

PRELIMINARY RESULTS:

Survey of Extension's Role in Urban Agriculture

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INTRODUCTION

Extension educators throughout the country are involved in work focused on urban agriculture. To date, however, few if any studies have been completed that examine the scope and extent of that work. In 2015, the eXtension Community, Local and Regional Food Systems (CLRFS) Community of Practice conducted a national survey aimed at measuring Extension's role in urban agriculture. The CLRFS Community of Practice is a national network of more than 400 educators, researchers and practitioners who collaborate to conduct new research and programs, expand professional networking, and create innovative educational opportunities.

1 SURVEY DISTRIBUTION AND RESPONSE

This survey was developed collaboratively by members of the Urban Agriculture Working Group, a sub-team that provides opportunities for CLRFS members to share information, learn, and collaborate on topics and issues related to urban agriculture. The survey included both open and closed-ended questions asking respondents to describe their Extension work, their activities related to urban agriculture, challenges they face, and Extension programs and resources relevant for urban agriculture.

For this survey, urban agriculture was defined as the growing, processing, and exchange of food and other agricultural products in and around cities. Urban agriculture encompasses a wide range of activities from small-scale, diversified farmers who sell to urban markets to community-based projects that focus on food justice to individuals growing produce at home. Extension's role in urban agriculture is equally varied and may include support for small farmers, development of local markets, providing educational services, and engaging in food system planning, policy, and assessment.

Survey data was collected online from October to December 2015 using Qualtrics software. The survey was distributed via email to the CLRFS listserv, which had 384 members during the period of survey collection. We also used snowball sampling to recruit additional participants, asking Urban Agriculture Working Group members and CLRFS members to distribute the survey to others in their professional networks. Finally, we did targeted outreach to Extension professionals in two regions—the Pacific Northwest and the Northeast—that did not initially have many survey respondents. Of the surveys we received, we retained those that had at least 30% of the questions completed. In total, we retained and analyzed 147 surveys.

Because of our sampling design, there is likely some selection bias toward Extension personnel who are already engaged in local food systems work. We also are unable to calculate a response rate because there is no way of knowing how many potential respondents the survey reached. While the survey results should not be viewed as representative of all the Extension personnel working in urban agriculture, they do offer a snapshot of Extension involvement in urban agriculture, particularly among members of the CLRFS Community of Practice and their extended networks.

Data from closed-ended questions were summarized in Excel. We used qualitative data analysis techniques to categorize and analyze data from open-ended questions.

2 SURVEY RESPONDENTS

Geographic Location

Geographic location: We received survey responses from Extension professionals working in 33 states. North Carolina (n = 19), Nebraska (n = 16), Virginia (n = 13), Florida (n = 11), and Washington (n = 10) were the states with the greatest number of respondents. We also grouped responses by region. Nearly 75% of responses came from the Midwest and Southeast regions, while fewer than 10% of responses came from the Northeast and Southwest (table 1).

The portion of surveys received from each region was similar to the portion of CLRFs Community of Practice members from each region with two exceptions (table 1). The percent of survey responses from the West was slightly greater than the percent of CLRFs members from that region, while the percent of survey responses from the Northeast was lower than the percent of CLRFs members from that region, despite our outreach efforts. While the portion of responses from the Southwest was very low, this mirrors the overall representation of the Southwest in the CLRFs Community of Practice.

Table 1. Geographic distribution of survey responses by region. This table shows the percent of surveys received from each region and, for comparison, the percent of overall CLRFs membership from each region. The table also indicates in bold which states were represented in the survey; CLRFs members come from all 50 states.

Region	Percent of surveys	Percent CRLFS membership	Percent of states in region represented
West WA, OR, CA, NV, ID, MT, WY, UT, CO, AK, HI	20% n = 29	15% n = 57	64% (7/11)
Southwest AZ, NM, TX, OK	3% n = 4	2% n = 6	25% (1/4)
Midwest ND, SD, NE, KS, MN, IA, MO, WI, IL, IN, MI, OH	36% n = 53	37% n = 144	100% (12/12)
Southeast AR, LA, MS, AL, GA, FL, SC, NC, KY, TN, WV, VA, MD, DE	38% n = 56	36% n = 141	71% (10/14)
Northeast NY, NJ, PA, RI, CT, MA, NH, VT, ME	4% n = 6	11% n = 42	33% (3/9)
Totals*	101% n = 148	100% n = 390	

* Totals sum to greater than 147 surveys and greater than 100% because one respondent's position covered two states. The CRLFS membership data is from April 2016.

SURVEY RESPONDENTS

Role in Extension and program focus

Role in Extension: People occupying a wide range of positions within the extension system are engaged in urban-agriculture-related work (figure 1). Extension Educator and Extension Agent were the most commonly listed positions. This open-ended question asked survey participants to write in their role in Extension and their program focus, so our analysis of the responses relied on the terms that people used to describe their work.

Program Focus: Horticulture (n = 39) and Agriculture & Natural Resources (n = 27) were the most commonly reported areas of program focus (figure 2). Other programs related to production, such as Small Farms, Sustainable or Organic Agriculture, and Water, were also well represented. Survey respondents participated in three programs that were specifically devoted to alternative food production systems: community, local, and regional food systems (n = 18), urban agriculture (n = 10), and local foods (n = 7). Many respondents listed more than one program area; when this occurred, each program area was categorized and counted separately.

