Growing Together: Community Coalescence and the Social Dimensions of Urban Sustainability

Charlotte Glennie

Department of Sociology, University of California—Davis, Davis, CA 95616, USA; cfglennie@ucdavis.edu

check for
updates

Abstract: Urban sustainability is most often measured using a series of social, economic, and ecological indicators. Assessment methods for urban sustainability typically factor in the ecological dimensions of greenspace, such as biodiversity maintenance, stormwater management, and/or air quality—yet indicator schemas that consider only the ecological dimensions largely overlook the social benefits of some types of urban greenspace, particularly community gardens and orchards. This article makes the case that the process of community formation and strengthening that occurs in shared growing spaces is an important element of urban sustainability in its own right. Based on 55 interviews of community garden advocates, policy-makers, and development professionals involved in urban agriculture planning, this article traces the widespread understanding among practitioners that shared growing spaces strengthen social as well as environmental sustainability, though the social benefits are often difficult to measure. The latter concern was most frequently expressed by urban agriculture advocates who, after involvement in the political process, perceived the need for such metrics in order to communicate persuasively with planners and policy makers. The social values of shared growing spaces, at once self-evident to garden advocates and difficult for them to demonstrate with quantitative data, may be theorized by drawing on insights from sociology: A truly sustainable city requires community coalescence among diverse citizens, and such community is fostered particularly well in shared growing spaces.

Keywords: sustainability assessment; social sustainability; urban agriculture; community gardens; urban ecology; community cohesion; social cohesion; social capital; collective efficacy

1. Introduction

An online image search for "sustainable cities" or "urban sustainability" yields depictions with a consistent mix of buildings, transit pathways, and greenery. When these images contain people, they are usually shown on the transit pathways; rarely do they occupy any greenspaces. Collectively, these images reflect a wider pattern in sustainable urban design, assessment, and planning: The value of greenspaces for ecological sustainability is widely understood, yet there is less attention paid to the compounding benefits of greenspaces that invite human use. This article aims to shed more light on the social benefits of urban greenspace, bringing together findings from existing research, sociological theory, and interview data about the community benefits of shared growing spaces to encourage a more nuanced treatment of greenspace in urban sustainability assessments and planning.

Systems to measure sustainability most commonly use the "three pillars" framework of environment, economy, and society, and most calculate sustainability scores with a series of indicators or ratings [1,2]. While scholars have suggested improving the three-pillars model with additional domains such as culture or governance [3,4], and others question the validity of this model altogether [5], the three pillars still constitute the most prevalent framework for selecting urban sustainability indicators [2]. Yet since indicator-based assessment methods silo different processes and factors that

are interconnected in complex ways, they risk drawing decision-makers' attention to policies that address specific indicators rather than encouraging a holistic approach to sustainability [6–9]. In other words, frameworks that treat ecological, economic, and social sustainability as separate domains are likely to elevate concerns and solutions at the center of each domain, while obscuring those at the boundaries between them.

Social scientists across disciplines have grappled with the implications of how socio-natural systems are conceptualized. For example, ecological economists model social and economic systems as nested within the natural system, rather than as partially overlapping domains; they contend that this approach highlights the critical importance of maintaining a manageable economic scale, which cannot be resolved simply by pricing ecosystem services and internalizing environmental costs [10–13]. Similarly, environmental sociologists have long argued that theoretical models that treat the social world as separate from and outside of the natural world will consistently overlook the ways in which a finite resource base constrains social phenomena [14–16]. Analyzing the history of the environmental reform and environmental justice movements, sociologists and historians demonstrate how perspectives treating the natural world as distinct from the human world have yielded different policy priorities than conceptualizations of the environment as the places where humans "live, work, and play" [17,18]. The choice of how to conceptualize nature is equally consequential for urban sustainability practitioners.

The example of urban greenspace illustrates this point. Investing in urban greenspace is a common strategy to improve ecosystem services and indicators of environmental sustainability, but research shows that greenspaces can have widely varying social and economic effects along with their ecological impacts. An assessment system that considers greenspace only through the lens of ecological indicators, or that treats all greenspaces identically, will likely undervalue those types of greenspace that contribute to the economic and especially the social sustainability of a city. Demonstrating the tendency to treat urban greenspace only as a solution to problems of ecological sustainability, major urban sustainability policies in the United States put far less emphasis on multifunctional greenspaces such as parks, community gardens, and other sites that nurture both vegetation and human use relative to their emphasis on green infrastructure such as bioswales and green roofs [19]. Similarly, researchers have found that European cities are using sustainability indicators that are most effective regarding the physical dimensions of greenspace; while these cities do address the social aspects of greenspace with some indicators, measures of urban gardening activity are found to be highly efficient for sustainability analysis, relatively easy to implement in most cases, and yet conspicuously absent from existing frameworks [20]. In order for urban sustainability assessment and planning to incorporate greenspace as effectively as possible [21], it is important to differentiate between types of greenspace, to understand the kinds of benefits that each type is likely to provide, and to develop planning strategies with a comprehensive framework that attends to this variation.

To what extent can actively used urban greenspaces contribute to social sustainability? The remainder of the paper focuses on the case of shared growing spaces, namely community gardens and orchards—a highly multifunctional type of urban greenspace whose community-building potential is especially valuable for urban social sustainability. Drawing from Dempsey et al.'s conceptualization of urban social sustainability as a combination of social equity and the sustainability of community, this analysis emphasizes shared growing spaces' contribution to the sustainability of community, which is "concerned with the continued viability, health and functioning of 'society' itself as a collective entity" [22] (p. 297). Following a summary of the research regarding economic and social benefits from different types of urban greenspace, key sociological concepts that inform urban social sustainability are discussed: organic solidarity, social capital, and collective efficacy. The article then provides some background on the data and methods that have yielded evidence of how these sociological concepts manifest in shared growing spaces. The results are presented with a conceptualization of "community coalescence," a process that benefits urban sustainability by promoting organic solidary, social capital, and collective efficacy, and evidence of how widely this process is observed in shared

growing spaces. Finally, possible approaches to quantifying community coalescence are discussed along with the potential for urban sustainability assessment to better analyze the value of different greenspaces, community institutions, and other city attributes by employing less common assessment strategies that are integrative, framework-driven, participatory, or mixed-methods.

1.1. Economic and Social Benefits of Urban Greenspace

The environmental value of urban greenspace is widely understood, but the social and economic impacts have only recently begun to gain attention [23]. In terms of economic impact, research has demonstrated that new parks and community gardens have a positive effect on surrounding property values [24–27]. Many local officials now realize that signaling urban sustainability can help attract employers and high-income residents, and greenspace enhancements are being used as one such signal [28,29]. However, economic growth through greenspace enhancement can have a social downside: In many contexts, the outcome is "green gentrification" that displaces lower-income residents [30–35]. The effects of greenspace on property values and gentrification are complex but largely quantitative; they can generally be measured as part of broader metrics for economic growth, income inequality, and displacement.

More challenging to quantify are the social impacts of urban greenspace, impacts that vary widely depending on the type of greenspace, its location, and how people use it. The health effects of greenspace are among its most-studied social impacts, and bulk of findings suggest that urban greenspace is good for public health [36]. Urban residents living near greenspace have been found to have lower mortality rates [37–40], improved mood and physical activity [40,41], and better self-reported health [42–45] compared to those living in areas with less vegetation. Especially clear are the health benefits for the elderly [37,42,43] and residents of low-income communities [42,44,46]. One study of more than 10,000 residents of the Netherlands found that, independent of urbanity, the percentage of green cover in a person's neighborhood is associated with fewer symptoms of illness, better perceived general health, and better mental health [42]. Additionally, the presence of a garden nearby is associated with fewer symptoms of illness [42] and lower self-reported stress [47,48]. Parks, gardens, playfields, trails, and other greenspaces conducive to recreation have been found to benefit resident health as residents engage in more physical activity [23,49]. Indeed, making use of local greenspaces appears to lower stress levels [47] and relieve mental fatigue [50]—though some health benefits from greenspace can be conferred even in the absence of physical activity [51,52]. Generally, across numerous studies and a range of outcome measures, greenspace seems to benefit our health.

Recent findings suggest that greenspace may have other social benefits, as well. More vegetation in residential areas is associated with lower levels of violence and crime [40,53,54]. When vacant, untended lots are improved through a greening intervention, crime rates nearby tend to fall [55,56], though the types of crime reduced may vary depending on the type of greenspace created [57,58]. Public health and crime rates may improve with additional greenery in part because greenspace improves people's moods [40] and their perceptions of order in the neighborhood [56]. Another possible mechanism for these effects is that greenspaces encourage urban residents to go outside [56] and to interact more with their neighbors [59], building more cohesive community.

The concept of community is somewhat difficult to measure, and studies on the relationship between urban greenspace and community-building are limited [41]. However, this limited research does suggest that greenery may help to encourage social interaction. In public housing complexes in Chicago, the presence of trees next to buildings was associated with more people gathering [60], and vegetation increased both the use of common spaces and the formation of social ties [61]. For older adults, use of shared greenspaces was found to increase the strength of social ties as well as self-reported sense of community [62]. In a Los Angeles study, the number of nearby parks was found to positively correlate with residents' collective efficacy, or sense of trust in neighbors and confidence in the community's ability to organize group behavior [63]. These studies suggest that greenspace can play an

important role in the social connections among neighborhood residents, which may also help explain why greenspace is so beneficial for health and crime outcomes.

