

RESEARCH ARTICLE

How property relations shape experiences and transformative potential of urban growing spaces: Connecting land, food, and Earth justice perspectives

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This study uses both socio-legal and theoretical methods to examine the ambivalent role of property regimes in food system transformation. Combining an Earth justice perspective with a small-scale empirical study of how property and land-use laws affected experiences of growing spaces in an English city that included some element of collective ownership or management, we argue for greater diversity in formal legal structures (e.g., tenancy models), but also in concepts of land relationships. Our discussion diverts attention from individual entitlements to allocation of responsibilities and opportunities for human and interspecies collaboration. Growers' experiences were shaped by productivist property narratives but provide a material basis to think beyond individual entitlement, reframing issues of security of tenure and public access in terms of responsibility and connection.

Keywords: Property and land-use law England, Urban growing spaces, Urban agroecology, Land, food, and Earth justice, Reimagining security of tenure and public access, More-than-human

1. Introduction

This article explores how property regimes shape experiences of urban growing spaces, and the role that they might play in transition to a more just and sustainable food system. Our small socio-legal case study of communally owned or managed growing places in the U.K. city of Brighton and Hove during the COVID-19 pandemic is combined with theoretical reflection on land, food, and Earth justice, in the sense of a justice that is attentive to the more-than-human world. We highlight the ambivalence inherent in existing property structures, which have powerful effects but operate in multifaceted and sometimes conflicting ways. Property rights make growth (and transformation) possible, yet often reproduce exclusionary and extractive ways of relating to land. We focus on opportunities to build more diverse and just land relationships, through changes to formal legal rules, but also through reimagining who is involved in those relationships, and the stories that we tell about them.

Beyond food production and food security, urban growing is recognized to contribute to addressing significant challenges including biodiversity loss, climate change, public health, and social cohesion (Guitart et al., 2012;

Bendt et al., 2013; Barthel et al., 2015; Jahrl et al., 2021). Land relations have been identified as significant in mediating the potential of urban growing to promote food system transformation (Glowa and Roman-Alcala, 2021) and as a key issue in urban agriculture generally (e.g., Guitart et al., 2012; Fox-Kämper et al., 2018; St. Clair et al., 2018). There is an extensive sociological and geographical literature on the politics and governance of urban growing spaces (e.g., McClintock, 2014; Tornaghi, 2017; Jahrl et al., 2021). Legal scholarship has pointed to the potential of growing activities to challenge existing doctrinal property concepts and the inadequacy of current legal forms (Farran, 2013). To this cross-disciplinary discussion, we contribute socio-legal examination of the way that legal rules can affect experiences of growing, and capacities for transformation, at the level of the individual site. We focus on the experiences of users and managers of urban growing places with some element of collective ownership or management, including both individual and community allotments, and community gardens. From the perspective of property theory, we add to property's nomos, or hinterland of normative resources (Roark and Fox O'Mahony, 2022, p. 816), by examining these sites as a specific type of shared space that nurture a range of public values.

The next part links urban growing to questions of food, land, and Earth justice, identifying urban agroecology as a set of principles and practices that may “unite social and

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ecological justice” (Deh-Tor, 2017, p. 9). It also situates urban growing within property theory and doctrine. We then introduce our case study and methodology. Our findings suggest that property regimes on shared growing sites present obstacles to the adoption of agroecological practices. While they create relations of belonging for some, others are excluded, in particular nonhuman inhabitants of growing sites. We use our study sites to think about property beyond individual entitlement, reframing issues of security of tenure and public access in terms of responsibility and connection. Our analysis emphasizes the role of property relations in allocating resources, and their function as a legal and material basis for collaboration and connection. We conclude by identifying potential legal and policy strategies for food system change, including the adoption of more diverse, collaborative, and longer-term property models, while arguing for the recognition of public, as well as private, responsibilities for creating just urban environments.

2. Locating property, agroecology, and justice within urban growing sites

2.1. Linking food, land, and Earth justice agendas

We argue that evaluation of property relations within urban growing spaces requires connections to be drawn between food, land, and Earth justice agendas. It is beyond the scope of this article to offer a comprehensive definition of the terms “food justice,” “land justice,” or “Earth justice” (see further Alkon and Agyeman, 2011; Horst et al., 2017; Cullinan, 2011). “Justice” focuses attention on distribution: of land, of food, of opportunities to exist and to flourish (Nussbaum, 2023). Justice further incorporates both procedural and substantive dimensions, recognizing that exclusion from decision-making operates to sustain and reinforce inequalities (Tornaghi, 2017, p. 783). While urban agriculture can be seen as a response to these inequalities, critical geographical scholarship also identifies the urban production of food as being embedded in, and reproducing, multiple forms of injustice (Clenning et al., 2016; Tornaghi, 2017). A key aim of this article is to deepen understanding of the role of property relations in (re)producing unjust social and ecological systems, and the extent to which existing land use and property rules contain potential for change. In the context of food systems, justice has been argued to include not only access to all for nutritious food, but food that complies with ethical, religious, or cultural preferences (e.g., Horst et al., 2017, p. 279). The extent to which food justice requires active participation in food production systems, and hence access to land, is contested. Growing food can be understood, similar to the Hegelian vision of property, as an essential part of individual and cultural development (Tornaghi, 2017, pp. 784–785). At the same time, disconnection from food production, growing, cooking, and manual labor can equally be perceived as liberation, perhaps particularly by women (Tornaghi, 2017, p. 791). Despite these evident tensions, *opportunities* to participate in the practice and organization of urban growing would appear to enhance justice, for human and nonhuman alike.

Justice further requires acknowledging the claims of the more-than-human to live self-directed and fulfilling lives (Braverman, 2018). “Earth justice” envisages a reconfigured legal system based on the understanding of the natural world, not as a resource for human use, but as a network of which we are an integral part (Cullinan, 2011). This includes reshaping property laws (Burdon, 2015). Our use of the term emphasizes the need for a system of land-use governance attentive to the interests of vulnerable humans and nonhumans, offering substantive protection of those interests alongside procedural mechanisms for collaborative decision-making. For us, (re)establishment in industrialized societies of connection within and between human and nonhuman is vital to fostering the emergence of Earth justice (Howe, 2017). It is those stronger bonds of attachment and understanding that will enable us to fully value and care for the more-than-human world (Nedelsky, 2012). As a locus of multi-species interaction, urban food growing has the potential to enhance these relational connections and practices of care, but also to undermine them (Pitt, 2018).

2.2. The significance of urban agroecology

We see agroecology as offering an approach to urban food growing that responds to these multiple forms of justice and provides, in particular, opportunities for connection and care. Agroecology comprises a set of value-based practices that are premised on growing in harmony with the natural world, using methods appropriate to local contexts (Altieri, 2004). Rooted in concerns for “multi-species solidarity, biodiversity and environmental stewardship” (Deh-Tor, 2017, p. 9), it accommodates a plurality of interests in land use, aligning not only with food and land justice but, vitally, with Earth justice. By recognizing the inherent value of nonhumans and their right to coexist, irrespective of any instrumental value to growers, agroecological approaches are more likely to foster respectful and careful relationships in urban growing than conventional or productivist approaches (Pitt, 2018, p. 268; Tornaghi and Dehaene, 2020, p. 606). As such, it could play a key part in the transition to a more just and ecologically sustainable food system (Altieri and Nicholls, 2012; De Schutter, 2014; Altieri and Nicholls, 2020a). While more commonly associated with rural contexts, an urban agroecology is emerging that sees these principles and practices applied to urban food systems (Tornaghi, 2017; Altieri and Nicholls, 2020b; Egerer and Cohen, 2021, Ch 1).

