

## Nexus of exclusion and challenges for sustainability and health in an urban periphery in Brazil

Nexos de exclusão e desafios de sustentabilidade e saúde em uma periferia urbana no Brasil

Nexos de exclusión y desafíos de sostenibilidad y salud en una periferia urbana en Brasil

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### Abstract

*The urban nexus approach involves the investigation and elucidation of integrated solutions through the recognition of tradeoffs between water, energy, and food, namely resources whose shortage leads to inequalities in health. The article's central hypothesis is that the context of shortage corroborates social practices that can be synergic or contradictory in relation to the challenges of sustainability and social rights. The objective is to investigate synergies and contradictions based on social practices in the urban nexus in the neighborhood of Novo Recreio in the city of Guarulhos, Greater Metropolitan São Paulo, Brazil. The methodology consists of a qualitative ethnographic study drawing on practice theory as the reference, with direct field observations and narratives. The results featured social practices associated with systematic lack of water, precarious public lighting and transportation, and difficult access to fresh and healthy foods. The study of social practices between synergies and contradictions allowed verifying that this spontaneous process of search for solutions to local problems reveals the need to incorporate local practices and knowledge into public policies and global demands. We define nexus of exclusion as the peripheral condition of impossibility of conscious options that allow jointly orienting the reduction of shortage and iniquities through alternatives for sustainability.*

*Sustainable Development; Health Equity; Urban Health; Social Marginalization*

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## Introduction

*“The right to the city is not merely a right of access to what already exists, but a right to change it after our heart’s desire (...) If our urban world has been imagined and made then it can be re-imagined and re-made”* Harvey<sup>1</sup> (p. 939-41)

The global urbanization trend can be related to the search for inclusion in a universe of different forms of modernity and from the perspective of connecting humans with changes in the environment in their own favor. However, the matter of contradiction is striking and permanent in this sense, since the urban environment materializes constant perversities, even when properly planned measures become successful vis-à-vis their elementary parameters<sup>2</sup>.

A fundamental contradiction of cities is expressed by the logic of private property in a market context of capital accumulation, which has generated numerous injustices and inequalities in urban ways of life. Meanwhile, this trend has spawned motivations for social changes and an understanding of possibilities for living harmoniously with our own creations<sup>1</sup>. In Greater Metropolitan São Paulo, Brazil, for example, as in other large urban areas, there is a clear duality between a pattern of metropolization and the dramatic situation of low quality of life for large population contingents who occupy distant urban peripheries, lacking in basic infrastructure, legality, and social investments<sup>3,4</sup>.

In these urban contexts, the central argument for health promotion is characterized by the reduction of the inequities corroborated by health determinants and conditioning factors<sup>5</sup>, of a social and environmental nature, which demand integrated alternatives and innovative approaches for their mitigation<sup>6,7,8,9</sup>. This study was thus oriented by contexts of vulnerability based on reflection on social justice<sup>10</sup>, associated with the concept of the urban water-energy-food nexus. The urban nexus approach is dedicated to the investigation and elucidation of integrated solutions through the recognition of trade-offs in the water, energy, and food supply chains, considered essential for human development<sup>11</sup>. This article addresses sustainability, based on the premise of sustainable development<sup>12</sup>, and in this sense we see urban nexus through the search for synergies that reduce the pressure on trade-offs between the water, energy, and food supply chains. However, the opposite still characterizes the unsustainability of contradictions in the nexus, which exacerbates the pressures for resources<sup>13</sup>. The synergies associated with the urban nexus are thus possibilities for reducing inequities and vulnerabilities, associated with the search for sustainability through inter-sector alternatives.

The article’s central hypothesis is that in a peripheral context of social exclusion and vulnerability in a megacity, the shaping of situations of scarcity fosters the establishment of social practices<sup>14,15</sup> oriented dually in relation to the water-energy-food nexus. These practices alternately corroborate synergies and possibilities for the reduction of inequities in access to urban services and deepen the contradictions in access to these services, making urban spaces environmentally unsustainable and hindering the pursuit of the right to the city. This article thus aims to investigate synergies and contradictions in social practices through the water-energy-food nexus in the peripheral urban context in the city of Guarulhos, Greater Metropolitan São Paulo, with the perspective of identifying relevant relations between the reduction of urban inequities, possibilities for improvements in living conditions, and the respective dialogue with threats of unsustainability.