1.2. Urban Social Sustainability through the Lens of Sociology

Understanding the organization of social life is at the root of sociological inquiry. As industrial urbanization began to accelerate and cities grew larger, early sociologist Emile Durkheim questioned how the new dense and more diverse human systems were holding together, developing the concept of "organic solidarity" to distinguish the nature of urban social cohesion from that of smaller, more traditional communities [64]. Whereas a village or tribe is cohesive because of the homogeneity among members, Durkheim posited that urban populations are held together across demographic diversity because of "organic solidarity," the social cohesion arising from the division of labor and interdependence among residents [64]. Most research today uses the term "social cohesion" to describe solidarity and integration among neighborhood residents [22,65–67], however, the term "organic solidarity" is uniquely useful for the present discussion. Social cohesion can be assessed in the context of any social group, whereas organic solidarity is specific to the context of urbanization and addresses the need for maintaining large, diverse human populations in close proximity. Urban social sustainability hinges on the local community's ability to "sustain and reproduce itself at an acceptable level of functioning" [22] (p. 293), and organic solidarity speaks directly to this need. Community research supports Durkheim's insight that interdependence is key to organic solidarity, finding that interdependence among neighbors is a leading factor in their sense of community [68]. Applying the notion of organic solidarity to the context of urban greenspace, we can begin to distinguish between shared growing spaces and other forms of urban greenery: While the biophysical activity of plants in any greenspace benefits environmental sustainability and human health, greenspaces where residents are actively and collectively involved in tending plants may also improve social sustainability by fostering organic solidarity among participants.

An important and much-studied element of organic solidarity and social cohesion is social capital [65,66]. Bourdieu first defined social capital as the potential for accessing resources through one's social network [69]. Subsequent scholars have conceptualized social capital as an aspect of communities themselves, derived from elements of social organization—particularly network ties and norms of trust—that facilitate collective action [70,71]. High levels of social capital contribute to social sustainability in many ways. First, social life is more stable when people feel connected to one another, resources can flow to where they are needed, and groups can accomplish shared goals—in other words, when there is a strong, functional social network. Furthermore, social capital within a community can increase the return on public investments in infrastructure and education, because it marshals community members' "voluntary efforts" [72] (p. 547). This is an important consideration for the social sustainability of cities, as limited public resources must be used efficiently in order to achieve complex sustainability goals. Social capital has been given higher priority in participatory urban sustainability visioning as compared with expert-led sustainability planning, and the higher emphasis on social capital can simultaneously yield a plan with better outcomes for environmental sustainability [73]. Finally, social capital matters for urban sustainability in terms of its potential for spreading environmental knowledge and practices [74], as strong social networks within urban communities may increase environmentally sustainable behaviors, public support for sustainable policies, and the ability of the community to effectively govern shared resources [75].

Scholars have conceptualized several dimensions of social capital, including a group's ability to coordinate and regulate behavior among group members [70,76]. The perceived potential for effecting social control is also termed "collective efficacy" [63,76,77]. When collective efficacy in a neighborhood is high, residents trust each other and have confidence that they can accomplish goals together. This strengthens urban sustainability because residents are more likely to participate in and support desired changes for their communities, such as behavioral changes, infrastructure investments, or regulatory policies, when they have stronger collective efficacy. Climate change research has

shown that individuals are more likely to take action, such as climate-mitigating behaviors and social-movement participation, when they have a higher sense of the action's efficacy [78–80]. As noted earlier, collective efficacy among neighborhood residents appears to increase with the number of parks nearby [63]. Furthermore, succeeding with any neighborhood initiative, such as installing a playground or maintaining a community garden, can build collective efficacy by extending residents' event horizons and increasing their trust, abilities, and confidence.

Organic solidarity, social capital, and collective efficacy can delineate the role of social factors in maintaining healthy cities; they are useful concepts for evaluating and improving urban social sustainability assessment and planning tools. With regard to urban greenspace, these sociological concepts help explain why varied types of greenspace have different effects and also point to the underappreciated potential of multifunctional sites such as shared growing spaces. This article draws on interview data about the impacts of urban agriculture in US cities to highlight the important contributions that shared growing spaces can make to a city's social sustainability. Community gardens and orchards support a process of "community coalescence" by attracting diverse residents to a common greenspace, increasing the number and strength of ties between neighbors, and fostering goodwill across demographic differences as people work alongside one another to accomplish shared goals. The case of shared growing spaces illustrates how urban sustainability assessment can be made more effective both by attending to the socially significant variation within the category of greenspace and by encouraging consideration of more socially valuable greenspaces in the planning process.

2. Materials and Methods

As part of a larger project that examines local efforts to secure urban land for community gardens [81,82], I interviewed 55 community garden program managers, advocates, policy-makers, and development professionals involved in urban agriculture planning in three US cities. Conducted between 2016 and 2019, these interviews centered around local efforts to develop and maintain community gardens and orchards, as well as efforts to preserve these spaces amidst pressure for competing land uses.

Three cities were chosen as study sites based on their long-running citywide gardening programs and their histories of local policy struggles that have been somewhat successful in legitimizing urban agriculture as a land use. Interview selection was a purposive sample of key informants who had intimate knowledge of the relevant political and organizational dynamics. Following background research on the case cities, individuals who played significant roles in the garden programs and local policy struggles in each city were contacted. Interview participants included 19 past and present garden and orchard program managers, 12 pro-garden policy advocates, 11 city employees and elected officials, 7 community organizers, and 6 urban planning and development professionals. Interviews were semi-structured, with open-ended questions and follow-up probes of the aspects of participants' answers most relevant to the research project. Semi-structured interviews allow participants wide latitude in how they respond to questions, eliciting their own narratives and understandings rather than measuring only pre-determined variables [83]. The interview script began with background questions on how participants became involved with urban agriculture, then sought their narratives about the pivotal events in which they were involved (such as the development of a garden program, a campaign to protect threatened gardens, a land-use policy change, or a budget vote). The interview script closed with general questions about the city itself, including questions that asked respondents to reflect on how urban agriculture had impacted their city and what they thought the value of community gardens was for their neighborhood or city. Particularly in response to these closing questions, interviewees remarked about the community-building process that tends to occur in shared growing spaces.

All interviews were recorded, transcribed by the researcher, and coded thematically using NVivo qualitative analysis software. In a deductive approach to the project's broader research questions, coding began with a list of themes developed from the literature on urban agriculture. In the

category encompassing the social benefits of community gardens and orchards, initial codes were for aesthetics, civic engagement, cultural continuity, economic development, education, food provision, recreation, and self-improvement. (The code for aesthetics was defined as the attractiveness or visual appeal of a space, design, or landscape [29,84,85]. The code for civic engagement was used for any reference to local residents more engaged in some aspect of policy, planning, government, or governance because of shared growing spaces [86–90]. The code for cultural continuity was used for any description of gardens as a cultural resource, connection to one's heritage, or strategy for preserving a way of life [88,91,92]. The code for economic development was defined as a mention of property values, business activity, or other economic indicators in the neighborhoods around shared growing spaces [26,28,93–95]. The code for education was defined as educational activities or learning taking place at a garden site [88,89,96,97]. The code for food provision was defined as the function of growing spaces either feeding gardeners and neighborhood residents or producing food to be distributed through food banks [29,87,94,98,99]. The code for recreation was used for any description of gardening as a recreational activity or reference to other outdoor recreational activities occurring around shared growing spaces [89,90,99], and the code for self-improvement was defined as any reference to how gardening helps people provide for themselves, gain skills, or develop character [89,96,100].) As the research progressed, new questions arose as emergent themes in the interviews called for the inductive category development used in conventional content analysis [101,102]. Codes added to the social benefits category included community, diversity, security, senior citizens, and youth engagement. (The code for community was defined as references to community-building, relationships, or friendships formed in shared growing spaces. The code for diversity was used for references to demographic diversity among garden participants, especially diversity in race, ethnicity, age, social class, religion, and ability. The code for security was defined as any reference to crime, violence, or physical safety in and around shared growing sites. The code for senior citizens was used for any reference to people over 65 or the elders of a community. The code for youth engagement was defined as the involvement of children or teenagers in gardening or other activities at a shared growing site.) The codebook was expanded when it was clear that interviewees frequently described these themes as important reasons for participating in and/or advocating for urban agriculture projects. The present study is based on extracting the transcript excerpts coded under "community" and triangulating across the 55 interviews [103] to analyze the patterns in how the theme of community was discussed. Transcript excerpts are included in Appendix A, and the results of this content analysis are described below.

3. Results

Of all the social benefits that interviewees described experiencing or observing in urban community gardens and orchards, community was the most common. Through analysis of the "community" code, the concept of "community coalescence" was developed to describe a widely understood benefit of shared growing spaces that, despite its manifest importance to so many practitioners, is often difficult to measure and therefore challenging to communicate effectively to decision-makers.

3.1. Community Coalescence

Community coalescence involves a process of residents in a neighborhood getting to know one another through repeated contact, especially around a shared activity or space, which increases trust, collective efficacy, and the density of social ties in the neighborhood. Community coalescence increases a community's social capital and residents' feelings of organic solidarity and collective efficacy, as people establish ties with and build trust in neighbors who are different from them in many ways yet share a goal or interest that they can work on together. Community coalescence supports social sustainability, augmenting some or all of the five elements of the "sustainability of community" outlined by Dempsey et al. (i.e., social interaction and social networks among community members, stability of the community's membership over time, collective institutions in which members participate, trust among

members and a sense of security, and positive identification with the community) [22]. The process of community coalescence and its outcomes are also closely related to both community cohesion [104] and neighborhood social cohesion [66,105], as community coalescence brings together the trust and shared identity in the concept of neighborhood social cohesion with the focus on breaking down demographic barriers central to the concept of community cohesion. A variety of spaces or activities can serve as a basis for community coalescence, including—and perhaps especially—shared growing spaces.

