



Urban agriculture and political ecology of health in municipal Ashaiman, Ghana



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ABSTRACT

This paper examines the multiple processes that shape the use of agrochemicals and wastewater irrigation in Ghanaian urban agriculture. It further explores whether and how these processes present bodily health challenges for women and men farmers. Qualitative fieldwork was conducted in Ashaiman, a municipal area located about 30 km north-east of Accra, Ghana's capital. Methods of data collection involved in-depth interviews, focus groups and participatory risk ranking and scoring. Conceptually, the paper brings political ecologies of health into closer conversation with scholarship on embodiment and gender. Overall, the findings demonstrate how specific urban agricultural practices are socially produced, how these practices come to affect the human body, and the long-term gendered consequences. One of the contributions of the paper is to draw attention to the nature and cost of urban agriculture in Ghana, a cost not in financial or environmental sense, but in the realm of embodied experiences of exposure to agrochemicals. The paper argues that the current problem confronting urban agriculture in Ashaiman, Ghana, cannot be adequately addressed unless understood as socially produced and historically determined. Further, the health impact of urban agriculture is not only a full bodily experience, but is also gendered. In the end, a case is made as to why gendered bodies demand more critical analysis in scholarship involving political ecologies of health.

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1. Introduction

Recent years have seen a raft of interest in urban agriculture, defined as crop production and animal husbandry within city limits (Ernwein, 2014; Hampwaye, 2013; Zezza and Tasciotti, 2010). From rooftop farming in Chicago (Taylor and Lovell, 2012), to vertical sack gardening in the Kibera slums of Kenya (Gallaher et al., 2013; Pascal and Mwendu, 2009), urban agriculture is growing in scope and extent, with many documented benefits. In low- and middle-income countries, among the many benefits include opportunities for part-time and full-time employment (Arku et al., 2012; Gallaher et al., 2013; Hampwaye, 2013; Orsini et al., 2013). Further, urban agriculture is used to augment incomes, mainly through selling harvests, or through reduced expenditure on food (Drechsel and Keraita, 2014; Smart et al., 2015; Vermeiren et al., 2013; Zezza and Tasciotti, 2010). Growing food in the city means that

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fresh crops may travel only a few blocks from field to table. By ensuring access to locally grown fresh fruits and vegetables, urban agriculture does not only lead to improved food and nutritional security, but it also serves as a supplement to unhealthy and pre-packaged diets dominating today's food system (Allen and Apsan Frediani, 2013; McClintock, 2014; Orsini et al., 2013; Shillington, 2013; Smart et al., 2015; Zezza and Tasciotti, 2010).

In addition to eating more healthily, the physical tasks involved in urban farming (e.g., planting seeds, pulling weeds and gathering produce) can help to control obesity, a major risk factor for many cardiovascular diseases (McClintock, 2014). Moreover, urban agriculture does not only renew a sense of pride and reconnect people to their sources of food, but it also brings 'nature' to the urban environment, and increases the attractiveness of undeveloped inner-city neighbourhoods (Drechsel and Keraita, 2014; McClintock, 2014). However, despite the numerous contributions to human health and well-being, urban agriculture has come under serious academic critique, especially in regard to issues of intensive farming methods that have negative externalities (McClintock, 2014; Tornaghi, 2014).

In sub-Saharan Africa, Ghana is one of the countries where this concern has become exceedingly prominent in recent years. Since urban agriculture gained prominence in Ghana around the early 1970s (Asomani-Boateng, 2002), scholarly work has shown that the use of pesticides and fertilizers has grown alarmingly (Botwe et al., 2011; Drechsel and Keraita, 2014; Obour et al., 2015; Yeboah, 2013). Of additional concern is the adverse human and environmental health impacts of these agrochemicals, especially at the urban fringes where farmers and non-farmers must coexist in close proximity (Fianko et al., 2011; Yeboah, 2013). In some cases, studies have shown the accumulation of pesticide residues in the breast milk of women farmers (Northern Presbyterian Agricultural Services, 2012). Similarly, not only do Ghanaian urban farmers irrigate with wastewater from sewage drains, but often-times, vegetable harvests are contaminated with pesticides far above the maximum residue levels (Bempah et al., 2011; Amponsah et al., 2015a; Drechsel and Keraita, 2014; Owusu et al., 2012). According to a recent assessment, between 500,000 and 800,000 Ghanaian city dwellers are at health risks of consuming these vegetables (Amponsah et al., 2015b).