## Materials and methods

The city of Guarulhos is intensely urbanized and industrialized, with some 1.3 million inhabitants and a territory of 319.17km<sup>2</sup>. The city suffers from such socioenvironmental impacts as deforestation, degradation of water resources, formation of heat islands, air pollution, and intermittent water supply<sup>16,17,18,19</sup>, while also harboring part of the Cantareira State Park, a remnant of the Atlantic Forest<sup>20</sup> and an important reserve of water resources. Located in two river basins (Upper Tietê and Paraíba do Sul), the city of Guarulhos has 31% of its territory in a preservation area for water springs (*State Law n. 9,866/1997*). Guarulhos had a human development index (HDI) of 0.763 in 2010, higher than the Brazilian average. The municipality’s population grew at a mean annual rate of 1.31% from the 2000s to the 2010s, with urbanization increasing from 97.85% to 100%<sup>17</sup>.

Novo Recreio, part of the Recreio São Jorge neighborhood, located on the northern periphery of the city of Guarulhos, is home to approximately 4,500 families with some 28,000 inhabitants. The social vulnerability index in Novo Recreio is 0.374, considered average according to the scale developed by the Institute for Applied Economic Research (IPEA) in the publication *Atlas do Desenvolvimento Humano no Brasil*<sup>17</sup>. According to data from the Urban Supply Diagnosis by the Brazilian National Water Agency (ANA), the neighborhood (and municipality) have low water security. The terrain in Novo Recreio is rugged, with plateaus, mountains, and escarpments, as a risk area for erosion and landslides. Floods are also common along the waterways during the heavy rainy season.

This was a qualitative ethnographic study referenced on Practice Theory<sup>14,21,22</sup>, which offers analytical support for the research. According to Nicolini<sup>15</sup>, practice-based studies can be performed according to the following premises: (1) the analysis of the performance of certain action scenes; (2) the investigation of how certain action scenes are constituted over time; and (3) the investigation of coevolution, conflicts, and interferences between two or more practices.

In this scope, social practice is understood here as the locus for knowledge to occur. That is, knowledge is manifested within and through a practice<sup>23</sup>. Practices only exist when they are reproduced. Practices thus have material conditioning factors, history, social constitution, and a perceptible normative dimension. The use of the term “practice” entails a broad, open definition, according to the idea that the regime takes place in both the political and mechanical sense. Practices have a social constitution and are reproduced regularly, which makes their existence possible in the long term. Still, Nicolini<sup>15</sup> highlights that actions/practices are also in constant emergence and change, always subject to negotiation and challenge. This property is particularly relevant to the study, due to the perspective of innovation in convergence with sustainability, through synergies in the urban water-energy-food nexus.

A relevant aspect is the understanding that practices represent the collective. Individuals may have their personal motives, but when they are part of a practice, they attune to the object and meaning associated with that practice. As suggested by Bourdieu<sup>24</sup>, all practices have a meaning, an object around which they are oriented.

Nicolini<sup>15,23</sup> suggests that the attempt to theorize practices will be indirect, provisional, and partial, since to study a form of knowledge involved in a practice necessarily means to study some of its specific manifestations and moments. Such moments thus involve a network of relations anchored in space and time. Finally, Nicolini resumes the Heideggerian notion of place, in which knowledge appears as inherently situated in a system of activities in motion and is therefore a relational knowledge, mediated by artifacts and rooted in a context of interaction.

Our ethnographic study of practices in Novo Recreio took place during visits to the families living in the neighborhood, during a three-month period in 2017. Inclusion criteria were: (a) living in the neighborhood, which is associated with peripheral vulnerability; (b) being willing and available to receive the researchers and engage in dialogue with them; and (c) being 18 years or older. A total of 16 families were visited. For the first 12 families, interviews were conducted with a script covering aspects of the daily water-energy-food nexus and information on the household and the residents themselves. The choice of families used a “snowball” technique through recommendations made initially by the community health agents from the local basic health clinic and subsequently by the residents themselves. This stage allowed identifying the main relevant topics for the study, and the saturation criterion was used to limit the collection of information. Other important sources involved direct observation during visits to the neighborhood and dialogue with social actors from the community through local institutions: Family Health Program (FHP), municipal public school, and Novo Recreio Mothers’ Club (a nongovernmental organization that promotes social activities, proposes courses for youth, and runs a daycare center).

