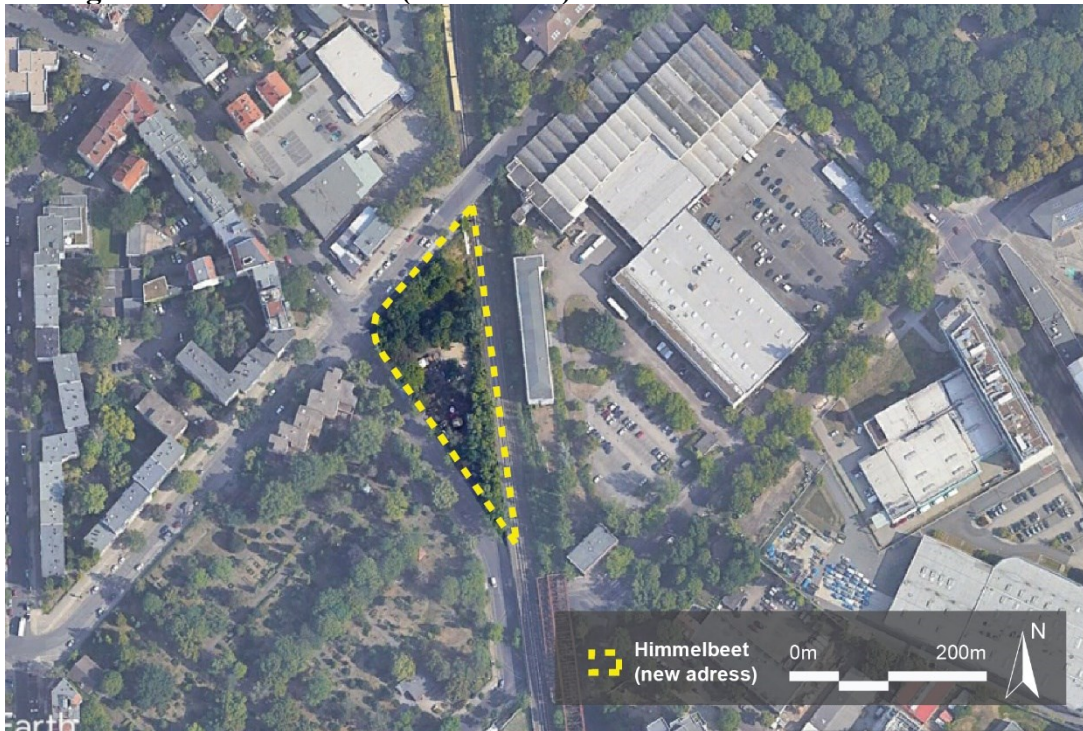
Source: JARDIM, 2023.⁵⁴³

Cartogram 12 - Himmelbeet (former adress)



Source: JARDIM, 2023.⁵⁴³

Cartogram 13 - Himmelbeet (new adress)



Source: JARDIM, 2023.⁵⁴³

Cartogram 15 - Frieda Süd



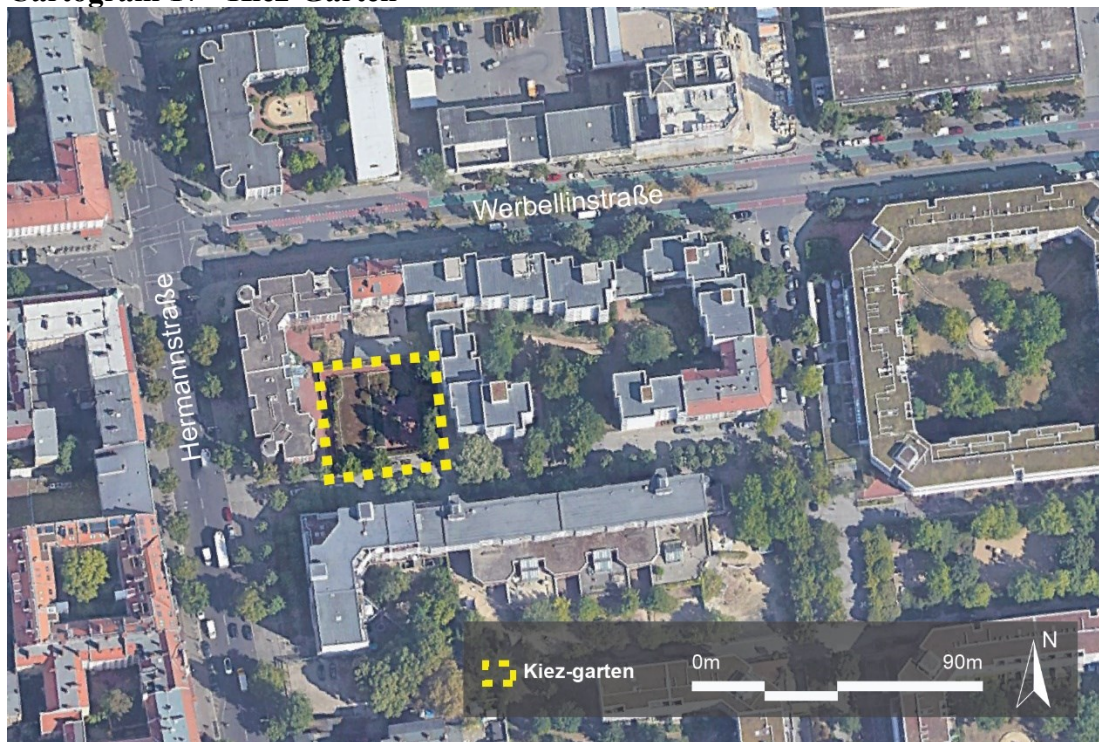
Source: JARDIM, 2023.⁵⁴³

Cartogram 16 - Möhrchenpark



Source: JARDIM, 2023.⁵⁴³

Cartogram 17 - Kiez-Garten



Source: JARDIM, 2023.⁵⁴³

APPENDIX F – Cartograms of investigated community gardens in Rio de Janeiro

Cartogram 18 - Horta Carioca Morro do São Carlos



Source: JARDIM, 2023.⁵⁴³

Cartogram 19 - Horta Carioca Morro da Formiga



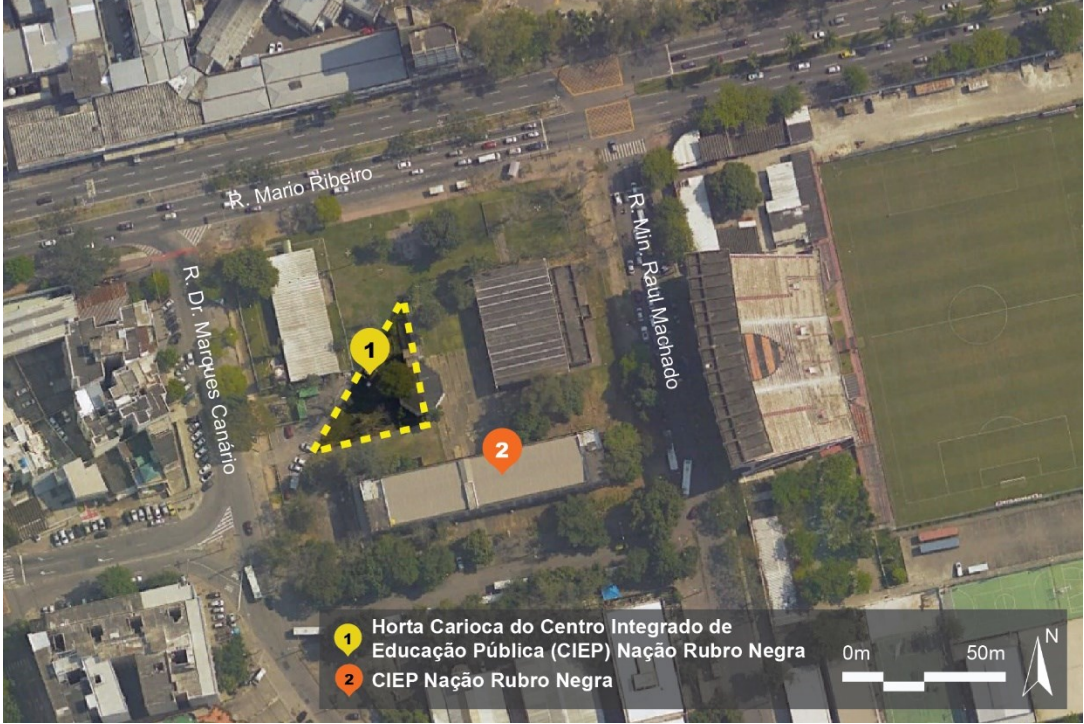
Source: JARDIM, 2023.⁵⁴³

Cartogram 20 - Horta Carioca Morro do Borel



Source: JARDIM, 2023.⁵⁴³

Cartogram 21 - Horta Carioca Nação Rubro Negra



Source: JARDIM, 2023.⁵⁴³

Cartogram 22 - Horta Carioca Comunidade Palmirinha (Madureira's Park)