In the scholarly literature, a widely held concern is that Ghanaian urban farmers irrigate with wastewater or intensively apply agrochemicals in an attempt to meet growing demand for vegetables, or due to inadequate health risk awareness (Amponsah et al., 2015a, 2015b; Mattah et al., 2015; Ntow et al., 2006; Obour et al., 2015; Yeboah, 2013). While these explanations provide insights into the dynamics of urban agriculture in Ghana, they nonetheless overlook crucial contextual factors. In particular, they are framed as 'apolitical ecologies,' meaning explanations that neglect politics and social power (Robbins, 2012, p.11). These explanations are also less historicized, with no reference to the structural and historical contingencies that shape urban farming practices. Additionally, they fail to account for embodiment and social differentiation, with farmers often treated as a homogenous group uniformly affected by agrochemical exposure. Indeed, it is not enough to argue that urban land users are ignorant about the health risks of wastewater irrigation or the use of pesticides and fertilizers. A more sophisticated explanation of irrigation practices, for example, requires an analysis of the historical processes that have shaped municipal water supply and access (Bakker, 2010; Robbins, 2012). At the same time, a better understanding of urban soil fertility management will require a sensitive account of social relations of production, including patterns of land rights and security of tenure (Robbins, 2012; Watts, 2000). Insofar as urban agriculture consists of women and men of diverse social positions, we also need to pose broader questions about how exposure to agrochemicals plays out along gender lines.

Our goal in this paper is to better understand the social, political and ecological dimensions of Ghanaian urban agriculture, as well as its impacts on human health and well-being. We are specifically interested in the multiple processes that shape the use of wastewater irrigation and agrochemicals. We further seek to understand the embodied experiences of the impacts of agrochemicals, and the gendered effects of these experiences. We draw the empirical evidence from municipal Ashaiman, one of the Ghanaian urban areas noteworthy for urban agriculture. In-depth fieldwork with farmers, non-farmers and other relevant stakeholders provided a unique opportunity to consider the following research questions: (1) What are the factors contributing to the use of agrochemicals and wastewater irrigation? (2) What are the gendered and embodied experiences of human exposure to agrochemicals?

Conceptually, we answer these questions by employing human-environment research in political ecologies of health (King and Crews, 2013; King, 2015; Jackson and Neely, 2015) integrated with scholarship on gender and embodiment (Harrison, 2000; Longhurst and Johnston, 2014; Sultana, 2012). Specifically, we

use the case of urban agriculture to demonstrate why political ecology's multi-scalar analysis must be extended to include human bodies, an endeavour currently being advanced by geographers including Guthman (2012), Guthman and Mansfield (2015), and Sultana (2012). Since political ecology emerged in the 1980s, it has mostly retained an emphasis on landscapes, rather than human bodies, but there is an emerging shift away from this traditional emphasis (e.g., see Bryant, 2015; Perreault et al., 2015). Our case study is an effort to advance this engagement. We put emphasis on the urban landscape, but we also scale down our analysis to examine the gendered and embodied impacts of urban agriculture. In doing so, our work extends emerging scholarship on human-environment dimensions of health, nature, difference and the body (Hayes-Conroy and Hayes-Conroy, 2013; King, 2015; Guthman, 2011; Guthman and Mansfield, 2015; Sultana, 2012).

A secondary contribution is to underscore the need to historicize and politicize urban farmers' land use practices. We argue that in the case of municipal Ashaiman in Ghana, wastewater irrigation and the use of agrochemicals are not simply shaped by the need to produce more vegetables for a growing market. Rather, these practices are tied to the municipality's social history and Ghana's economic restructuring experience more broadly. While this is a fundamental political ecology argument, it nonetheless stresses that the current problem confronting Ghanaian urban agriculture cannot be adequately addressed unless understood as socially produced and historically determined.

The rest of the paper is organized as follows. In the next section, we briefly outline the conceptual background for the study. We follow this discussion with an introduction to the case study municipality. Attention then shifts to a description of our methodology. Next, we present and discuss our empirical results. The final section highlights some theoretical conclusions, together with policy recommendations.

2. Political ecologies of health, gender and embodiment

To effectively answer our research questions, we require a deeper understanding of health and place with a sensitivity to history and socio-ecological contexts. Political ecology of health (PEH hereafter) offers an effective conceptual toolkit for such an analysis (Jackson and Neely, 2015; King, 2015; King and Crews, 2013). Rooted in the interdisciplinary lens of political ecology (Bryant, 2015; Perreault et al., 2015; Robbins, 2012), PEH examines human health in the context of broader social and economic dynamics (King, 2010). As an analytical approach, it advocates for a stronger focus on the socio-political determinants of health, including colonial history and neoliberal development policies (Neely, 2015; Richmond et al., 2005). Along with the emphasis on socio-political factors, one of the most appealing characteristics of PEH is the recognition that health cannot be understood without an explicit consideration of ecological dynamics (King and Crews, 2013; Richmond et al., 2005). The PEH subfield is underpinned by the idea that it is at 'the nexus between social and ecological processes that human health is shaped, and only in understanding the interactions between them can human health be properly understood' (King, 2015, p. 349).

The explanatory power of the PEH framework rests heavily on three inter-linked themes: (1) the examination of health outcomes within a broader socio-ecological context; (2) multi-scalar analysis that moves from the human body, to an examination of macro-level structural forces; and (3) a sensitive historical account to understand the evolution and dynamics of contemporary health outcomes in a given place (Guthman and Mansfield, 2015; King, 2010; Neely, 2015; Richmond et al., 2005; King and Crews, 2013). Most importantly, historical analysis is crucial in the PEH

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