After this preliminary diagnosis, which also covered aspects of socioenvironmental vulnerability, the second round of home visits began, based on direct observation, focusing on discourses in the practices related to local contingencies, vulnerability, and domestic solutions to the scarcity of components in the nexus (water supply and rationing, food purchases, transportation, waste disposal, and access to electricity). This stage consisted of four visits, three of which with residents interviewed in the first round.

All these data were recorded in field diaries and subsequently transcribed as narratives and categorized according to the social practices targeted by the study. The target analytical categories were thus water, energy, and food, whose practices were classified again according to dialogues in the form of synergies or contradictions related to the urban water-energy-food nexus<sup>15</sup>.

The study was approved in advance by the Institutional Review Board of the University of São Paulo School of Public Health, under protocol n. 2.015.104, and complied with all the prevailing methodological requirements and ethical guidelines.

### **Conceptual contribution to the nexus**

The approach of the urban water-energy-food nexus poses an intersectoral challenge that involves overcoming the conventional lack of interlocation and considering interdependent provision matrices connected by scarcity. A sort of “nexus rationality” and the demand for integrated actions thus becomes evident, revealing the fundamental understanding that it is no longer possible to achieve efficiency in just one single sector. In other words, taking water as the central issue in the nexus, even the best sector-based management of this resource does not mean automatically achieving success in its association through tradeoffs with the energy and food supply chains<sup>11,25,26</sup>. This approach is based on recognition of the tradeoffs and of an analogy between different forms of shortage, intrinsically in the supply of resources and social and political dynamics<sup>27,28</sup>.

Although the urban environment may display some isolation in the territorial dimensions of the water, energy, and food supply chains, its connection with these points is constant and intense. In fact, the dynamics and demands related to the components of the nexus are shaped in the cities. Thus, to conceive of cities from this perspective allows dialoguing with the scarcity of resources and with the respective planetary crisis, which has caused various forms of unsustainability. Still, as relates to the analysis in this article, two specific comments are valid in relation to the nexus: first, we understand scarcity in the context of vulnerability, with the prevailing challenge of supplying water, energy, and food as a way of reducing inequities in health, acting to mitigate determinants and conditioning factors<sup>5</sup>; second, the issue is not merely technical, of simply seeking to optimize the synergy between the water, energy, and food sectors. The key is to understand and act in the social sciences field, associated with the study of social practices and knowledge among residents in conditions of vulnerability, possible interlocations with public policies, better governance structures, and necessary interactions in the search for multiple solutions and synergies<sup>14,29,30</sup>.

In this sense, we analyze the study’s context on the periphery of Guarulhos, considering its position of exclusion and “peripheral exile” as a key element in health inequities<sup>31,32</sup>. The study’s locus belongs to an important metropolitan area, close to the global megacity of São Paulo. Even so, its residents remain in a certain isolation from the benefits and modernity that the metropolis has to offer. This disparity, based on our analysis from the nexus perspective, reverberates two possibilities for dialogue between exclusion and vulnerability. Deepening the understanding of the local context based on knowledge of the inherent social practices in the nexus can produce a contribution to the study of the socioeconomic and political context and of the structural issues of the determinants of health inequities<sup>33</sup>.

The synergies in the urban nexus can also align with the premises of the right to the city, as alternatives to exile on the periphery, for example helping to promote adequate diet, besides engaging broadly in dialogue with such social rights as food, health, and protection of children, as provided by the *Brazilian Federal Constitution* ([http://www.planalto.gov.br/ccivil\\_03/constituicao/emendas/emc/emc64.htm](http://www.planalto.gov.br/ccivil_03/constituicao/emendas/emc/emc64.htm)). These perspectives also corroborate current planetary challenges<sup>34</sup> and intersectoral initiatives related to the *U.N. Sustainable Development Goals* (SDGs), specifically related to the following: 2 – zero hunger and sustainable agriculture; 3 – good health and wellbeing; 6 – clean water and sanitation; 7 – affordable and clean energy; 10 – reduced inequalities; 11 – sustainable cities and communities (<https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>).

## Results and discussion

Practice as the locus of knowledge is what Nicolini<sup>23</sup> called heterogeneous contexture, encompassing human and non-human elements. Thus, local knowledge gains preeminence, scattering across a labyrinth of associations between social and material practices that irradiate from different points and connect in complex ways to different practices.