Community garden program managers, food activists, community-minded planners, and other supporters of urban agriculture widely observe that community coalescence occurs in shared growing spaces. Although community and other social benefits were not the focus of my interviews with these individuals, 76% of interviewees—42 out of 55—indicated that community gardens and orchards can initiate a process of community coalescence. They described the dimensions of community coalescence in various ways, such as "community-building," "relationships," "bringing people together," or with specific anecdotes that illustrate the ways in which shared growing spaces foster and strengthen community among neighborhood residents. Below, evidence for community coalescence is provided in terms of the increased organic solidarity, social capital, and collective efficacy that my interviewees observed.

3.1.1. Organic Solidarity

Well before the widespread attention to urban sustainability, officials in many cities were already conscious of the need to foster social solidarity among diverse residents, especially in the US case due to the painful and costly history of racial conflict. Following riots against police brutality in the 1960s, community gardens proliferated in Black and Brown neighborhoods in many US cities [106]. In one interview, a longtime public official tasked with building community in a rapidly diversifying city explained why he had strongly supported community garden initiatives throughout his career:

> Community's all about building relationships. And you build relationships by bumping into people over and over, the same people over and over. And so to build community, you need bumping places . . . And community gardens are just a key bumping place . . . All the communities that are defined by identity or by interest are one kind of people. And it's in neighborhoods that they get that variety of people, and I think the gardens are one place where you really do get that variety. Places of worship tend to be pretty segregated. Even schools, even if they're integrated, tend to be, you know, you've got your special education programs over here and you've got your gifted programs over here.

Compared to other neighborhood institutions like churches and schools, this city official observed, community gardens do more to bring people together across demographic differences, which is critical for building organic solidarity and keeping cities functional. Other interviewees echoed this understanding, noting how shared growing spaces introduce people who might not otherwise become connected. For example, another longtime urban planner who worked in multiple cities over his career stated, "I think it's one of the few things that people of different races, economic groups, religions, backgrounds can come together [around]."

In addition to bridging demographic differences, interviewees explained that shared growing spaces can help counteract a variety of socially isolating tendencies in modern cities. A former elected official explained that a gardening program in his city "has brought people together who would otherwise be in an apartment and never see anybody other than walk down the hallway or going to their car." Similarly, a garden program manager in another city explained the value of community gardens to combat hyper-individualization:

> I think technology is a really big influence these days . . . and people just moving around a lot has caused communities to be weakened and people to be much more individualized. American culture has this push for individualization, and I think we take it too far in a lot of ways. And we forget the value of working together with people that are different than us,

but they're in the community and we should get along with them. So I think that's a good [benefit].

Organic solidarity grows among people who work together, as they come to see the value in the diverse contributions that different people can make. One garden manager in a highly segregated city explained that she had deliberately assigned garden plots so that people with different racial and ethnic backgrounds would be near each other. As this manager observed,

When you diversify the people, you diversify the community. And so there used to be a time where you could come into this garden, and you can look at a plot and you could identify the ethnicity of that gardener simply by what they were planting. But you can't do that anymore, because we've exchanged seeds. We've exchanged knowledge. We've exchanged agriculture. We've exchanged recipes.

Gardening is an interest that cuts across demographic lines—and because it requires ongoing labor in a particular place, it is an activity that creates opportunities for both interaction and interdependence.

Even in gardens where all the plots are tended individually, gardeners interact and share ideas; moreover, collective work is inevitably required to keep up the overall site, maintain pathways between gardens, and address issues that may arise such as equipment needs, vandalism, or theft. Beyond these ever-present collaborative needs, some interviewees also observed growing interdependence among gardeners who would temporarily take over watering and harvesting each other's plots in the event of an illness, injury, or vacation. Because the work required for a garden encourages interaction and interdependence, organic solidarity is likely to be supported more by shared growing spaces than by other types of urban greenspaces.

3.1.2. Social Capital

The shared work required to maintain a garden creates opportunities for interdependence among gardeners, and this work can also form the basis of new social ties within the community. Some people become part of a gardening group through an existing friend or family member, and others join a shared growing space due to their interest in gardening or proximity to the site; regardless of how they arrive, participants in shared growing spaces tend to make new social connections once they are involved. The value of these social connections is not lost on those who observe them up close.

After coming into contact with many community gardeners while working on land-use policy, a community organizer noted how the gardens appeared to foster social capital among participants: "People who are involved seem to be getting connected in really important ways, and that's half of it, you know, it's like making connections, knowing who to contact to learn more about this, or get this or that resource." Community gardens, like other neighborhood-scale institutions, can serve as important hubs within local social networks through which information and resources flow in helpful ways [107].

In line with earlier findings that greenspaces are linked to crime reductions [53,54], community garden advocates I interviewed stressed that gardens improve public safety by activating the space: Gardeners come and go throughout the day, and so they can serve as eyes on the street that help discourage criminal behavior. While any activated greenspace might provide some benefit, community gardens provide further capacity for social control because they increase social capital in the neighborhood. As one city planner explained, "Community gardens can bring in neighbors from opposite ends of the block that may not know each other, and all of a sudden, Miss Emma is now watching the back of Miss Jones, cause they know each other. So I like to create mini town commons where people can gather safely, and get to know each other, and start to watch each other's backs." As this city official understands, the social capital cultivated in community gardens can have benefits beyond the growing space.

Social capital is especially important for the health of communities whose residents have relatively low levels of other forms of capital (such as education or financial resources). Many gardens in low-income neighborhoods offer free produce to local residents, and some host public events designed

to increase awareness about the garden and invite new participants. The longtime director of one such garden described throwing free barbecues for the neighborhood, along with an innovative approach to meeting nearby residents and building social connections with them:

> We are a very transient community . . . . I mean, that's the reality of living here. So, it's hard to build relationships when people are coming and going like that. But we try . . . . There are these [longtime resident] anchors in the community that we have really intentionally befriended. And we have this program with our garden, called Pollinator Pots, because we need bees for product. So we take flowerpots to all of our neighbors, up and down the blocks . . . going to a home, knocking on the door and chatting up the neighbors and saying, 'Here's a flowerpot, can you help us? And oh, by the way, our garden is just down the street. We give everything away, so keep an eye out . . . show up. We do barbecues, come on down.' For Grandma next door, she can't walk. So we barbecue, we bring her the plate of hot dogs. So that's for our anchors, and . . . the new families that come in, hopefully, are connecting a little bit with their neighbors.

When people get to know their neighbors, the social capital of the community increases. More social ties mean a greater capacity to communicate, coordinate activity, locate resources, and find fulfillment in day-to-day life.

Interviewees frequently stressed the value of social capital specifically for marginalized communities, often immigrants and the elderly. A garden program manager working with a largely Latinx population suggested that for residents dealing with demoralizing and disorienting challenges of life in a new country, being recognized as an expert in something like growing food could boost their confidence while building attachment to the community. She went on to explain:

> My favorite part of gardens, I think, is when people grow too much, or like they grow more than they need for themselves, they hand it out to their neighbors. And people recognize them as like The Tomato Lady, or The Mint Lady—I just think there's something beautiful about that because there's more conversations happening [and] people are interacting with people they haven't interacted with before.

Similarly, a program manager working mainly with Southeast Asian immigrant families found that the garden helped participants build social ties critical for their wellbeing:

> We have a lot of like, what some might call, highly vulnerable populations. So we have the elderly and we have very young people who live in this neighborhood who are often marginalized and not included in policy and conversations. And when you add on that other layer of being immigrants and being refugees who don't speak English as their first language . . . the garden is a really intentional space for them to have autonomy and to have their needs met. And with the elderly population, social isolation is a huge issue, just on an epidemiological level. So it's really cool just to see anecdotally—we don't unfortunately have quantitative data on it—but anecdotally, when you talk to our elder gardeners, something that they really love is that they've built friendships through the garden.

Numerous gardeners, program managers, and city officials described the value of residents building relationships with their fellow gardeners and other community members—whether for the benefits of friendship itself, or for the resource access, stability, and trust that strong social networks can engender. Especially when residents recognize and understand that they are contributing to the development of robust and useful social networks, these activities improve the social sustainability of their city.

3.1.3. Collective Efficacy

Many interviewees discussed aspects of social capital such as network ties and trust, and a few program managers detailed specifically how their community gardens seemed to enhance collective

efficacy. When local residents work together to accomplish shared goals, such as installing, protecting, or improving a community garden, they gain skills and experience that can be transferred to other community initiatives. One program manager explained how gardeners at her site took on a series of projects and how those efforts brought the community closer together:

> Especially in a garden people have to self-organize, so they have to figure out a way that works for them to make decisions with money, to do projects, to respect each other, to protect each other, protect their stuff. 'Cause you know, there's theft and things to deal with. There's a lot of community projects that come out of them. [Our garden] is part of a really good example, because it's big, it's a couple acres in size. So it's got this beautiful barn, pavilion, that folks put together some years ago. You have to write grants, you have to, you know, figure out how to do that and ask for money.

Other gardeners similarly reflected on the skills and camaraderie they developed while planning, fundraising for, and installing infrastructure such as rain catchment or tool sheds. Since community gardeners rarely own the land they cultivate, shared growing spaces are often vulnerable to development [82,91,108,109]; gardeners who have mobilized to protect their sites have also extended their social networks and acquired new skills during the preservation campaigns.

