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Research, part of a Special Feature on Conceptualizing, Analyzing, and Supporting Stewardship: Examining the role of civil society in environmental governance

Types of urban agricultural stakeholders and their understandings of governance

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ABSTRACT. Urban agriculture is a significant driver of urban sustainability and resilience, yet the contribution of urban agriculture to resilience is complicated by governance systems that require further investigation. This study deploys a mixed-methods approach to investigate the agricultural values and understandings of urban agricultural governance among farmers, garden leaders, and other actors in urban agriculture in Lansing, Michigan. Drawing from semistructured interviews and Q-methodology, agricultural values are used to identify four types of urban agriculture stakeholders: urban agricultural stewards, risk managers, food desert irrigators, and urban agricultural contextualists. These groups differ in terms of their agricultural values as well as their participation in local governance and general understandings of the purpose of governance. Urban agricultural stewards place comparatively higher priority on community building, environmental sustainability, and food sovereignty; they participate in the city's formal governance systems and view governance as an opportunity to codify shared norms. Risk managers place comparatively higher priority on safety, and they largely view governance in the traditional mold of state-legislated regulations to which stakeholders should comply. Food desert irrigators place comparatively higher priority on environmental sustainability, health, food access, and convenience; they expect governance to support stakeholders with the greatest needs, and though not active in formal governance, work to craft empathetic policies in their particular organizations. Urban agricultural contextualists place comparatively higher priority on community building and health, and hold that the prioritization of additional values should be determined through local and inclusive governance. The coupling of agricultural values with understandings of governance can support effective and legitimate policy making attentive to the process through which, and scale at which, stakeholders expect their values to inform decision making.

Key Words: *Lansing, MI; Q method; qualitative research; stewardship; urban agriculture; values*

INTRODUCTION

In a 2009 UNESCO publication, "Urban Sustainability and Governance: Issues for the Twenty-first Century," Francoise Lieberherr-Gardiol calls attention to the wicked problems confronting urban sustainability and "an obvious alliance" (p. 333) between urban sustainability and governance. Among resource challenges such as transportation, housing, and water, Lieberherr-Gardiol identifies urban agriculture and food as "significant quotients for sustainability" (p. 339), pointing out that urban agriculture is a key factor for environmental and economic sustainability. Achieving sustainable urban agriculture depends on policies and regulations as well as social norms and rules, which collectively compose a city's urban governance. We follow Lemos and Agrawal (2006) in understanding governance as the regulatory processes, mechanisms, and organizations through which different actors influence societal actions and outcomes. As these authors point out, governance includes more than the "pure" regulatory activities of state and market actors and must also account for the social practices of community members and the organizations that they form. What Lemos and Agrawal refer to as "hybrid" modes of governance are exemplified in, for instance, urban food production and urban gardening that cultivate social mechanisms and practices that contribute to that city's resilience (Barthel et al. 2015). These mechanisms include environmental learning and social-ecological memory developed through collective activities like allotment gardening and vital for wise governance (Colding and Barthel 2013). Others have noted that urban farmers and gardeners develop valuable understandings of the local social-ecological system through their day-to-day agricultural practices (Barthel and Isendahl 2013, Ernstson et al. 2010). This has led to researchers calling for social-ecological research through which researchers collaborate with stakeholders to better understand the values and goals motivating urban agricultural practices (Teschner et al. 2017). Here we conceive of values in the sense that Tadaki et al. (2017) describe values-as-priorities, where values are individual ideas about desirable end-states that can differ across publics affected by environmental management decisions.

One clear finding from such social-ecological research is that urban agriculture is multifunctional (Lovell 2010, McClintock and Simpson 2018); it provides a wide range of ecological, economic, and social benefits, such as promoting biodiversity (Lin et al. 2015) and building community (Carolan and Hale 2016). These wide-ranging benefits have attracted diverse stakeholders whose participation in urban agriculture is motivated by complex values and subjectivities (McClintock 2014, Classens 2015), and whose participation ranges from farming and community gardening to food-related nonprofits and university outreach and engagement (Colasanti et al. 2012, Walder and Kantelhardt 2018). For example, McClintock and Simpson's (2018) study of 251 urban agriculture organizations and businesses in 84 U.S. and Canadian cities reveals the diverse values motivating these stakeholders. Their study used a mixed-methods approach to group participants into six "motivational frames" that share similar values and motivations, such as eco-centric stakeholders and entrepreneurial stakeholders. Understanding these motivational frames is vital to allying urban sustainability with governance. Not only must policy makers anticipate how stakeholders will respond to policy interventions (Schoon and te Grotenhuis 2000), but legitimate policy making requires the

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recognition of communities' diverse values and identities (Walker et al. 2002, Anderies et al. 2004).

Davies and Hodge (2007) trace research into farmer mindsets to at least Beus and Dunlap (1991), but with roots in distinctions among American agrarianisms recognized by Smith (1982) and nascent much earlier. More recent work has recognized distinct goals and management styles among farmers; for instance, Brodt et al. (2006) found that farmers can be classified as environmental stewards, production maximizers, and network entrepreneurs. Whereas production maximizers manage their farm to optimize yield, and network entrepreneurs strive to build relationships with peers and agricultural experts, environmental stewards are characterized by their prioritization of sustainability and cooperation with nature. We follow Brodt et al. (2006) in conceiving of environmental stewardship in this way. Typologies of farmers frequently recognize environmental or stewardship motivational frames (Fairweather and Keating 1994, Walder and Kantelhardt 2018). Others have highlighted the importance of stewardship for urban planning and governance of sustainable infrastructure (Andersson et al. 2014).

Our investigation pairs research into urban agricultural values with research into participation in, and understandings of, urban agricultural governance. This provides a richer picture of how different types of urban agricultural stakeholders engage in governance and how urban agricultural stewards in particular extend their stewardship to the regulatory landscape. Specifically, this work addresses three interrelated questions:

1. What values motivate urban agricultural stakeholders to participate in urban agriculture?
2. Do urban agricultural stakeholders fall into recognizable groupings that suggest distinct perspectives or motivational frames?
3. How do such stakeholder groups differ in terms of their participation in, and understandings of, governance?