Figure 1. Role in Cooperative Extension (n = 146)

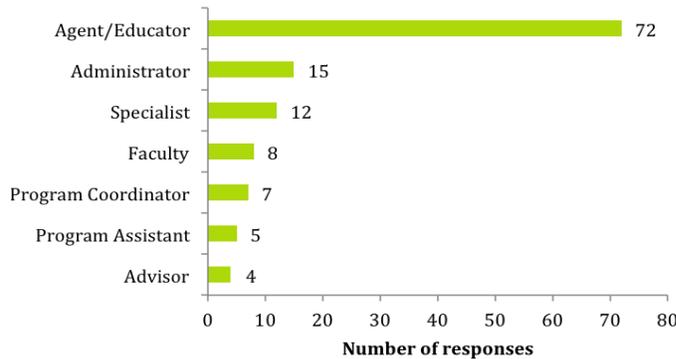
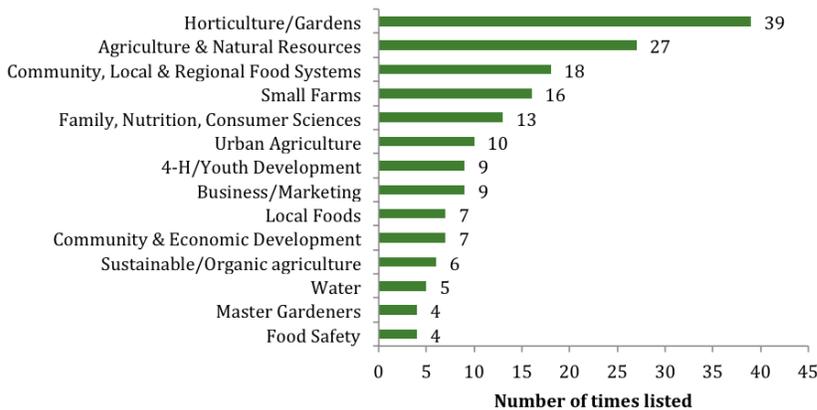


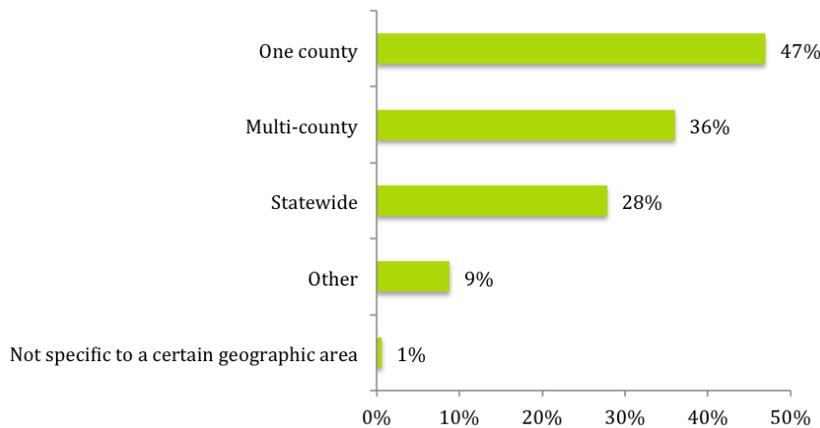
Figure 2. Program focus of Extension professionals involved in urban agriculture (n = 146)



3 SCOPE OF WORK AND SIZE OF AREAS SERVED

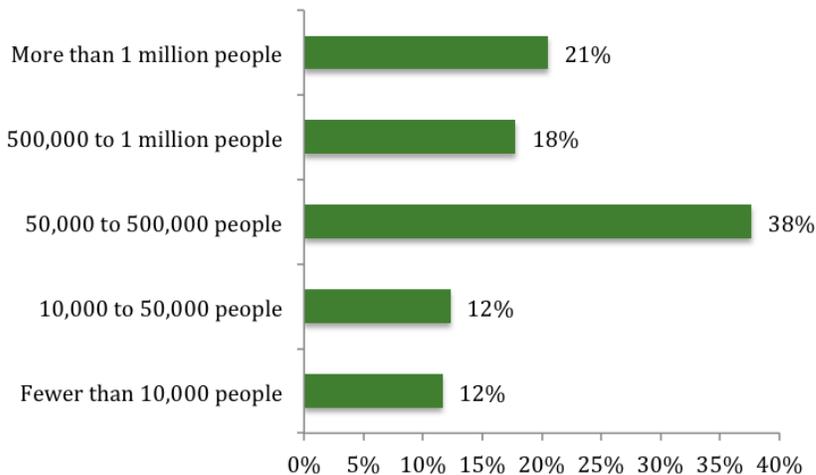
Geographic scope of work: Nearly 50% of respondents worked in a single county (figure 3). Thirty-six percent of respondents worked in multiple counties and 28% had a statewide focus. Typically those who selected “other” described working in an urban area or having some combination of single-county, multi-county, and statewide responsibilities.

Figure 3. Geographic scope of work within state Extension system (n = 147)



Population of area served: Survey respondents were also asked about the size of the population centers where they worked. It was most common for respondents to work in areas that had cities with populations between 50,000 and 500,000 (figure 4). Nearly 25% of respondents worked in areas with population centers that had fewer than 50,000 people and just over 20% of respondents served areas with population centers that had more than 1 million people.

