Contextualizing Urban Agriculture in Quito, Ecuador: A Look at Urban Production and Producer Traits

11

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Abstract

Research on urban agriculture has identified a great number of benefits, including, but not limited to, improved food security and increased economic well-being. While such outcomes provide strong reasons for engaging in urban agriculture, it is important to recognize that these benefits are not experienced uniformly among all who participate in urban agriculture. Rather, the benefits must be understood in relationship to the characteristics of urban producers. The characteristics of urban producers will heavily influence who engages in urban agriculture, the reasons they have for engaging in it, and the type of benefits that they realize from engagement. This chapter uses findings from a case study on the AGRUPAR urban agriculture program in Quito, Ecuador to explore how the practice of urban agriculture differs among producers based on three primary characteristics: migration history, age, and gender. The findings from this case study demonstrate how the personal characteristics of producers can influence how urban agriculture manifests and the benefits associated with it, underscoring the importance of taking producer traits into consideration when studying urban agriculture.

Keywords

Urban agriculture · Gender · Migration · Age · Livelihood · Ecuador

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11.1 Urban Agriculture and Its Producers: A Case Study

The practice of urban agriculture is a worldwide phenomenon; the Food and Agriculture Organization of the United Nations (FAO 2019) estimates that approximately 800 million people engage in urban agriculture in some form. As urban populations continue to grow, interest in urban agriculture and its potential benefits for urban residents has increased, with cities around the world integrating it into city plans, policies, and community development efforts as a way to address growing issues of poverty, health, and well-being.

An example of one such effort is the urban agricultural project, AGRUPAR, in Quito, Ecuador. AGRUPAR (*Agricultura Urbana Participativa*: Participatory Urban Agriculture) is a long-standing program through the municipal government of Quito that trains residents in urban agricultural production and provides extension services for those who complete the program, including access to inputs, infrastructure, and help from professional agronomists. AGRUPAR supports thousands of producers throughout the city, who range from hobbyist gardeners with patio-sized container gardens, to larger-scale producers who depend on intensive production for their livelihood. The program targets low-income communities, using urban agriculture as a tool for addressing poverty and food insecurity, but membership is open to anyone interested in joining.

The potential benefits of urban agriculture, in general, and of the AGRUPAR program, in particular, are myriad, ranging from pragmatic to transformative. Urban agriculture has been used as a means for addressing both urban poverty and urban food insecurity; food production in the city gives urban households increased access to healthy food (Corrigan 2011; Litt et al. 2011; Zezza and Tasciotti 2010), while also providing economic benefits through the sale of garden products and saving money on food (Bryld 2003; Cook et al. 2014; van Veenhuizen 2006). It also has been associated with environmental gains (Ackerman et al. 2014; Brown and Jameton 2000; Galluzzi et al. 2010), improvements in physical and mental health (Brown and Jameton 2000; Hale et al. 2011; WHO 2016), as well as individual and social benefits such as increases in self-esteem, confidence, gains in social capital, and greater community engagement (Battersby and Marshak 2013; Bradley and Galt 2014; Brown and Jameton 2000; Olivier and Heinecken 2017; Pudup 2008; Teig et al. 2009; Webber et al. 2015).

To understand how these potential benefits manifest in the real lives of urban agricultural producers, research was undertaken with participants in the AGRUPAR program in Quito. A critical insight that emerged from researching the AGRUPAR program was that, while the program provided participants with the same training and extension services, there was significant variability in terms of how participation in the program affected the lives of participants. Notably, participants' engagement in urban agriculture was mediated through personal characteristics that situated them differentially in relationship to urban agriculture, such that how they engaged in it and the effects it had in their lives varied.

The findings of this research indicate that the characteristics of producers must be considered in order to understand both the variations in how urban agriculture is

practiced, as well as the benefits associated with it. This chapter will explore the case study of AGRUPAR, focusing in particular, how the practice of urban agriculture was found to be influenced by three producer characteristics: migration history, age, and gender.

11.2 Researching AGRUPAR

The AGRUPAR program has been active in Quito since 2000 when it was implemented in partnership with the International Development Research Centre as part of an effort to understand how municipal governments could facilitate urban agriculture. Since then, the program has become an important part of the city's effort to address both food insecurity and un/under-employment among city residents. The program's mission is to "work to fight against poverty and to improve the living conditions of vulnerable groups by producing healthy food, creating employment opportunities and improving income, while also encouraging environmental stewardship, conserving indigenous knowledge, and promoting unity and solidarity among participants" (CONQUITO 2015).