Our first and second questions contribute to a better understanding of the values of urban agricultural stakeholders; though recent work has generated typologies of these stakeholders, the vast majority of the work has not attended to urban participants in particular. Our third question explores the intersection of urban agricultural stakeholders' values and their participation in, and understandings of, governance. The different ways that stakeholders participate produces different "hybrids" of state, market, and community formal and informal institutions that collectively comprise a city's governance. Understanding how and why community stakeholders form the hybrid institutional arrangements that they do will help determine what modes of governance are possible and appropriate in a given place.

We pose these questions through a case study of Lansing, Michigan, a Rust Belt city of roughly 115,000 residents. Like other Michigan cities such as Detroit and Flint, Lansing has witnessed a growth in urban farming often occupying abandoned lots vacated by declining industries and a shrinking workforce (Masson-Minock 2010, Colasanti et al. 2012). The city boasts urban farms and community gardens at myriad scales, with the county land bank's Garden Program alone leasing 160 parcels between 2000 meters^2 and 400 meter^2 to farmers and gardeners (Putnam 2016). The city's foodbank supports The Garden Project, a prominent network of community gardens in the city boasting over 125 community gardens and 400 home gardens that feed over 7000 residents (https://greaterlansingfoodbank.org/programs/programs-home/the-garden-project). As with other Midwestern cities recovering from recession, previously innocuous food production comes into competition with returning business and neighborhood development, and growers have fewer opportunities to lease land inexpensively (Castillo et al. 2013). More traditional urban land use expands and encroaches upon lots under cultivation, producing conflicts that require clearer regulation and consistent enforcement regardless of one's stance on urban farming. Though urban agriculture is widely perceived as an expanding practice in Lansing, policies and regulations are still emerging. Ostensibly, urban agriculture is governed according to the state's Right to Farm Act, which protects generally accepted agricultural management practices unless preempted by ordinances at the municipal level. Many stakeholders find both the generally accepted agricultural management practices and their protection in urban contexts to be ambiguous, however, with groups like the Michigan Department of Agriculture and Rural Development's Urban Livestock Workgroup recommending specific guidelines for urban agriculture in 2015, and leading to the proposal (but not ratification) of an "Urban Agriculture Act" in the state senate in 2016 and 2017 (Urban Livestock Workgroup 2015). As these comprehensive regulations take form, piecemeal regulations have filled the niche, such as a county ordinance in 2009 permitting backyard chickens and 2017 reinterpretations of city ordinances regarding permanent structures on properties to permit hoop houses.

METHODS

Semistructured interviews including a values ranking activity were conducted over a six week period in fall 2017. In order to survey a diverse set of food system perspectives, we recruited a wide range of individuals involved in urban agriculture, including urban and peri-urban farmers, community garden leaders, university outreach and engagement specialists, city program directors, farmers' market managers, and regulators. Emailed invitations disclosed that the interview would cover the participant's goals and motivations for being involved in the local food system, the impact of rules and regulations on their participation, and their involvement in creating rules and regulations; we also disclosed that we planned to report findings to city and state policy makers. Urban and peri-urban farmers were recruited by email via a list generated through an internet search for "Lansing farms." Community garden leaders were recruited based on recommendations of the director of the local community gardening network. Farmer's market managers were recruited by email via a list generated through an internet search for "Lansing farmer's markets." Other nonproducers were recruited based on previous experience with key stakeholders in Lansing urban agriculture and in consultation with colleagues with extensive organizational knowledge in the area. All participants were invited to suggest additional individuals to recruit for participation; these suggestions were recruited selectively to include multiple individuals from each category, e.g., city program directors, above. Seventeen participants were recruited through an initial list of 24 stakeholders, while four additional participants were recruited at the suggestion of participants. Participants included five urban

farmers, four community gardeners, five university outreach and engagement specialists, three city program directors, two farmers' market managers, and two regulators. Participants were emailed consent forms and a demographic survey prior to meeting and completed a follow-up survey recommending additional participants following the meeting; this helped to limit interviews to one-hour to be respectful of participants' time and to avoid cognitive fatigue.

After 21 interviews we received no new recommendations for additional participants from our interviewees that we had not already invited to participate. We also began to observe repetition and/or persistent similarities across the responses related to values and governance. Given these observations, as well as the appropriateness of the sample for qualitative studies (Green and Thorogood 2009), our experiences in the system, prior research (Guest et al. 2006), and incorporation of the Q-method activity as triangulation, we concluded that response saturation had been achieved (Mason 2010). For our study, this meant that additional responses related to participants' values or involvement in governance were in accord with our general understanding of their perspectives (Strauss and Corbin 1998, Mason 2010). Therefore, no additional participants were recruited.

The first author conducted in-person, semistructured interviews regarding participants' values, their participation in local, state, or federal governance, and their evaluation of the governance processes with which they are familiar (Appendix 1). Interviews opened with two open-ended questions about why participants became involved in urban agriculture and whether their values have changed over the course of their involvement. These open-ended questions were asked at the start of the interview and before the values-ranking activity so that the list of values gleaned from the literature would not influence the values that participants expressed during these first two questions.

Opening questions were followed by a values-ranking activity modeled off of Q-methodology. Q-methodology is a statistical approach developed by William Stephenson (1953) that investigates the viewpoints or subjectivities of a population. Practically, the methodology explores intercorrelations of participants' viewpoints or subjectivities through analysis of a sorting activity where participants prioritize statements about their values, goals, and perceptions. Participants were invited to rank 13 provided value statements (Table 1) and three blank value statements in a diamond-shaped chart that would encourage (but not require) their ranking to approximate a normal distribution (see directions in Appendix 1); these statements make up the "Q set" for the study. Provided value statements were based on a survey of the academic and policy literature on the benefits of urban agriculture (Brodt et al. 2006, Colasanti et al. 2010, Piso et al. 2016). In order to invite inclusion of benefits uncommonly discussed in the literature, participants were invited to provide additional value statements using the three blank spaces (Tadaki et al. 2017); this represents a departure from the standard method for a Q-sort but the approach is generally considered flexible enough to accommodate these deviations (Watts and Stenner 2012). Participants were encouraged to think about ranking as expressing the priority that they would place on a value if they encountered trade-offs in a practical or policy decision. The goal of Q methodology is to capture the distinct viewpoints in a population through strategic sampling that one has reason to believe will identify differences in perspective (Watts and Stenner 2012). We anticipated that including participants from across the food system was likely to identify different perspectives. Strategically recruited samples permit comparatively smaller sample sizes than traditional research techniques; our sample fits within the suggested range of anywhere from "less than the number of items in your Q set" to "40–60 participants" (Watts and Stenner 2012). Small and strategically recruited samples support inferences about the subjectivities present in a population, but they compromise the ability to generalize about the proportionality of these subjectivities in the wider population, which is beyond the scope of our study.