When neighbors build knowledge, skills, and confidence in one another, they build collective efficacy. This can improve neighborhood sustainability, and it can even translate to broader civic participation that further benefits the city's social sustainability. After more than 30 years of helping residents access vacant lots to establish new gardens and orchards, a retired program manager mused, "I think, in the end, what we helped develop ... is that community gardening is a community development tool. And sometimes it's as simple as helping to organize the block, and sometimes it catalyzes much larger efforts by neighbors to revitalize their community through housing development and infrastructure or whatever." Shared growing spaces bring community residents together to establish and accomplish collective goals. When groups succeed in their efforts, collective efficacy increases, and civil society is strengthened.

3.2. Measuring Community Coalescence

The process of community coalescence is obvious to many up-close observers of shared growing spaces, yet it is not always so evident to decision-makers further removed from the sites. Across the 55 interviews, 18 respondents (33%) specifically mentioned the difficulty of documenting community coalescence, which was perceived as a critical need in order to effectively communicate the social benefits of shared growing spaces to officials at various levels of government. Urban agriculture advocates who have sought funding for growing spaces, and those who have fought to preserve them against potential redevelopment, are particularly conscious of the gap between their understanding of the space's value and that of most public officials.

When communicating with city officials about the value of shared growing spaces, advocates come prepared with numbers: the number of garden sites within a councilperson's district, the total volunteer hours contributed to maintaining the sites, the annual pounds of food donated to those in need, and so on. In some cases, these metrics have worked to convey the public, social value of shared growing spaces. As one longtime program manager reflected:

> I think one of the criticisms that a lot of folks in government and in the funding community gave was that they viewed a lot of these gardens as places to pursue a hobby. And they didn't see the gardens as these transformative spaces that allowed for a community to have its own classroom, living room, you know? A place for common ground, for knitting together people from different walks of life, as we saw them. So [the food bank program] became the way in which these gardens could show their greater purpose for the community, because they were growing so many pounds of food and giving to families in need ... So [the food bank

> program] really made a big change in getting people to see the difference—that these weren't private little gardens, that these gardens served a larger social purpose in the community.

While coordinating and quantifying food bank donations is a common strategy for demonstrating how community gardens and orchards benefit the wider public, many advocates feel that this metric still does not fully capture the social value of shared growing spaces. A leader in another large gardening program similarly described measuring food bank donations to build political support for the program, but went on to say, "I don't know how you measure what to me is the other half of the program, which is the community-building. I don't know that anybody measures that. But I think it's of critical importance."

Advocates in all three cities echoed this sentiment, often emphasizing the complexity of community coalescence and the challenges in quantifying or clearly documenting it. As one garden advocate explained:

> It's hard to measure relationships. But in my opinion, it's the most valuable thing of just that—if I know what you're up to, and then six months from now I think, 'You know what, she's doing that. And she's over there in that corner of town, and she knows people there, let's call her up and see what she's doing.' It's that kind of stuff. It doesn't get into grants, it doesn't get into books, it's just so hard to measure that. But that's kind of what makes the world turn, too.

Across all three cities, interviewees frequently described the process of community coalescence through specific anecdotes or hypothetical scenarios like the one above. However, they often noted that this process is difficult to measure quantitatively—something they understood as important to policymakers who make critical decisions about land use and program funding. Many successful community gardens in US cities have been initiated with assistance from federal funding sources, such as grants through the Department of Agriculture, the Fish and Wildlife Service, or the Department of Housing and Urban Development. One highly effective investment in US urban agriculture was the federal Urban Gardening Program, which ran from 1977 to 1994 and seeded numerous successful community gardens across 23 cities with an annual budget of only $4 million [110]. The program died with a lack of Congressional support; past and present garden managers who saw the benefits firsthand feel that its effects weren't fully grasped by those who controlled its budget. One former program manager explained reporting to the program's central office:

> We had a submittal that gave it to them, so that they could use that to continue getting funding. And it was quantitative stuff. We could never record the qualitative stuff, about how it improved people's health and the group dynamics of getting to know your neighbors, or getting out of your own neighborhood and seeing what other people were doing elsewhere … All of the human stuff, we couldn't submit to Congress. But it was quite valuable for what it did for people.

For public officials deciding between different budget items, land uses, or sustainability strategies, the choice is often distilled into numerical terms. Advocates for shared growing spaces have attempted to quantify their value in various ways, yet these advocates widely agree that the community-building aspect is not effectively captured in existing metrics.

4. Discussion

Social sustainability hinges not only on reducing inequality and improving equity in access to resources, but also on ensuring the sustainability of community itself [22]. In other words, for a city to be considered socially sustainable, its residents must get along with each other and have the capacity to work together to produce desired outcomes. The data presented in this paper demonstrate how actively used greenspaces can provide a basis for improving the sustainability of community in a neighborhood and, if they are developed and supported within a wider urban planning framework,

in neighborhoods across a city. Shared growing spaces such as community gardens and orchards are thus an important vehicle for social sustainability, because they provide the basis for a process of community coalescence in which diverse people can interact around a shared interest, get to know and trust one another through repeated contact, and work together to safeguard the viability of that shared interest in their neighborhood. Community coalescence increases the organic solidarity and social capital of a neighborhood, and this process also builds a sense of collective efficacy among people when they accomplish shared goals by working together.

Despite the widespread appreciation for community coalescence among urban agriculture participants and advocates, urban sustainability assessment tends to undervalue shared growing spaces by siloing economic, social, and environmental aspects of sustainability and failing to fully account for the social benefits of multifunctional greenspace. As with any conceptualization that reifies the human-nature divide, the three-pillars framework draws attention to domain-specific solutions at the expense of strategies that place humans within nature and seek to improve both social and ecological systems simultaneously.

If urban sustainability assessment overlooks the social contributions of shared growing spaces, then decision-makers, too, are likely to continue undervaluing them. Community gardens and orchards are already vulnerable land uses, considered temporary by most landowners and funders whose interests ultimately diverge from those of participants [82,108,111,112]. Considering that local governments are often the landowners and/or funders in question, a firmer understanding of the multifaceted contributions that shared growing spaces make to urban sustainability will change the calculus around community garden and orchard preservation in cities that prioritize sustainability.

This paper presents a conceptualization for the mechanism by which shared growing spaces benefit urban social sustainability, reflecting the understanding expressed by 76% of interview respondents. While community coalescence appears to be widespread, this finding does not imply it is universal, and more research is needed to measure social dynamics in specific cases. For this project, interviews were only conducted with individuals in the US, and the sample was purposive rather than random. Of the 55 program managers, garden advocates, community organizers, planners, and city officials interviewed, 15 were also community gardeners themselves, but their experiences likely reflect more of a macro-level understanding of the social dynamics in shared growing spaces than would be typical for rank-and-file community gardeners. Interview data are best interpreted as the understandings of individual interviewees; research using surveys, participant observation or other methods can contribute to a more complete picture of the context in and extent to which actively used greenspaces contribute to social sustainability.

To further address the need for research demonstrating how shared growing spaces foster community coalescence, urban agriculture researchers and advocates can continue to explore methods to measure this phenomenon quantitatively. Community researchers have already developed survey tools for measuring neighborhood social cohesion [113] and collective efficacy [77]. Where new gardens are proposed or existing gardens are slated for removal, well-timed longitudinal surveys may be able to capture the social effects of the garden. Similarly, following Cohen et al. [63], comparative survey research may be used to establish spatial associations between shared growing spaces and measures of community. Community-based research methods offer additional opportunities for measuring community coalescence in shared growing spaces, particularly when working in partnership with advocacy coalitions or organizations that administer multiple garden or orchard sites. Systematically tracking the frequency, attendance volume, and attendance diversity of events held in shared growing spaces over time may serve to document the unique ability of these spaces to bring people together across demographic differences. Finally, smartphone technology and social media offer new avenues for analyzing community activity and social networks [114,115]. In situations where the data are accessible to researchers, it may be possible to measure the longitudinal development of social networks among urban agriculture participants, neighborhood residents, and others who visit shared growing spaces.

Due to the frequent undervaluing of shared growing spaces in cities, both researchers and activists will likely continue to pursue methods to quantify the social benefits of community gardens and orchards. Existing power relations governing urban land use stipulate that garden advocates must pursue the strongest justifications possible for urban agriculture in order to protect shared growing spaces from being sold and repurposed. In contrast, there are no equivalent power relations creating a similar urgency among urban sustainability professionals to fully account for the benefits of activated, multifunctional greenspaces. Thus, the results presented in this paper serve to reinforce calls from within the sustainability research community for urban sustainability assessment that is more integrative [2,4,8], mixed-methods [2,116], framework-driven [2,6,117,118], and/or participatory [7,9,21,73,119]. These assessment methods are likely to produce more accurate estimates of a city's sustainability, especially the contributions of multifunctional spaces like community gardens, and thus will point to policies that can more effectively navigate the landscape of tradeoffs among ecological, economic, and social dimensions of sustainability.

Conflicts of Interest: The author declares no conflict of interest.

Appendix A

Table A1. Transcript excerpts coded for "community" and interpretations thereof.