Source: JARDIM, 2023.⁵⁴³

Cartogram 23 - Horta Carioca Jardim Sulacap



Source: JARDIM, 2023.⁵⁴³

Cartogram 24 - Horta Carioca Dirce Teixeira



Source: JARDIM, 2023.⁵⁴³

Cartogram 25 - Horta Carioca Escola Joaquim Fontes



Source: JARDIM, 2023.⁵⁴³

Cartogram 26 - Horta Carioca do Morro do Salgueiro



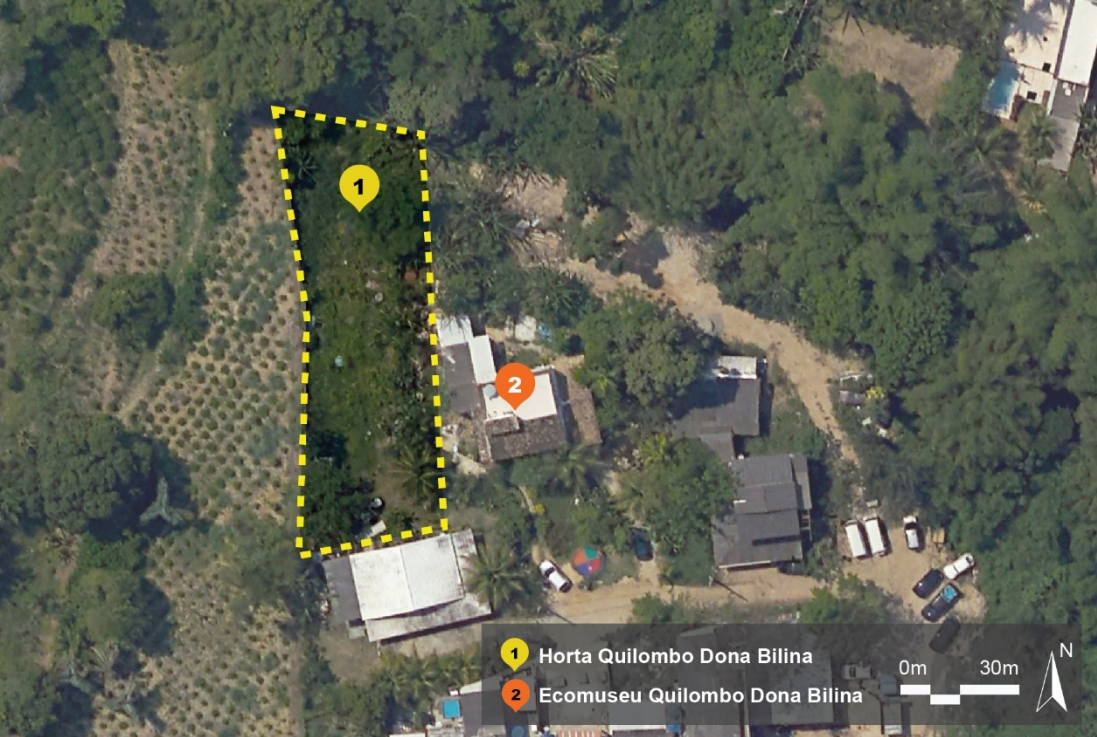
Source: JARDIM, 2023.⁵⁴³

Cartogram 27 - Federal University of Rio de Janeiro



Source: JARDIM, 2023.⁵⁴³

Cartogram 28 - Quilombo Dona Bilina



Source: JARDIM, 2023.⁵⁴³

Cartogram 29 - Quilombo das Caboclas



Source: JARDIM, 2023.⁵⁴³

Cartogram 30 - Children's garden



Source: JARDIM, 2023.⁵⁴³

ANNEX A – Urban food sharing matrix

Table 06 – Urban food sharing matrix

Mode of sharing/ What is shared	IIIU	Bartering	Not-for-profit	For-profit
Stuff From seeds, to unprocessed and processed foodstuffs including utensils, food waste or compost	Sharing the foodstuff that has been "liberated," foraged or gleaned e.g., 510 fruits, Berkeley, USA	Swapping foodstuff e.g., Adelaide Hills Produce Swap, Australia	Providing opportunities to offer or collect excess food on a not-for-profit basis e.g., Foodsharing.de	Selling home-cooked food that generates income beyond the costs of production e.g., Cookisto, Athens
Spaces From shared growing spaces to shared food preparation or shared eating spaces	Guerilla gardening of public open spaces e.g., Elephant and Castle roundabout, London	Providing spaces where food can be acquired in exchange for labor e.g., Neighborhood food stores	Providing spaces for people to grow food on a not-for-profit basis e.g., Milwaukee Urban Gardens	Providing spaces for supper clubs e.g., The Underground Supper Club, Dublin
Skills Including the sharing of knowledge and experiences around food from growing to eating and food waste disposal	Identifying places where gleanings or foraging might occur e.g., Fallen Fruit, Los Angeles, USA	Providing opportunities to learn about growing food, swap seeds, and produce with other gardeners near you e.g., Grow stuff, Melbourne, Australia	Providing workshops around nutrition or growing e.g., Hunger mountain co-op, Montpellier, USA	Providing opportunities for travelers to experience home-cooked meals with locals e.g., Eat With, operating in cities globally

Source: DAVIES, A. *et al.* Fare sharing: interrogating the relation of ICT, urban food sharing, and sustainability. *Food, Culture & Society*, 2018, p. 18. Available on: <<http://www.tandfonline.com/doi/abs/10.1080/15528014.2018.1427924>>. Accessed on May 16th, 2023.

ANNEX B – *Plataforma Brasil* ethic committee certificate of research approval

Você está em: Público > Buscar Pesquisas Aprovadas > Detalhar Projeto de Pesquisa

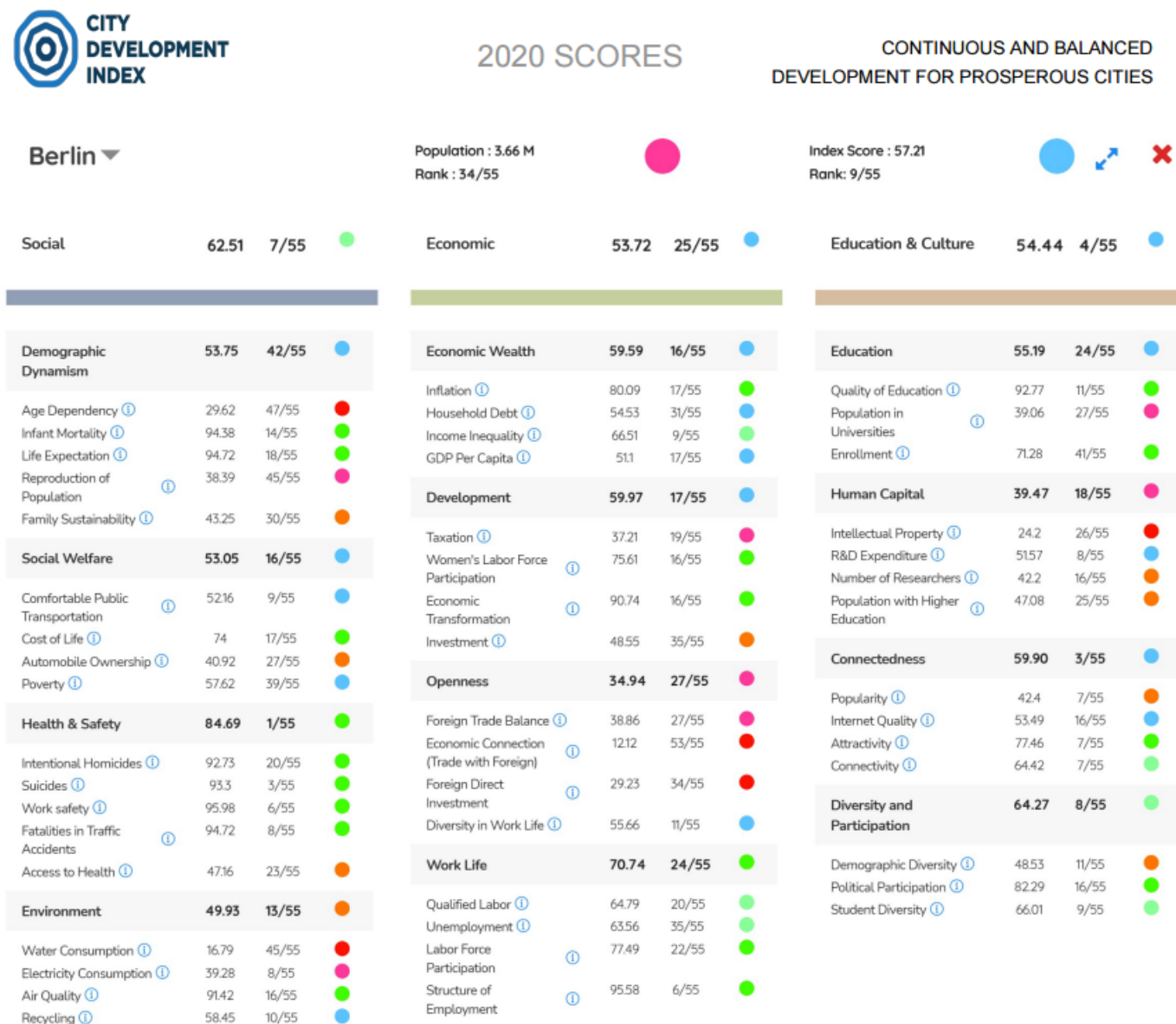
DETALHAR PROJETO DE PESQUISA

<p>- DADOS DO PROJETO DE PESQUISA</p> <p>Título Público: USOS E SENTIDOS DAS HORTAS URBANAS COMUNITÁRIAS PARA CONCRETIZAÇÃO DE DIREITOS HUMANOS Pesquisador Responsável: FELIPE JARDIM DA SILVA Contato Público: FELIPE JARDIM DA SILVA Condições de saúde ou problemas estudados: Descritores CID - Gerais: Descritores CID - Específicos: Descritores CID - da Intervenção: Data de Aprovação Ética do CEP/CONEP: 31/03/2022</p> 
<p>- DADOS DA INSTITUIÇÃO PROPONENTE</p> <p>Nome da Instituição: Faculdade de Direito Cidade: RIO DE JANEIRO</p>
<p>- DADOS DO COMITÊ DE ÉTICA EM PESQUISA</p> <p>Comitê de Ética Responsável: 5282 - Universidade do Estado do Rio de Janeiro - UERJ Endereço: Rua São Francisco Xavier 524, BL E 3ºand. SI 3018 Telefone: (21)2334-2180 E-mail: coep@sr2.uerj.br</p>
<p>- CENTRO(S) PARTICIPANTE(S) DO PROJETO DE PESQUISA</p>
<p>- CENTRO(S) COPARTICIPANTE(S) DO PROJETO DE PESQUISA</p>

Source: *Plataforma Brasil*. Available on: <<https://plataformabrasil.saude.gov.br/login.jsf>>. Accessed on May 16th, 2023.