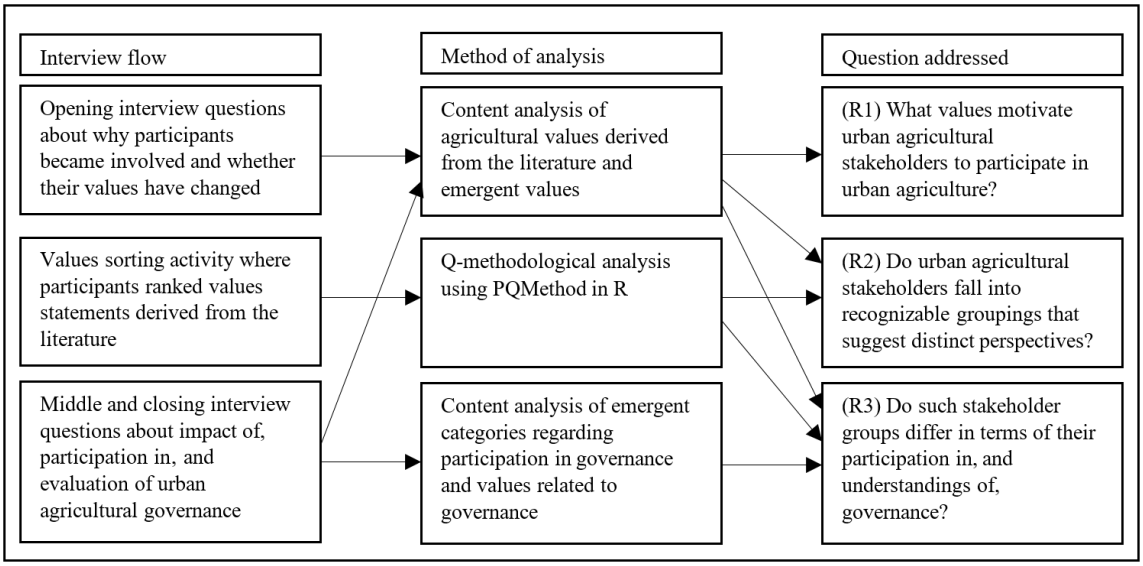
Table 1. List of values expressed by participants, ordered by number of participants who expressed the value in the opening interview questions. All but "social justice" were included in the Q-sorting activity. *Emergent category not included in the Q-sort activity

Labels	Descriptions (Urban agriculture should...)	#
Health	...ensure that available food is healthy and nutritious	15
Hunger	...ensure that everyone has access to enough food	12
Education	...provide opportunities to learn about food and agriculture	10
Community	...support relationships between community members	8
Self	...support your connection to the land and emotional well-being	7
Environment	...produce food without harming or depleting the environment	6
*Social Justice	...ensure that the food system is fair, especially for those worse off	6
Market Opportunity	...provide a business opportunity that meets financial needs	6
Sovereignty	...promote local control of food production and distribution	3
Safety	...ensure that food production is safe and minimizes risks	2
Convenience	...produce fresh food for oneself or convenient markets	1
Economic Growth	...promote more diverse and local businesses	1
Job Training	...provide jobs and/or training to people looking to enter workforce	1
Beautification	...improve the look and feel of neighborhoods	0

After the value sorting activity, participants were asked a separate round of open-ended questions pertaining to their experience with, and participation in, governance at the local, state, and federal level. Interviews closed with questions about participants' evaluation of the governance system, including which practices work well and which create obstacles.

All interviews were professionally transcribed. We conducted a qualitative content analysis on the interview data to identify emergent themes (Elo and Kyngäs 2008), coding the data inductively (Thomas 2006), then condensing the codes into themes by merging related concepts. Finally, we grouped the themes into categories that reflect their relationships. These categories and associated themes formed our codebook, which we used to deductively recode all 21 interviews to make sure the

Fig. 1. Map of mixed-methods approach in terms of interview flow, method of analysis, and research question addressed.



final themes and categories effectively captured participant language and ideas (Glaser 1965) and no new codes related to our research questions emerged. Codebook development was a collaborative process. Two coders coded two interviews independently then discussed their draft codes to create a working list. They cocoded a third interview with this code list, discussing the usefulness and clarity of each code, as well as additions, changes, and confusion around code meanings. They condensed related codes and grouped codes into thematic groupings and major categories, leading to a draft codebook. They then independently coded an additional interview, revising the codebook in the process, and cocoded a fifth interview (25% of the data set). No new codes emerged at this stage; all revisions to the codebook pertained to streamlining language, eliminating redundancy, and clarifying code definitions. Satisfied with the effectiveness of this revised codebook, one coder then recoded the entire data set, meeting weekly with the second coder to discuss themes, observations, and challenges that arose in the coding process.

The final codebook was organized into five main categories including: (a) Participants' background, (b) Relationships with others, (c) Participation in governance, (d) Agricultural values, and (e) Criteria for good governance. The analysis below draws from categories (c), (d), and (e). Participation in governance included categories concerning degree and form of participation, e.g., at the federal, state, or city level. Agricultural values included the 13 values provided in the Q-sort activity plus one emergent value and a code for "other" to capture additional values discussed by no more than one participant. In addition to agricultural values, we also coded for what Lieberherr-Gardiol (2009) calls "criteria for good governance," e.g., that governance should be equitable and/or sustainable. These criteria emerged primarily through interview questions regarding the governance system. All transcripts were coded in Dedoose. Q-sorts were analyzed using PQMethod in R. The relationship between the flow of interview questions, method of analysis, and research question addressed is depicted in Figure 1.