In practical terms, agroecological growing relies less on chemical fertilizers and pesticides than conventional forms and instead seeks to mimic an ecosystem with high biodiversity and good nutrient cycling (Pimbert, 2017, p. 15). It also encourages the use of agro-forestry systems, including fruit trees, as well as mixed-farming including birds, fish, or other animals (Pimbert, 2017, p. 15). This functional biodiversity provides biological “pest” control, as well as improving soil health (Altieri et al., 2017, p. 18). By anticipating less-extractive interactions with land and by incorporating multiple opportunities for deepening connection with the more-than-human, agroecology

promotes the stronger social-ecological bonds that could underpin transition.

Drawing on resilience-thinking in food system transformation and its emphasis on adaptive capacity (Tendall et al., 2015; Howe and Ross, 2019), we suggest that, for agroecology to flourish, legal arrangements for access to and management of growing spaces need to enable diversity of growers, sites and methods, bringing together different knowledges, crops, and habitats. These arrangements must be flexible enough to respond to new threats, ideas, or opportunities and permit the use of emergent agricultural and horticultural practices. Property rules that facilitate learning and experimentation regarding the practices that best meet the needs of the particular land and its inhabitants will arguably provide a quicker route to food, land, and Earth justice. The need for excess capacity in the system presents a particular challenge; ostensibly “redundant” spaces may facilitate diverse responses to future uncertainty (Barthel et al., 2015, p. 1335).

2.3. Understanding property relations on growing sites

Both food systems and property laws operate to configure land and space and to link human and nonhuman metabolic processes. Our examination of urban growing sites adds to legal geographical literature exploring how spatial markers of property shape our legal consciousness and foster particular kinds of socio-ecological relationships (e.g., Blomley, 2005). There is a close connection between Western liberal models of property and logics of agricultural “improvement” entailing enclosure, colonization, and domination (e.g., Graham, 2010); indeed, the history of the allotment is bound up with the enclosure of common land and the creation of a landless urban working class (Moselle, 1995). On the other hand, growing activities themselves contain potential for disruption and transgression of boundaries (e.g., Farran, 2013; Scott et al., 2018).

In the context of food systems, it is well understood that property rights condition distribution of food (e.g., Sen, 1988). Access to urban growing spaces has the potential to play a role in maintaining food security and addressing inequalities in distribution, although the extent of this is contested (McClintock, 2014). Property and land-use norms are often understood as a barrier to creation and maintenance of food growing spaces (e.g., St. Clair et al., 2018). While existing private property regimes may offer scope for improved human-land connection and less extractive food production for those holding such rights (Holland et al., 2022), it is these same property systems that have given rise to ecological destruction and inequality (e.g., Calo, 2020; Office for National Statistics 2020a; Calo et al., 2021; Sassano et al., 2023). Unequal distribution of rights to use and access land operates to sever marginalized communities from the ecological systems that sustain them (e.g., *Land in Our Names*, 2023 and, in the U.S. context, Shoemaker, 2021). Support for urban food growing has formed part of the land reform agendas (see, e.g., in Scotland Part 9 of the Community

Empowerment [Scotland] Act 2015 and, in England, Incredible Edible’s “Right to Grow” campaign, 2022). Politically, there has been a repositioning of state as facilitator, rather than as primary actor, in maintaining public growing sites (e.g., van der Jagt et al., 2017).

Urban green spaces in general are also spaces in which human communities are constituted and identities and belonging negotiated (e.g., Abram and Blandy, 2018; Page, 2020 part 5.5). In focusing on urban food growing spaces with some element of collective use or management, the article contributes to socio-legal and theoretical scholarship examining the way that property relations both create and destroy communities, publics, and belonging (e.g., Alexander and Penalver, 2010; Keenan, 2015; Abram and Blandy, 2018; Page, 2020). In line with the focus on Earth justice set out above, however, the article is also concerned with connections between the human and nonhuman. One theme of the article is the way that property norms affect relationships of belonging with our own bodily systems and with the nonhuman communities that we are embedded in. While urban growing spaces are often recognized as capable of providing habitats for wildlife and fostering biodiversity (Nicholls et al., 2020), the ways in which nonhumans experience and co-construct the property relations that govern those sites (Braverman, 2013; Ojalampi and Blomley, 2015; Brown et al., 2019) is less frequently addressed (although see Müüripeal et al., 2023).

Building on Blandy et al.’s (2018, p. 90) insight that different formal and informal norms may come to the fore at different points in a dynamic relationship, a further theme of the article is the relationship between security and formality during a time characterized by insecurity and flux. Previous research has concluded that clearly formulated rules, objectives, and governance procedures support urban community growing initiatives in contributing to social resilience (van der Jagt et al., 2017, p. 271). As noted above, a fundamental element of the ability of urban growing to foster the multiple forms of justice under discussion is security of tenure. Formal property rights can support the creation of long-term connections and nurturing relationships that are often presented as the foundation for the transition to agroecological food production (Anderson et al., 2019, p. 7; Glowa and Roman-Alcala, 2021, p. 183; Holland et al., 2022). But, at the same time, they may operate to enforce separation and vulnerability. The most common challenge faced by U.S. gardeners was the insecurity of future land access (Guitart et al., 2012, p. 368), and this is echoed in the U.K. literature (e.g., St. Clair et al., 2018).

2.4. Property frameworks governing urban growing in England

In terms of formal legal structures, the default position is that urban growing spaces in England are subject to the same property and planning law regimes as other types of land. Formal rights to make use of the land may be based on contract with the owner (a license agreement) or property rights (a leasehold [temporary right to use] or freehold ownership). As Farran explains, many urban growing activities take place without any formal legal agreement

(or indeed, without the consent of the landowner at all) (2014, p. 245). Existing private property models have been argued to have difficulty accommodating collective management and interests (Clarke and Xu, 2018).

There is a complex body of law applying to tenancies of agricultural land in England, much of which is limited to commercial operations where the whole of the land is substantially used for agriculture (Rodgers, 2016). However, for the noncommercial urban growing sites in our study, the principal relevant property regime is the allotment tenancy, provision for which is made under various Allotments Acts (Clayden, 2002). An “allotment” is defined in s. 3(7) of the Allotments Act 1922 as “any parcel of land, whether attached to a cottage or not, of not more than two acres in extent, held by a tenant under a landlord [otherwise than under a farm business tenancy (within the meaning of the Agricultural Tenancies Act 1995)] and cultivated as a farm or a garden, or partly as a garden and partly as a farm.” According to s. 22 of the same Act, an “allotment garden” is “an allotment not exceeding forty poles in extent which is wholly or mainly cultivated by the occupier for the production of vegetable or fruit crops for consumption by himself or his family.”

Allotments may be created on privately owned or council-owned land. The terms of an allotment tenancy will vary between different landowners and areas. Where land has been “appropriated” for allotments by a local authority, it cannot be sold or used for other purposes without the permission of the Secretary of State (s. 8 Allotments Act 1925). Consideration must be given to the need for, and adequacy of, alternative provision, although this does not require provision of an equally suitable site (*R v Secretary of State for the Environment ex p. Gosforth* [1997] 74 P. & C.R. 93). This applies regardless of whether the local authority retains day-to-day management responsibility. Privately owned allotment sites do not receive the same protection, and, although their status as open spaces may be taken into account in any planning application, there is no requirement for ministerial consent to disposal. These differing legal and governance arrangements applying to privately owned, as opposed to municipally owned, allotments have been argued to render them especially vulnerable (Scott et al., 2018). Council allotment tenants must be given 1 year’s notice to quit (s1 Allotments Act 1922), but no justification is required for the notice, which may be for bad or vindictive reasons (*Armsby and Price v Pointalls Allotments Limited* [2022] EWHC 2803 (Ch)).