In this sense, also based on Nicolini<sup>15,23</sup>, it was possible to observe the practices by the residents of Novo Recreio, based on consideration of the material mediations and discursive practices, assuming that practices are “*places of contextualized knowledge*”<sup>23</sup> (p. 5) that emphasize different ways of acting and speaking.

The observation periods in the Novo Recreio community allowed identifying some dominant practices in the urban water-energy-food nexus, constituting a synergy of alternative means and resilience in relation to the scenario of prevailing scarcity, as well as potential results or products of contradictions in the urban nexus and the perpetuation of the residents’ exile on the city’s periphery.

### Energy

Local public transportation, with few bus lines circulating and limited access on rainy days, contributes to limitation of the residents’ mobility for commuting to work, shopping, or using public services outside the neighborhood. To discuss transportation is to discuss energy<sup>35</sup>, thus revealing a first form of exclusion from the use of energy, associated with precarious transportation.

The second form of energy exclusion was identified in insufficient public lighting in the neighborhood. Various streets lack this service, leading to insecurity in the residents. Two related social practices were monetary collaboration among residents on some streets, allowing to install light posts, and the installation of lamps and spotlights on the façades of many houses located on streets that still lack public lighting. Meanwhile, there were also illegal electricity connections that can lead to risks and waste, thus contradictions in the nexus.

We also observed social practices that characterized synergies in the urban nexus. One case was solid waste recycling, involving residents in door-to-door collection of materials or directly on the streets, and sorting, sale, and/or resale. The synergy occurs with income generation, reduction of waste in landfill, and energy savings in industrial chains, which also systematically unburdens the demand for water and the pressure on food production.

### Water

As with other precarious services in the neighborhood, the public water supply is intermittent, running on odd days. When the area was first settled in the 1990s, the resident population had no access to basic sanitation (running water, sewage disposal, garbage collection, storm drains), since the neighborhood was considered a squatter settlement. The older residents report that they fetched water from a “fountain” that still exists, but at risk of drinking contaminated water.

Currently, to mitigate the intermittent water supply, local residents store water in tanks, drums, and other recipients. Better-off residents have large water tanks that are installed safely and are thus less affected. Residents with very low income (per capita monthly family income of BRL 200.00, less than USD 50.00) rely on precarious forms of water storage, leaving them more vulnerable, and occasionally fetch water at the same old “fountain”.

This social practice of storing water is linked to one of the main issues cited by residents, namely circulation in the neighborhood. Increased vulnerability is associated with the need to fetch water, trekking up and down unpaved hillsides with one or more pails. Thus, improved water supply could attenuate their vulnerability.

In this case, an important contradiction was identified between water shortage and the residents’ failure to perceive the respective risks and inequities. Many residents failed to report any concern or annoyance with the lack of running water every other day, or even any reference to the water supply

crisis in the state of São Paulo, when public running water was only supplied every three days or more in the region.

Stored water is normally used for housecleaning and washing clothes. Thus, other social practices were associated with storage, such as collecting rainwater, which also points to synergies with the urban nexus. One family reported that they began collecting rainwater during the most critical period of the water crisis in São Paulo and that they have future plans to improve their collection and storage system by building a cistern.

## **Food**

Peripheral regions of large cities have been classified as food deserts, where there is little or no ready source of food, as well as difficulties in access to fresh, healthy, and unprocessed foods <sup>36,37,38,39,40</sup>, a situation that applies to Novo Recreio. There are few produce markets in the neighborhood, and the limited offerings of healthy foods are sold at high prices. As explained by Milton Santos <sup>32</sup>, the low income of people living in peripheral areas discourages the installation of businesses and services, and when they do exist, they are small, forcing them to keep small inventories and hike up their prices. Residents thus prefer larger markets and wholesale food outlets, where the choices are more diversified and the prices are more affordable (while requiring more money to reach them). We can also describe this process as a contradiction in the urban nexus, related to scarce transportation and involving energy.

Healthy eating in this context is conditioned by family income, i.e., the ability to pay for transportation to the larger food markets and also to purchase more expensive foods. Vulnerable families, with lower and more variable income, end up purchasing cheaper industrialized foods, available in their own neighborhood. Residents also show a preference for red meat. However, due to its high cost they end up purchasing cold cuts and sausages, that is, ultra-processed foods they consume as their protein option. The conditions for marketing and access to food, individual traits (income, mobility), and local characteristics (presence of sidewalks, risk of violence) directly affect the quality of the residents' diet <sup>39</sup>.

