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# Street food environmental sustainability in a urbanizing global south: A social practice perspective

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Selling and buying street food is an every-day practice for millions of urban poor living in cities across Africa, Asia, and Latin America. These practices are embedded in social routines (e.g., for producing food to consuming it and disposing waste) that are dependent on and influence the environmental performance of urban food systems as agents make use of resources (e.g., soil, water, energy, ingredients, etc.). A social science theory being increasingly applied to food systems and sustainability transformations, social practice theory focuses attention on the cultural, institutional, and physical embeddedness of social routines that characterize street food systems. It allows identifying barriers and lock-ins as well as opportunities to de-routinize unsustainable practices and help visualize the linkages and opportunities to nudge the routinization of sustainable practices. Through three examples of social practices in street food systems of the global south, we illustrate those linkages and propose a research agenda to step up the use of these perspective in promoting the contribution of urban street food system to sustainability.

## KEYWORDS

street food, environmental sustainability, global south, metropolis, social practice theory

## Introduction

Selling and buying street food is an everyday practice for the millions of urban poor living in cities across Africa, Asia, and Latin America (Roever, 2010; Battersby and Crush, 2014). It is also a diverse practice, including ready-to-eat, processed, and fresh foods and beverages sold by formal and informal vendors who may be mobile or operating from stalls or kiosks; while the food can be consumed at home, on location or at the workplace (Steyn et al., 2014). Demand for street food by the urban poor is driven by a lack of access to fresh produce, limitedly available time, and an absence of the necessary infrastructures and resources (e.g., water, energy) for preparing food at home (van't Riet et al., 2001; Dixon et al., 2007; Martinez et al., 2008; Battersby and Crush, 2014; Broto et al., 2017; Hatab et al., 2019; Mguni et al., 2020). Street food is expected to become even more important over the next decades as the population in the urban and peri-urban settlements is expanding (Bini et al., 2017; Ezeh et al., 2017; Battersby and Watson, 2018; UN, 2018) largely due to the inflow of rural migrants. So far street food has been

studied mainly with respect to issues of public health and nutrition security (Steyn et al., 2014; Abrahale et al., 2019; FAO, 2019; Ingram, 2020) and the livelihoods of poor urban vendors (Tinker, 2003). However, the contribution of street food to environmental sustainability has received less attention. In this paper, we illustrate the relevance of street food for environmental sustainability which is closely intertwined with the social, cultural, and economic life of urban poor in the Global South and contribution social practice theory offers when analyzing different street food practices.

Street food constitutes an important component of urban food systems, which are critical in achieving several of the Sustainable Development Goals (SDGs). Information on the environmental dimension of urban street food systems is scarce and fragmented but, as shown by the following sources, is pointing to significant contributions to environmental degradation both within and beyond urban boundaries. For example, street food waste disposal can add to the already large residents' food waste production that is inadequately handled and thereby contributes to water pollution (FAO, 2019). While the demand for freshwater to serve drinking water, cleaning food and prepare dishes by street food vendors (e.g., 800 l/day; Acho-Chi, 2002) might substitute for their clients' households water-use, it also increases the importance of the street food water footprint in the urban sustainability agenda.

Urban street food systems can also affect environmental degradation in the rural areas where the firewood and charcoal required for cooking are (over-)harvested (e.g., Acho-Chi, 2002; Naibbi Ali and Healey, 2013) or where food ingredients are produced through unsustainable practices creating problems in soil and water quality (Drechsel and Karg, 2018; Fonseca et al., 2018).