Figure 4. Size of population centers in areas served (n = 146)



4 TIME SPENT ON URBAN AGRICULTURE

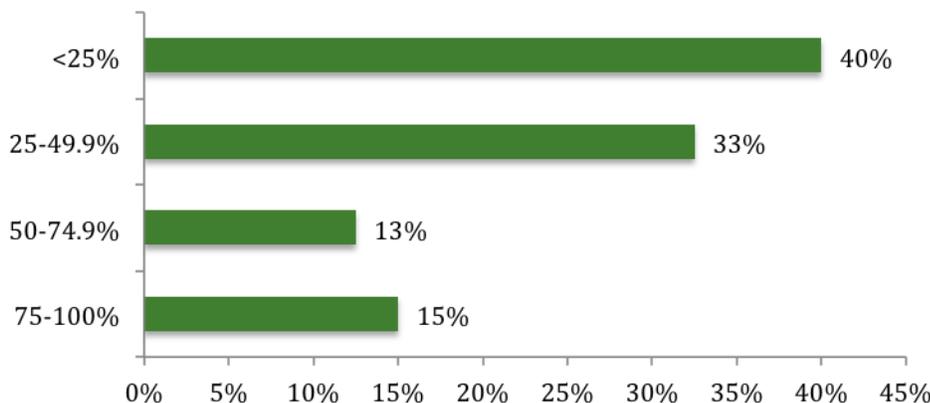
Number of years in Extension and working on urban agriculture in Extension: We asked survey respondents how many years they had worked in Extension and how many years they had been involved in urban agriculture within Extension. About half of survey respondents had worked in Extension for less than 10 years (51%) and more than three-quarters of respondents had worked on urban agriculture in Extension for less than 10 years (table 2). The average length of time working in Extension was 11.6 years and the average length of time working on urban agriculture in Extension was 6.9 years. Forty-seven percent of respondents had been involved with urban agriculture for their entire Extension careers.

Table 2. Comparison of years in Extension to years working on urban agriculture in Extension

	Total time working in Extension (n = 135)	Time in Extension working on Urban Agriculture (n = 135)
< 5 years	28%	44%
5-9.9 years	23%	33%
10-19.9 years	27%	16%
20-29.9 years	16%	6%
> 30 years	5%	1%
	100%	100%

Portion of time devoted to urban agriculture: In an open-ended question, respondents indicated what portion of their time was devoted to urban agriculture-related work. Nearly three-quarters of respondents spent less than 50% of their time on urban agriculture (figure 5). Twenty-eight percent of respondents devoted more than half their time to urban agriculture. Six respondents worked full-time on urban agriculture.

Figure 5. Portion of time devoted to urban agriculture work (n = 120)

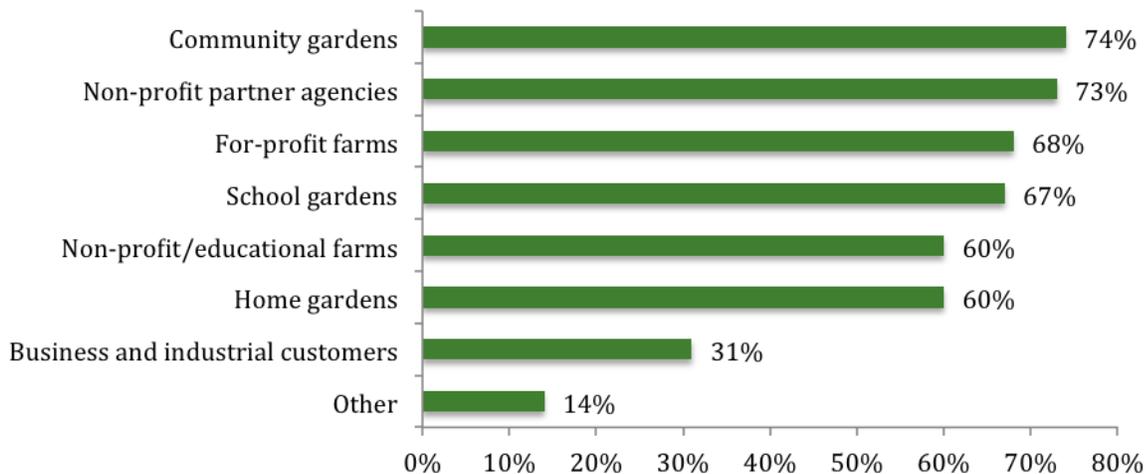


5 URBAN AGRICULTURE CLIENTELE

Community gardens (74%) and non-profit partner agencies (73%) were the most common clientele for Extension professionals involved in urban agriculture (figure 6). For-profit (68%) and non-profit (60%) farms were also common clients as were home (60%) and school gardens (67%). Extension professionals who selected “other” described working with local governments and government agencies as well as other for-profit entities such as indoor hydroponic operators and landscape professionals. They also provided education services beyond school gardens, for example in childcare settings, for 4-H, and in school grow labs.

Many survey respondents are serving multiple clients. Twenty-two percent of survey respondents reported that they worked with all of the following clients: community, school, and home gardens, for- and non-profit farms, as well as partner agencies.