Food from more distant regions impacts the chains in the nexus, since it also requires more water and energy in the transportation. Thus, the more isolated areas in a metropolis are subject to this exclusion from the benefits of fresh food, revealing the lack of integrated urban planning to make health and sustainability feasible <sup>41</sup>.

Two reports were important in the study to illustrate the idea of contradictions for the urban nexus. The first was in a visit to a local market, which had difficulty replenishing its stocks. The wholesale suppliers only delivered cleaning products, cookies, canned goods, and alcoholic beverages. Meanwhile, the market owner had to go for vegetables on Tuesdays and Fridays in the Parque Dom Pedro neighborhood in the city of São Paulo, with the risk of spoilage because of the heat and substandard transportation conditions.

The report was by a resident who had been a fishmonger in Novo Recreio for many years. His work routine had been exhausting, getting up at two in the morning to collect fresh fish at the São Paulo Entrepot and General Warehouse Company (CEAGESP) wholesale fish market, also in São Paulo city. Since he had no local competition, sales were good, with as many as four cars working for him at the time and building up a small distribution company. However, despite the steady source of income, the routine became unsustainable in the medium run. A personal problem with alcohol abuse, which is recurrent in many of the families we interviewed, also contributed to his abandoning this line of work.

On the other hand, there was an example of an important social practice that created synergies with the urban nexus: local food production. One of the families produced and sold fresh foods in the neighborhood (lettuce, parsley, kale, chive, cabbage, coriander, lemon, and cassava). Their garden used chicken manure for fertilizer, partly produced locally, and water from the public supply for irrigation (and occasionally rainwater). They mainly distributed the greens and vegetables in the area closest to their home, using a handcart. According to the woman, many of the families only started eating fresh foods after her family began to sell their produce.



Finally, food purchases became a focus of synergies between the urban water-energy-food nexus, with health as an intrinsic element. This highlights the possibility of local food production for attenuating the pressure on the nexus, providing fresh and healthy foods and contributing to sustainability <sup>11,39,42</sup>.

• **Nexus and the nature of social practices**

Box 1 summarizes the social practices studied here in relation to contradictions and synergies and the urban nexus, considering shortages and difficulties in access to water, energy, and food, contextualizing the practices, permeated by material mediations constituting inherent limiting factors for the practices in social space <sup>15,23</sup>.

The chart shows how scarcity itself and the gaps in possibilities for social ascent hinder the search for channels to optimize resources and the possibilities for access. There is a systematic lack of water and precarious public lighting (negatively affecting security). Transportation to connect to the resources in the metropolitan area is costly, and access is complicated (a problem related to energy), and access to fresher and healthier foods (an alternative for synergy in the nexus) is difficult and expensive. In this context, we can reconsider the concept of “exile on the periphery” <sup>32</sup>, expanding its meaning *vis-à-vis* the contemporary challenge in the nexus and jeopardizing not only the right to the city, but also the link to global crises in these processes.

The concentration of poverty in Brazilian metropolises and the contradictions between the visible and invisible (formal and informal) cities, or between the city center and the periphery (whatever the name for the differences), creates fragmentations in society, intensified by the lack of essential services and infrastructures. People living on the periphery are also excluded or poorly served in terms of water supply, sewage disposal, sidewalks, street paving and curb-and-gutter, public transportation, and other social services <sup>32,43</sup>, which corroborates the nexus analogy <sup>11</sup>.

Concerning local knowledge coupled with social practices <sup>23</sup>, the current structure of abysmal urban inequities involves not only processes of material deprivation and limited opportunities, but also major cognitive exclusion <sup>44</sup>. The knowledge associated with social practices in peripheral communities, whose relational nature is rooted in the shortage of resources and infrastructure, and which sustains alternatives for survival and a minimum of comfort, is not incorporated into broader social practices such as decision-making and public policymaking. Social practices interact with each other within “constellations of practices”, through “semipermeable membranes”, i.e., with the property of selective interaction and expressed as possibilities for mediation <sup>14</sup>. By analogy, the break in local practices and other organizational levels shows that community knowledge is not necessarily connected to the intersections of ideas in the global sustainability crisis.

**Box 1**

Nexus and social practices.