In spite of the significant role food systems play in achieving social and environmental objectives in large metropolises in the Global South, a more integral perspective is lacking. Such an overarching analysis is needed both internationally and locally to grasp the opportunities food systems provide for sustainable development. More specifically, the role urban food systems play in the sustainability agenda is internationally recognized in the New Urban Agenda (UN, 2016) and in the United Nations 2030 Agenda for Sustainable Development (UN, 2018). However, food and cities remain being framed as distinct elements. For instance, the Urban Sustainable Development Goal (SDG11) does not mention food, and the food security and sustainable agriculture goal (SDG2) focuses on food production but does not mention urban residents' access to food (Crush et al., 2020). In particular, according to the currently dominant narrative among urban authorities and planners in Asia (Bhowmik, 2005), Africa (Battersby and Crush, 2014) and Latin America (Roever, 2010) street food vending is considered a problem for being illegal, unsafe and negatively affecting urban mobility and the value of real estate properties. Including street food as an integral part of urban food

systems is needed to effectively contribute to food security and environmental sustainability.

We argue that to embrace the full potential of food systems' contribution to environmental sustainability, the role of street food should also be considered. Street food practices in large metropolises in the Global South are complex, in particular because they often happen in informal settings (Knox et al., 2019). More specifically, we argue that promoting sustainable street food practices as part of the urban food system requires a thorough understanding of the everyday cultural, institutional and social reality of the social actors involved, from farmers, sellers to the millions of poor street food consumers. Identifying barriers, challenges and opportunities for interventions needs to be based on in-depth understanding of the everyday realities of street food in the urbanizing Global South. Street food practices are embedded in closely-linked institutional, infrastructural, and socio-cultural settings. At the same time these street food practices relate to the routines of food producers, distributors, vendors, and consumers which are highly fragmented and dynamic as they are trying to adapt to continuously changing conditions (e.g., in availability of inputs and markets).

To understand this complexity of street foods, we illustrate how a social practice approach can provide conceptual tools that allow for the analysis of the routines of the involved actors, and their social embeddedness, dependence, and environmental impacts. Indeed, this approach to street food focuses attention on the interactions between daily routines, the provisioning systems (including the natural resources used, e.g., energy, water, ingredients, and soil) and the corresponding (in)formal institutional and infrastructural setting.

In the next sections, we first expand on the conceptual contribution social practice theory offers to analyse street food in large metropolises in the Global South. In the section that follows, we provide three examples of the use of social practices theory in the analysis of the contribution of street food to the environmental sustainability of urban food systems. Finally, we build on these examples to develop a research agenda to advance understanding the contribution street foods can make to the environmental sustainability of urban food systems and discuss the related governance challenges.

## A social practice perspective on the sustainable street food systems

The social practice (SP) perspective helps understanding the complexity of the social, cultural and material dimensions of system interactions characterizing the everyday practices of street food buyers and sellers in urbanizing Global South. Under this perspective, everyday mundane activities are understood as socially-embedded in routinised activities (Giddens, 1984; Schatzki, 2002; Shove et al., 2012). Street food combines several routinised mundane activities such as transporting, preparing

and selling street food as well as buying and consuming it. These activities interact closely in a dynamic way and can therefore be analyzed as a bundle of social practices. Each of these social practices is composed of three core elements: materials, meanings, and competences. Core material elements are, for instance, the food items prepared and sold, the preparing installations such as cooking stoves and the transporting and selling equipment such as carts and stalls. Meanings in street food practices may be “value for money,” “convenience,” and “healthy and safe food.” Relevant competences may be the capacity to collect sufficient food ingredients for a low price, to prepare good quality food items and to find good, ready-to-eat food for a low price. These different elements are combined to create social practices of producing, supplying, and consuming street food. These practices may acquire different shapes depending of specific local conditions and the particular actors involved. As people have to eat every day, consuming street food may be expected to be inserted in a wider set of more or less routinized practices (Warde, 2016), that include work and mobility and others that together constitute a particular urban lifestyle. For example, people may be forced to rely on street food because of poverty (Hill et al., 2016), as the conditions under which they live may prevent them from cooking their food at home. Some of the poor actually don't have a kitchen where they can cook a meal, others are forced to work for long hours far from their home and necessarily rely on the food available in their working environment. Street food practices need to be reproduced and thereby may evolve over time because of the dynamic interactions between the different elements and because of the interactions with other social practices. For instance, as Ombeni suggests (Ombeni, 2019), the rapidly increasing urban population leads to a growing demand for street food. This growing urban population is often the result of continued rural-urban migration (Bhattacharyya, 2001) and the background of these urban migrants may influence the street food on offer.