RESULTS

Results from the demographic survey completed prior to the interviews provide context for the results below. Nineteen of 21 participants completed this demographic survey; two declined to provide demographics for unstated reasons. Of these, 14 identified as female and five as male; 17 identified as Caucasian and two as Latino/Latina and/or multiracial. Five participants were age 25–34 years, 10 were age 35–44, and four were age 55–64. Seven held a Master's degree, 10 held a Bachelor's degree, one held a High School diploma, and one chose not to disclose their degree status. Three earned a household income between $20,000–$39,999, six between $40,000–$59,999, three between $60,000–$79,000, and five more than $100,000. Thirteen participants garden or farm; six of these on less than one acre and the remaining seven on between one and 25 acres.

First, we present the results of interview analysis to describe the values that motivate participants' involvement in urban agriculture. Second, we present results from the Q-sorting activity to suggest a typology of four groups of urban agricultural stakeholders in this context. Last, we use this typology to explore how these four groups differ with respect to their participation in, and attitudes toward, urban agricultural governance.

Values motivating participants' involvement in urban agriculture

Participants expressed a wide range of agricultural values prior to the Q-sorting activity, including the 13 values included in the sort—thus aligning with prior literature (e.g., Lovell 2010, McClintock and Simpson 2018)—plus an emergent value of social justice expressed by multiple participants. Additional values were expressed by no more than one participant, e.g., spirituality, neighborhood safety.

The average participant invoked 3.9 distinct values, ranging between two and seven values discussed. Table 1 summarizes these values and reports the number of participants who evoked that value prior to the Q-sorting activity. Most common among these were the values of health (15 of 21), hunger/access (12 of 21), and education (10 of 21), with one outreach and engagement specialist providing a paradigm of the three values coming together:

> *My main goal is just to feed people and give them fresh food. You know, that isn't provided to them through the food bank or otherwise. The people who can't afford to buy it, or the people that really want it but just don't know how to grow it. So we're just there to help people, give them information.*

By and large, participants conceived of health, food access, and education similarly. Many became involved in urban agriculture in order to promote access to healthy foods, and to promote education so that people could grow for themselves or make healthier purchasing decisions at grocery stores or farmers' markets.

The next most commonly evoked values included community (8), self (7), environment (6), social justice (6), and market opportunity (5). Though expressed by fewer participants, those who did express the value of community tended to emphasize it. One community gardener explained,

> *Spend a couple of hours in the garden with other people you don't know, you may make a new friend or something. And it helps build the community and things like that. And community is a big thing for us, too. We all live in the city and it's go, go, go, go, go, go. We don't all take time to know each other and hang out and do things.*

Another community gardener praised "the web of relationships that the garden gives us." Others discussed the role that urban agriculture plays for one's "self," with one farmer recalling "experience working in agriculture and then kind of seeing this healing potential," and another sharing that, "a garden for me is a real Zen place...I enjoy getting my hands dirty. If I don't have dirt under my fingernails from April to October, I just don't feel right." Environmental values were often evoked when discussing efforts to avoid conventional agriculture and its reliance on pesticides, herbicides, and carbon-intensive inputs. "Market opportunity," typically expressed in terms of the importance of growers being able to make a living producing food, was also regularly evoked by producers and nonproducers alike. As one farmer and educator put it, their "biggest passion" is "to make sure that farmers get paid and to really be an advocate for that."

Several other values previously identified were sovereignty (3), safety (2), job training (1), convenience (1), and economic growth (1). When sovereignty was discussed it was in participants' emphasis on local production, with one outreach and engagement specialist calling for "supporting your local growers and trying to keep things as close to where they're produced as possible."

Typology of urban agricultural stakeholders

As noted, 13 statements derived from existing research were used in a Q-Methodology wherein participants ranked statements by order of most to least agreement (Table 1). Initial analysis of the values ranking activity using a Q-methodology approach indicates that up to eight factors could be extracted with eigenvalues over 1.00. Factors here are idealized Q-sorts (completed sorting activities); the goal is to determine a number of idealized Q-sorts that roughly correspond to common ways that different participants prioritized values when sorting. Following heuristics articulated by Watts and Stenner (2012), such as approximately one factor per seven participants, and by triangulating the grouping produced with three to six factors with qualitative responses and demographic considerations, we settled on extracting four factors. Four factors explained 78% of the variation across the Q-sorts. A typology based on three factors explained 69% of the variance, and while a typology based on five (83%) and six (88%) explained incrementally more of the variance, it is important to note that settling on the number of factors to extract requires a judgment of when incremental gains no longer justify further complicating the typology. Value statements with eigenvalues greater than 1 or less than -1 are generally considered characteristic for a factor and are indicated in bold in Table 2 (Stenner and Watts 2012). Positive eigenvalues indicate that participants who load onto that factor place higher priority on the value than the overall sample; conversely, negative eigenvalues suggest that participants who load onto the factor place lower priority on the value.

Table 2. Characterizing statements for motivational frames. Value statements with eigenvalues greater than 1 or less than -1 are generally considered characteristic for a factor and are indicated in bold.

	Urban agricultural stewards	Risk managers	Food desert irrigators	Urban agricultural contextualists
Beautification	-0.75	-0.48	**-1.73**	0.75
Community	**1.50**	0.89	0.00	**1.73**
Convenience	-0.16	0.09	**1.03**	**-1.66**
Economic Growth	0.14	0.42	-0.69	**-1.10**
Education	0.54	0.94	0.35	0.44
Environment	**1.20**	0.31	**1.38**	0.75
Health	0.51	1.00	**1.38**	**1.00**
Hunger	0.06	0.75	**1.38**	0.25
Job Training	-0.66	0.64	**-1.04**	-0.70
Market Opportunity	-0.71	-0.04	-0.35	**-1.26**
Safety	**-1.21**	**1.36**	0.34	**-1.10**
Self	0.91	-0.33	0.00	0.11
Sovereignty	**1.69**	-0.57	-0.69	**-1.00**

Based on the values characteristic of each factor, we labeled the four factors: (1) Urban agricultural stewards, (2) Risk managers, (3) Food desert irrigators, and (4) Urban agriculture contextualists. Characterizing statements for each of these four motivational frames are indicated in bold in Table 2. Urban agricultural stewards place comparatively higher priority on community, environment, and sovereignty, while placing comparatively lower priority on safety. The term "urban agricultural steward" denotes these stakeholders' emphasis on ecosystem health, especially through community-based initiatives. Risk managers place comparatively higher priority on safety, and though health and education fall just short of the quantitative threshold to consider them characteristic,

triangulation with interviews suggest that both are priorities. The term "risk manager" denotes these stakeholders' concerns about food-borne risks and the importance of education to ensure consumer safety and producer compliance. Food desert irrigators place comparatively higher priority on environment, health, hunger, and convenience, while placing comparatively lower priority on job training and beautification. The term "food desert irrigator" denotes their emphasis on providing convenient access to nutritious food. Urban agricultural contextualists place comparatively higher priority on community and health, while placing comparatively lower priority on convenience, market opportunity, safety, economic growth, and sovereignty. The term "urban agricultural contextualist" denotes their emphasis on urban agricultural benefits that are achieved in most contexts, coupled with the commitment that additional benefits should be geared to the particular context of the urban agricultural system in question.