Elements of the nexus conditioned by exclusion and scarcity	Social practices	
<ul style="list-style-type: none"> <li>- Precarious transportation (energy).</li> <li>- Lack of public lighting (energy).</li> <li>- Intermittent water supply.</li> <li>- Difficulties in access to fresh foods.</li> </ul>	Contradictions	<ul style="list-style-type: none"> <li>- Purchase of ultra-processed foods.</li> <li>- Need to travel outside the neighborhood to purchase food.</li> <li>- Illegal electricity connections.</li> </ul>
	Synergies	<ul style="list-style-type: none"> <li>- Local food production.</li> <li>- Household water storage.</li> <li>- Use of rainwater and rational use of water.</li> <li>- Solid waste recycling.</li> <li>- Alternatives to public lighting.</li> </ul>

Source: elaborated by the authors.

We therefore refer to nexus of exclusion as situations characterized by the impossibility of consciously opting for sustainable consumption <sup>45</sup>, and in the case of food, the distant conjuncture of a new paradigm for healthy eating, considering the stages in diet from food production to consumption, jointly favoring consumers' health and sustainable development <sup>41</sup>. In this analysis, nexus of exclusion represent an abysmal frontier <sup>46</sup> that disconnects peripheral residents from sustainable and healthy choices and interaction with other organizational levels. The nexus of exclusion also preclude adherence to sustainable practices except by confronting profound difficulties and scarcity. Local waste recycling is a powerful example: although recycling per se is a synergy in the urban nexus, people perform this social practice simply because they lack better alternatives for income generation and mitigation of their profound vulnerability.

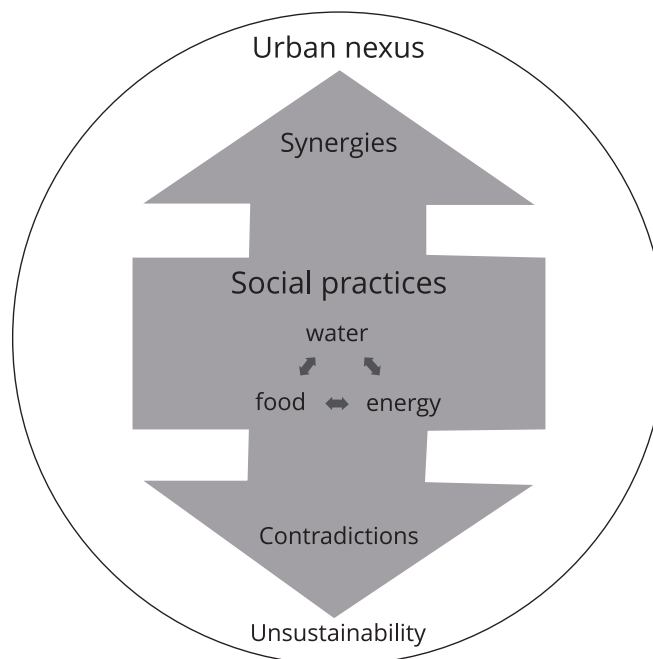
Figure 1 illustrates possibilities for synergies targeted to sustainability, social inclusion, and urban nexus, while also signaling the opposite, that is, scenarios of contradictions that exacerbate unsustainability, vulnerability, and aggravation of health determinants, including those inherent to basic social rights and the right to the city itself.

The alignment of creative social practices <sup>29</sup> with synergies in the urban nexus expands the possibility of reducing inequities in health, from the perspective of combining different dimensions of determinants and conditioning factors, contributing to the perspective of progress in the health proposal in all policies and with the inherent intersectoral logic of the SDGs <sup>47</sup>. This conjuncture can also contribute systemically to social protection, adding beneficial interactions to reduce poverty, access to essential resources (water, energy, and food), and contributions to local economies, converging in the applicability of an expanded concept of health <sup>5,9</sup>.

As for innovation in the applicability of the concept of the urban water-energy-food nexus, the current article helps remedy the scarcity of case studies involving social actors. It also helps overcome the gap in knowledge on interactions between persons, institutions, and bureaucracies <sup>48</sup>, where the study of social practices proved to be a feasible approach.

**Figure 1**

Social practices and the urban nexus.