Figure 6. Urban and peri-urban clientele served (n = 146)

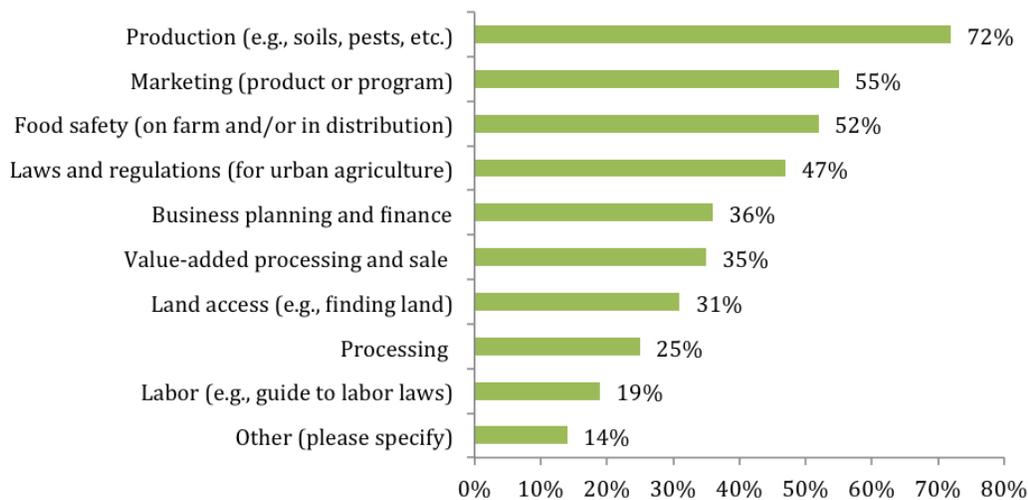


6 URBAN AGRICULTURE ACTIVITIES

We asked respondents to select the urban agriculture activities that they had been involved in within the past year in five categories of work: 1) support for urban or peri-urban farms; 2) support for local distribution and markets; 3) support for other urban agriculture activities (e.g., beekeeping, aquaculture, composting, etc.); 4) education and youth services; and 5) food system planning, policy, and assessment. In each section, respondents had the opportunity to select “other” and write in any activities not listed.

Support for urban or peri-urban farms: Production assistance (72%) was the most common Extension activity related to supporting urban and peri-urban farms (figure 7). A majority of respondents also engaged in marketing (55%) and food safety (52%). Among the least common activities were support for value-added processing (35%), processing (25%), land access (31%), and labor (19%). “Other” farm support activities included soil quality, heavy metals-safe growing practices in contaminated soils, organic certification, and season extension.

Figure 7. Extension activities to support urban or peri-urban farms (n = 138)



Support for local distribution and markets: Farmers' markets efforts were the most commonly reported activity (75%) to support local distribution and markets (figure 8). A majority of respondents also engaged in Farm-to-Institution programs, food hubs, and CSAs. Fewer than 10% of respondents were involved with food trucks or crop exchanges. “Other” local marketing and distribution activities included training for food entrepreneurs, online markets, commercial kitchens, and efforts to improve communication and cross-cultural understanding between local buyers and new American farmers.

Support for other urban agriculture activities: Composting (70%) and energy and water conservation (44%) were by far the most common activities in support of other forms of urban agriculture (figure 9). About one-third of respondents were engaged in growing ornamental, medicinal and/or culturally relevant plants; urban agritourism; urban beekeeping; and urban poultry raising. “Other” activities that respondents described included ecosystem services, edible green spaces, therapeutic horticulture, and working with landscape professionals.

URBAN AGRICULTURE ACTIVITIES

Figure 8. Extension activities to support local distribution and markets (n = 124)

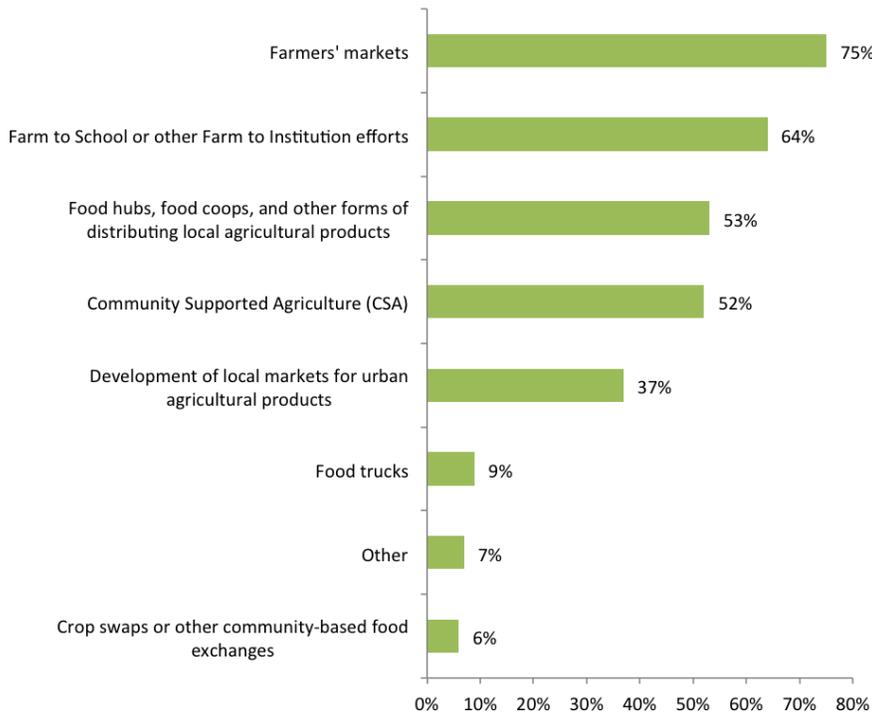
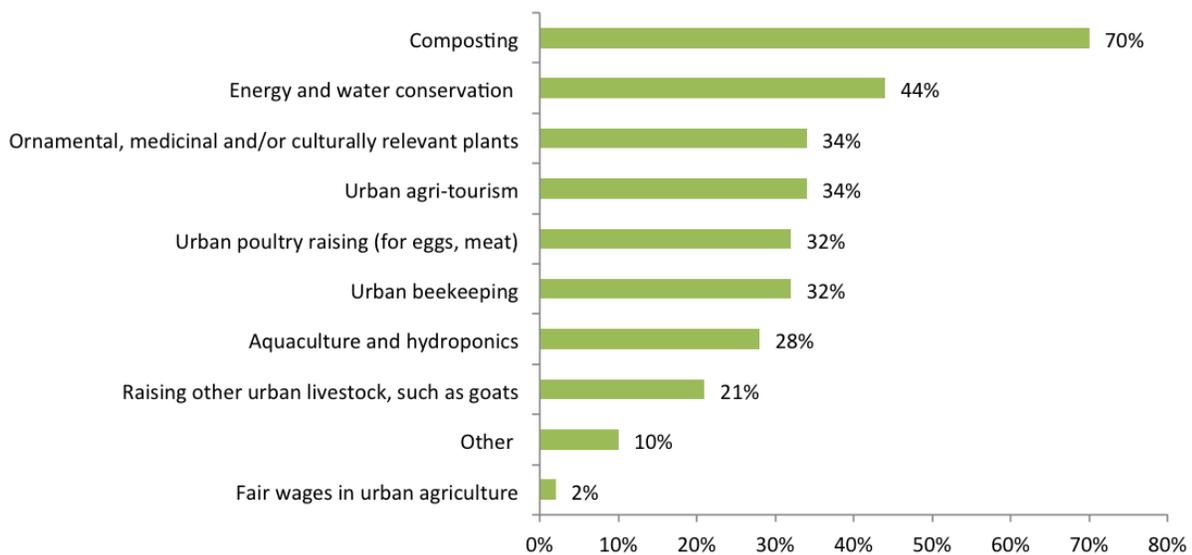