To determine whether a participant belongs to a particular grouping, factor loadings were calculated as the multiplier for the desired level of statistical significance divided by the square root of the number of statements in the Q-sort (Watts and Stenner 2012). At $p < 0.05$, 17 of 21 participants loaded onto one of these four factors, while the remaining four participants loaded significantly onto two factors; these four are included in the group on which they loaded most strongly. Interestingly, the typology cuts across the role that the participants held in the food system. Urban agricultural stewards included urban farmers, outreach and engagement specialists, and city program directors. Risk managers included urban farmers, community garden leaders, farmers' market managers, outreach and engagement specialists, and regulators. Food desert irrigators included community garden leaders and a market manager, while urban agricultural contextualists included a community garden leader and an outreach and engagement specialist.

Stakeholder groups' participation in, and understandings of, governance

The four factors emerging from the Q-Methodology were used to group individuals based on the agricultural values that motivate their engagement in urban agriculture. Interviews were analyzed to provide insight into these stakeholder groups' participation in, and understandings of, urban agricultural governance. This analysis suggests that each of the four groups understands governance differently, and that these understandings inform variation in the scale and extent of their participation in governance.

Urban agricultural stewards

The most common perspective among participants, representing nine of 21 participants, was that of an urban agricultural steward. In terms of ranked values, urban agricultural stewards ranked sovereignty, community, and the environment as among the most important goals for urban agriculture, and tended to place less priority on safety.

As mentioned in the previous section, participants across the board were dedicated to community building, so it is sovereignty that sets urban agricultural stewards apart from the other three perspectives. Nearly 90% (31/35) of statements to the value of sovereignty were voiced by urban agricultural stewards. As one farmer put it,

> *I think that urban agriculture can serve as a model for what the larger food system should strive for. Local control of food production and distribution. I think corporate control and governmental control, in the form of subsidies... [is] dangerous, because it takes power out of the hands of the people, both the people who are consuming it and the people who are growing food.*

Similarly, a disproportionate amount of statements to the value of the environment were voiced by urban agricultural stewards (35/54, or nearly 65%). Some conversations keyed on general concerns about mitigating climate change by shortening food distribution supply chains or avoiding reliance on carbon-intensive fertilizers. As another urban farmer explained,

> *We need to eat and we need to have clean water... And I also know that statistically agriculture is a huge piece of carbon emissions...so finding ways to grow food that are diverse and resilient that can withstand the rigors of climate change as things happen, and can withstand unpredictable seasonality and extreme weather events, but also are sustainable in and of themselves as far as supply chain - the whole supply chain - with emissions and pollution... Those things are all really important.*

Other conversations shared participants' efforts to create habitat for beneficial insects or to raise farm animals within the city, and it was here that these participants' vision for sustainable urban agriculture stood in some tension with city and county regulations. Often urban agricultural stewards expressed the need for an urban agriculture overlay, a specific zoning designation, so that particular corridors in the city would be regulated according to policies friendlier to urban agriculture. An administrator of one of the city's food-related offices tied together community, sovereignty, and the environment when describing such an overlay:

> *It'd be kind of cool if people could self-select to live in these zones because they want that enhanced personal freedom to live a more sustainable, self-reliant lifestyle, and they want to live among other people who feel the same way-who don't want necessarily, you know, front lawns to look like putting greens-who maybe want some native wildflowers or some kale growing in their front yard, you know?*

Comments like these reveal something of urban agricultural stewards' criteria for good governance. These participants often expressed reservations about beautification and, characteristically, about safety. An outreach and engagement specialist explained that she and fellow producers in their neighborhood "don't care about safety as much as most people do...[Urban agriculture] is a different production system [in which] there's not as much risk of unsafe food because there's a different connection to the food and intentionality around it." Rather than viewing governance as a way of enforcing standards of beautification (e.g., grass height) and safety, urban agricultural stewards preferred a more adaptive and context-sensitive approach to governance, where communities could collaboratively construct norms and rules in the service of that community's vision for urban agriculture. Far from resisting regulation writ large, urban agricultural stewards actually lamented the "missed opportunity" of carefully drafting

urban ecological policy, an opportunity that had arisen in conversations with city officials but that had passed. One city program director compared "two different situations...when you're just told you're fine to keep doing what you're doing, as opposed to, let's envision our future together and set ordinances and policy that get you there." By striving for sustainability in their own production practices at home and in discussions with policy makers, urban agricultural stewards were stewards of both the physical landscape of the city and the regulatory landscape.

Risk managers

Second most common among participants, representing seven participants, was the perspective of a risk manager. In terms of ranked values, these participants were defined by prioritizing safety more highly than others, while also placing heavy emphasis on education and health (both fell just short of the z-score threshold). Indeed, 12 of 14 statements to the value of safety were voiced by risk managers, though all of these statements were voiced by three participants, including two that worked for agencies specifically concerned with food safety. One participant, a peri-urban farmer, connected health and safety in stating the mission of his operation:

> *The underlying goals are to feed people healthy food in our community...The fact that they're producing all of this food that is regulated by our standards of organic practices - not organic, but organic practices - and the [Michigan Agriculture Environmental Assurance Program] standards for food safety, ensures that the community that they are a part of and our greater community are getting [safe and healthy food]. And then they're using it as a source of income, as a source of self-sufficiency, job training, education.*

The relationship between values implicit to organic and food safety standards, on the one hand, and values like self-sufficiency, job training, and education, on the other, comes across in the "and then" of this statement. As the participant explained, the ultimate goals of community access to healthy foods must first accord with environmental and safety standards before attending to additional promises of urban agriculture like job training or education. This was succinctly stated by a participant working for a state food safety agency:

> *Without [food safety], nothing else happens. If you don't have safe food, whether you're hungry or not, you're still going to have problems. You're going to have health problems. You're going to have hunger problems, because people are going to be afraid to eat the food. Do you know what I mean?*

For risk managers, health showed up in terms of minimizing the risk of foodborne illness in addition to promoting healthy diets and avoiding risky agricultural practices such as pesticide application. Education was important so that producers and consumers could be knowledgeable about these risks and engage in practices that would minimize them. As a different regulator put it:

> *I think food safety is the biggest change you're going to see in many years. So like anything, everything is evolving and changing, and when it comes to urban ag and small farms - whether it be urban or rural - some of the things we've done is to educate these farmers so that they know food safety.*

Other expressions to the value of education emphasized nutrition education so that community members would be more knowledgeable about the impacts of their diet on their well-being.

What unites the values of safety, health, and education, especially education about health, safety, and environmental standards, is an understanding of governance that views regulation as ensuring strict protection of basic rights. From the point of view of producers, this means figuring out what standards you need to meet and doing your best to comply; as one participant put it, "I always look for guidelines, right? And as long as I can understand where I fall within the system there, I can understand how I can go about trying to do what I want to do." Another explained that in training new farmers, their program needed to inculcate incubating farmers into a culture of compliance:

> *They're going to do this stuff because it's a requirement of the program. It might not be something that they're thinking of at the beginning, it might be, but I think that has given a lot of people the opportunity to really grow through the program and internalize the systems that we have in place.*

More so than the other groups, risk managers celebrated clear and defined policies created through transparent processes. Generally, however, risk managers adapted to rules and regulations whereas urban agricultural stewards adapted rules and regulations (where "adapt" in their case is a transitive verb). This is to say that risk managers understand governance mainly as state-legislated regulations to which stakeholders should comply. Whereas all (9) urban agricultural stewards were involved in crafting rules at some level of governance, only four of seven risk managers participated in formal policy making.

Food desert irrigators

Though the perspectives of urban agricultural stewards and risk managers represented most of the participants, five participants fell into neither category, with three holding the perspective of a food desert irrigator. Food desert irrigators placed higher priority on access to food, health, the environment, and convenience, while de-emphasizing job training and beautification. These participants were motivated by concerns that some neighborhoods in the city were food deserts and that community gardens and farmers' markets could provide access to healthy food. One community gardener shared a proposal for addressing these food deserts:

> *One of the things that we want to do... is have an orchard on the residential lot. I don't know if I can do that but we're going to try. And basically just have baskets that anyone walking up and down the street can grab a basket and go grab a bushel of whatever. I don't know if we can do that and I don't know if it's legal.*

Another community gardener lamented the cap on hens for residential lots in the city. With a larger flock, the garden could supply its associated food pantry with "a steady production of eggs so that I wouldn't have to worry about it just to help feed the people because that's important to me...[Eggs] are not too terribly expensive at the grocery store, but there's people that have to

choose between buying their medication or buying food." These participants were also more likely to value convenience, with one farmers' market manager recounting the challenges of making the market as convenient as big box stores.

Given their emphasis on promoting food access to those with the greatest needs, it is unsurprising that food desert irrigators call for empathy as a criteria for good governance. In describing rule-making and enforcement at their community garden, one gardener explained that, "when a client comes in [to the pantry or garden]...I don't know their story. Getting to know a person and having a little bit of compassion goes a long way with the community." Similarly the market manager stressed knowing their farmers personally and making sure that market policies recognize their individual situations. Though none of the three food dessert irrigators interviewed had participated in governance at the city level or higher, all were very intentional about crafting rules within their particular organizations that reflect empathy.

Urban agricultural contextualists

The remaining two participants shared the perspective of an urban agricultural contextualist, characterized by its emphasis on health and community, two values that these stakeholders expected to be priorities across diverse urban agricultural efforts. Urban agricultural contextualists trust that urban agriculture can bring communities together and encourage healthier eating habits, but they are relatively cautious about overselling the benefits of urban agriculture, and harbor reservations that urban agriculture can be the silver bullet it is sometimes portrayed to be. One participant who studied urban agriculture in a nearby city explained that urban agriculture must grow and evolve based on the contingencies of place and the priorities of residents:

> *It's pretty obvious also that there's substantial variation in the built environment and the socio-cultural context across the municipalities. So in that sense I think there are different levels of receptivity to different scales of urban production and different priorities and values in terms of what's seen as most important or most needed by different communities. Might look different in different places.*

Restrained expectations about the promise of urban agriculture licensed contextualism about additional benefits that urban agriculture might accrue, where according to this participant policies "should be determined by municipalities and the stakeholders in that community." This contextualism also arose in conversations with a community garden leader reflecting on values beyond community:

> *I mean I think those [other values] are all great. I just don't particularly [expect them], with our own community garden...One of my questions about our community garden is, is it scalable? Is it doable? Is it sustainable? Can we keep it going? And we're just hanging on, and so to think we could sell food later, or to train people to go on and do a job, I mean if that's a byproduct, great. But it isn't one of my main goals or values.*

Both participants shared the criterion that good governance should be decentralized, so that more local levels of policy making can cope with the specific challenges facing that community and support that community's particular values. They were less comfortable with top-down governance. Though our analysis suggests that all four perspectives demonstrate an interplay between agricultural values and expectations for governance, urban agricultural contextualists are notable for placing priority on their understanding of good governance. In the case of urban agricultural stewards, risk managers, and food desert irrigators, some agricultural values were inherently more important than others, and good governance could be evaluated in its ability to deliver these inherent values. For contextualists, however, the prioritization of values should be determined based on a prior commitment to deliberative and decentralized decision making.

DISCUSSION

These findings suggest that urban agriculture stakeholders hold both diverse agricultural values and diverse understandings of urban agricultural governance. Policy makers and stakeholders must recognize diversity along both axes to achieve effective and legitimate governance.