In an effort to meet these goals, AGRUPAR has developed a multi-pronged approach to encourage and support urban agriculture among its participants. All participants complete a comprehensive training program that provides them with the knowledge and skills they need to become urban agricultural producers (Fig. 11.1a). As part of its commitment to foster both health and environmental stewardship, AGRUPAR's training is based on organic, agro-ecological methods, an approach that avoids the use of petrochemical inputs. In addition to this training, a key part of AGRUPAR's success is due to the comprehensive support that it gives to producers across the chain of production. Some of the key ways in which the program supports its producers include, but are not limited to, the provision of ongoing extension services from professional agronomists (Fig. 11.1b), the provision of free or discounted materials for irrigation systems, greenhouses (Fig. 11.1c), and organic seeds and inputs, access to the city's specialized markets to sell agricultural products (Fig. 11.1d), and assistance in becoming officially certified organic producer. This comprehensive approach provides participants with extensive support, making it far more likely that they will be able to successfully engage in urban agricultural production.

To understand how participants' lives had changed since joining the AGRUPAR program as urban agricultural producers, fieldwork was conducted in Quito, Ecuador from 2014 to 2015. A mixed methods approach was applied, utilizing both quantitative and qualitative data collection methods to explore changes within economic, social, health, environmental, and personal domains of participants' lives.

The first stage of research was the administration of a survey. Two hundred gardens registered with AGRUPAR were randomly selected (representing approximately 29% of the gardens in the program), and a survey was conducted with a participant associated with the garden. A total of 192 surveys were included in the final analysis. Surveys were administered in the comfort of participants' homes or

Fig. 11.1 Images of the AGRUPAR program: (**a**) AGRUPAR group training; (**b**) Agronomist visit; (**c**) Greenhouse in neighborhood; (**d**) Producers at AGRUPAR's *bioferia*. (Source: K. Oviatt)

gardens and were designed to capture their perspective on how their lives had changed since they started their garden. The data from the surveys provided a macro-level understanding of how participants' lives had changed since they joined AGRUPAR, specifically considering changes in economic well-being, social

engagement, health status, environmental behavior, and participant's sense of agency.

The survey was followed by in-depth, semi-structured interviews with a sub-sample of participants. Within the sample of survey participants, a quota sampling approach was used to ensure that participants with diverse traits were represented in the interviews, selecting participants by gender, age, and selling status (whether or not they sold their garden products), for a total of 18 interviews. The interviews were organized around the same domains as the survey and, while the questions were the same for each participant, the responses were open-ended, allowing participants to freely express themselves. A semi-structured format ensured that responses were comparable across interviews and able to gain participants' perspectives about the changes they had experienced in each domain.

Findings from both methods were integrated to develop an understanding of urban agriculture participation, practice, and effects in participants' lives. Data from the 192 surveys were analyzed using descriptive techniques including frequency distributions and comparison of means. Preliminary findings from the survey were used to inform the development of the interview guide. Data from the 18 interviews were coded using a combination of coding strategies to capture themes that emerged from the data (open-coding) as well as theoretical constructions defined prior to fieldwork (a priori coding). This mixed methods approach provided a fuller understanding of the changes participants had experienced than either method could on its own. The quantitative data provided breadth, giving an understanding of how participation effected change among participants as a whole and made it possible to compare variations among different groups of producers. Conversely, qualitative data from the interviews provided great depth, giving insight into the details of how participants' lives had changed and what mattered most to participants themselves.

The relevancy of different producer traits in understanding urban agriculture emerged from this analysis. The survey data revealed that the reported changes within the five primary domains were not experienced uniformly among all participants. Rather, they were experienced differentially based on certain producer traits, most notably, migration history, age, and gender. Interview data supported this with participants from these different backgrounds expressing unique experiences, priorities, and perspectives. The remainder of the chapter will be dedicated to exploring how these particular characteristics influenced the practice of urban agriculture and the benefits associated with it for AGRUPAR participants.

11.3 Findings: Comparing Differences in Urban Agricultural Producers

11.3.1 Migration History

The first characteristic found to have some effect on the practice of urban agriculture was the migration history of producers. While there were many similarities between people who had migrated to Quito and those who were from the city (Quiteños),

Table 11.1 Migration history summary

	Quiteños		All migrants		Long-term migrants		Recent migrants		Total	
	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*
	58	118	37	74	34	65	5	9	100	192
Sell products	81	95	65	48	63	41	55	5	74	143
Sell at *bioferias*	33	39	24	18	25	16	10	1	29	57
Bottom quartile of earners[a]	16	15	31	15	32	13	22	2	34	48

[a]Percentage calculated based on total number of producers who sell products, not total number of producers

there were some notable differences. For the purposes of this research, participants who moved to the city as infants (age 2 or younger) were considered as being from Quito. Participants who had moved to the city were more likely to have a background in agriculture. In interviews, many described how as a child they had lived in rural provinces of Ecuador and had parents who depended on agriculture for their livelihood. This background was part of what inspired them to become a part of AGRUPAR; agriculture was an activity they enjoyed, not just a means to increased food security or economic savings.