Although our discussion focuses on property regimes, public land-use planning law plays an important part in protecting existing growing sites and in facilitating access to land for growing. In the English National Planning Policy Framework (NPPF), there is no specific provision for food-growing sites, although these are likely to fall within the scope of planning policies promoting “green infrastructure” and protecting “open space” (e.g., NPPF paras 98–99; para 154(a)). Local planning policies that promote urban food growing are beginning to emerge (see, e.g., Sustain, 2014). However, growing sites, like other urban green spaces, are under severe pressure from housing

development and lack of local authority resources (Dobson et al., 2020; Marsh, 2023). Key strategies include identification of land suitable for food growing in city plans (e.g., Mayor of London, 2021 Policy G8), facilitation of the use of municipally owned land for food growing (e.g., Shropshire Council, 2022; 2023), and promotion of the inclusion of food-growing spaces within new development proposals (Brighton and Hove City Council, 2020).

3. Case study: Growing spaces in Brighton and Hove during the COVID-19 pandemic

3.1. Background

In order to explore these themes, the research adopts a socio-legal methodology that, drawing on the work of Blandy et al. (2018), focuses on relationship dynamics and experiences of property norms. This opens up a dimension of fluidity and informality that is not typically associated with property law scholarship. In addition to doctrinal legal sources and theoretical literature on urban growing, discussion is built around a small-scale qualitative study involving interviews with users and managers of growing sites and focus groups bringing together participants involved in policy and growing practice. While care must be taken before generalizing, case studies can provide valuable context and complement more traditional methods (Argyrou, 2017, p. 102).

Brighton and Hove, a city in southeastern England, was selected for, and, in part, inspired, the research project in its adoption of an innovative planning policy seeking to encourage the provision of food-growing spaces within new developments (Brighton and Hove City Council, 2020). At the time of writing, Brighton and Hove is one of only 2 cities in the United Kingdom to have been awarded a Gold award by the Sustainable Food Places scheme, which recognizes cities that are taking significant positive steps toward a healthy and sustainable food system (Sustainable Food Places, 2023). Geographically, Brighton and Hove is a densely populated urban area with around 280,000 human inhabitants (Office for National Statistics, 2022), including a large number without access to a private garden. Thirteen percent of residents have no access to a private outdoor space, rising to 27% of flat residents (Office for National Statistics, 2020b). Distribution of garden access likely reflects that across England, where younger people, non-white ethnic groups and those in lower socioeconomic groups are less likely to have access to a garden (Office for National Statistics/Natural England, 2020c). According to the city’s 2014 Allotment Strategy, there are 37 allotment sites with 3,092 plots of 250 m² (“full plots”) or 125 m² (“half plots”). Thirty of these are “community plots” used by voluntary-sector groups (Brighton and Hove City Council, 2014, p. 12). Plots are leased to individuals (“plot-holders”), but additional people may garden on the plot as “co-workers.” Additionally, there are over 45 community growing projects of various sizes on land other than allotments (Brighton and Hove City Council, 2014, p. 13). Competition for space means that there are limited opportunities for providing new allotment sites, particularly in the city-center

locations where demand is highest (Brighton and Hove City Council, 2014, p. 58).

The COVID-19 pandemic has highlighted the importance of growing sites both in immediate pandemic response (maintenance of mental and physical health, food security) and in “green recovery” efforts to promote more resilient and sustainable urban communities (Samuelsson et al., 2020). Interest in growing-related media and sales of seeds increased markedly during the initial phase of the pandemic (e.g., Perrone, 2020); gardening was cited by over 40% of respondents to ONS lifestyle surveys as a means of coping during lockdowns (Office for National Statistics, 2020a). In our study location, the number of people paying a £17 fee to join the waiting list for an allotment increased from 466 in 2019/2020 to 853 in 2020/2021 (Brighton and Hove City Council, 2021). Growing spaces may have particular value for groups most vulnerable to pandemic effects, such as the elderly, ethnic minorities, and those on low incomes (Samuelsson et al., 2020). However, unlike in the case of mortgages or residential tenancies, where a range of emergency measures were enacted to prevent evictions (Roark and O’Mahony, 2022), the pandemic did not appear to have immediate or obvious effects on property arrangements for growing sites.

3.2. Methodology

Our aim was to investigate how different ways of owning and organizing growing spaces had affected the experiences of those using them during the pandemic, and the potential for growing spaces to provide a range of social and ecological benefits. The first phase of the research was a scoping exercise using publicly available lists of growing sites to identify and map the different legal and organizational structures used in Brighton and Hove. This extended and applied the legal landscape surveyed by Farran (2013) to the local context. It was not possible to link the qualitative data collected regarding legal models with GIS mapping data, but this would provide an avenue for future research. Although sites with an element of commercial production were not excluded, the focus was on noncommercial operations.

Sites were selected for interview to represent a range of different legal models. As Farran sets out, the blurring of public and private land and interests is one of the particularly interesting features of growing sites (Farran, 2013). Focusing on this public–private boundary, we excluded sites that were wholly private, choosing those with some element of collective or public organization or entitlements. Within a small sample, we aimed to include a range of organizational structures with different degrees of public access, as well as both formal and informal land tenure arrangements. A table setting out key features of the sites included in our interviews and focus groups is included in Appendix 1. Potential participants were identified via the mapping exercise, and contacts within existing networks (in particular, Brighton and Hove Food Partnership), and approached directly. An open invitation to participate in the interviews and focus groups was also circulated to growing communities in the city via networks such as

Brighton and Hove Allotment Federation. Due to pandemic restrictions, interviews were conducted remotely and lasted for around an hour each. Two online focus groups lasted for 2 h each.

There were 8 interviewees representing 6 sites with some element of collective ownership or management, as displayed in the table in Appendix 1. Two interviewees came from a community allotment, where a group of people garden an individual allotment plot (CA1 Manager and CA1 Volunteer). Two others were holders of individual allotment plots (IA1 and IA2) on a shared allotment site. In all cases, the allotment land was owned by the local council and was used by growers on the basis of the Council’s standard annual allotment tenancy (Brighton and Hove City Council, 2011). In the case of the community allotment, we understood that the tenancy was formally in the name of the manager only, but that the Council’s permission had been obtained for the group to use the site. The allotment sites are managed by Council Allotment Officers, in conjunction with volunteer site representatives, who liaise with the Council on behalf of tenants and growers on the site. Allotment tenants had also formed unincorporated associations on each allotment site to represent tenant interests (Allotment Associations).

The remaining 3 sites were community gardens (CG 1, CG 2, and CG 3), with 2 interviewees coming from CG 1 (CG 1 Manager and CG 1 Volunteer). Each garden was used by a group of c. 10 core volunteers. One garden (CG 3) was on council-owned land, one on land owned by a nonestablished church (CG 1), and one on land owned by the Church of England (CG 2). None of the growers had any formal legal agreement allowing them to use the site, although CG 1 and CG 2 had the permission of the landowner. CG 2 drew on the organizational structures and charitable status of the Church when organizing its activities. The right of the growers to use CG 3 was the subject of an ongoing discussion with the local council. The public was excluded from all the sites except community garden CG 1.

The focus groups added further context to our interviewees’ experiences. Focus Group 1 involved 3 participants from NGOs, 2 of which were registered charitable trusts with purposes connected to sustainability and provision of food to low-income households, respectively, plus a local food partnership (a not-for-profit company) and the City Council’s Food Policy Coordinator. Focus Group 2 involved an allotment holder who also spoke on behalf of an unincorporated voluntary association of allotment holders in the city. There were also 5 participants from 4 community gardens on land owned by the City Council. Two of these were publicly accessible: one in a park, and one on a public street (CG 4 and CG 5). Another was located within a council-owned residential housing estate (CG 6). The growers operated without formal tenancies but with the permission of the Council. On a final site (CG 3—represented in interviews and focus groups), growing took place on a council-owned site, but the terms on which the land was used were disputed. All the community gardens used the comparatively informal structure of an unincorporated association to organize their activities.