Effective governance anticipates how stakeholders will respond to changes in rules, norms, regulations and policies (Schoon and te Grotenhuis 2000). Extensive research explores how farmers and others in the food system respond to agricultural rules and regulations, yet less is known about what motivates these actors to become involved in governance themselves (Schoon and te Grotenhuis 2000, Walder and Kantelhardt 2018). Our typology indicates that stakeholders engage in governance differently depending on the particular agricultural values that they prioritize. In this case study, urban agricultural stewards pair their emphasis on community, sovereignty, and environment with active participation in local governance and the general attitude that rules, regulations and policies should be crafted to respond to these values. By engaging in governance, these stakeholders extend stewardship of their farms, gardens, and organizations to the food system more generally. This finding resonates with the work of stewardship scholars who have documented the connection between stewardship values and civic engagement (Svendsen 2009, Fisher et al. 2015). By contrasting urban agricultural stewards with other stakeholder groups that participate in governance less robustly or at the organizational level, our study supports the insight that stewards are distinct. This corroborates research showing that stewards and stewardship networks provide resources for resilient governance that dynamically responds to social challenges through deliberation and knowledge integration (Connolly et al. 2014).

Legitimate governance ensures that the values informing rules, norms, regulations, and policies are aligned with and accountable to the values of stakeholders (Walker et al. 2002, Anderies et al. 2004). Research into stakeholder values, especially into values as conceived of as priorities, commonly underwrites critiques of governance for ignoring or underrepresenting public values (Dietz et al. 2005, Tadaki et al. 2017). Generally, environmental and agricultural values research has tended to focus on values that might be achieved through practical or policy actions; for example, farmers might adopt practices that promote biodiversity because they value the environment, or policy makers might legislate safety standards to promote health. Less attention has been paid to stakeholders' valuation of environmental and agricultural governance in these studies. These "governance values" are not just another set of values to be met in addition to

environmental and agricultural values, however. Instead, governance values provide guidance for how (through what process?), where (at what scale?), and by whom (who should craft rules to impact who?) governance should be responsive to stakeholders' environmental and agricultural values. Values researchers aiming to facilitate deliberation among diverse stakeholders would do well to appreciate different understandings of governance in order to better locate (1) how and where rules and regulations should be responsive to different environmental and agricultural values and (2) who should be crafting rules and regulations for whom. For urban agricultural governance in Lansing, for instance, our study suggests that risk managers and food desert irrigators conceive of governance where state and market mechanisms play an essential role, while urban agricultural stewards and contextualists conceive of governance in a "hybrid" mode. Facilitation could first clarify these different ways to conceive governance because stakeholders are likely to agree that some governance is best addressed by state and market mechanisms while other decisions are more appropriately made at the community or neighborhood scale. This can then clarify subsequent conversations because stakeholders may agree to prioritize values like community and environment if they can trust that values such as health and safety are strictly enforced by central regulations and policies; conversely, stakeholders may be more receptive to central regulations and policies of health and safety as long as the balance of environment and beautification could be governed at the community or neighborhood scale. When stakeholders do not understand how one another conceive of governance, it may be more difficult to find common ground about which values should be prioritized in urban agriculture. Recognizing how different groups understand governance provides a pathway to more productively discuss how different values can be realized at different scales and through different mechanisms.

CONCLUSION

Lieberherr-Gardiol's (2009) call for an alliance between urban sustainability and governance upholds seven criteria for good urban governance: sustainability, decentralization, equity, efficiency, transparency and accountability, civic involvement and citizenship, and security. To various degrees, urban agricultural stewards, risk managers, food desert irrigators, and urban agricultural contextualists each value these criteria. Urban agricultural stewards were most attentive to sustainability and civic involvement, risk managers attended to transparency and security, food desert irrigators emphasized equity, and urban agricultural contextualists celebrated decentralization or polycentric governance. Insofar as good urban governance requires all of these features, policy makers and regulators should include each of these perspectives in shaping the regulatory landscape of urban agriculture. Crucial here is recognition not only of diverse values and motivations among stakeholders, but diverse understandings of and expectations for governance in general. The "missed opportunity" expressed by one participant and echoed by many urban agricultural stewards may stem from misrecognition; unlike risk managers, urban agricultural stewards see policy making not merely as a regulatory landscape that demands compliance, but as an opportunity to codify a shared vision. Urban agricultural stewards retain the steward's relationship to place with a social-ecological sensibility about the coupling of the ecological and social landscapes. Their stewardship extends beyond tending to their fields to tending to relationships with policy makers and to the offices and organizations that more informally govern food systems.

Responses to this article can be read online at:
http://www.ecologyandsociety.org/issues/responses.php/10650

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Appendix 1. Interview protocol.

Introduction and purpose of the interviews: Thank you for agreeing to our interview today! Our research group is interested in how communities interact with formal and informal regulations related to urban agriculture here in the Greater Lansing Area.

Interview walkthrough: The interviews comprise of three stages; first, I'll ask you about your goals for participating in urban agriculture; second, I'll ask about the ways rules and regulations help or hurt these goals; and third, I'll ask about your experience in participating in creating rules and regulations related to urban agriculture.

> By "rules and regulations" I mean both the formal policies at the federal, state, or local level, and also the informal guidelines or even expectations for how communities around here engage in urban agriculture, like setting the days and hours for a farmer's market, or the community rules for participation in a specific garden.

Stage One: Goals for urban agriculture

Question 1	When and why did you become involved in urban agriculture?
Probing Question 1.1	Are there any other goals that motivated you to be involved in urban agriculture?
Question 2	Have your motivations for being involved in urban agriculture changed over the course of your involvement? How and why?
Probing Question 2.1	Are there any new goals for urban agriculture that seem more important to you now?
Probing Question 2.2	Do any of your original goals seem less important than they did when you started?
Probing Question 2.3	What kinds of challenges have you experienced? Have those impacted your motivations for participation in urban agriculture?
Question 3	Along with the goals that you mentioned, consider the following goals that motivate individuals to become involved in urban agriculture (see Goals Cards and add from Questions 1 & 2). Please rank the goals in the order that you deem them most important to your vision for urban agriculture. If any are tied, feel free to place them next to one another. If you view two as more or less the same thing, feel free to stack them.

Probing Question 3.1	What do you consider to be the most important goal or goals, and why?
Probing Question 3.2	What do you consider to be the least important goal or goals, and why?
Probing Question 3.3	Did you have any difficulty ranking any of the goals, and why?