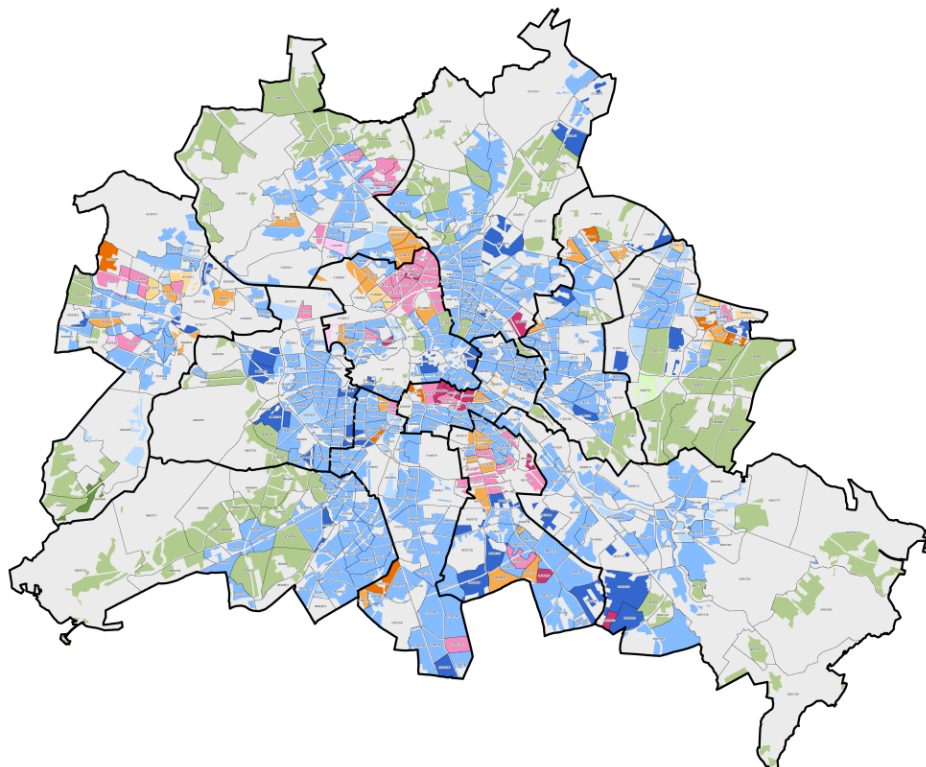
ANNEX C – Socioeconomic and urbanistic data illustration relevant for the case of Berlin

Figure 05 - City development index Berlin 2020



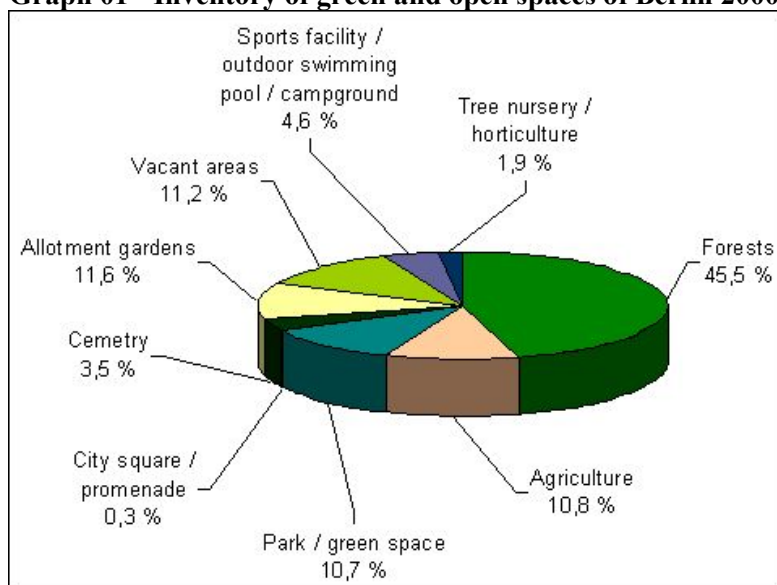
Source: CITY DEVELOPMENT INDEX. Berlin. 2020. Available at: <https://cdindex.net/world/map/Berlin>. Accessed on 9th October 2023.

Figure 06 - Report monitoring social urban development Berlin 2021



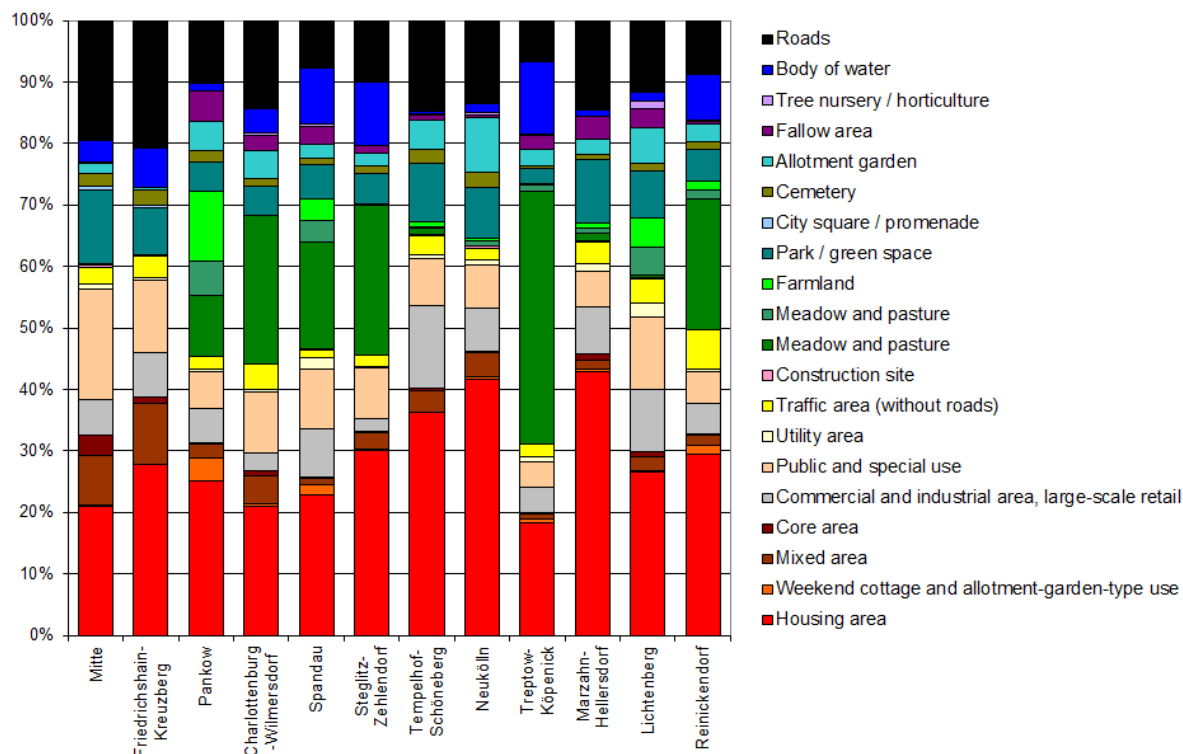
Source: BERLIN. Government. City data. 2021. Available at: <https://www.berlin.de/sen/sbw/stadtdaten/stadtwissen/monitoring-soziale-stadtentwicklung/bericht-2021/>. Accessed on 9th October 2023.

Graph 01 - Inventory of green and open spaces of Berlin 2000



Source: BERLIN. Government. Land Use. 2000. Available at: <https://www.berlin.de/umweltatlas/en/land-use/actual-land-use/2000/map-description/>. Accessed on 9th October 2023.

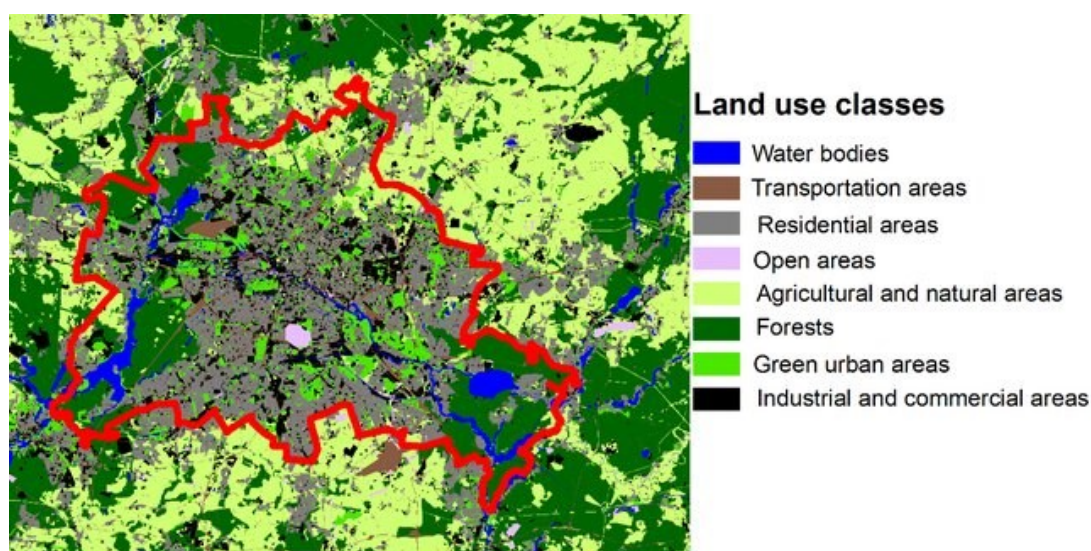
Graph 02 - Area shares of uses in the total area of Berlin's boroughs (%) 2020



Source: BERLIN. Government. Land Use. 2020. Available at: <<https://www.berlin.de/umweltatlas/nutzung/flaechennutzung/2020/kartenbeschreibung/>>. Accessed on 9th October 2023.

Note: Area sizes based on the block (partial) area map (with construction priority), as of 31.12.2020-

Figure 07 - Land use map of Berlin and its surrounding



Source: HAMID, T., SAHAR, S.; High-resolution air temperature mapping in urban areas: A review on different modelling techniques. *Thermal Science*, volume 21, issue 6 part A, 2017, p. 2271. Available at: <<http://dx.doi.org/10.2298/TSCI150922094T/>>. Accessed on 9th October 2023.

Note: The red line is the boundary of Berlin.