In terms of geographical context, most of the community gardens (CGs 1, 2, 4, 5, and 6) were located close to the city center. The allotment sites, along with CG 3, were in urban fringe locations. The individual and community allotments were 250 m² plots. We do not have precise measurements for all of the community gardens, some of which (CG 1 and CG 4) were part of larger urban green spaces, but they were generally of a similar total size to the allotment plots and varied from 100 m² (CG 1) to 1 acre (CG 3). We were not able to collect detailed social or ecological data on our study sites, although this would be an interesting avenue for future research. We were also not able to monitor the exact numbers of humans using each space, which varied over time, and in accordance with pandemic restrictions. Individual allotments were used by the plot holder and his or her family, while the community allotments were each used by several voluntary groups weekly of up to 10 persons/group. The community gardens had core gardening groups of around 10 persons, but this fluctuated, and larger numbers were sometimes involved, for example, in community events. All of our sites were used for some food production, with most including both fruits and vegetables, as well as other plants such as flowers. Farmed animals were not kept on the land, although bees were kept on CG 3. Apart from focus group participant NGO 4, none of our study participants sold the food produced. All of the spaces were described as having social and ecological purposes and benefits that went beyond food production, including promotion of human mental and physical health, biodiversity conservation and education about growing and cooking.

Recorded interview transcripts were manually coded and analyzed thematically, alongside the notes from the focus group discussions. We did not use data analysis software. It must be acknowledged that the interviews and focus groups are limited in scope and scale. They provide only a human perspective on relationships at the sites and do not cover those who were unable to obtain access to a growing site. They include only a small sample of sites in one urban location, which is known for its support for food-growing projects. Cultural, climatic, and political factors combine to mean that the experiences of growers are likely to be different, and perhaps more positive, than those elsewhere in the United Kingdom. We were not in a position to assess the impact of changes over time. The themes emerging during the interviews and focus groups are therefore intended as a lens through which to examine the questions around the role of property in mediating food system transformation set out above.

4. Findings and discussion

4.1. Fostering urban agroecology

We have a lot of fruit trees and orchards and hedgerows and all of these features which are great for biodiversity which now the Allotment Service were saying, "Well you're not growing enough veg; not enough of your land is being used for food production." (CA 3 Volunteer)

Agroecology was identified in Section 2 as being an approach to food production that has potential to unite food, land, and Earth justice. Urban agroecology offers the potential to foster human–nature connection through growing practices that value diversity and respect multi-species coexistence. Yet our case study suggests that these practices are discouraged on some growing sites, with allotment rules being particularly restrictive.

All sites in the case study provided some opportunity to produce food and to forge valuable connections with other people and with the more-than-human world. Property rules, including both formal tenancy terms and their interpretation by local officials, shaped relations between human and nonhuman communities. Formal rights were experienced as both constraining the activities that could happen on site but also as making them possible:

[the allotment tenancy] has shaped our project, obviously, because, you know. We have a particular piece of land. We have neighbours, we have a locked gate. We have rules that govern what can and can't happen there, so that has determined our activity. You know, we're not supposed to sell things [...] So, there are things like that, but to be honest with you, there are many benefits to being based there as well. (Interviewee CA 1 Manager)

Sites provided a way of connecting with local landscapes and habitats, for example, through the creation of a chalk bank with chalk from the local hills and the planting of native fruit trees (CG 1). This site also hosted a community composting scheme, linking human and extra-human metabolisms. Communal spaces, especially those accessible to the public, appeared to offer particularly good opportunities for the sharing of knowledge about wildlife using the site, as well as methods of growing and cooking produce (FG 1).

However, our case study also revealed instances of legal rules limiting the transformative potential of growing sites. These exemplified a pattern described by Tornaghi (2017, p. 788) of alienation from bodily and urban metabolic processes. The most commonly used property models (allotment tenancies) could undermine diversity and flexibility by mandating conventional, productivist practices. Several of our interviewees mentioned requirements under the standard Council allotment lease to keep 75% of the plot in "cultivation" (Brighton and Hove City Council, 2011, 2.1) as presenting a barrier to agroecological practices and planting of fruit trees and hedgerows (CG 2). Growing is itself an activity that both substantiates and transgresses property norms. It is notable that while the cultivation of plants is central to cultural and legal definitions of an allotment, the mobility and vitality of plants (e.g., those classed as "weeds" or "trees") is identified in tenancy terms as a threat to allotment boundaries and identity. Fruit trees do not qualify as "cultivation" unless the soil beneath them is planted with productive crops (Brighton and Hove City Council, 2011, 3.3) and the whole plot must be kept free from "flowering weeds" (Brighton and Hove City Council, 2011, 2.2). Limits are

also placed upon the size of ponds and of polytunnels (Brighton and Hove City Council, 2011, 8.3; 8.6), while animals are not permitted to be kept on the land overnight (Brighton and Hove City Council, 2011, 10.6).

Focus group participants also mentioned negative perceptions of the way that allotment cultivation requirements were sometimes applied, describing a focus on tidiness and a lack of understanding of agroecological cultivation practices by Council Allotment Officers. Tenancy terms—and their restrictive interpretation—directly impacted the biodiversity on sites, while potentially restricting growers' ability to experiment with natural processes at the heart of agroecology, such as options for biological species control or natural fertilizer, which could pose less harm to more-than-human inhabitants. The same rules also had negative consequences for humans. If an allotment-holder is unable to maintain the cultivation standards expected, the tenancy may be terminated. These types of tenancy term arguably normalize conventional growing and contribute to informal understandings about what the “good” allotmentee cares about and does. Their embeddedness in productivist narratives may reduce the likelihood that the interests of the nonhuman will be valued and respected. This has echoes of similar ecologically problematic cultural expectations to maintain a “tidy” farm, described in literature on rural land management (Burton, 2012).

Our findings here reinforce McClintock's (2014) arguments about the contradictory impulses inherent in urban agriculture and the limits to its transformative potential. At the same time, they highlight the value of diversity and flexibility in legal and organizational models for provision of growing space. A broader range of tenancy models, for example, could offer options to groups and individuals with differing needs and abilities, as well as facilitating practices more sensitive to more-than-human interests. Existing literature has argued that the more-than-human may disregard the physical and legal boundaries associated with property but are inevitably affected by them (Braverman, 2013; Cooke et al., 2019, p. 176). While the scale and methods of our study provided little insight into the experiences of nonhuman animals inhabiting urban growing sites, further research could usefully explore how property systems could support the sharing of growing sites with “wild” neighbors (Deckha and Pritchard, 2016).

4.2. *Belonging, care, and responsibility*

When you say, “Yes, come along, anyone's welcome,” it sounds really simple, but then you have to really think—and it's not simple at all. (Interviewee CA 1 Manager)

Our findings suggest that property rights can provide a foundation for belonging and connection, but are actuated by, and give rise to, responsibilities to human and nonhuman cohabitants. The food produced on our study sites was used to build connections with other humans, both site users and surrounding residents: “because we've got some nice apple trees, you know, we can make apple

cake, and then have a Sunday afternoon where we invite the community in for tea and cake” (Interviewee CG 2). Several interviewees mentioned donating food to food banks and other initiatives serving disadvantaged communities (IA 1; CA 1; CG 2). At the same time, gardening activities could be experienced as acts of individual appropriation. Labor was described by an interviewee working on a communal garden (CG 2) as giving rise to a sense of ownership of land and its produce, and growing sites, allotments in particular, were characterized by focus group participants as offering private, individual space, and solace. In several community spaces, some users were felt to be appropriating the space for themselves (e.g., CG 2). This extended on another site to an attempt by a site Committee member to take formal legal control: “he tried to take over the land himself in his own name for a company up there—quite a lot of politics; I think land brings out certain aspects in people” (CG 3 Volunteer).

Belonging is, however, inseparable from responsibility. This was apparent in the relationships between site users. All sites, regardless of legal structure, were described as providing a variety of benefits (health, food, nature- and social connections) during the pandemic. Interviewees on both individual allotments and communally gardened plots mentioned the benefits of social interaction. However, one interviewee (CA 1 Manager) emphasized the vulnerability of those using the space, and the impact of funding cuts to local mental health services, highlighting a traumatic incident in which a vulnerable person using the site had taken her own life. Another (CG 1 Garden User) spoke of the need for adequate supporting infrastructure to assist those with mental and physical health issues to participate in gardening.