ID	Interviewee Expertise	Question	Answer	Interpretation
1	City official	How do you think that [the garden program] has impacted [your city]?	Community's all about building relationships … It's in neighborhoods that they get that variety of people, and I think the gardens are one place where you really do get that variety.	Shared growing spaces promote organic solidarity among different kinds of people
2	Community organizer	What is the program's relationship with the non-gardening public? [1]	We encourage gardeners to be friendly with the neighbors. 'Cause they're also eyes on your [garden]. And be in touch with them, and if neighbors wanna volunteer and help... you bring people together, do a little work, share some food, it's always a good way.	Shared growing spaces promote organic solidarity among different kinds of people, while increasing social capital
3	Pro-garden policy advocate	How do you think that [the garden program] has impacted [your city]?	When you … measure how long people know each other in these programs, and the ties that people developed over the years … We're always saying hello, we know a lot about each other, you know? And we're supportive of each other and what goes on in our personal lives.	Shared growing spaces increase social capital

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
4	Planning professional	Was [the gardening program] always popular with the local community? [1]	Yeah, I think so ... There's a real sense of community in the gardens, right? That people work together. There's always a little competition but that's, there's always a lot of collaboration.	Working together to develop shared growing spaces increases collective efficacy
5	Pro-garden policy advocate	How do you think that [the garden program] has impacted [your city]?	I don't know how you measure what to me is the other half of the program, which is the community-building. I don't know that anybody measures that. But I think it's of critical importance.	Shared growing spaces increase social capital
6	City official	How do you think [the garden program] differs from other community gardening programs?	I think there are probably some examples where community gardens are used as ways to do the community-building.... It's because people are in search of that, and somehow they create community gardens for that purpose.... It's a good way to break down barriers, build trust in the community.	Shared growing spaces promote organic solidarity among different kinds of people, while increasing social capital
7	City official	How do you think that [the garden program] has impacted [your city]?	It has brought people together who would otherwise be in an apartment and never see anybody other than walk down the hallway or going to their car.	Shared growing spaces counteract the social isolation of cities to build organic solidarity
8	Garden program manager	How do you think that [the garden program] has impacted [your city]?	We have a lot of like, what some might call, highly vulnerable populations ... When you talk to our elder gardeners, something that they really love is that they've built friendships through the garden.	Shared growing spaces increase social capital
9	Garden program manager	How has [the garden program] changed over time?	A lot of the gardens that are the older gardens, as they have gone through refurbishing, they've set aside more space for community space ... And having the benches that are public benches.	Organic solidarity forms when different kinds of people feel welcome in the space
11	City official	What do you think is the value of community gardens for the neighborhoods or city overall?	It's been a hugely important aspect ... as the mechanism for keeping open space, and keeping people in open space.... Every open space should be converted for the use of everybody, and not some.	Shared growing spaces attract different kinds of people side-by-side more than other kinds of growing space
12	City official	How do you think that [the garden program] has impacted [your city]?	It has encouraged a sense of community and neighborliness.	Shared growing spaces promote organic solidarity

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
13	City official	How do you think that [the garden program] has impacted [your city]?	It's bringing people with common interests together in a community where they live, working on something they love.	Shared growing spaces promote organic solidarity and collective efficacy
14	Garden program manager	Why not move [the garden program] into the Parks Department? [1]	Culturally ... parks didn't quite mix that well. Now ... for the most part they really value the way that community gardens activate parks space and activation of public space is an incredibly important thing to happen in urban areas.	Shared growing spaces promote organic solidarity by bringing more people into public space
17	Garden program manager	What do you think is the value of community gardens for the neighborhoods or city overall?	There's the whole community aspect.... Especially in a garden people have to self-organize ... There's a lot of community projects that come out of them .... You have to write grants, you have to, you know, figure out how to do that and ask for money.	Working together to develop shared growing spaces increases collective efficacy
18	Pro-garden policy advocate	In [your city] overall, is there a narrative that it's affordable housing versus community gardens [in land use policy conflicts]? [1]	When it comes to open space, there is a lot of opportunity there for us to be together, and sometimes it crosses lines of class .... I don't think the middle-class new folks, mostly white folks, can do it on their own .... I certainly don't think the long-term residents, we can do it on our own. And so this is the perfect place for us to work together.	Struggles to preserve shared growing spaces promote organic solidarity
19	Pro-garden policy advocate	Would permanent community gardens become a rigid space and lose that flexibility [that informal urban agriculture has]? [1]	I think it's proof, the fact that we have gardens that have survived in their communities as long as they have—in [this city] you have gardens that are 70 years old.... Once you have a community operating in space, and you have the organization for a community to operate in space and you keep it flexible, and then it does fill different needs.	Shared growing spaces can provide a basis for realizing community needs, which may increase collective efficacy
20	Planning professional	Has there been a narrative [in this city] that gardens can gentrify neighborhoods? [1]	They can help sustain, both create and sustain important amenities or public spaces. And community-controlled spaces. And that in some ways helps stabilize parts of people's lives ... networks of support and such, among other cultural, social, and educational functions like exercise, et cetera.	Shared growing spaces increase social capital and social stability

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
21	Pro-garden policy advocate	Since you've been interacting with the city this whole time, have you seen a shift in their priorities? [1]	[I have seen] acknowledgement that gardening is a viable land use … because these gardens that have been there, in some cases for decades, have helped to stabilize those land values by creating community and by creating space for neighbors to come together.	Shared growing spaces increase organic solidarity and social stability
22	Garden program manager	How did you first get involved with urban agriculture?	Community gardening is a community development tool. And sometimes it's as simple as helping to organize the block, and sometimes it catalyzes much larger efforts by neighbors to revitalize their community.	Working together to develop shared growing spaces increases collective efficacy
23	Community organizer	Could you explain more what you mean that [your organization] is radical? [1]	People who are involved seem to be getting connected in really important ways, and that's half of it, you know, it's like making connections, knowing who to contact to learn more about this, or get this or that resource.	Struggles to preserve shared growing spaces can increase social capital
24	Garden program manager	How did you first get involved with urban agriculture?	It was really wonderful to do that … seeing how people engaged and how they would get involved, and how the kids would get involved … coming more from that technical perspective of 'these are the design principles that we should be thinking about and these are the best practices around creating these urban spaces' to thinking about people in that.	Working together to develop shared growing spaces increases collective efficacy
26	Pro-garden policy advocate	How did you make the case to city council that gardens should be preserved? [1]	[One large] refugee garden in [the city has] become sort of a site for cultural revitalization for these refugees … . And there's some evidence that came out of some hospital studies that the suicide rates have apparently fallen … . And they attribute that to the community gardening because it's symbolic and it's a site where they can gather and build community and educate their youth.	Shared growing spaces counteract social isolation and promote organic solidarity
27	Planning professional	How did you first get involved with urban agriculture?	There were these community gardens, and some people—it was a community building tool.	Shared growing spaces promote organic solidarity

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
28	Garden program manager	Did [the USDA program] have specific requirements or did they just want you to keep track [of demographic information]? [1]	We could never record the qualitative stuff, about how it improved people's health and the group dynamics of getting to know your neighbors … or having Blacks and Koreans gardening next to each other … . For men who were unemployed or retired, it gave them a place to go and a social life.	Shared growing spaces promote organic solidarity among different kinds of people
31	Garden program manager	Have you focused on preserving gardens in those areas because they are really needed there? [1]	One of the important things to me about the gardens is that they are a place for people to learn to do community building, and talk to their neighbors, and organize … . The tools that you learn to talk to your neighbors and build a community garden are the same tools that you can use to organize your neighbors to do anything!	Working together to develop shared growing spaces increases collective efficacy
34	Community organizer	Could you talk more about the work that you and [your organization] were doing regarding [the city's land dispensation policies]? [1]	[One farm I work with] employs no less than 50 young people per summer … Being on the farm and seeing that it's an option, and then seeing that we are farmers, and changing the image of farming has been just really life-changing for folks … . We just need to continue making space for front-line communities so that our kids, our elders, our adults who are underemployed or unemployed can see themselves making jobs.	Shared growing spaces can provide a basis for realizing community needs, which may increase collective efficacy
35	Garden program manager	How did you first get involved with urban agriculture?	[The organization's] history and approach to working with residents around reclaiming land and repurposing vacant spaces into really useful community spaces … because of the conditions in the neighborhood, that developed into urban farming and gardening, because of the need.	Shared growing spaces can provide a basis for realizing community needs, which may increase collective efficacy

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
39	Garden program manager	Could you tell me more about the partnerships you've been forming? [1]	We are a very transient community . . . so it's hard to build relationships when people are coming and going like that. But we try . . . . There are these [longtime resident] anchors in the community that we have really intentionally befriended . . . . We take flowerpots to all of our neighbors, up and down the blocks . . . . The new families that come in, hopefully, are connecting a little bit with their neighbors.	Shared growing spaces promote organic solidarity and increase social capital
40	Pro-garden policy advocate	How did you first get involved with urban agriculture?	And then of course there's community gardening, which has a, a different kind of experience. That just gets people active, physically active. Away from screens, outside, chatting with people, as well as the generational knowledge to pass down.	Shared growing spaces counteract the social isolation of modern life and promote organic solidarity among different kinds of people
41	Planning professional	What do you think is the value of community gardens for the neighborhoods or city overall?	And the community-building aspect of it . . . I think it's one of the few things that people of different races, economic groups, religions, backgrounds can come together [around].	Shared growing spaces promote organic solidarity
42	Pro-garden policy advocate	How do you think [the local garden movement] differs from urban ag in other cities?	There is a rich, vital mesh of relationships, with grade school, high school, faith community, civil society, and the activists doing it.... One of the most positive adaptations of the . . . challenges that we face. You know, you grow things, you get people to eat together, to grow together . . . . It's a boundary-crossing resource.	Shared growing spaces counteract undesirable forces in urban life to promote organic solidarity among different kinds of people
43	Garden program manager	What do you think is the value of community gardens for the neighborhoods or city overall?	I see the garden as a place to connect with your neighbor . . . . It really is that social, it gives you that social good feeling.	Shared growing spaces promote organic solidarity
44	Pro-garden policy advocate	Are conflicts of development pressure, replacing gardens with other uses, maybe still in [your city's] future? [1]	I think people come to value . . . the relationship. And I don't think that relationship would necessarily disappear because the physical space disappears . . . . You create relationships. I go visit [my friend] at least once a week.... I would not have known [him] without community gardening.	Shared growing spaces increase social capital