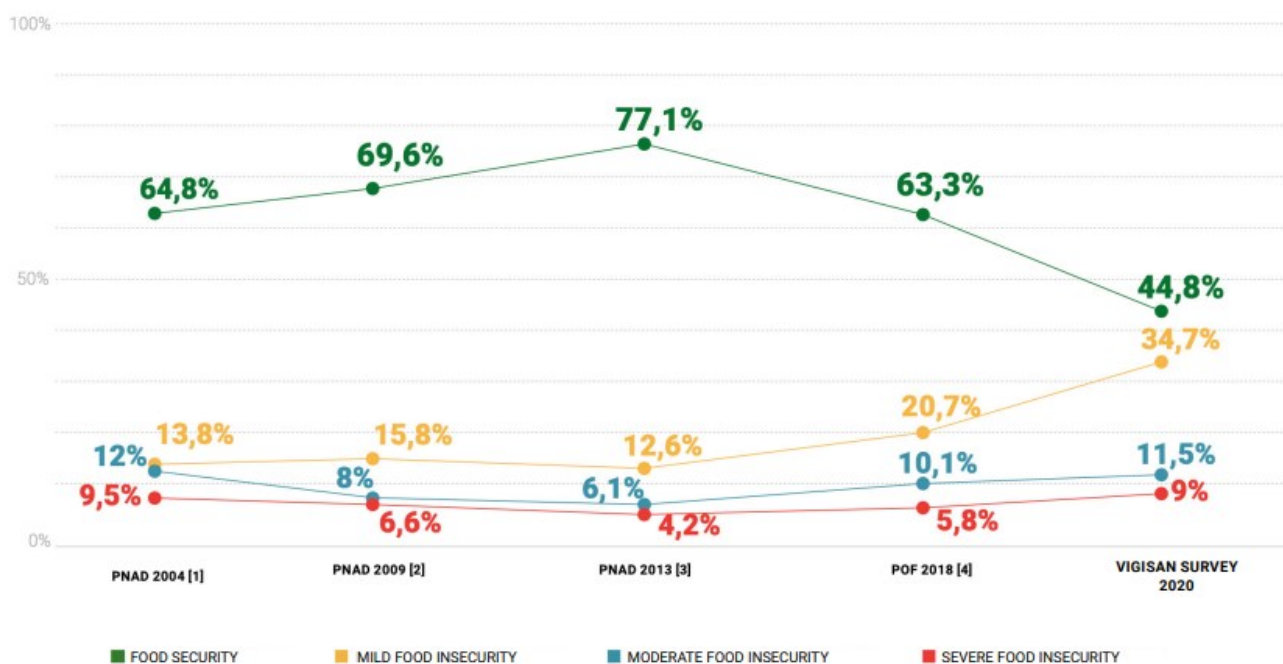
Figure 08 - Gardens in Berlin 2013



Source: ORANGOTANGO. Berlin Gartenkarte. 2013. Available at: <<https://orangotango.info/map-of-urban-gardens-in-berlin/>>. Accessed on 9th October 2023.

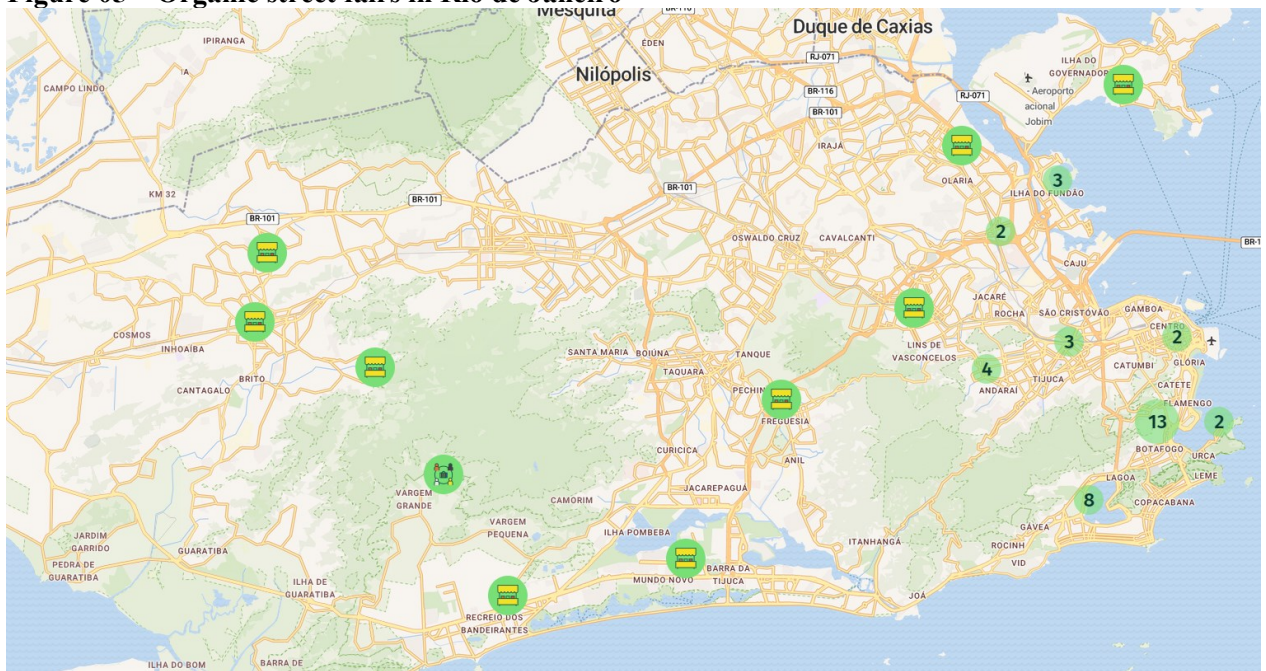
ANNEX D – Socioeconomic and urbanistic data illustration relevant to the case of Rio de Janeiro

Graph 03 - Food insecurity in Brazil



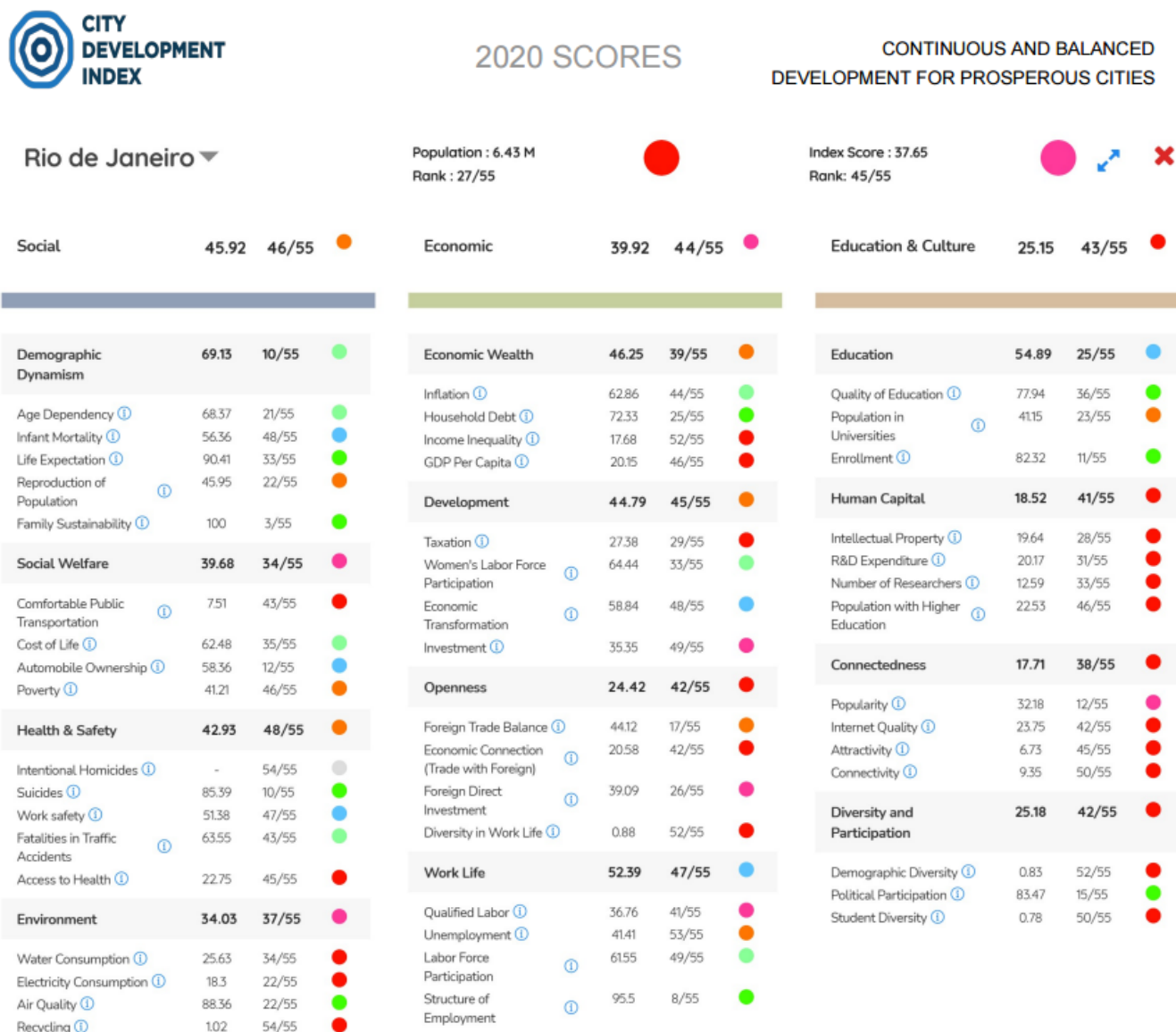
Source: REDE PENSSAN. Food insecurity and COVID-19 in Brazil. 2021, p. 9. Available at: https://olheparaafome.com.br/VIGISAN_AF_National_Survey_of_Food_Insecurity.pdf. Accessed on 9th October 2023.