This responsibility lens brings into focus the material resources necessary to support property regimes. Our study sites underline that entitlements to access and use growing spaces are of limited value without recognition of obligations of care toward site users. Publicly accessible spaces enabled the formation of connections by marginalized groups who would not otherwise have engaged with growing activities, but, at one city-center site, were perceived by site managers as imposing significant (and sometimes unwelcome) health and safety liabilities. Similarly, even on closed-access sites, the ability of vulnerable groups to access the mental and physical health benefits associated with growing depended on the acceptance of responsibilities by others. Heavily polluted and overcrowded city-center growing spaces presented obstacles to both human and nonhuman communities thriving. This directs attention away from binary relationships between landowners and users and toward a broader consideration of resource allocation.

The need to manage responsibilities and liabilities arising from the use of the site was also an important factor when navigating legal structures for collective activity, for example, when deciding whether to move from an unincorporated association to a corporate structure such as a Charitable Incorporated Organisation (CIO) or a Community Interest Company (CIC) (CG 3). Several interviewees mentioned difficulties with the limitations of allotment

tenancies, which, under s. 22(1) of the Allotments Act 1922, are modeled on the premise of cultivation by a single occupier for the benefit of himself and his family (e.g., CG 3; CA 1 Manager). Focus group participants pointed to the benefits of alternative, community-based, models for those who did not want to bear full responsibility for maintaining and cultivating an allotment plot.

It is especially difficult to establish what our responsibilities are toward the nonhuman inhabitants of growing sites, and what a just distribution of land, food, and opportunities between human and nonhuman communities might look like. The stories told by our interviewees point to the emergence of responsibilities from the fact of their connection with the land in a way that was specific to each individual place. As well as formal responsibilities to maintain the site under, for example, an allotment tenancy, relationships of belonging also gave rise to informal duties to the nonhuman communities using the site:

if we hadn't kept the watering going, the plants would have died. So, there has to be someone keeping an eye on a garden, otherwise it just doesn't work. Topping up the bird feeders, we've got bird feeders all around the garden. Just because of a pandemic, birds don't . . . you can't stop feeding birds, that sort of thing. You can't stop the compost schemes from happening, because compost bins are there and still have to be monitored. (Interviewee CG 1 Garden User)

Similar sentiments were expressed by focus group participants, who spoke of residents “adopting” a plant. Involvement with growing sites connected growers to urban metabolic processes, with a number of focus group participants noting increased sensitivity to issues around waste disposal, recycling, and composting.

These experiences appear to support the idea that property and planning laws that increase access to urban land for food growing could lead to more connected, responsive, and responsible relations with the nonhuman world. However, it must be acknowledged that most food growing will often still involve the exclusion or killing of nonhumans, with connection and care operating instrumentally: certain plants or insects may be protected as beneficial for crops but many others are eliminated (Pitt, 2018). Nonhuman animals can experience a definitional transition from “wildlife” or “biodiversity” to “pest” as they move through the city, with life-threatening implications (Braverman, 2013; Ojalampi and Blomley, 2015). While this appears to be less of a concern with agroecological growing practices (Pitt, 2018), it remains the case that some species are still treated as “pests.” Even a property regime that fosters care and responsibility must still acknowledge and manage these ethical conflicts.

4.3. Security and connecting over time

This section uses the case study to reflect on the limits of the security offered by private property regimes on growing sites, and the link between security of tenure and

broader questions of resource allocation. The term “security” has many resonances and, in property law, is often conceptualized in terms of relationships between private parties (security of tenure). However, as Sonnino explains, in the context of food systems, “security” has a much more prominent public dimension: “the concept of food security today evokes a series of interrelated public health, political, socioeconomic and ecological crises that threaten human survival and, for this reason, require strong public intervention” (Sonnino, 2016, p. 191).

Our empirical findings highlight the importance of forming connections over time, and the failure of available property forms to adequately nourish these long-term relationships. Several interviewees emphasized the ability to connect people and place over time as being crucial to the success of a growing project:

[Name of site] is not a service. It's a community organisation. It's about community, and it's about relationships, and it's about building relationships over time. That's the most therapeutic thing. So, every new person that comes in, and we've had loads and loads in the last 12 months, you know, it brings a whole kaleidoscope [. . .]. And people get the most out of it when they feel like they belong. That's the great thing that a community garden can offer people is a sense of belonging and contribution. That's a relationship over time with the space and with the other people in it. (Interviewee CA 1 Manager)

The spaces provided a way of connecting to past human communities: “I really want to do a series of events that goes from the ancient history of the place [. . .] And through all the different decades of the kind of people that were [at the site]” (Interviewee CG 3).

Long-term agreements were seen as necessary to support ecological communities and knowledge sharing:

if you're planting fruit trees, it's going to take you 15 years to see—it might take a long time, and it's a lot of effort. [. . .] The other thing is I think I've learnt a lot now and I don't have a mechanism really for sharing it. [. . .] all this sort of community knowledge, and there's not really a mechanism for sharing it. (CG 2)

Allotment tenancies were generally perceived to offer some level of long-term security, but this was limited by their formal requirements (e.g., regarding cultivation) and the way that these were applied by site representatives. One focus group participant described losing an allotment tenancy in distressing circumstances following a bereavement. Site representatives were described as having substantial power to enforce or disregard the formal tenancy terms.

Other focus group participants had agreed a long-term lease with the City Council, but, due to the existence of a 1-year break clause allowing the tenancy to be brought

to an end, felt that any long-term security depending on maintaining a positive relationship with the Council. This led to a reluctance to ask the Council for support (financial or otherwise) in case this encouraged the Council to review the existing arrangements. Interview participants described lengthy and ongoing negotiations with the Council around the terms of any agreement to use one site (CG 3). It was difficult for the users to accommodate their community-based decision-making structures, and their use of the site (e.g., the growing of fruit trees) to the allotment tenancy offered by the Council. In line with the findings of St. Clair et al. (2018, p. 554), on a day-to-day basis, our interviewees were able to garden as if their future on the site were assured. However, feelings of security appeared to come from personal relationships with owners and managers rather than from formal legal agreements. The length and complexity of formal tenancy agreements was seen as presenting a significant barrier to those who wished to establish or to maintain new community growing spaces.

As in many urban locations, demand for housing has created pressure on growing sites across Brighton and Hove, particularly in the city center (e.g., Brighton and Hove City Council, 2014; Cheshire, 2014). Lack of available land implies that most opportunities for new urban growing sites will be located in underused, marginal or “meanwhile” spaces, what Scott et al. (2018, p. 187) refer to as “remnant landscapes.” The insecurity experienced by our study sites reflects the broader pattern that the same processes of spatially and temporally uneven urban development (McClintock, 2014, p. 161) that give rise to these spaces can also undermine their long-term stability. Several scholars have argued that “meanwhile” spaces that work with existing development plans may simply reinforce commodified approaches to land, accepting a system within which land is something to be used for whatever commands the highest financial value, and contributing toward gentrification (St. Clair et al., 2018; Glowa and Roman-Alcala, 2021, p. 183).

Our findings reinforce the importance of long-term land tenure options in developing meaningful relationships with human and nonhuman communities sharing the land and to become “enchanted” (Herman, 2015) in ways that motivate understanding and care. On a practical level, longer durations are needed to build soil fertility, establish trees and perennials, and nurture the biodiversity needed to establish healthy crops without relying on artificial inputs. Both human and more-than-human attachments were described by our study participants as becoming richer and deeper over time. In the context of rural land, many scholars (e.g., Howe and Ross, 2019; Calo, 2020) have highlighted the role of land tenure systems in promoting—or undermining—farmers’ capacity to adopt more ecologically sustainable approaches. Our case study supports the view (expressed by, e.g., Glowa and Roman-Alcala, 2021, p. 183) that providing long-term security of tenure can promote the uptake of urban agroecological practices. While some may find opportunities for multispecies connection and care in the spontaneity permitted by informal and short-term spaces (Müüripeal

et al., 2023), we suggest that these cannot meet all needs. An important implication of this argument for long-term connection is that one site with its particular ecological and geographical characteristics and a long cultivation history cannot easily be replaced with another (e.g., Save Craven Vale Allotments Group, 2014).