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
45	City official	What do you think is the value of community gardens for the neighborhoods or city overall?	Community gardens can bring in neighbors from opposite ends of the block that may not know each other, and all of a sudden, Miss Emma is now watching the back of Miss Jones, 'cause they know each other.	Shared growing spaces increase social capital
46	Community organizer	How do you think that [the garden program] has impacted [your city]?	From the time we had the garden from 1998 to 2004, converted a bunch of vacant, abandoned homes to owner-occupants, just because they loved the idea of not having to deal with neighbors across the street other than a community garden . . . . It brought a number of people together across ethnic and racial lines as well. There were white growers, Black growers, primarily Asian growers.	Shared growing spaces increase social stability and promote organic solidarity among different kinds of people
47	Garden program manager	What do you think is the value of community gardens for the neighborhoods or city overall?	I think working together is a good benefit. I think communities, especially before—I think technology is a really big influence these days . . . . We forget the value of working together with people that are different than us, but they're in the community and we should get along with them.	Shared growing spaces counteract the social isolation of modern life and promote organic solidarity among different kinds of people
48	Garden program manager	What do you think is the value of community gardens for the neighborhoods or city overall?	[From a survey of community gardeners we participated in,] a couple takeaways would be . . . everybody loved the communal aspect, they loved the nature, becoming better stewards of nature. They loved sharing the traditions with their kids, with their grandparents.	Shared growing spaces promote organic solidarity across generations
49	Garden program manager	What do you think is the value of community gardens for the neighborhoods or city overall?	I just think there's something beautiful about that because there's more conversations happening [and] people are interacting with people they haven't interacted with before.	Shared growing spaces increase social capital
51	Garden program manager	How did you first get involved with urban agriculture?	As my work started, it became, like we still build garden beds, but we're still, we were now working to create those community experiences . . . . It's not solely just the garden that they see, they see the spot where the kids can play. They see where the yoga classes are held, where the community meetings are sometimes held, where the barbecue grill is.	Shared growing spaces promote organic solidarity when they become centers of community life

Table A1. *Cont.*

ID	Interviewee Expertise	Question	Answer	Interpretation
53	City official	Is there a concern that conflict will arise if a garden is slated to sell for housing or commercial development?[1]	The benefit to the neighborhoods are, you're doing community building, you're activating a space, you're beautifying it. So there's a lot of non-tangible benefits that come along with that as well. So it has worked out, and if anybody has to move, we can always find them another spot.	Shared growing spaces promote organic solidarity
54	Garden program manager	How has [the garden program] changed over time?	When you diversify the people, you diversify the community. [Before] you could identify the ethnicity of that gardener simply by what they were planting. But you can't do that anymore, because we've exchanged seeds. We've exchanged knowledge. We've exchanged agriculture. We've exchanged recipes.	Shared growing spaces promote organic solidarity among different kinds of people
55	Garden program manager	Did [a commercial composter previously discussed] learn composting from [the city's prominent master composter]?[1]	I actually funded him to go to, it's a yearlong farmer training program that they used to offer.... But being able to get that funding … if we can get it back into the hands of the people who have no hope, no concept of moving ahead … it changes a lot of people's vision of their own potential. And it also makes for a lot better relationship-building between people of color and people of white, which is also a very difficult problem in our city.	Shared growing spaces promote organic solidarity and collective efficacy

[1] Indicates an interview-specific follow up question.

References

1. Hahn, R.; Kühnen, M. Determinants of sustainability reporting: A review of results, trends, theory, and opportunities in an expanding field of research. *J. Clean. Prod.* **2013**, *59*, 5–21. [CrossRef]

2. Cohen, M. A Systematic Review of Urban Sustainability Assessment Literature. *Sustainability* **2017**, *9*, 2048. [CrossRef]

3. Hawkes, J. *The Fourth Pillar of Sustainability: Culture's Essential Role in Public Planning*; Common Ground: Melbourne, Australia, 2001.

4. Ali-Toudert, F.; Ji, L. Modeling and measuring urban sustainability in multi-criteria based systems—A challenging issue. *Ecol. Indic.* **2017**, *73*, 597–611. [CrossRef]

5. Davidson, K.M.; Kellett, J.; Wilson, L.; Pullen, S. Assessing urban sustainability from a social democratic perspective: A thematic approach. *Local Environ.* **2012**, *17*, 57–73. [CrossRef]

6. Gibson, R.B. Sustainability assessment: Basic components of a practical approach. *Impact Assess. Proj. Apprais.* **2006**, *24*, 170–182. [CrossRef]

7. Pearsall, H.; Pierce, J. Urban sustainability and environmental justice: Evaluating the linkages in public planning/policy discourse. *Local Environ.* **2010**, *15*, 569–580. [CrossRef]

8. Davidson, K.M. Reporting Systems for Sustainability: What Are They Measuring? *Soc. Indic. Res.* **2010**, *100*, 351–365. [CrossRef]

9.   Lozano, R.; Huisingh, D. Inter-linking issues and dimensions in sustainability reporting. *J. Clean. Prod.* **2011**, *19*, 99–107. [CrossRef]

10. Constanza, R. *Ecological Economics: The Science and Management of Sustainability*; Columbia University Press: New York, NY, USA, 1992.

11. Daly, H.E.; Farley, J. *Ecological Economics: Principles and Applications*; Island Press: Washington, DC, USA, 2004.

12. Munda, G. Environmental Economics, Ecological Economics, and the Concept of Sustainable Development. *Environ. Values* **1997**, *6*, 213–233. [CrossRef]

13. Bergh, J.C.V.D. Ecological economics: Themes, approaches, and differences with environmental economics. *Reg. Environ. Chang.* **2001**, *2*, 13–23. [CrossRef]

14. Catton, W.R.; Dunlap, R.E. Environmental sociology: A new paradigm. *Am. Sociol.* **1978**, *13*, 41–49.

15. Goldman, M.; Schurman, R.A. Closing the "Great Divide": New Social Theory on Society and Nature. *Annu. Rev. Sociol.* **2000**, *26*, 563–584. [CrossRef]

16. Pellow, D.N.; Brehm, H.N. An Environmental Sociology for the Twenty-First Century. *Annu. Rev. Sociol.* **2013**, *39*, 229–250. [CrossRef]

17. Buttel, F.H.; Gottlieb, R. Forcing the Spring: The Transformation of the American Environmental Movement. *Contemp. Sociol. A J. Rev.* **1995**, *24*, 51. [CrossRef]

18. Alkon, A.H. Paradise or pavement: The social constructions of the environment in two urban farmers' markets and their implications for environmental justice and sustainability. *Local Environ.* **2008**, *13*, 271–289. [CrossRef]

19. Clarke, M.; Davidson, M.; Egerer, M.; Anderson, E.; Fouch, N. The underutilized role of community gardens in improving cities' adaptation to climate change: A review. *People Place Policy Online* **2019**, *12*, 241–251. [CrossRef]

20. Carmen, R.; Jacobs, S.; Leone, M.; Palliwoda, J.; Pinto, L.V.; Misiune, I.; Turkelboom, F.; Pereira, P.; Wanner, S.; Ferreira, C.; et al. Keep it real: Selecting realistic sets of urban green space indicators. *Environ. Res. Lett.* **2020**, *15*, 095001. [CrossRef]

21. Curran, M.A. Wrapping Our Brains around Sustainability. *Sustainability* **2009**, *1*, 5–13. [CrossRef]

22. Dempsey, N.; Bramley, G.; Power, S.; Brown, C. The social dimension of sustainable development: Defining urban social sustainability. *Sustain. Dev.* **2011**, *19*, 289–300. [CrossRef]

23. Douglas, I. Urban ecology and urban ecosystems: Understanding the links to human health and well-being. *Curr. Opin. Environ. Sustain.* **2012**, *4*, 385–392. [CrossRef]

24. Wachter, S. *The Determinants of Neighborhood Transformation in Philadelphia: Identification and Analysis: The New Kensington Pilot Study*; Perelman School of Medicine at the University of Pennsylvania: Philadelphia, PA, USA, 2004.