Figure 05 – Organic street fairs in Rio de Janeiro



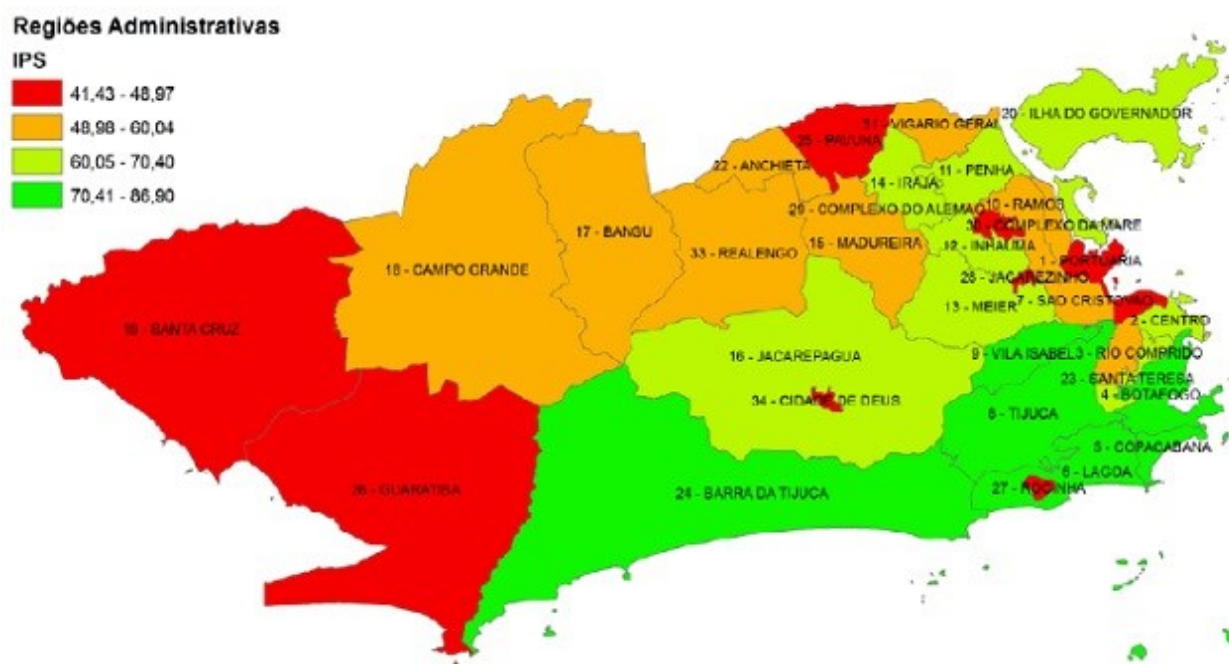
Source: IDEC. Mapa de Feiras Orgânicas. Available at: <<https://feirasorganicas.org.br/>>. Accessed on 9th October 2023.

Figure 06 - City development index Rio de Janeiro 2020



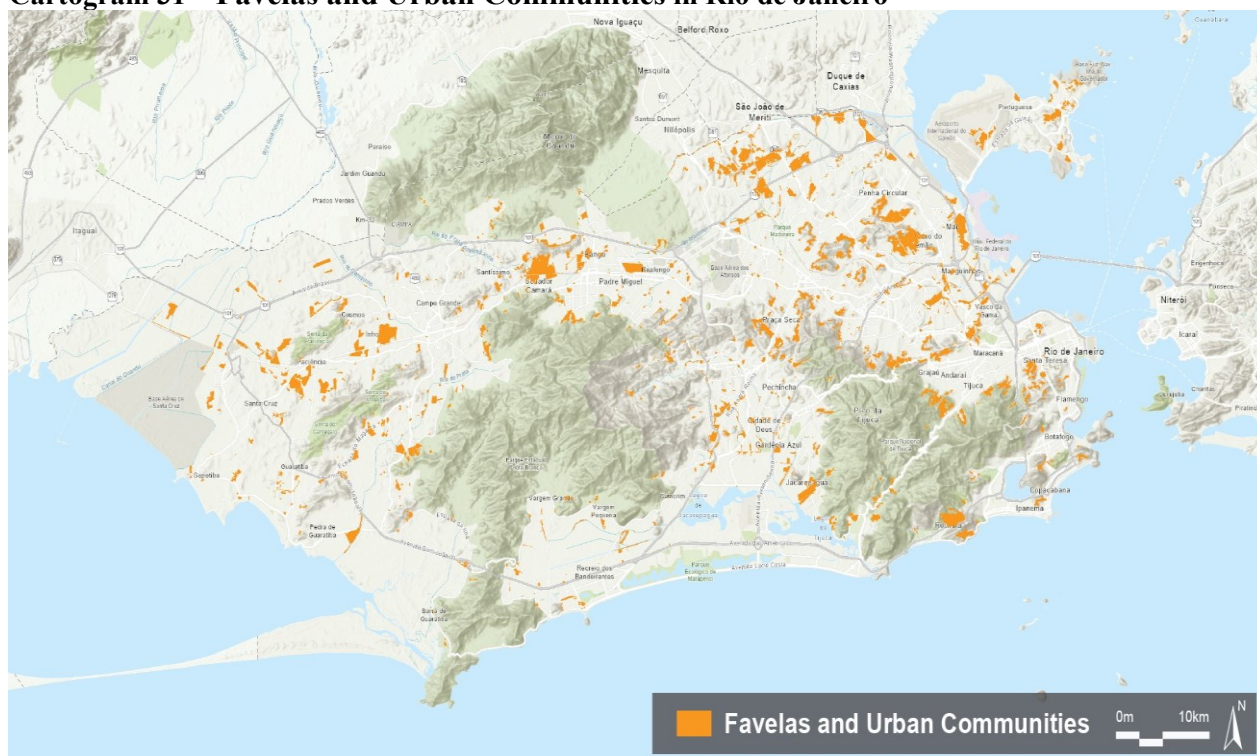
Source: CITY DEVELOPMENT INDEX. Rio de Janeiro. 2020. Available at: <https://cdindex.net/world/map/Rio%20de%20Janeiro>. Accessed on 9th October 2023.

Figure 07 – Social Progress Index (IPS) of Rio de Janeiro



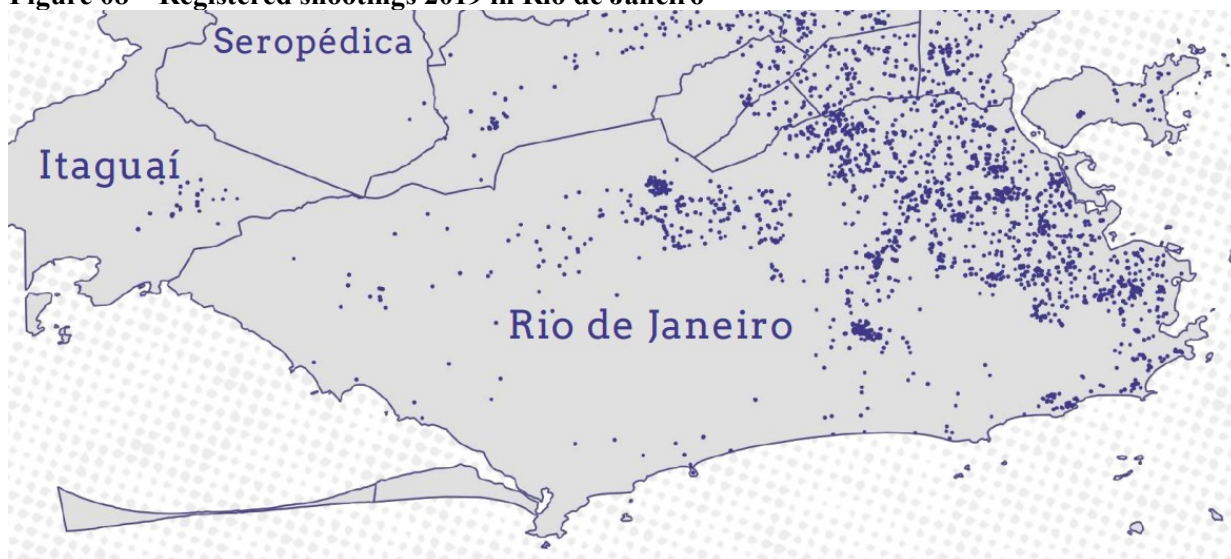
Source: RIO DE JANEIRO. Prefeitura. Social Progress Index. 2019. Available at: <https://www.multirio.rj.gov.br/index.php/reportagens/14898-o-que-os-%C3%ADndices-revelam-sobre-progresso-social-e-desigualdades-no-rio-de-janeiro>. Accessed on 9th October 2023.

Cartogram 31 – Favelas and Urban Communities in Rio de Janeiro



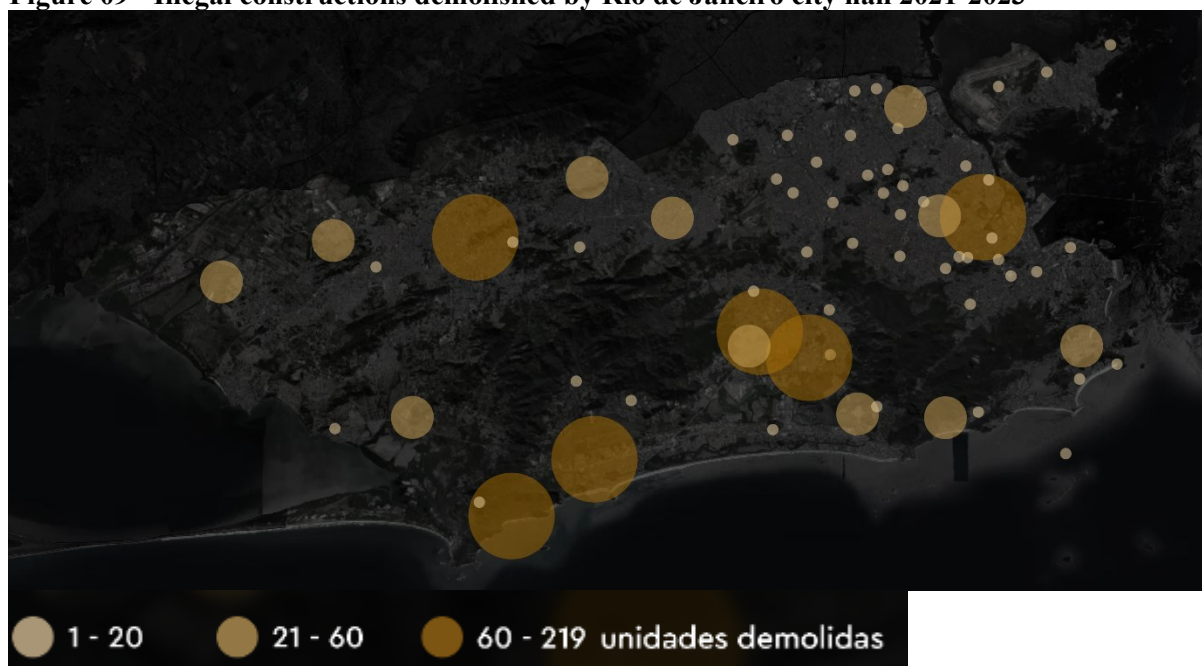
Source: JARDIM, 2023. [Adapted version in collaboration with Jéssica Lucena Basis Land use Map. Illustrator Software. Source: <https://www.data.rio/datasets/PCRJ::uso-do-solo-2019/about>].