At the same time, our case study raises questions about the ability of existing private property regimes to support the richer connections with land necessary for food system transformation. Even in our very small sample, insecurity was observed to be embedded within the productivist model. As discussed above, the formal entitlements (often allotment tenancies) that offered long-term security were generally drafted with more conventional forms of growing in mind. We also saw that mental or physical health problems could make it difficult to meet requirements to produce, replicating exclusionary capitalist models of production. These findings align with suggestions in critical geographical scholarship (e.g., McClintock, 2014; Tornaghi and Dehaene, 2020) that a focus on the private rights of individuals or groups may serve only to reinforce liberal private property norms that reify particular types of relationship with land (especially commercial and financial relationships) over others.

In thinking about property’s role in providing security, account must also be taken of the embeddedness of people and places in social, institutional, and material contexts. Personal relationships were very important to our study participants, but the resources that individuals and groups are able to draw on to negotiate insecure tenure may change over time, and social institutions and relationships do not afford equal resilience to all (Fineman, 2008). For example, whereas social relationships may operate to sustain and benefit those belonging to the same social networks as landowners and their representatives (in the United Kingdom, often white people in middle to higher socioeconomic groups), those same social relationships may operate to marginalize and exclude those from other backgrounds, with particularly negative effects on low-income communities and people of color (e.g., St. Clair et al., 2018; Greenaway, 2023; *Land in Our Names*, 2023).

Our findings point toward the need for a richer theoretical account of security of tenure and its role in food system transformation. The challenges faced by the growing sites in our study in securing access to land tend to support Tornaghi’s (2017, p. 782) conclusion that “the residuality and precariousness of the large majority of [urban growing] projects show that they remain an inadequate answer to the failures and injustices of neoliberal urban environments and food markets.” Security of tenure is meaningless without both mechanisms for providing access to land, and social structures that support just allocation of access, a point explored below. Drawing on Roark and Fox O’Mahony’s discussion of housing security during the pandemic (2022), attention is drawn to the role of the state in providing the institutions and resources necessary for secure long-term connection.

Although our case study reinforces the importance of long-term connection to the nonhuman communities on growing sites, further research, using a range of methodologies, is needed to explore how land tenure might impact different beings, from short-lived insects to mammals, birds, and trees. This might well reach quite different conclusions to our still-human-focused study. Existing legal geographical scholarship is beginning to explore nonhuman perspectives on property relations, arguing that spaces may be viewed as marginal and under-used only because the nonhuman has been rendered invisible within property relations (Brown et al., 2019). For example, environments that seem of little value to humans, such as scrub or unused buildings, may better accommodate at least some nonhuman mobilities and preferences. If occupation of, and movement through, physical space is intimately connected to justice (Philippopoulos-Mihalopolous, 2014), Earth justice must require that human security does not come at the expense of nonhuman inhabitants, who themselves have claims to residency in urban landscapes (Donaldson and Kymlicka, 2011, p. 241).

4.4. Publics, communities, and justice

This section looks beyond the “propertied subject” (Van Wagner, 2022) to consider how property shapes relationships within human and more-than-human communities around growing sites, and how it allocates power. It suggests that formal legal regimes are not well aligned with the needs of communities on growing sites, and that there is a risk that responsibilities will be outsourced to site users while ultimate decision-making power remains with the landowner. Discussion is organized around the 3 dilemmas relating to property and community identified by Alexander and Penalver (2010): inclusion and exclusion from the community, the place of the individual within the community and the internal governance of the community (Alexander and Penalver, 2010, pp. xxix–xxxiii). At various points, our interviewees grappled with all of these dilemmas.

4.4.1. Inclusion and exclusion

The dynamics of public and private, closure and openness, inclusion and exclusion varied across the different types of growing space in our small study. Although we were not able to collect detailed socio-economic data on the users of the study sites, it was clear that some human communities continued to be excluded from “community” growing spaces. Formal property rules intersected with geography and social practices in subtle ways to create place-based relations of belonging for some, but to exclude others: “the fact that it’s in the church will put some people off, and it will encourage some people” (Interviewee CG 2). Several of the interviewees described tension between a desire to be open to new gardeners and the need to maintain established communities, practices, and standards (e.g., CA 1, CG 1, CG 2).

Focus group discussion connected poor access to food growing sites with exclusion from food systems generally, and difficulties in accessing sufficient quantity and quality

of food during the pandemic. The hilly topography of Brighton was understood to create difficulties of physical accessibility to many sites, which were described as tending to be marginal land on the edge of the city. Our interviewees also mentioned public transport and caring commitments as forming barriers to access (CA 1 Manager; CA 1 Volunteer). Even where sites were located in deprived parts of the city (e.g., CG 3), focus group participants suggested that this did not mean that the group using the site was representative of local residents. The marginalization of minority ethnic groups was raised by focus group participants and attempts to address this at one site within the city noted.

Only one of the sites focused on in interviews was fully legally and physically accessible to the public, apparently on the basis of a public right of way. The site manager, however, expressed concerns around anti-social behavior, and questioned the site’s status as a “community” garden: “It’s an open space, it’s a green space in the city. Obviously, anyone can walk through it and stuff. We don’t really advertise participation . . .” (CG 1, Manager).

This contrasted with the experience of garden users:

you’ve got on the one hand all the anti-social behaviour and the problems that you get with that, but if you excluded it then it wouldn’t be a community garden. People see that it’s cared for and that it’s loved and that people work in it and I think that people take something from that and they realise that it’s a space that they can use.
(CG 1, Garden user)

The ability to impose physical boundaries (e.g., via locks and fences) was perceived as important by a number of interviewees (e.g., CA 1 Manager). This was in order to keep some people out but also to keep vulnerable participants safe (CA 1 Manager). The exercise of exclusive control over a space was characterized by some interviewees as an important part of establishing a claim to a site: “You have to really take it and give it an identity, to make it something intentional” (Interviewee CG 1 Site Manager).

4.4.2. Individual, community, and public

Several of the study sites included the transfer of management obligations to site users on the basis of informal agreements, or easily-terminable tenancies, while land-ownership, and ultimate power remained with the landowner. Both of the community gardens on church land involved users investing significant resources in growing spaces on the basis of informal permissions to use: “it was a bit of a rough space and the idea was to get the community a more involved in work with that” (CG 1 Garden User). One site had developed following a community purchase of a church hall that was in disrepair (CG 2). The garden’s claim to the space was seen as potentially competing with that of the general public, who felt that the church was in some sense “public property.”

On several council-owned sites, the investment of time and care, and the assumption of responsibility, led to site users expressing a claim to publicly owned land that

potentially competed with that of the formal owners: “if we can really prove to [the local authority] that we’re providing the community a service [...] like maybe there is a way to [...] eliminate [rent] completely” (CA 1 Manager).

[The previous site organising group] always had the principle of saying, “We’re not going to pay rent because this land was given to us to work as a community project and why should a community project then pay money to the Council when we are providing a service that the Council would pay someone else to do?” (CG 3)

The situation of the communally gardened spaces in our study on council or church-owned land adds an interesting dimension to Page’s (2020 part 3.3) enumeration of public ownership as most plausibly understood in terms of a spectrum of public owners. As Blomley (2005) explores, there is hybridity and fluidity in the way that people actually experience property and legal categories such as public/private. The relationship between church, state, and public is complex, particularly when considering nonestablished churches (CG 1), which have some public purposes, but are not public institutions in the sense usually understood by the law of persons. Page (2020 part 3.6) argues that public ownership is best understood in terms of public purpose, rather than as a narrow question of owner-identity; this seems to align better with the way that our interviewees spoke of the public values associated with particular growing sites.