Stage Two: Institutions and urban agricultural goals

For this stage of the interview, we will talk about the role that formal regulations and community rules play in how you pursue the top three goals that you ranked in Stage 1.

Question 4A	You ranked [A] as the most important goal for urban agriculture. What federal, state, or local regulations or policies do you believe help or hurt your ability to pursue that goal?
Question 5A	With respect to [A], what neighborhood or organizational rules do you believe help or hurt your ability to pursue that goal? For example, are there any farmers' market regulations that help or hurt [A].
Question 6A	Finally, with respect to [A], how do your own day-to-day routines help or hurt your ability to pursue that goal?

[For each of Questions 4A, 5A, and 6A, repeat for the Goal B and (time permitting) Goal C]

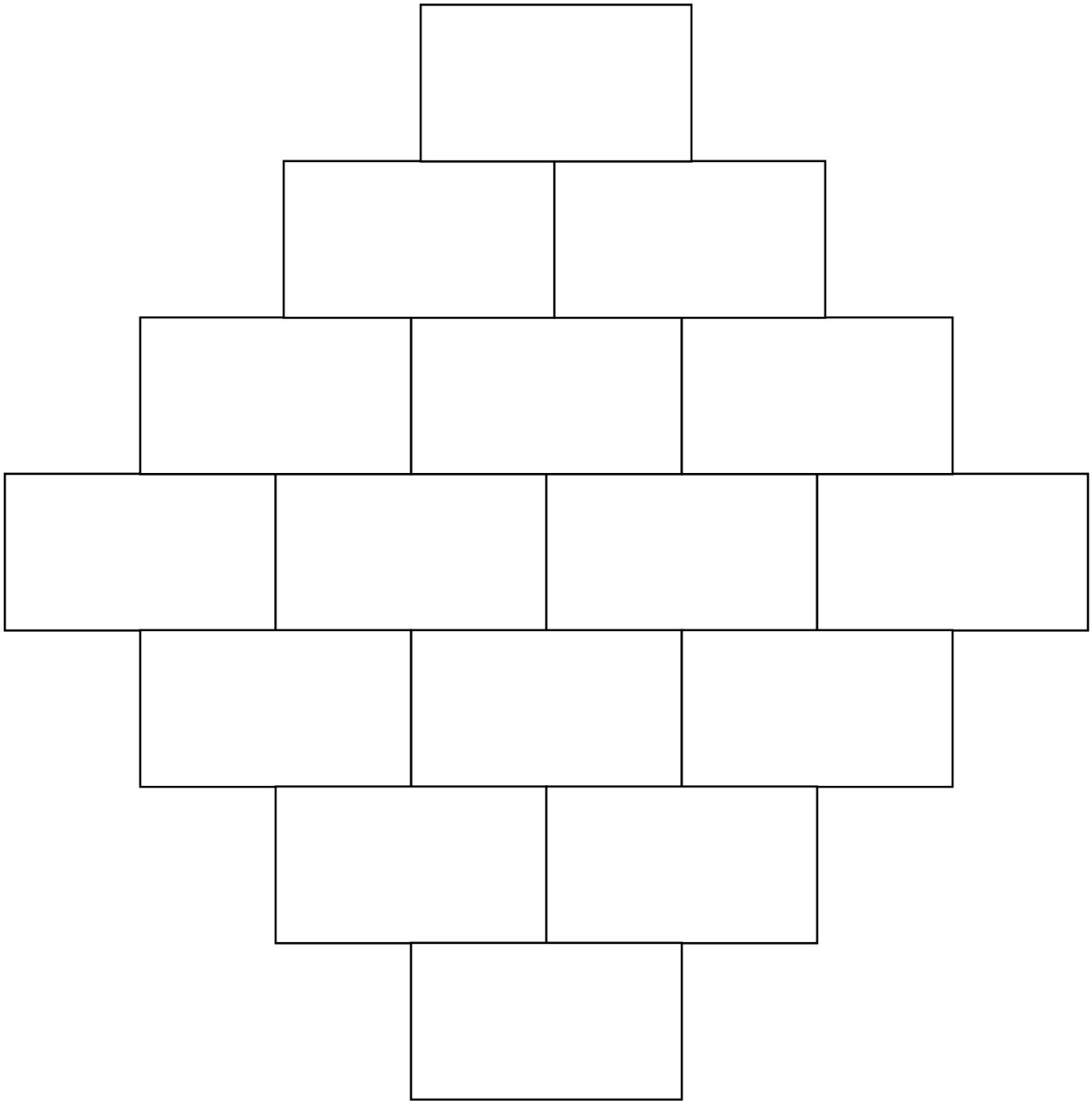
Stage Three: Participating in urban agricultural governance

Question 7	Have you been involved in the process of any of the federal, state, or local regulations or policies, and if so, how were you involved?
Question 8	Would you describe this process as a good process? Why or why not?
Question 9	Have you been involved in creating any of the community or organizational policies, and if so, how were you involved?
Question 10	Would you describe the process that created this policy a good process? Why or why not?
Question 11	How do any of the policies that you discussed impact your own day-to-day routines? Have you catered your day-to-day routines around any of the policies and regulations discussed?

Goal Ranking Sheet

Please use the Goals Statements (including the ones stated in the opening questions) to fill in the pyramid below by ranking the goals from most important to least important to you. When possible please limit yourself to the number of spaces in each row (for example, only one card should be placed on the top or bottom of the pyramid, while four cards should be placed in the middle row), but you can add off of the side of the rows if necessary. Don't worry about placement left to right within a row, as all that matters is placement top to bottom.

Most important



Least important

Community UA should support relationships between community members	Convenience UA should produce fresh food for oneself or convenient markets	Economic Growth UA should promote more diverse and local businesses	Education UA should provide opportunities to learn about food and agriculture
Job Training UA should provide jobs and/or training to people looking to enter workforce	Environment UA should produce food without harming or depleting the environment	Health UA should ensure that available food is healthy and nutritious	Hunger UA should ensure that everyone has access to enough food
Sovereignty UA should promote local control of food production and distribution	Market Opportunity UA should provide a business opportunity that meets financial needs	Safety UA should ensure that food production is safe and minimizes risks	Beautification UA should improve the look and feel of neighborhoods
Self UA should support your connection to the land and emotional wellbeing			