Figure 08 – Registered shootings 2019 in Rio de Janeiro

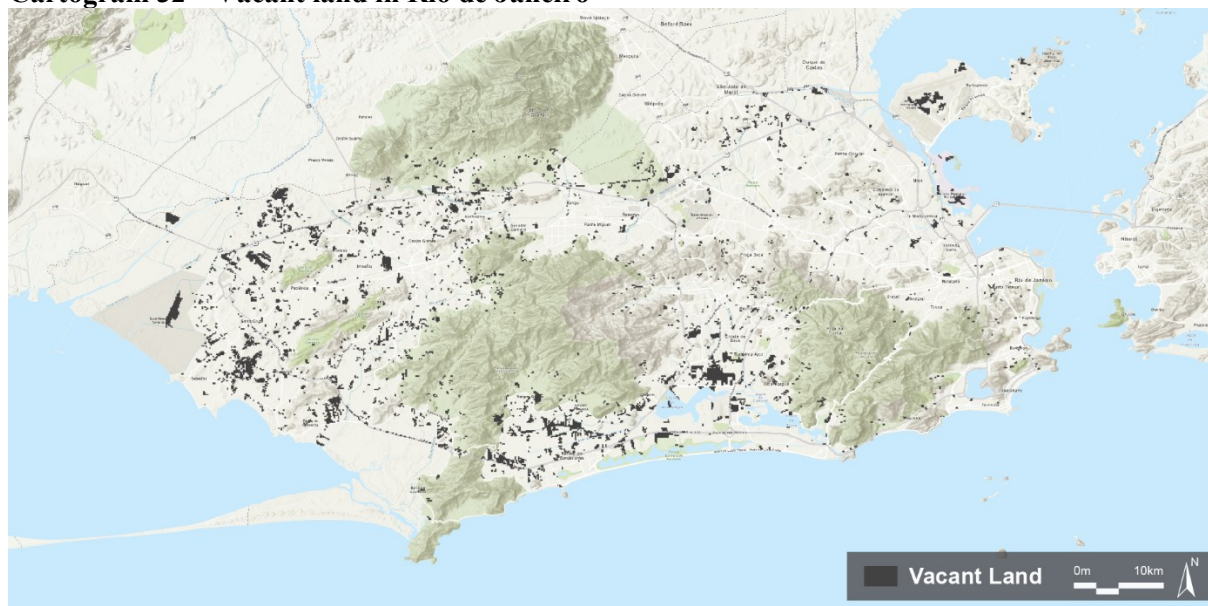


Source: CASA FLUMINENSE. Mapa da desigualdade 2020 Região Metropolitana do Rio de Janeiro. 2020, p. 27; FOGO CRUZADO, 2019. Available at: <https://www.casafluminense.org.br/wp-content/uploads/2020/07/mapa-da-desigualdade-2020-final_compressed.pdf>. Accessed on 9th October 2023.

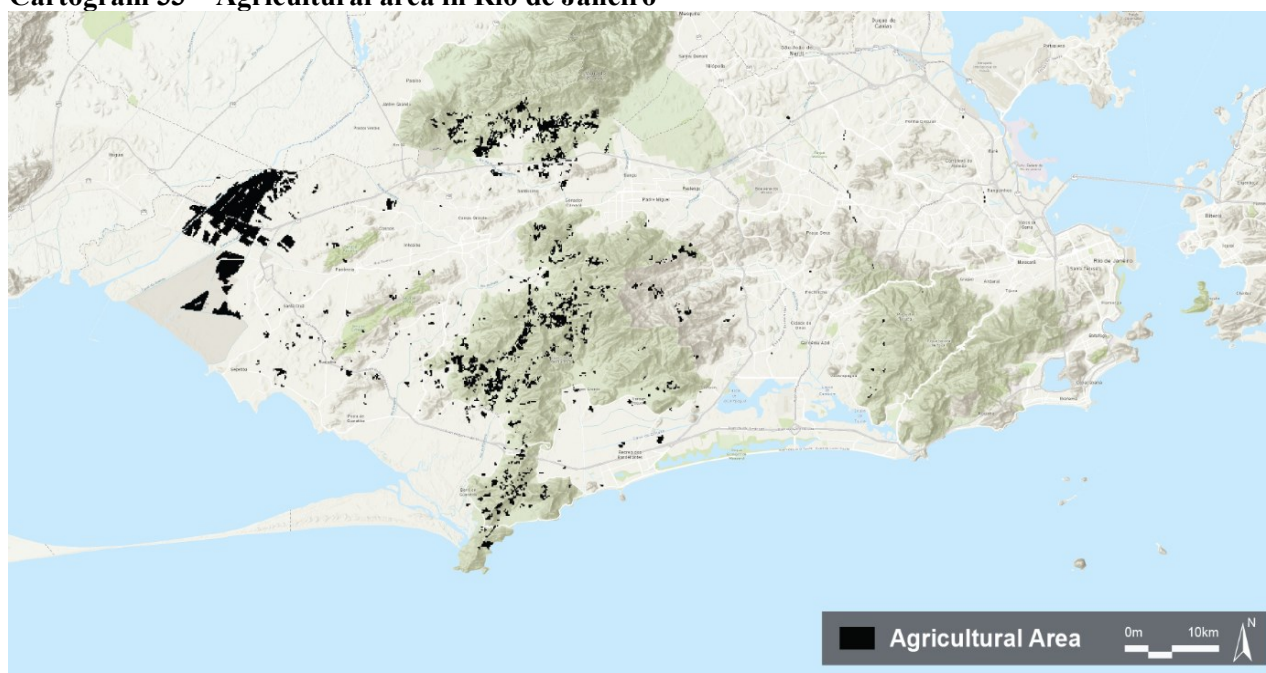
Figure 09 - Illegal constructions demolished by Rio de Janeiro city hall 2021-2023



Source: RIO DE JANEIRO. Prefeitura. Demolições de construções ilegais 2021-2023. Available at: <<https://viz.dados.rio/#/especial-seop/demolicoes>>. Accessed on 9th October 2023.

Cartogram 32 – Vacant land in Rio de Janeiro

Source: RIO DE JANEIRO, 2019. [Adapted version in collaboration with Jéssica Lucena Basis Land use Map. Illustrator Software. Source: <https://www.data.rio/datasets/PCRJ::uso-do-solo-2019/about>].

Cartogram 33 – Agricultural area in Rio de Janeiro

Source: RIO DE JANEIRO, 2019. [Adapted version in collaboration with Jéssica Lucena Basis Land use Map. Illustrator Software. Source: <https://www.data.rio/datasets/PCRJ::uso-do-solo-2019/about>].

Figure 10 - Hortas Cariocas and other public food initiatives in Rio de Janeiro

Iniciativas da Prefeitura do Rio de Janeiro contra a fome

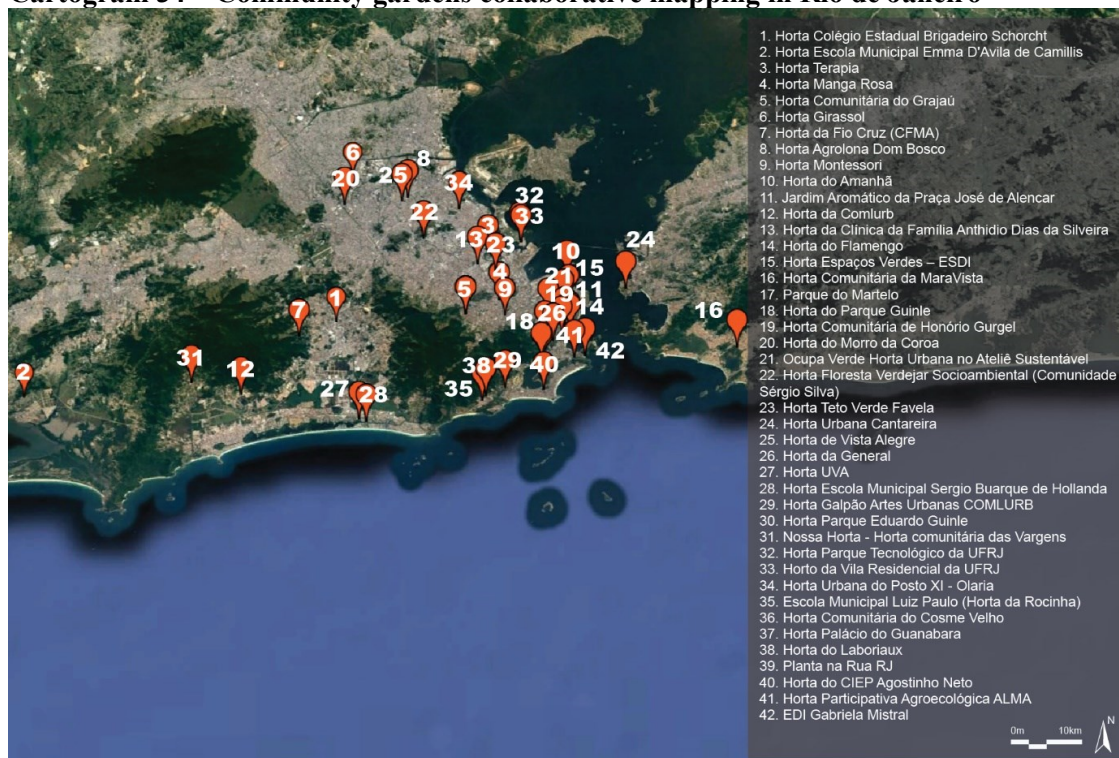
■ Cozinhas Comunitárias ■ Hortas Cariocas ■ Restaurantes Populares



Mapa: Escritório de Dados • Fonte: Prefeitura do Rio de Janeiro • Criado com Datawrapper

Source: RIO DE JANEIRO. Prefeitura. O Rio de Janeiro no combate à fome: Available at: <<https://www.dados.rio/post/o-rio-de-janeiro-no-combate-a-fome>>. Accessed on 9th October 2023.