Eating street food is at the center of a growing number of publications exploring the trade in and the availability of healthy food in cities in the Global South (Turner et al., 2020). Research on the environmental sustainability dimensions of social practices has shown that the use of material inputs, such as water and energy, is steered by the practice as a whole (Mguni et al., 2020) and not only by technical needs. Furthermore, the role of consumption in steering the practice, and thereby its environmental sustainability performance, has clearly been shown (Spaargaren and Oosterveer, 2010; Spaargaren et al., 2012). Within the bundle of multiple practices that determine street food environmental sustainability outcomes, eating represents an interesting starting point. Starting with analyzing eating practices rather than with the production of food leads to a different perspective on other social practices (e.g., marketing, choosing dishes and ingredients, cooking, preparing and presenting meals, etc.). At the same time, it provides the

analytical lens to identify linkages and interactions between those social practices in urban settings with those routinized practices more upstream in the commodities chains (rural-urban transporting, producing food inputs, and energy in rural and peri-urban areas).

## Environmental dimensions of street food social practices in the Global South

### Preparing street food

Cooking practices refer to the routinized performance of activities to transform and combine ingredients to prepare food dishes. Recent social practice research in an African metropolis (e.g., Mguni et al., 2020) described the challenges faced by urban poor households living in informal settlements when cooking food. Although this study focused on the household, its findings are also relevant for street food vendors in large metropolises in the Global South because they also depend on access to safe drinking water and energy to prepare and cook their meals. By zooming in and zooming out, the authors showed the precariousness of performing cooking practices and how the provisioning system influences the urban poor's access to food ingredients, water and energy. More specifically, they found that the periodic unaffordability of charcoal faced by urban poor limits their access to safe drinking water (i.e., as boiling unsafe water becomes too costly) and thereby their menu composition as they tend to use ingredients that require less energy for cooking. As a consequence, urban poor avoid highly nutritional items such as beans because they require more energy for cooking. The focus on provisioning in the water-food-energy nexus related to urban cooking practices allowed this study to show the linkages between the cooking practices and the diets of the urban poor. These findings are also relevant for street food vending as they show the need for sufficient good quality fresh water and fresh produce and sufficient energy for preparing meals that are safe and healthy.

### Trading

Street food trading practices are embedded in urban food systems as they ensure that ingredients are distributed and reach the locations where food is prepared for final consumption. The provisioning part of street food trading practices has a direct impact on the environmental outcomes of urban food systems as it determines the need for energy to transport and store food, run kiosks, mobilize inputs (e.g., water, ingredients, etc.), and manage waste. By focusing attention on the institutional and infrastructural networks characterizing the provisioning system, the social practice perspective

helps understanding the linkages between the routinized production practices performed by farmers and the selling and trading practices performed by distributing agents and street vendors.

By taking this systemic perspective on trading and selling routines, the social practice approach broadens the perspective beyond the traditional focus on economic transactions and livelihoods (Tinker, 2003). Instead, it shifts the focus to other elements that have direct social and environmental implications. The social practice perspective calls attention to dynamics in the food ingredients commodity supply chain in connection with convenience, health discourses and trust that are central among trading agents and with the environmental impacts, such as water, energy, and waste.