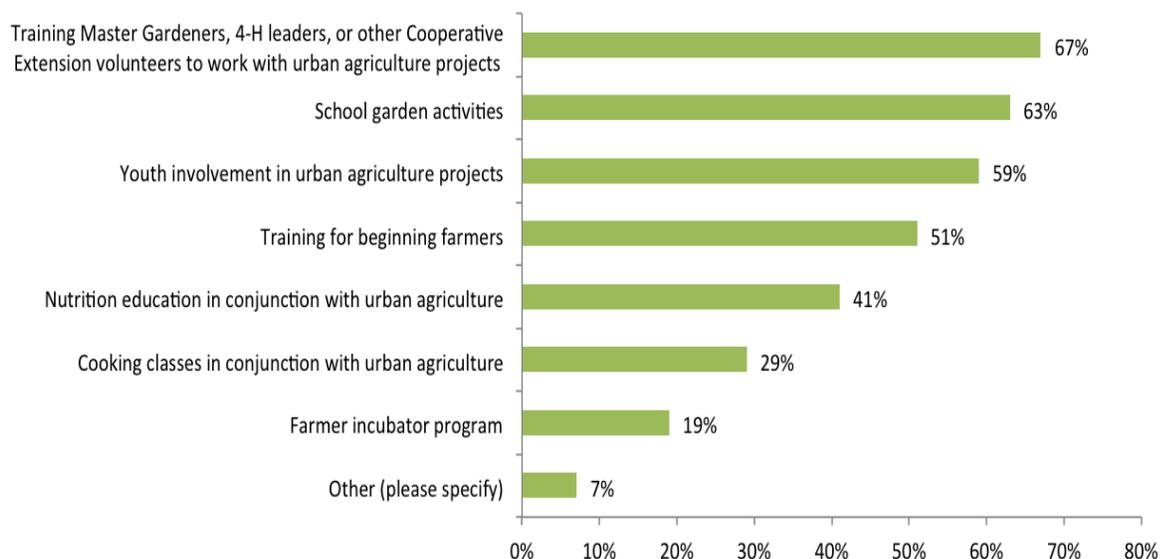
Figure 9. Extension activities to support other urban agriculture activities (n = 125)



URBAN AGRICULTURE ACTIVITIES

Education and youth services: More than half of respondents reported training Extension volunteers (e.g., Master Gardeners and 4-H leaders) to work with urban agriculture projects; participating in school garden activities; supporting youth involvement in urban agriculture projects; and providing training for beginning farmers (figure 10). Less common were cooking classes in conjunction with urban agriculture and farmer incubator programs. “Other” education activities included developing horticultural food production curriculum for high school students; hatching chicken eggs with preschoolers; a Junior Master gardener program; and farm-to-school education.

Figure 10. Extension activities in education and other youth services related to urban agriculture (n = 134)



Food system planning, policy, and assessment: Healthy food access (58%) and urban agriculture policy development (49%) were the most common activities within food system planning, policy, and assessment (figure 11). Urban agriculture project design (43%) and activities related to food waste (41%) and land access (41%) were also common. Just over a third of respondents reported being involved in applied research related to urban agriculture. Twenty-eight percent of respondents were involved in food justice activities and 22% were involved in undoing racism/inequality in the food system.

Urban agriculture activities combined: In the preceding sections we looked at the frequency of various urban agriculture activities by category of work (e.g., production, marketing, distribution, education, and policy). We also looked at how common different urban agriculture activities were regardless of their categorization. Overall, the five most common urban agriculture activities were production support, farmers' markets, training Extension volunteers for work with urban agriculture projects, composting, and school garden activities (figure 12). The five least common activities were farmer incubator programs, community health assessments, food trucks, crop swaps, and fair wages in urban agriculture (figure 13).