Cartogram 34 – Community gardens collaborative mapping in Rio de Janeiro



Source: RIO DE JANEIRO, 2019. [Adapted version in collaboration with Jéssica Lucena Basis Land use Map. Illustrator Software. Source: <https://www.data.rio/datasets/PCRJ::uso-do-solo-2019/about>].

ANNEX E – Food security in Germany

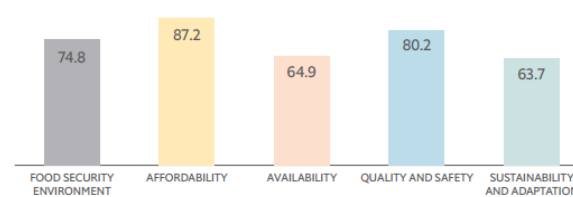
Box 1 - Global Food Security Index 2022: Germany (part 1)

Germany

Europe—regional snapshot

Europe scores an average of 74.8 on the overall food security environment in the 2022 GFSI, making it the second most food-secure region globally. Out of the four pillars of the index, the region scored the highest on the Affordability pillar (87.2) and the lowest on the Sustainability and Adaptation pillar (63.7). Food remains affordable and safe for consumers. However, in order to mitigate short-term availability risks and long-term climate related risks there is room to further improve food production (and its levels of volatility); policy commitments on food security and access by various governments; and protection of its oceans, lakes and rivers.

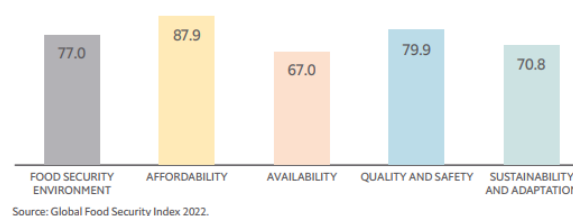
Global Food Security Index 2022: Average scores for Europe



Germany—food security overview

Germany ranks 19th out of the 113 countries in the overall index and 14th out of the 26 European countries for its overall food security environment. The country scores highest on the Affordability pillar, with a score of 87.9, similar to regional peer countries, and the lowest on the Availability pillar, with a score of 67. Germany provides affordable and good-quality food, has relatively stable food prices, and provides extensive food safety-net programmes. It also maintains a high quality of proteins and food safety standards. However, the country needs to enhance its food security policy commitments through enacting a dedicated strategy and establishing a food security agency, as well as improving the biodiversity of its seas, rivers and lakes to help sustain improvements in food security.

Global Food Security Index 2022: Scores for Germany



The four pillars of food security—analysis for 2022

- Affordability:** Germany ranks 26th globally on the Affordability pillar and 17th in Europe. This is its best-performing pillar in terms of scores.
 - Despite a slight score drop in the indicators 1.1) *Change in average food costs* and 1.4) *Agricultural trade*, Germany still falls under the “very good” (80+) score bracket for three of five indicators, elevating its global rank and score.
- Availability:** Ranking 27th globally and 12th in Europe, this is Germany’s weakest performing pillar.
 - The country’s overall score in this pillar is undermined by a “very weak” score on indicator 2.9, *Food security and access policy commitments*.
- Quality and safety:** Germany ranks 20th globally and 13th in Europe.
 - This performance can be attributed to its “good” or “very good” scores across three of five indicators, and “moderate” scores in 3.1) *Dietary diversity* and 3.3) *Micronutrient availability*.
- Sustainability and adaptation:** Germany achieves its best rankings for this pillar, placing 7th globally and 5th in the Europe region.
 - This is due to its performance in indicators 4.1) *Exposure*, 4.2) *Water*, 4.5) *Political commitment to adaptation* and 4.6) *Disaster risk management*, for all of which it receives “good” or “very good” scores.

Source: THE ECONOMIST. Global Food Security Index 2022: Germany. Available at: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/germany>>. Accessed on 9th October 2023.

Box 1 - Global Food Security Index 2022: Germany (part 2)

Snapshot: Germany 2012-22 food security environment

Germany's overall food security environment has slightly improved over the last 11 years, its 3.6-point score increase primarily driven by the Sustainability and Adaptation pillar, for which its score increased by 21.6 points. Scores across all of the remaining three pillars deteriorated.

Highlighting a growing commitment to adapting to climate change, Germany increased its scores on 4.5) *Political commitment to adaptation* and 4.6) *Disaster risk management*. It has strong climate finance flows and a national policy for agricultural adaptation, and has implemented early warning measures for agriculture.

An affordable food system has been a consistent area of strength for Germany, as seen by relatively stable food prices, a strong agricultural trade and robust food safety-net programmes. Germany's 4.1-point drop in the Quality and Safety pillar is largely due to a drop in 3.2) *Nutritional Standards* (-18.5); the overall pillar score is still classified as "good". Under Availability, the country experienced a 10.2-point drop in 2.4) *Volatility of agricultural production*. This is the only pillar where the overall score has consistently ranked "moderate" over the 11-year period covered by the GFSI, and it remains an area for action.

Germany

The diagram below shows country performance in 2022 (latest available data). Scores are normalized 0-100, where 100=best conditions. Δ = change in score, 2022 compared with 2012. ↑ = Score improved ↓ = Score deteriorated - = no change in score

FOOD SECURITY ENVIRONMENT					Score	Δ	
					77.0	↑ +3.6	
Score	Δ	Score	Δ	Score	Δ	Score	Δ
1 AFFORDABILITY	87.9 ↓ -0.5	2 AVAILABILITY	67.0 ↓ -0.6	3 QUALITY AND SAFETY	79.9 ↓ -4.1	4 SUSTAINABILITY AND ADAPTATION	70.8 ↑ +21.6
1.1 Change in average food costs	84.0 ↓ -2.0	2.1 Access to agricultural inputs	67.8 ↑ +0.7	3.1 Dietary diversity	65.2 ↑ +1.9	4.1 Exposure	72.6 ↔
1.2 Proportion of population under global poverty line	99.8 ↔	2.2 Agricultural research & development	67.8 ↑ +3.0	3.2 Nutritional standards	70.2 ↓ -18.5	4.2 Water	72.5 ↔
1.3 Inequality-adjusted income index	78.6 ↑ +1.0	2.3 Farm infrastructure	60.8 ↑ +4.9	3.3 Micronutrient availability	68.1 ↓ -0.5	4.3 Land	68.9 ↓ -0.4
1.4 Agricultural trade	76.0 ↓ -1.2	2.4 Volatility of agricultural production	61.2 ↓ -10.2	3.4 Protein quality	100.0 ↔	4.4 Oceans, rivers and lakes	8.7 ↑ +0.9
1.5 Food safety net programmes	100.0 ↔	2.5 Food loss	87.6 ↓ -3.4	3.5 Food safety	94.8 ↓ -3.1	4.5 Political commitment to adaptation	96.3 ↑ +31.8
		2.6 Supply chain infrastructure	82.3 ↓ -1.7			4.6 Disaster risk management	100.0 ↑ +100.0
		2.7 Sufficiency of supply	92.6 ↓ -0.8				
		2.8 Political and social barriers to access	91.5 ↑ +2.7				
		2.9 Food security and access policy commitments	0.0 ↔				

■ Very good (80-100)
 ■ Good (70-79.9)
 ■ Moderate (55-69.9)
 ■ Weak (40-54.9)
 ■ Very weak (0-39.9)

Source: Global Food Security Index 2022.

Strengths and opportunities for action

Germany's food security environment has been underpinned by robust food safety-net programmes, high levels of political stability and equitable access to food for all. In recent years the country has also shown a growing commitment to long-term structural adaptation through relevant policies. Given its vulnerability associated with seas, rivers and lakes, such a commitment is a step in the right direction. Germany can further improve its food security environment by adopting a food security strategy, establishing a food security agency and addressing the volatility of its agricultural food production.

Strengths

1.5 Food safety-net programmes: Germany ranks joint 1st in this indicator and has maintained a perfect score of 100. The existence, funding, coverage and operation of food safety-net programmes have all consistently received the highest score since 2012.

2.8 Political and social barriers to access: Germany ranks 10th in this indicator. Germany is generally safe from corruption and armed conflict, and has high levels of political stability and gender equality, granting it a high score in this area.

4.5 Political commitment to adaptation: Germany has experienced a significant improvement of 31.8 points to its score, and now ranks joint 1st overall in this indicator. An improvement to the country's national agricultural adaptation policy facilitated this significant jump in rank.

Areas for improvement

2.4 Volatility of agricultural production: Germany ranks joint 78th in this indicator. Although there has been a slight improvement since last year, the score remains below the 2019 score. Limiting volatility is important to be able to predict and plan for consistent food supply.

2.9 Food security and access policy commitments: Germany is ranked joint 80th globally on this indicator. The country has the lowest rating owing to a lack of a food security strategy and food security agency, and has seen no improvement or change since 2012.

4.4 Oceans, rivers and lakes: Germany ranks joint 105th in this indicator. Germany has a consistently low score for eutrophication, though ocean management policy commitments made in 2020 indicate initial positive indicators that the country is making efforts to better protect these natural resources.

Source: THE ECONOMIST. Global Food Security Index 2022: Germany. Available at: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/germany>>. Accessed on 9th October 2023.

ANNEX F – Food security in Brazil

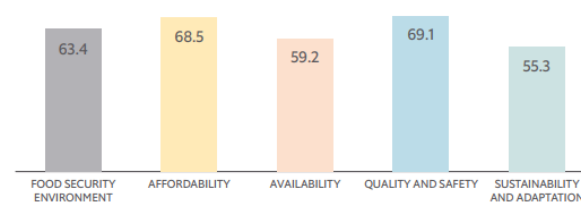
Box 2 - Global Food Security Index 2022: Brazil (part 1)

Brazil

Latin America—regional snapshot

Latin America scores an average of 63.4 on its overall food security environment in the 2022 GFSI, making it the third most food-secure region globally, tied with the Asia-Pacific region. Out of the four pillars of the index, the region scored the highest on the Quality and Safety pillar (69.1) and the lowest on the Sustainability and Adaptation pillar (55.3). Food is high quality and affordable for consumers, but the region has shortcomings in developing policies to shore up food production against climate impacts and environmental deterioration. Although developing policies to better manage sustainability and adaptation is a shared challenge across all regions, the issue is paramount in Latin America, a region with abundant natural resources that provides global biodiversity and carbon capture benefits.