25. Wachter, S.; Wong, G. What Is a Tree Worth? Green-City Strategies, Signaling and Housing Prices. *Real Estate Econ.* **2008**, *36*, 213–239. [CrossRef]

26. Voicu, I.; Been, V. The Effect of Community Gardens on Neighboring Property Values. *Real Estate Econ.* **2008**, *36*, 241–283. [CrossRef]

27. Heckert, M.; Mennis, J. The Economic Impact of Greening Urban Vacant Land: A Spatial Difference-In-Differences Analysis. *Environ. Plan. A Econ. Space* **2012**, *44*, 3010–3027. [CrossRef]

28. Walker, S. Urban agriculture and the sustainability fix in Vancouver and Detroit. *Urban Geogr.* **2016**, *37*, 163–182. [CrossRef]

29. McClintock, N. Cultivating (a) Sustainability Capital: Urban Agriculture, Ecogentrification, and the Uneven Valorization of Social Reproduction. *Ann. Am. Assoc. Geogr.* **2018**, *108*, 579–590. [CrossRef]

30. Dooling, S. Ecological Gentrification: A Research Agenda Exploring Justice in the City. *Int. J. Urban Reg. Res.* **2009**, *33*, 621–639. [CrossRef]

31. Checker, M. Wiped Out by the "Greenwave": Environmental Gentrification and the Paradoxical Politics of Urban Sustainability. *City Soc.* **2011**, *23*, 210–229. [CrossRef]

32. Loughran, K. Parks for Profit: The High Line, Growth Machines, and the Uneven Development of Urban Public Spaces. *City Community* **2014**, *13*, 49–68. [CrossRef]

33. Wolch, J.R.; Byrne, J.; Newell, J.P. Urban green space, public health, and environmental justice: The challenge of making cities 'just green enough'. *Landsc. Urban Plan.* **2014**, *125*, 234–244. [CrossRef]

34. Gould, K.A.; Lewis, T.L. *Green Gentrification: Urban Sustainability and the Struggle for Environmental Justice*; Routledge: New York, NY, USA, 2016.

35. Anguelovski, I.; Connolly, J.J.; Masip, L.; Pearsall, H. Assessing green gentrification in historically disenfranchised neighborhoods: A longitudinal and spatial analysis of Barcelona. *Urban Geogr.* **2017**, *39*, 458–491. [CrossRef]

36. Lee, A.C.K.; Maheswaran, R. The health benefits of urban green spaces: A review of the evidence. *J. Public Health* **2011**, *33*, 212–222. [CrossRef] [PubMed]

37. Takano, T.; Nakamura, K.; Watanabe, M. Urban residential environments and senior citizens' longevity in megacity areas: The importance of walkable green spaces. *J. Epidemiol. Commun. Health* **2002**, *56*, 913–918. [CrossRef] [PubMed]

38. Villeneuve, P.J.; Jerrett, M.; Su, J.G.; Burnett, R.T.; Chen, H.; Wheeler, A.J.; Goldberg, M.S. A cohort study relating urban green space with mortality in Ontario, Canada. *Environ. Res.* **2012**, *115*, 51–58. [CrossRef] [PubMed]

39. Gascon, M.; Triguero-Mas, M.; Martínez, D.; Dadvand, P.; Rojas-Rueda, D.; Plasència, A.; Nieuwenhuijsen, M.J. Residential green spaces and mortality: A systematic review. *Environ. Int.* **2016**, *86*, 60–67. [CrossRef] [PubMed]

40. Kondo, M.C.; Fluehr, J.M.; McKeon, T.; Branas, C.C. Urban Green Space and Its Impact on Human Health. *Int. J. Environ. Res. Public Health* **2018**, *15*, 445. [CrossRef]

41. Konijnendijk, C.C.; Annerstedt, M.; Nielsen, A.B.; Maruthaveeran, S. *Benefits of Urban Parks: A Systematic Review*; A report for IFPRA; International Federation of Parks and Recreation Administration: Wellington, New Zealand, 2013.

42. De Vries, S.; Verheij, R.; Groenewegen, P.P.; Spreeuwenberg, P. Natural Environments—Healthy Environments? An Exploratory Analysis of the Relationship between Greenspace and Health. *Environ. Plan. A: Econ. Space* **2003**, *35*, 1717–1731. [CrossRef]

43. Maas, J. Green space, urbanity, and health: How strong is the relation? *J. Epidemiol. Commun. Health* **2006**, *60*, 587–592. [CrossRef]

44. Mitchell, R.; Popham, F. Greenspace, urbanity and health: Relationships in England. *J. Epidemiol. Commun. Health* **2007**, *61*, 681–683. [CrossRef]

45. Coppel, G.; Wüstemann, H. The impact of urban green space on health in Berlin, Germany: Empirical findings and implications for urban planning. *Landsc. Urban Plan.* **2017**, *167*, 410–418. [CrossRef]

46. South, E.C.; Hohl, B.C.; Kondo, M.C.; Macdonald, J.M.; Branas, C.C. Effect of Greening Vacant Land on Mental Health of Community-Dwelling Adults. *JAMA Netw. Open* **2018**, *1*, e180298. [CrossRef]

47. Grahn, P.; Stigsdotter, U.A. Landscape planning and stress. *Urban For. Urban Green.* **2003**, *2*, 1–18. [CrossRef]

48. Nielsen, T.S.; Hansen, K.B. Do green areas affect health? Results from a Danish survey on the use of green areas and health indicators. *Health Place* **2007**, *13*, 839–850. [CrossRef] [PubMed]

49. Rung, A.L.; Mowen, A.J.; Cohen, D.A. The significance of parks to physical activity and public health. *Am. J. Prev. Med.* **2005**, *28*, 159–168. [CrossRef] [PubMed]

50. Hartig, T.; Mang, M.; Evans, G.W. Restorative Effects of Natural Environment Experiences. *Environ. Behav.* **1991**, *23*, 3–26. [CrossRef]

51. Ulrich, R.S.; Simons, R.F.; Losito, B.D.; Fiorito, E.; Miles, M.A.; Zelson, M. Stress recovery during exposure to natural and urban environments. *J. Environ. Psychol.* **1991**, *11*, 201–230. [CrossRef]

52. Richardson, E.; Pearce, J.; Mitchell, R.; Kingham, S. Role of physical activity in the relationship between urban green space and health. *Public Health* **2013**, *127*, 318–324. [CrossRef]

53. Kuo, F.E.; Sullivan, W.C. Environment and Crime in the Inner City. *Environ. Behav.* **2001**, *33*, 343–367. [CrossRef]

54. Bogar, S.; Beyer, K.M. Green Space, Violence, and Crime. *Trauma Violence Abus.* **2015**, *17*, 160–171. [CrossRef]

55. Branas, C.C.; Cheney, R.A.; Macdonald, J.M.; Tam, V.W.; Jackson, T.D.; Have, T.R.T. A Difference-in-Differences Analysis of Health, Safety, and Greening Vacant Urban Space. *Am. J. Epidemiol.* **2011**, *174*, 1296–1306. [CrossRef]

56. Branas, C.C.; South, E.; Kondo, M.C.; Hohl, B.C.; Bourgois, P.; Wiebe, D.J.; Macdonald, J.M. Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear. *Proc. Natl. Acad. Sci. USA* **2018**, *115*, 2946–2951. [CrossRef]

57. Kondo, M.C.; South, E.C.; Branas, C.C. Nature-Based Strategies for Improving Urban Health and Safety. *J. Hered.* **2015**, *92*, 800–814. [CrossRef] [PubMed]

58. Branas, C.C.; Kondo, M.C.; Murphy, S.M.; South, E.C.; Polsky, D.; Macdonald, J.M. Urban Blight Remediation as a Cost-Beneficial Solution to Firearm Violence. *Am. J. Public Health* **2016**, *106*, 2158–2164. [CrossRef] [PubMed]

59. Maas, J.; Van Dillen, S.M.; Verheij, R.A.; Groenewegen, P.P. Social contacts as a possible mechanism behind the relation between green space and health. *Health Place* **2009**, *15*, 586–595. [CrossRef] [PubMed]

60. Coley, R.L.; Sullivan, W.C.; Kuo, F.E. Where Does Community Grow? *Environ. Behav.* **1997**, *29*, 468–494. [CrossRef]

61. Kuo, F.E.; Sullivan, W.C.; Coley, R.L.; Brunson, L. Fertile Ground for Community: Inner-City Neighborhood Common Spaces. *Am. J. Commun. Psychol.* **1998**, *26*, 823–851. [CrossRef]

62. Kweon, B.-S.; Sullivan, W.C.; Wiley, A.R. Green Common Spaces and the Social Integration of Inner-City Older Adults. *Environ. Behav.* **1998**, *30*, 832–858. [CrossRef]

63. Cohen, D.A.; Inagami, S.; Finch, B. The built environment and collective efficacy. *Health Place* **2008**, *14*, 198–208. [CrossRef]

64. Gehlke, C.E.; Durkheim, E.; Simpson, G. On the Division of Labor in Society. *Columbia Law Rev.* **1935**, *35*, 643. [CrossRef]

65. Kawachi, I.; Berkman, L. Social cohesion, social capital and health. In *Social Epidemiology*; Berkman, L.F., Kawachi, I., Eds.; Oxford University Press: Oxford, UK, 2000; pp. 174–190.

66. Forrest, R.; Kearns, A. Social Cohesion, Social Capital and the Neighbourhood. *Urban Stud.* **2001**, *38*, 2125–2143. [CrossRef]

67. Echeverría, S.; Diez-Roux, A.V.; Shea, S.; Borrell, L.N.; Jackson, S. Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: The Multi-Ethnic Study of Atherosclerosis. *Health Place* **2008**, *14*, 853–865. [CrossRef]

68. Völker, B.; Flap, H.; Lindenberg, S. When Are Neighbourhoods Communities? Community in Dutch Neighbourhoods. *Eur. Sociol. Rev.* **2006**, *23*, 99–114. [CrossRef]

69. Bourdieu, P. Les trois états du capital culturel. *Actes de la Recherche en Sciences Sociales* **1979**, *30*, 3–6. [CrossRef]

70. Gibbs, J.P.; Coleman, J.S. Foundations of Social Theory. *Soc. Forces* **1990**, *69*, 625. [CrossRef]

71. Putnam, R. *Making Democracy Work, Civic Traditions in Modern Italy*; Princeton University Press: Princeton, NJ, USA, 1993.