URBAN AGRICULTURE ACTIVITIES

Figure 11. Extension activities in support of food system planning, policy & assessment (n = 120)

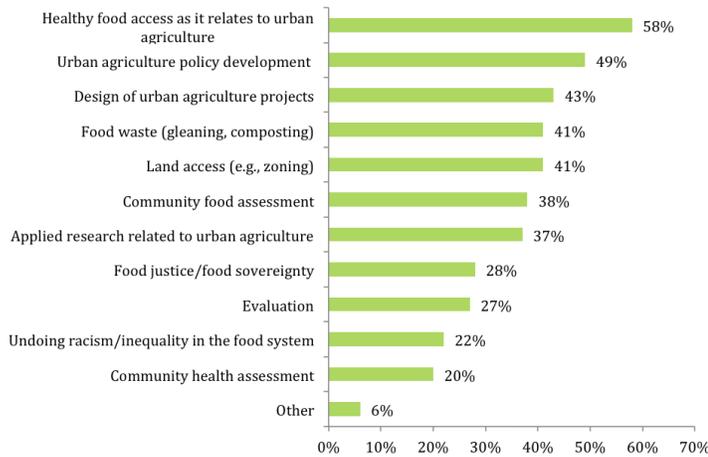


Figure 12. Most common urban agriculture activities overall, selected by more than 50% of respondents (n = 146)

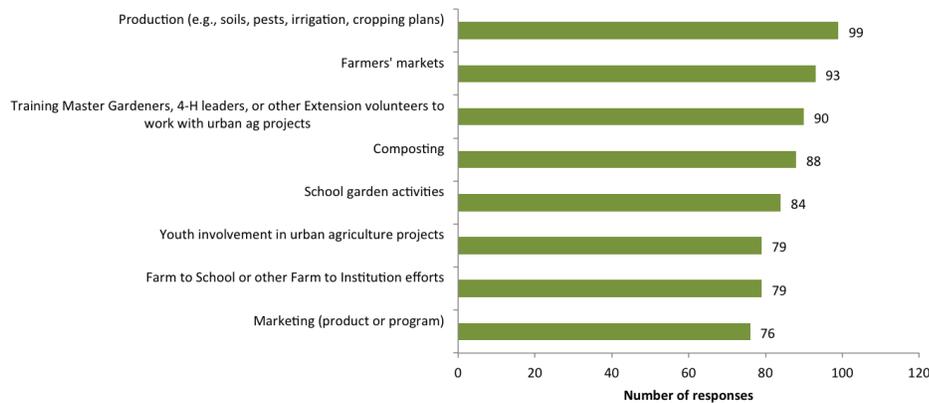
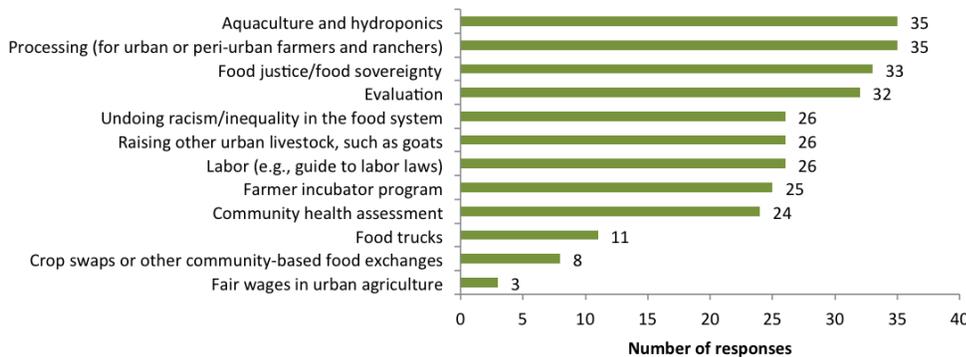


Figure 13. Least common urban agriculture activities overall, selected by fewer than 25% of respondents (n = 146)



7 EXAMPLES OF RECENT WORK

We asked respondents to share one to three examples of urban agriculture activities that they had been involved in during the past year. Their comments reflect the richness of urban agriculture-related work in Extension. In this section, we present an initial overview of the responses, but further analysis remains to be conducted.

Education. Educational activities were by far the most common example of urban agriculture work given. These ranged from developing an urban agriculture Associate's degree program to running a gardening-themed summer camp for elementary school children to establishing gardens in childcare centers. Respondents had also developed a Master Urban Farmer workshop series; given cooking demonstrations and taught nutrition education at farmer's markets; trained community gardeners and Master Gardeners; and conducted educational workshops for planners on urban agriculture.

Technical assistance. Extension professionals also provided technical assistance on production, food safety, and business to urban farmers and market gardeners. Topics included alternative urban gardening methods; weed, disease, and insect control; animal care and management for small poultry, meat and dairy goats, and rabbits; soil quality and remediation; water quality; farm food safety plans; agricultural entrepreneurship; business planning; nutrient management and cover cropping practices for organic vegetable farmers; and season extension.

Land access, zoning, and food policy. Respondents provided assistance to farmers and community gardeners to find land and understand regulations as well as to local government to develop ordinances that support urban agriculture. Many respondents were actively involved in Food Policy Councils. Their support included founding councils, staffing them, participating in them, and facilitating them.