## Consuming

Consuming street food involves the routinized practices undertaken by urban street food consumers. Eating practices result from a complex interaction among different elements in the social life of the consumers, more or less structured along their spatial and temporal configurations (Warde, 2016). In the case of the Global South these configurations are directly influenced by the interactions between the location of street food vending and the mobility and employment routines of urban street food consumers. Street food consumption practices are also influenced by the cultural significance attached to the culinary preparation of dishes and their ingredients (Warde, 2016; Adeosun et al., 2022). Understanding the cultural embeddedness of street food consumers' taste preferences alongside the social embeddedness in the lives of the urban poor and the above-mentioned barriers to cooking practices is crucial for identifying possibilities to promote more sustainable and healthy food. For example, the proposed Diet, Dishes, Ingredients (DDI) approach (Aiking and de Boer, 2020) could help identifying ingredients that maintain the social and cultural acceptability of recipes in their specific urban consumption context (Warde, 2016) and substitute less sustainable or healthy ingredients with better performing ones. This has, for instance, been applied when promoting low emission diets in the context of relatively more structured eating routines in developed countries (i.e., substitution of meat proteins by vegetable alternatives). In the case of street food consumption in metropolises in the Global South, using the DDI approach could benefit from using a social practice lens by considering how the urban poor's eating routines are embedded in cultural identity and in complex and dynamic spatial and temporal configurations that characterize their daily routines. For example, a social practice perspective could help paying attention to the challenges faced by recent urban migrants from rural areas in making food choices (e.g., due to their safety concerns or limited knowledge

of urban menus) and better aligning menu innovations to cultural identity (e.g., promoting healthy products available from rural menus). A social practice perspective on street food consumption practices allows understanding the linkages between the provisioning system of ingredients with its urban spatial and temporal configuration, the social lives of street food consumers and the culturally-accepted dishes that are actually consumed.

## Conclusions for building a research agenda

The growth of street food vending in fast growing metropolises in the Global South requires more attention to also address their environmental sustainability impacts. In this paper we developed several arguments for studying this dynamics and also provided some suggestions for a conceptual framework to be employed in such research.

The examples above suggests ways through which a social practice approach could contribute to identify socially-embedded opportunities for promoting environmental and social beneficial outcomes for urban food systems in urbanizing Global South. Differently from the analytical focus assuming rational economic choices of street food agents or pointing to the information-deficit in (food) consumers' behavior, social practices approach identifies and analyse systematically the composing elements of inter-connected urban street food systems practices. We argue that this approach can contribute to developing a research agenda on urban sustainable transitions in the Global South through at least two promising lines of research.

First, the social practice approach could be used to identify challenges as well as opportunities for designing socially-embedded sustainability interventions in urban food systems (Debru and Brand, 2019). The analysis of taste preferences, dishes and ingredients in street food eating practices along that of associated practices (e.g., food producing, distributing, marketing, cooking, and disposal) can, for example, help identifying challenges and opportunities to nudge healthy but also environmentally-sustainable ingredients for socially-accepted street food dishes.

Second, the social practice approach could help identifying leverage points for innovations (e.g., to support routinization of sustainable practices) by analyzing the interactions between the materiality, skills, capabilities, infrastructures and institutions (Herrero et al., 2020) of street food systems practices. For example, this research could help identify previously-unthought linkages between the material, competences, and meanings of street food eating practices with those in landscapes neighboring the Global South metropolis where the majority of ingredients composing their dishes are produced (Fonseca et al., 2018). More specifically, from the analysis of social practices' material

flows from fork (i.e., street food eating) to farm (ingredients production) along with their provisioning systems, skills and competences, researchers could identify bottlenecks that hamper changing unsustainable practices and identify opportunities for nudging more sustainable ones. This research could build on proposals from sustainable urban food system researchers that developed methods to trace ingredients of Global South urban recipes (e.g., in Burkina Faso: Karg et al., 2016; Latin America: Dubbeling et al., 2017; Blay-Palmer et al., 2018) back to the neighboring production landscapes. This food system approach would allow connecting efforts in urban and rural areas to enhance the social and environmental outcomes of Global South metropolises.

## Author contributions

Both authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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