## Conclusions

The study of social practices in the context of urban vulnerability allowed an in-depth understanding of issues in the “exile on the periphery”, essential human rights inherent to health and the right to the city, in light of the concept of the urban water-energy-food nexus. The social practices studied here are established on the basis of scarcity in the search for solutions to local problems under material mediation and through the discourses of the Novo Recreio local residents. Since the practices inherently involve confronting scarcity, they are oriented towards contradictions, enhancing the nexus of exclusion, and synergies, offering alternatives that favor sustainability, the reduction of vulnerability, and better health conditions. Since these practices coexist and interact, a promising approach would be to mediate interactions between local social practices and public policies, that is, social practices on expanded scales. This possibility of approach relates to knowledge and practices, constituting options for breaking with what we call nexus of exclusion, contributing to the idea that there can be no global social justice without a global cognitive justice <sup>46</sup>.

The study thus aimed to orient the creation of an innovative qualitative analytical base for the urban nexus. Focused not only on local social practices in contexts of self-organization and vulnerability, the study also addressed the dialogue with global issues like scarce resources and premises of the SDGs. We found that social practice theory reaffirms the challenge of studying the local context and the search for solutions and urban resilience, since from the perspective of trade-offs between scarce resources, the reduction of inequities and improvement of health for vulnerable populations should be confronted through synergic practices that emerge spontaneously but can create new prospects for addressing the perversity and inequities of the urban environment.

## Contributors

All of the authors worked in the study’s conception, data analysis and interpretation, and writing and approval of the article’s final version.

## Additional informations

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## Resumo

*A abordagem do nexu urbano corresponde à compreensão e à busca de soluções integradas mediante o reconhecimento das interdependências entre água, energia e alimentos, recursos cuja escassez configura iniquidades em saúde. A hipótese central deste artigo considera que o contexto de escassez corrobora práticas sociais que podem ser sinérgicas ou contraditórias em relação aos desafios da sustentabilidade e dos direitos sociais. O objetivo é investigar sinergias e contradições a partir de práticas sociais mediante o nexu urbano no bairro Novo Recreio, na cidade de Guarulhos, Região Metropolitana de São Paulo, Brasil. A metodologia consiste em um estudo qualitativo e de base etnográfica com referência à Teoria das Práticas, com observações diretas de campo e narrativas. Os resultados apresentaram práticas sociais associadas a falta sistemática de água, precariedades na iluminação pública e no transporte, bem como dificuldade de acesso a alimentos frescos e saudáveis. O estudo das práticas sociais entre sinergias e contradições permitiu verificar que, nesse processo espontâneo de busca de solução para problemas locais, é constatada a necessidade de integrar práticas e saberes locais a políticas públicas e demandas globais. Com isso, denominamos nexos de exclusão a condição periférica de impossibilidade de opções conscientes que permitam orientar conjuntamente a redução da escassez e de iniquidades com alternativas para a sustentabilidade.*

*Desenvolvimento Sustentável; Equidade em Saúde; Saúde da População Urbana; Marginalização Social*

## Resumen

*El abordaje del nexu urbano se corresponde con la comprensión y búsqueda de soluciones integradas, mediante el reconocimiento de las interdependencias entre agua, energía, alimentos y recursos, cuya escasez configura inequidades en salud. La hipótesis central de este artículo considera que el contexto de escasez corrobora prácticas sociales que pueden ser sinérgicas o contradictorias, a través de los desafíos en sostenibilidad y derechos sociales. Los objetivos son investigar sinergias y contradicciones, a partir de prácticas sociales mediante el nexu urbano en el barrio Novo Recreio, en la ciudad de Guarulhos, región metropolitana de São Paulo, Brasil. La metodología consiste en un estudio cualitativo y de base etnográfica, vinculado a la teoría de las prácticas, analizando observaciones de campo directas y relatos. Los resultados presentaron prácticas sociales asociadas a la falta sistemática de agua, precariedad en la iluminación pública y el transporte, dificultad de acceso a alimentos frescos y saludables. El estudio de las prácticas sociales entre sinergias y contradicciones permitió verificar que, en ese proceso espontáneo de búsqueda de soluciones para problemas locales, se constata la necesidad de integrar prácticas y saberes locales con políticas públicas y demandas globales. De esta forma, denominamos nexos de exclusión a las condiciones periféricas de imposibilidad, en cuanto a opciones conscientes que permitan orientar conjuntamente la reducción de la escasez e iniquidades con alternativas para la sostenibilidad.*

*Desarrollo Sostenible; Equidad en Salud; Salud Urbana; Marginalización Social*

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