Local distribution and marketing. Respondents participated in farmer's markets, food hubs, food coops, CSAs, Farm-to-Institution programs, and public markets. They also worked to connect chefs, food service managers, and small-scale farmers. Two respondents gave examples of developing online platforms to connect urban consumers with producers.

Food access for underserved populations. Extension professionals were involved in a range of activities to bring healthy food and other urban agriculture amenities to underserved populations. Respondents worked with gardens or farms that donated produce to food pantries and food banks; established school garden programs at schools with large low-income populations; and distributed farmers' markets vouchers to low-income seniors. Some survey respondents participated in broader networks that focused on food deserts and healthy food access.

Development and maintenance of urban agriculture projects. More than 10 respondents were involved in developing and launching new urban agriculture projects or maintaining existing ones. Urban agriculture projects created or run by Extension professionals included urban orchards, community gardens, food gardens for 4-H, edible forests, urban farms, and urban farm incubators.

Events. Respondents had organized a number of urban agriculture and local food-related events. These included an urban food systems symposium, local food summits, urban agriculture conferences and symposiums, urban farm tours and farm dinners, a community gardening and urban farming forum, and a small farms conference.

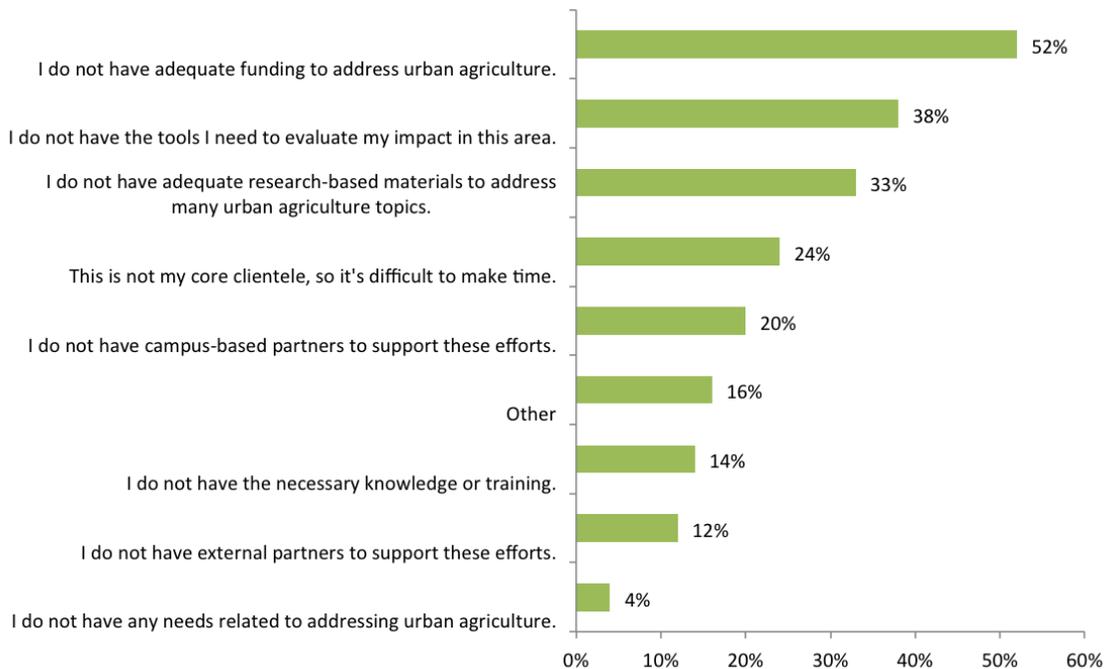
Research. Research was the least frequently mentioned activity. Research topics included vertical gardening; amending urban soils; assessing quality and pricing of farmer's market produce; variety trials for small, diversified farms; and a project conducted in conjunction with an organization that supports local food policy councils.

8 NEEDS AND CHALLENGES

The most common challenge Extension professionals faced in their urban agriculture-related work was inadequate funding (figure 14). Other common challenges were a lack of tools for evaluating impact in this area and inadequate research-based materials for addressing urban agriculture topics.

“Other” challenges included needing more time and/or staff support. Some respondents also described needing more internal support. For example, one commenter noted “My lead Extension administrator questions using resources for this work,” while others noted a need for additional local or statewide Extension personnel with relevant expertise (e.g., Small Farm Advisor, agronomist). Others mentioned that they lacked local colleagues: as one wrote, “I am in the only really urban area in my state, so my cohorts are in other states.” Another respondent described resistance by urban farmers and community gardeners to food safety recommendations because they found GAPS to be overly restrictive. And two people noted that there was not enough land available for urban agriculture programming.