Our findings draw attention to the complex politics of landownership by institutions with a public functions or purposes, such as local authorities, churches, or, indeed, public universities, and, in line with Blomley (2004, p. 633), the frequent presence of overlapping and multiple claims that are erased by dominant property regimes. As Abram and Blandy (2018, p. 183) have argued, land ownership brings with it liabilities and vulnerability. In this respect, the state becomes a “stakeholder,” which may be acting to increase its own resources and resilience through outsourcing of responsibility to others (Roark and Fox O’Mahony, 2022, pp. 798–800). Landowning institutions benefit from the energy and socio-ecological benefits offered by growing spaces, and, to that extent, may be willing to facilitate and encourage gardening activities on their land. On some of our study sites, gardening could be seen as a means of extending private “proprietary concern” (Blomley, 2004) into public spaces, allowing landowners to extend control over places that might otherwise be perceived as open or “unassigned.” Landowners benefited from the ability of growing activities to exert a territorial claim to the land that deterred other potential users, while simultaneously contesting the extent of that claim. This may prove double-edged for gardeners, who can ultimately feel manipulated (St. Clair et al., 2018, p. 555).

4.4.3. Community governance

In addition to the competing claims of owners and users, distribution of power between garden users was

contested. Several interviewees spoke of a tension between conscious efforts to create collaborative governance structures, and the need to ensure effective decision-making: “the ethos is very collaborative, but sometimes the coordination needs to be centralised” (CA 1 Manager). The existence of formal and informal structures for collective decision-making was seen as facilitating the articulation of shared values: “I think that where things fall down is where you don’t have a significant shared vision or shared plan about what you want that space to be” (CG 1 Garden User).

Although English law has introduced new types of legal person (such as the Charitable Incorporated Organisation and the Community Interest Company—see further Farran, 2013, pp. 183–184) in order to facilitate group enterprises with community benefit, there was an evident disconnect between these formal governance structures and the organic and dynamic relations within growing communities. The views expressed by our interviewees, in particular CG 3, here echo Abram and Blandy’s (2018) findings in relation to urban green spaces: legal institutions were not seen to facilitate broad participation in decision-making or to respond adequately to community feelings of belonging.

The perceived failure of property regimes to offer genuine power to communities, and to provide ways of making collective decisions, serves as a reminder that questions of politics, power, and of just distribution of resources are central to food system transformation. While meeting an immediate need, donation of produce to food banks can be argued to reproduce an individualistic and marketized norm within food systems. Communal urban gardening has been situated in critical geographical scholarship as part of a broader neoliberal transformation of the role of the state, responding to pressure on municipal budgets (e.g., Tomaghi, 2017; van der Jagt et al., 2017). Brighton and Hove City Council’s *Open Spaces Strategy* (2017) immediately locates the city’s green spaces within a context of austerity and budget cuts. The Strategy includes a commitment to explore transfer of open space assets via the grant of property rights (leases) or contractual rights (licenses) (Brighton and Hove City Council, 2017, para 4.74.) The shifting of responsibility for public space can be read as both empowerment of non-state actors and imposition of burdens on those actors.

An Earth justice lens also raises complex questions around the inclusion of other species in the process of resource allocation and, in particular, the extent to which nonhumans may be regarded potential *collaborators* in choices about the provision and management of urban growing space, rather than as mere objects of ethical and ecological concern (Cooke et al., 2019, p. 179). Although further exploration of the role of nonhuman actors in the co-constitution of growing spaces is needed, it is important to acknowledge such spaces as products of entangled multi-species relations (Ojalampi and Blomley, 2015, p. 59). The development of mechanisms through which nonhumans can participate in legal and political decision-making processes represents a vital component of justice (Stone, 1972; Donaldson and Kymlicka, 2011; Nussbaum, 2023).

5. Future directions for food system transformation

This part draws on discussion above to identify possible avenues for legal and policy change. The ability of existing private property regimes to challenge capitalist urban logics (Tornaghi and Dehaene, 2020) is arguably limited. While it is beyond the scope of the article to offer a developed theory of property system change (see further Shoemaker, 2019), there is scope for both planning law and private property law to better support food system transformation. The adoption of a wider range of tenancy models designed to better accommodate community growing and agroecological growing practices could address some of the restrictive cultivation requirements encountered by our interviewees. Such tenancy models could be developed at a local or at a national level and implemented on a voluntary basis.

Our study further highlights the insecurities embedded in the terms of allotment tenancies. An obvious solution here would be for tenancies for public allotment land to be granted for a minimum term (ideally of 5 years or more) in line with campaigns by farmers for longer agricultural business tenancies (Brown, 2023). Tenancies could be terminable within this period only for limited reasons in the public interest, aligning with the reforms proposed for the private residential sector in England (Renters [Reform] Bill 2023 [HC Bill 308 2022–23] clause 2). Such a change could again be implemented on a voluntary basis by local authorities and would involve local authority landowners giving up the right to arbitrary termination of allotment leases recognized in *Armsby and Price v Pointalls Allotments Limited* [2022] EWHC 2803 (Ch). Although some level of statutory protection against conversion to other land uses is currently provided to council-owned allotment sites, the non-fungible character of the land relationships that we observed merits consideration in allotment law and reinforces arguments for a restrictive approach when applications are made to sell allotment land under s. 8 Allotments Act 1925.

None of the community growing sites in our study had secure, long-term property rights. One reason for this may be that the statutory construction of the “allotment” as a space for individual cultivation (s. 22(1) Allotments Act 1922) presents a barrier to the creation of long-term property rights in favor of groups on allotment land; it is also difficult to show that a fluctuating group of persons have the “exclusive possession” required for a formal tenancy (see Farran, 2013, p. 183).

In the absence of statutory reform, attention is needed to alternative means of making land available for community growing on a long-term basis. Private property regimes require here the support of the public land-use planning system, and its ability to manage conflict with other pressing social needs, including affordable social housing. One option might be the creation of a new legal entitlement to use public land for growing purposes (as suggested by Incredible Edible Community Interest Company, 2022). Although a process for community asset transfer exists in England (see the Local Government Act 1972 General Disposal Consent [2003]), local and national

policies are needed that would support the use of this process to create and protect growing sites (e.g., Shropshire Council, 2023). Diversity in approaches is important here. Despite apparently strong legislative focus on food-growing sites in Part 9 of the Community Empowerment (Scotland) Act 2015, including a statutory requirement to provide allotments (s. 112), a recent review found that access to land remained a serious issue and recommended that the provisions of Part 9 be expanded beyond allotments (Scottish Parliament, 2022, paras 89–111).

Greater use could be made of Community Land Trusts (CLTs) as a vehicle for the provision of long-term urban growing spaces that are responsive to local community needs (Yuen, 2014), which could potentially also accommodate the nonhuman. CLTs provide not only a legal mechanism for holding land long-term in the community interest (s. 79 Housing and Regeneration Act 2008) but a participatory organizational structure to facilitate the acquisition of land for community-led purposes (Bunce, 2020). The comparative efficacy of CLTs for housing provision in England and Wales has been attributed to a network of governmental and nongovernmental support strategies (Bunce, 2020). They could be exploited further for urban growing sites, albeit with the risk that responsibilities will be transferred to communities not equipped to bear them.

In terms of justice, attention is needed to the distribution of opportunities to use and benefit from urban spaces among human and nonhuman communities. It was argued above that secure property rights are contingent on acceptance of responsibilities by the public institutions, landowners, and growers. Outside of property law, a range of other frameworks and policies (e.g., those reducing traffic and pollution and providing public transport, health, social, and childcare) can also create the necessary conditions for growing activities to flourish. Better provision of other resources (advice, support, and finance) by local authorities for those organizing community growing spaces would also help growers to navigate legal systems. Existing planning policies in Brighton and Hove (Brighton and Hove City Council, 2020) encourage the private-sector provision of food growing spaces in new developments. While our research focused on sites with some element of shared ownership or management, it suggests that further careful thought is needed regarding the long-term allocation of resources and responsibilities to support any new growing initiative. Otherwise, there is a risk that existing patterns of inequality and exclusion will be reproduced, and potential benefits left unrealized.