Global Food Security Index 2022: Average scores for Latin America

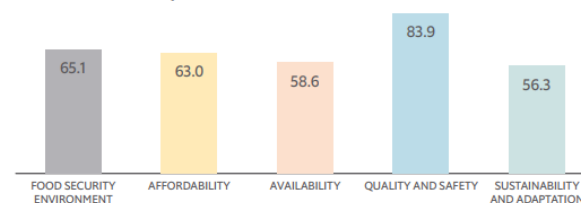


Source: Global Food Security Index 2022.

Brazil—food security overview

Brazil ranks 51st out of 113 countries and 8th out of the 19 countries in Latin America, with an overall food security environment score of 65.1. It scores best in the Quality and Safety pillar (83.9), and its weakest performance is in Sustainability and Adaptation (56.3). Overall, while food in Brazil is safe and of high quality, there remains a gap in terms of affordability. Moreover, Brazil's food security environment is particularly vulnerable to climate-change-related impacts and risks. The country needs to bolster its policies on sustainability and adaptation through increased risk Management co-ordination between local and national governments, as well as improve protection of natural resources, including marine biodiversity.

Global Food Security Index 2022: Scores for Brazil



Source: Global Food Security Index 2022.

The four pillars of food security—analysis for 2022

- Affordability:** Brazil achieves its lowest rank for this pillar, placing 71st globally and 15th in Latin America, with a score of 76.
 - A “very weak” score in 1.1) *Change in average food costs* (0-39.9) and a “weak” score (40-54.9) in 1.3) *Inequality-adjusted income index* lower the overall score in this pillar.
- Availability:** Brazil ranks joint 59th overall and 12th in Latin America in this pillar, with a score of 60.
 - “Weak” scores in 2.3) *Farm infrastructure*, 2.5) *Food loss*, and 2.9) *Food security and access policy commitments*, and “very weak” scores on both supply-chain related indicators—2.6) *Supply-chain infrastructure* and 2.7) *Sufficiency of supply*—worsen Brazil's overall performance in this pillar
- Quality and safety:** Quality and Safety is where Brazil performs the strongest, ranking 14th globally and 2nd in Latin America, with a score of 83.9.
 - This can be attributed to its “very good” performance (80-100) in 3.2) *Nutritional Standards*, 3.4) *Protein quality* and 3.5) *Food safety*.
- Sustainability and adaptation:** Achieving its lowest score for this pillar, Brazil ranks 50th globally and 11th in Latin America, with a score of 56.3.
 - “Very weak” or “weak” performances (scores of 0-39.9 or 40-54.9) in indicators 4.4) *Oceans, rivers and lakes*, 4.3) *Land*, and 4.6) *Disaster risk management* lower the overall score—and reflect urgent challenges.

Source: THE ECONOMIST. Global Food Security Index 2022: Brazil. Available at: <<https://impact.economist.com/sustainability/project/food-security-index/explore-countries/brazil>>. Accessed on 9th October 2023.

Box 2 - Global Food Security Index 2022: Brazil (part 2)

Snapshot: Brazil 2012-22 food security environment

Brazil's performance in the index has seen a very minor increase over the past 11 years, with the overall food environment score increasing only by 1.3 points. While Brazil has improved in Quality and Safety and in Sustainability and Adaptation, it has seen its score decline in Affordability and Availability.

Brazil's strong performance in Quality and Safety is driven by improved nutritional standards, highlighting a strong policy framework to ensure safe and high-quality food. The country's score in Sustainability and Adaptation improved the most, rising by 11.6 points owing to score gains of 52.9 points in 4.6) *Disaster risk management* and 18.7 points in 4.5) *Political commitment to adaptation*. Given that this is Brazil's weakest-performing area, there remains

room for further improvement.

A fall in the overall score for the Availability pillar can be attributed to a significant drop in score for 2.7) *Sufficiency of supply* (-45.6). Brazil has also lacked a food security strategy since 2020, which has also impacted the score in this pillar. The largest score decline, of 9.6 points, has been seen in the Affordability pillar (the score has fallen from a "good" score of 72.6 in 2012 to a "moderate" score of 63 in 2022), which can be mainly attributed to the decline of 16.5 points in 1.1) *Change in average food costs* (38 in 2022) and 26.8-point decline in 1.5) *Food safety-net programmes*.

Brazil

The diagram below shows country performance in 2022 (latest available data). Scores are normalized 0-100, where 100=best conditions. Δ = change in score, 2022 compared with 2012. \uparrow = Score improved \downarrow = Score deteriorated - = no change in score

FOOD SECURITY ENVIRONMENT		Score	Δ
		65.1	\uparrow +1.3
1 AFFORDABILITY	Score Δ	Score Δ	Score Δ
1.1 Change in average food costs	63.0 \downarrow -9.6	2.1 Access to agricultural inputs	83.9 \uparrow +9.8
1.2 Proportion of population under global poverty line	38.0 \downarrow -17.5	2.2 Agricultural research & development	60.5 \uparrow +1.9
1.3 Inequality-adjusted income index	95.6 \uparrow +8.2	2.3 Farm infrastructure	100.0 \uparrow +52.4
1.4 Agricultural trade	55.4 \uparrow +29.6	2.4 Volatility of agricultural production	63.4 \downarrow -16.3
1.5 Food safety net programmes	52.4 \uparrow +32.8	2.5 Food loss	94.0 \uparrow +6.0
	44.2 \downarrow -2.7	2.6 Supply chain infrastructure	99.7 \uparrow +3.6
	66.8 \downarrow -5.1	2.7 Sufficiency of supply	67.1 \leftrightarrow
	73.2 \downarrow -26.8	2.8 Political and social barriers to access	63.8 \leftrightarrow
		2.9 Food security and access policy commitments	54.4 \uparrow +3.5
			4.1 Exposure
			4.2 Water
			4.3 Land
			4.4 Oceans, rivers and lakes
			4.5 Political commitment to adaptation
			4.6 Disaster risk management
			52.9 \uparrow +52.9

■ Very good (80–100)
 ■ Good (70–79.9)
 ■ Moderate (55–69.9)
 ■ Weak (40–54.9)
 ■ Very weak (0–39.9)

Source: Global Food Security Index 2022.

Strengths and opportunities for action

Brazil is a leader in terms of holding food to a high and safe standard while also ensuring access to agricultural inputs and enabling stability in agricultural production. However, there remain gaps that must be filled to ensure overall food security in the country. Continued reliance on food aid and volatile food prices create insecurities for consumers, highlighting the need for policies that better protect consumers and ensure food access for all. A notable gap in ensuring sustainability and adaptation also exists: Brazil needs urgent policy action to protect its rich natural resources on both land and sea.

Strengths

2.1) Access to agricultural inputs: Since 2012 Brazil has climbed 27 places to rank joint 5th. Brazil's strong performance on this indicator can be attributed to its consistent top performance in 2.1.4) *Access to extension services* and 2.1.6) *Empowering women farmers*, and an 11-year gain of 50 points in 2.1.1) *Access to finance and financial products for farmers*, for which it scores 100 and ranks joint 1st this year.

3.2) Nutritional standards: Brazil ranks joint 1st in this indicator, scoring 100 this year. The country's strong performance on this indicator can be attributed to its consistent top performance (scoring 100 in all years of the index) in 3.2.2) *National nutritional plan or strategy* and 3.2.3) *Nutritional labelling*, and an 11-year gain of 100 points and 45 places in 3.2.1) *National dietary guidelines*, for which it ranks joint 1st this year.

2.4) Volatility of agricultural production: Brazil ranks joint 3rd with a score of 95.2 this year. Production growth rates have been steady and consistent throughout the tracking period, contributing to the country's high score.

Areas for improvement

2.7) Sufficiency of supply: Brazil ranks 80th globally in this indicator. Brazil's weak performance can be mainly attributed to the country's low score on 2.7.2) *Dependency on chronic food aid*, which first declined in 2019 and has remained at 0 since then. Improving domestic supply of food is essential to make food more accessible and available to the population.

4.4) Oceans, rivers and lakes: Brazil holds a "very weak" score on this indicator, and it has continued to decline. This can be mainly attributed to a poor score on 4.4.2) *Marine biodiversity*. Despite the designation of marine areas as nationally protected areas, more urgent action is needed to protect marine biodiversity and manage eutrophication.

1.1) Change in average food costs: Between 2012 (55.5) and 2022 (38), Brazil's score has declined by 17.5 points on this indicator. The country has dropped 20 positions in the ranking to sit in 100th place this year.

Source: THE ECONOMIST. Global Food Security Index 2022: Brazil. Available at: <https://impact.economist.com/sustainability/project/food-security-index/explore-countries/brazil>. Accessed on 9th October 2023.

ANNEX G – Honor declaration

Ehrenwörtliche Erklärung gem. § 4 Promotionsordnung

Hiermit erkläre ich,

1. dass mir die geltende Promotionsordnung der Fakultät für Sozial- und Verhaltenswissenschaften bekannt ist;
2. dass ich die Dissertation selbst angefertigt habe, (Selbstständigkeitserklärung), keine Textabschnitte eines Dritten oder eigener Prüfungsarbeiten ohne Kennzeichnung übernommen und alle von mir benutzten Hilfsmittel, persönlichen Mitteilungen und Quellen in meiner Arbeit angegeben habe;
3. dass ich bei der Auswahl und Auswertung des Materials sowie bei der Herstellung des Manuskriptes keine Unterstützung anderer Personen in Anspruch genommen habe;
4. dass ich nicht die Hilfe einer kommerziellen Promotionsvermittlung in Anspruch genommen habe und dass Dritte weder unmittelbar noch mittelbar geldwerte Leistungen von mir für Arbeiten erhalten haben, die im Zusammenhang mit dem Inhalt der vorgelegten Dissertation stehen;
5. dass ich die Dissertation noch nicht als Prüfungsarbeit für eine staatliche oder andere wissenschaftliche Prüfung eingereicht habe;
6. dass ich nicht die gleiche, eine in wesentlichen Teilen ähnliche oder eine andere Abhandlung bei einer anderen Hochschule bzw. anderen Fakultät als Dissertation eingereicht habe.

Ort, Datum, Unterschrift