72. Portes, A.; Landolt, P. Social Capital: Promise and Pitfalls of its Role in Development. *J. Lat. Am. Stud.* **2000**, *32*, 529–547. [CrossRef]

73. Cohen, M.; Quinn, J.E.; Marshall, D.; Sharp, T. Sustainability assessment of a community open space vision. *Sustain. Sci.* **2019**, *14*, 1565–1580. [CrossRef]

74. Jussaume, R.; Glenna, L.L. Considering Structural, Individual and Social Network Explanations for Ecologically Sustainable Agriculture: An Example Drawn from Washington State Wheat Growers. *Sustainability* **2009**, *1*, 120–132. [CrossRef]

75. Dietz, T.; Ostrom, E.; Stern, P.C. The Struggle to Govern the Commons. *Science* **2003**, *302*, 1907–1912. [CrossRef]

76. Sampson, R.J.; Morenoff, J.D.; Earls, F. Beyond Social Capital: Spatial Dynamics of Collective Efficacy for Children. *Am. Sociol. Rev.* **1999**, *64*, 633. [CrossRef]

77. Sampson, R.J.; Raudenbush, S.W.; Earls, F. Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy. *Science* **1997**, *277*, 918–924. [CrossRef]

78. Witte, K.; Allen, M. A Meta-Analysis of Fear Appeals: Implications for Effective Public Health Campaigns. *Health Educ. Behav.* **2000**, *27*, 591–615. [CrossRef]

79. Lorenzoni, I.; Nicholson-Cole, S.; Whitmarsh, L. Barriers perceived to engaging with climate change among the UK public and their policy implications. *Glob. Environ. Chang.* **2007**, *17*, 445–459. [CrossRef]

80. Roser-Renouf, C.; Maibach, E.W.; Leiserowitz, A.; Zhao, X. The genesis of climate change activism: From key beliefs to political action. *Clim. Chang.* **2014**, *125*, 163–178. [CrossRef]

81. Glennie, C. Cultivating Place: Urban Development and the Institutionalization of Seattle's P-Patch Community Gardens. *City Commun.* **2020**, *19*, 726–746. [CrossRef]

82. Glennie, C. Gardens in the growth machine. In *A Recipe for Gentrification: Food, Power, and Resistance in the City*; Alkon, A.H., Kato, Y., Sbicca, J., Eds.; NYU Press: New York, NY, USA, 2020; pp. 154–175.

83. Galletta, A.; Cross, W.E. *Mastering the Semi-Structured Interview and Beyond*; NYU Press: New York, NY, USA, 2013.

84. Whitt, J.A.; Zukin, S. The Cultures of Cities. *Contemp. Sociol. A J. Rev.* **1996**, *25*, 782. [CrossRef]

85. Aptekar, S. Visions of Public Space: Reproducing and Resisting Social Hierarchies in a Community Garden. *Sociol. Forum* **2015**, *30*, 209–227. [CrossRef]

86. Lyson, T.A. *Civic Agriculture: Reconnecting Farm, Food, and Community*; Tufts University Press: Boston, MA, USA, 2004.

87. Baker, L.E. Tending Cultural Landscapes and Food Citizenship in Toronto's Community Gardens. *Geogr. Rev.* **2004**, *94*, 305–325. [CrossRef]

88. Saldivar-Tanaka, L.; Krasny, M.E. Culturing community development, neighborhood open space, and civic agriculture: The case of Latino community gardens in New York City. *Agric. Hum. Values* **2004**, *21*, 399–412. [CrossRef]

89. White, M.M. Sisters of the Soil: Urban Gardening as Resistance in Detroit. *Race/Ethnicity: Multidiscip. Glob. Contexts* **2011**, *5*, 13–28. [CrossRef]

90. Ghose, R.; Pettygrove, M. Urban Community Gardens as Spaces of Citizenship. *Antipode* **2014**, *46*, 1092–1112. [CrossRef]

91. Martinez, M. *Power at the Roots: Gentrification, Community Gardens, and the Puerto Ricans of the Lower East Side*; Lexington Books: Lanham, MD, USA, 2010.

92. Alkon, A.H.; Agyeman, J. Environmental and Food Justice: Toward Local, Slow, and Deep Food Systems. In *Cultivating Food Justice*; MIT Press: Cambridge, MA, USA, 2011; pp. 197–220.

93. McClintock, N. Radical, reformist, and garden-variety neoliberal: Coming to terms with urban agriculture's contradictions. *Local Environ.* **2014**, *19*, 147–171. [CrossRef]

94. Draus, P.J.; Roddy, J.; McDuffie, A. 'We don't have no neighbourhood': Advanced marginality and urban agriculture in Detroit. *Urban Stud.* **2013**, *51*, 2523–2538. [CrossRef]

95. Quastel, N. Political Ecologies of Gentrification. *Urban Geogr.* **2009**, *30*, 694–725. [CrossRef]

96. Pudup, M.B. It takes a garden: Cultivating citizen-subjects in organized garden projects. *Geoforum* **2008**, *39*, 1228–1240. [CrossRef]

97. Walter, P. Theorising community gardens as pedagogical sites in the food movement. *Environ. Educ. Res.* **2013**, *19*, 521–539. [CrossRef]

98. Kremer, P.; DeLiberty, T.L. Local food practices and growing potential: Mapping the case of Philadelphia. *Appl. Geogr.* **2011**, *31*, 1252–1261. [CrossRef]

99. Corrigan, M.P. Growing what you eat: Developing community gardens in Baltimore, Maryland. *Appl. Geogr.* **2011**, *31*, 1232–1241. [CrossRef]

100. Allen, P.; Fitzsimmons, M.; Goodman, M.; Warner, K. Shifting plates in the agrifood landscape: The tectonics of alternative agrifood initiatives in California. *J. Rural Stud.* **2003**, *19*, 61–75. [CrossRef]

101. Hsieh, H.-F.; Shannon, S.E. Three Approaches to Qualitative Content Analysis. *Qual. Health Res.* **2005**, *15*, 1277–1288. [CrossRef]

102. Mayring, P. Qualitative content analysis. *Forum: Qual. Soc. Res.* **2004**, *1*, 159–176.

103. Carter, N.; Bryant-Lukosius, D.; DiCenso, A.; Blythe, J.; Neville, A.J. The Use of Triangulation in Qualitative Research. *Oncol. Nurs. Forum* **2014**, *41*, 545–547. [CrossRef]

104. Cantle, T. *Community Cohesion: A New Framework for Race and Diversity*, 2nd ed.; Palgrave Macmillan: New York, NY, USA, 2008.

105. Smith, R.A. Measuring neighborhood cohesion: A review and some suggestions. *Hum. Ecol.* **1975**, *3*, 143–160. [CrossRef]

106. Jones, I. *A Food Crisis is Coming, but Urban America Already Has it Solved*; Colorlines: New York, NY, USA, 2011.

107. Small, M.L.; Jacobs, E.M.; Massengill, R.P. Why Organizational Ties Matter for Neighborhood Effects: Resource Access through Childcare Centers. *Soc. Forces* **2008**, *87*, 387–414. [CrossRef]

108. Lawson, L. *City Bountiful: A Century of Community Gardening in America*; University of California Press: Berkeley, CA, USA, 2005.

109. Barraclough, L.R. South Central Farmers and Shadow Hills Homeowners: Land Use Policy and Relational Racialization in Los Angeles. *Prof. Geogr.* **2009**, *61*, 164–186. [CrossRef]

110. Rangarajan, A.; Riorden, M. *The Promise of Urban Agriculture: National Study of Commercial Farming in Urban Areas*; USDA: Washington, DC, USA, 2019.

111. Schmelzkopf, K. Urban Community Gardens as Contested Space. *Geogr. Rev.* **1995**, *85*, 364. [CrossRef]

112. Vitiello, D.; Nairn, M. *Community Gardening in Philadelphia: 2008 Harvest Report*; Penn Planning Urban Studies, University of Philadelphia: Philadelphia, PA, USA, 2009; p. 68.

113. Buckner, J.C. The development of an instrument to measure neighborhood cohesion. *Am. J. Community Psychol.* **1988**, *16*, 771–791. [CrossRef]

114. Ilieva, R.T.; McPhearson, T. Social-media data for urban sustainability. *Nat. Sustain.* **2018**, *1*, 553–565. [CrossRef]

115. Hamstead, Z.A.; Fisher, D.; Ilieva, R.T.; Wood, S.A.; McPhearson, T.; Kremer, P. Geolocated social media as a rapid indicator of park visitation and equitable park access. *Comput. Environ. Urban Syst.* **2018**, *72*, 38–50. [CrossRef]

116. Rau, H. Minding the Mundane: Everyday Practices as Central Pillar of Sustainability Thinking and Research. In *Environment and Society: Concepts and Challenges*; Boström, M., Davidson, D.J., Eds.; Palgrave Macmillan: Cham, Switzerland, 2018; pp. 207–232.

117. Sala, S.; Ciuffo, B.; Nijkamp, P. A systemic framework for sustainability assessment. *Ecol. Econ.* **2015**, *119*, 314–325. [CrossRef]

118. Verma, P.; Raghubanshi, A. Urban sustainability indicators: Challenges and opportunities. *Ecol. Indic.* **2018**, *93*, 282–291. [CrossRef]

119. Reed, M.; Fraser, E.D.; Dougill, A.J. An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecol. Econ.* **2006**, *59*, 406–418. [CrossRef]