While more diverse and flexible property structures may go some way to facilitate the care needed by more-than-human communities, more radical options for change include multi-species ownership or management arrangements. These might involve the formulation of property structures that enable land rights to be held jointly between human and nonhuman animals (Brown et al., 2019, p. 61) or even solely by the latter (Bradshaw, 2018). Additionally, commons (or “commoning”) has been suggested as a means of opening up land relations to multispecies collaboration (e.g., Cooke et al., 2019). There

is no simple template for what this might look like: “commons” signifies a form of collective property entitlement but also a set of commoning practices and acting together. In the context of urban growing, commoning would arguably require a wider range of opportunities for new multispecies communities to form, including more material and legal room for the unruly and unbounded (Brown et al., 2019, p. 62). This unruliness also applies to humans, some of whom may benefit from informal, as well as formal, opportunities to take part in growing (Müüripeal et al., 2023).

On a more formal level, revised tenancy models could experiment with governance structures that provide representation of nonhuman inhabitants’ interests in shared urban space (Donaldson and Kymlicka, 2011, p. 244), for example, through designated site officers. Again, it is necessary to reflect on who our property systems allocate resources to, and how the creation of more, and more diverse, growing spaces might serve multiple forms of justice.

6. Conclusions

Land-use and property rules limited the transformative potential of the growing sites in our study in some obvious ways. Property regimes sustained a largely productivist, human-centric vision of urban agriculture that limited what could be grown, and how, and did not always allocate opportunities to participate justly between human and nonhuman communities. Communally gardened sites appeared particularly badly aligned with available legal models, but apparently secure individual property rights (e.g., allotment tenancies) were also experienced as surprisingly precarious. Our discussion diverts attention from individual entitlements to allocation of responsibilities and opportunities for human and interspecies coexistence and collaboration. Property rules are

only one element of a broader set of social systems and institutions that are needed to create conditions for respectful connection.

Our article contributes a set of conceptual resources for understanding how property might support transformation. Moving beyond property rights as a basis for extraction from land, we have argued that growing activities generate, and must be accompanied by, responsibilities. In our analysis, security of tenure has a multidimensional and relational character that is not captured fully by bilateral legal entitlements. We have highlighted the benefits of long-term property arrangements for developing connection and knowledge sharing, but also the importance of material resources and social relationships in making formal legal rights effective. In terms of justice, and allocation of decision-making power, we found a tension between the feelings of belonging and empowerment that growing sites generated and the formal power retained by institutional landowners. Further consideration is needed of how both human and nonhuman communities might be better included in decision-making.

We have also pointed to a range of practical legal strategies for negotiating collaboration and shared use of urban growing spaces. Legal change at both local (innovative tenancy terms and planning policies) and national (reform of allotment law, the introduction of new mechanisms for making land available for community growing) level could help to realize the social and ecological potential of growing initiatives. Special attention is needed to the experiences of nonhumans, and to how responsibilities to, and rights to participate of, other species might best be recognized. Diversity of approaches is crucial here as is flexibility to experiment and learn. While experiences on growing sites often appeared shaped by a narrow range of property stories, they may also germinate new narratives of belonging and care.

Appendix 1. Interview and Focus Group Participants

Interview Participants

Site	Interviewees	Landowner	Individual or Collective Plots?	Tenure Type/Length	Public Access	Formal Legal/Organizational Structures?
CA 1 Community Allotment	1 × manager 1 × volunteer	City Council	Collective gardening on individual allotment plot	Lease—annual allotment tenancy. Termination 12 months’ notice or 1 month if in breach of tenancy conditions.	No	Informal—volunteer group. Manager holds formal tenancy. Allotment site has site representatives who liaise with City Council Allotment Service on behalf of tenants. Site also has a volunteer-run Allotment Association (unincorporated association).
IA 1 Individual Allotment	1 × plot holder	City Council	Individual	Lease—annual allotment tenancy.	No	Allotment site has site representatives who liaise with City Council Allotment Service on behalf of tenants. Site also has a volunteer-run Allotment Association (unincorporated association).

(continued)

Appendix 1. (continued)

Site	Interviewees	Landowner	Individual or Collective Plots?	Tenure Type/Length	Public Access	Formal Legal/Organizational Structures?
IA 2 Individual Allotment	1 × plot holder	City Council	Individual	Lease—annual allotment tenancy.	No	Allotment site has site representatives who liaise with City Council Allotment Service on behalf of tenants. Site also has a volunteer-run Allotment Association (unincorporated association).
CG 1 Community Garden (Church land)	1 × site manager 1 × garden user	Church	Collective	Lease—annual allotment tenancy.	Yes	Informal—volunteer group.
CG 2 Community Garden	1 × volunteer coordinator	Church	Collective	N/A	No	Informal—volunteer group. Draws on church organizational structure/charitable status.
CG 3 Community Garden	1 × volunteer	Council	Collective	Disputed—no formal tenancy.	No	Unincorporated association.

Focus Group Participants

Focus Group 1

Organization/Role	Landowner	Tenure Type/Length	Formal Legal/Organizational Structures?
NGO 1 Voluntary Association representing allotment holders. Also allotment plot-holder.	N/A	N/A	Unincorporated association.
CG 3 Community Garden (also represented in interviews). 2 attendees.	City Council	Disputed—no formal tenancy.	Unincorporated association.
CG 4 Community Garden	City Council	License from landowner.	Unincorporated association.
CG 5 Community Garden	City Council	License from landowner.	Volunteer group.
CG 6 Community Garden	City Council	License to occupy.	Unincorporated association.

Focus Group 2

Organization/Role	Landowner	Tenure Type/Length	Formal Legal/Organizational Structures?
NGO 2 Campaigns on food policy (health, food waste, food growing)	N/A	N/A	Private limited company run on a not-for-profit basis.
NGO 3 Charity growing food for food banks on community allotment plots	City Council	Lease—annual allotment tenancy.	Registered charity.
NGO 4 Charity that promotes greener lifestyles and sustainable development	City Council	Lease—peppercorn rent.	Registered charitable trust.
City Council—Food Policy Coordinator	N/A	N/A	Local authority.

Data accessibility statement

The mapping data generated in the first phase of the research is available on request from the authors. The interview transcripts and focus group notes will not be made publicly available for reasons of participant confidentiality.

Acknowledgments

The authors would like to thank Samantha Orenstein, James Jackson, Chloe Anthony, and Clare Ferguson for their assistance with the research for the article, Louise Dutnell for help with copy editing, and the peer reviewers and journal editors for their comments on the article. All errors are the authors' own.

Funding

The authors are grateful for funding for the initial stages of the research from the University of Sussex/UKRI Strategic Priorities Fund: Evidence-based Policy making and from the University of Sussex/Higher Education Innovation Fund (Research England) COVID Response.

Competing interests

The authors have no competing interests.

Author contributions

Contributed to conception and design: BH, HH.

Contributed to acquisition of data: BH, HH.

Contributed to analysis and interpretation of data: BH, HH.

Drafted and/or revised the article: BH, HH.

Approved the submitted version for publication: BH, HH.

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How to cite this article: Holligan, B, Howe, H. 2024. How property relations shape experiences and transformative potential of urban growing spaces: Connecting land, food, and Earth justice perspectives. *Elementa: Science of the Anthropocene* 12(1). DOI: <https://doi.org/10.1525/elementa.2023.00082>

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Knowledge Domain: Sustainability Transitions

Part of an Elementa Special Feature: Land and Sustainable Food Transformations

Published: June 26, 2024 **Accepted:** April 25, 2024 **Submitted:** June 02, 2023

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