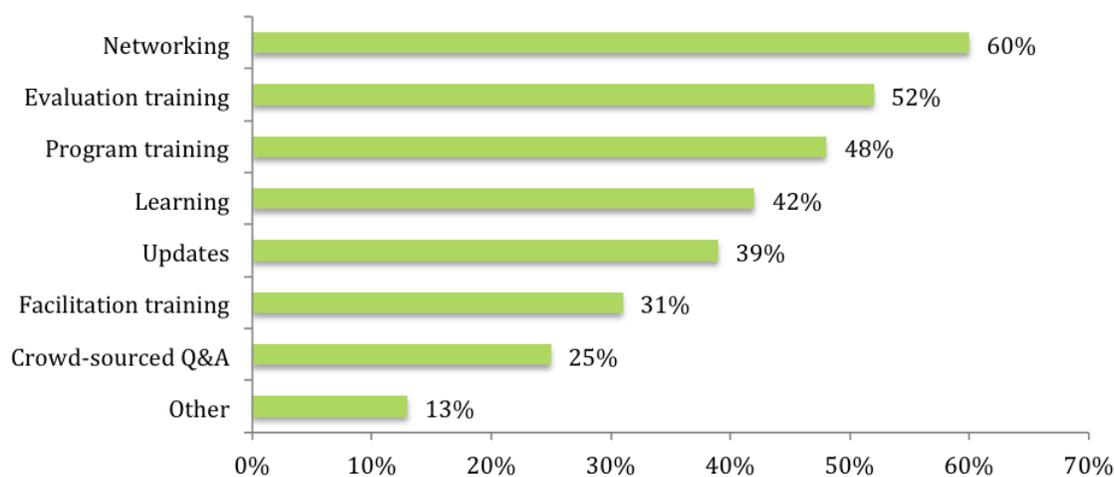
Figure 14. Needs or challenges related to providing support, advice, or technical assistance for urban agriculture (n = 129)



9 POSSIBLE SUPPORT FROM CLRFS COMMUNITY OF PRACTICE

We asked respondents if there were any way that the CLRFS Community of Practice could support them in their urban agriculture-related work. Sixty percent of respondents identified networking opportunities as a way for the Community or Practice to support their work (figure 15). About half of respondents indicated that evaluation and program training would be useful. Roughly 40% of respondents would find learning opportunities and updates valuable. Among those who selected “other” forms of support, help identifying funding opportunities was the most frequently listed response. One respondent was looking for “opportunities for urban agriculture-related publications” and another offered this note of caution: “recognize that there is more to urban agriculture than the local food bandwagon.”

Figure 15. Ways in which the CLRFS Community of Practice could support urban agriculture-related work (n = 122)



CONCLUSIONS

Urban agriculture is a growing priority for urban Extension offices. Extension personnel involved in urban agriculture come from all regions of the country and they work in many different capacities within the Extension system, ranging from Extension educators/agents to faculty and state specialists to administrators. Urban agriculture crosses all Extension program areas: agriculture and natural resources, 4-H youth development, community development, and family and consumer sciences. Because of the integrated nature of urban agriculture activities, there are tremendous opportunities for county personnel to collaborate across program areas and with external partners.

Extension's expertise in urban agriculture is often focused on traditional production issues including soils, pests and diseases, irrigation and composting. However, Extension's urban agriculture work also encompasses a broad suite of marketing (e.g., farmers markets and Farm-to-Institution) and education activities (training volunteers, working with youth and school gardens, and training beginning farmers). Along with their external partners, Extension educators are also addressing food security and policy change.

CONCLUSIONS

Half of respondents in this study reported training volunteers to be involved with urban agriculture projects. Volunteers have long been critical partners in furthering Extension's reach within the community and it is heartening to see that 4-H volunteers, who have traditionally been rural-based, and Master Gardeners are embracing these types of volunteer opportunities. Extension must ensure that volunteers receive appropriate training and are not advising urban farms that are involved in commercial activities.

Many organizations are working on urban agriculture, and a large percentage of Extension personnel reported working with external partners on urban agriculture issues. These partnerships can expand the services provided by Extension, and can help inform Extension about the issues of importance to urban agriculture in particular locations. Extension should especially pursue partnerships in areas where there seems to be less activity and expertise within Extension. One example may be found in dismantling racism in the food system, or working on food justice issues.

The primary barriers to Extension work on urban agriculture were insufficient funding, a lack of adequate research-based information on particular topics, and difficulty in evaluating impact in urban agriculture. Extension's growing involvement in urban agriculture takes place against a backdrop of dramatic changes and funding shifts for Extension. County offices have fewer staff and financial resources. In keeping with this trend, over half of survey respondents reported not having enough resources. Thus, additional funding from either internal or external sources will be important to maintain or expand Extension involvement in urban agriculture.

There are many opportunities for the CLRFS Community of Practice to support Extension professionals involved in urban agriculture activities, particularly through networking, and trainings on evaluation and program development. The CLRFS Community of Practice could also support Extension's urban agriculture work by helping its members identify or respond to multi-state funding opportunities or participate in cross-cutting research projects.

In an increasingly urban demographic, one of the ways Extension can draw on tradition while remaining relevant is to participate in urban agriculture. The Extension educators in the CLRFS Community of Practice can help by:

- raising the visibility of current urban agriculture initiatives
- demonstrating the impact of these initiatives through rigorous assessment
- raising awareness of the importance and relevance of this work within extension
- developing tools to assess program impact
- providing training and research-based materials for educators to use
- increasing opportunities for networking, where educators can share resources created and have a professional community for help on technical or larger complex issues.

These efforts will bolster Extension work in urban agriculture and can help make the case for increased funding and other resources within state Extension services.

ACKNOWLEDGMENTS

We wish to thank all the Extension personnel who took the time to complete this survey. We are also grateful to the Urban Agriculture Working Group members who helped to create and distribute the survey and to interpret the results. This research is funded in part through a USDA NIFA AFRI grant.

We welcome your questions and comments. Please contact us at ldiekmann@scu.edu.

The Community, Local and Regional Food Systems (CLRFS) Community of Practice provides information and networking opportunities for educators, community-based practitioners, policy makers, farmers/growers, families and those individuals involved in building equitable, health-promoting, resilient, and economically balanced food systems.

The Urban Agriculture Working Group provides an opportunity for CLRFS members to share information, learn, and collaborate on topics and issues related to urban agriculture.

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