The most significant aspect in which migrants differed from Quiteños was in terms of economics (Table 11.1). Migrants were significantly less likely to sell their garden products compared to producers from Quito. The vast majority (81%) of Quiteños sold at least some of their products, compared to 65% of migrants. When considering the most recent migrants (people who moved to Quito in the last 15 years), the number who engaged in sales dropped to 55%. Similarly, producers from Quito were more likely to be a part of AGRUPAR's *bioferias*, which were markets organized by the municipality specifically for AGRUPAR producers to help them sell their products: 33% of producers from Quito sold at the *bioferias*, compared to 24% of all migrants, and just 10% of more recent migrants. Additionally, migrants who sold their products reported lower revenue from sales than producers from Quito: 31% of migrants that sold their products were in the bottom quartile of earners (earning less than $50 USD a month in sales), while just 16% of Quiteño sellers were among the bottom earners.

11.3.2 Age

The second characteristic found to influence how people engaged in urban agriculture was age (Table 11.2). Producers were categorized into three age groups: younger (18–34 years), middle aged (35–54 years), and older (55+ years). First, the age of producers had some effect on the economic aspects of urban agriculture. Producers engaged in selling in distinct ways depending on their age: a substantial majority (76%) of middle aged and older producers sold their garden products, compared to just over half (56%) of younger producers. They are also more likely

Table 11.2 Age summary

	18–34 years		35–54 years		55+ years		Total	
	%	*n*	%	*n*	%	*n*	%	*n*
	8	16	52	100	39	75	100	191
Sell products	56	9	76	76	76	57	73	142
Sell in *bioferias*	19	3	30	30	32	24	29	57
Bottom half of earners[a]	78	7	50	38	42	24	49	69
Primary benefit of UA is providing food to family	47	7	54	53	47	35	50	95
Primary benefit of UA is helping the environment	33	5	10	10	9	7	12	22
Primary benefit of UA is enjoyment of activity	7	1	16	16	23	17	18	34
Much more active in community	56	9	60	59	40	29	51	97
Know community much better	50	8	54	53	27	20	43	81
Much more confident with others	75	12	75	74	53	39	66	125
Much more self-confident	93	15	80	80	65	49	75	144

[a]Percentage calculated based on total number of producers who sell products, not total number of producers

to sell in the *bioferias*: just over 30% of middle aged and older producers were *bioferia* sellers compared to 19% of younger producers. Additionally, when they did engage in selling, younger producers tended to earn less: 78% of young producers were in the bottom half of earners compared to about half of middle aged and older producers.

Younger and older producers also varied in what they most valued about practicing urban agriculture. The benefit that was most valued by producers of all age groups was that they were able to produce food for their families (between 47% and 54% across age groups). But beyond this shared value, different age groups of producers diverged in other valued benefits. For example, younger producers were more likely to say that helping the environment through organic, agro-ecological production methods was the primary benefit they valued about having a garden (33% compared to 9–10% of older and middle-aged producers). As producers increased in age, they were more likely to cite the enjoyment of working in a garden as the primary benefit: 23% of older producers as compared to 16% of middle-aged producers and only 7% of younger producers.

There was also variation in terms of social changes that producers experienced as a result of being a part of AGRUPAR. Younger and middle-aged producers were more likely to say that they were more active in their neighborhoods, with 56–60% saying they were much more active, compared to 40% of older producers. Participants self-defined what they meant by active, but examples include talking more with neighbors, leaving their house more, or working with others in the community towards a common goal. The same age groups were also more likely to say they felt they knew their neighborhood better after having participated in the

program: 50–54% of younger and middle-aged producers said they knew their neighborhood much better compared to 27% of older producers.

On a more personal level, younger and middle-aged producers also experienced greater changes in their feelings of confidence. When asked if they had more confidence when talking with their family and friends as a result of their participation in AGRUPAR, 75% of younger and middle-aged producers said they had gained a lot more, compared to slightly more than half (53%) of older producers. Similarly, younger and middle-aged producers also experienced greater increase in their self-confidence as a result of participation in the program: 93% of younger producers and 80% of middle-aged producers said they had gained a lot more self-confidence, compared to 65% of older producers. While all age groups made gains in confidence, younger and middle-aged producers gave much more positive answers and appear to have experienced greater gains.

11.3.3 Gender

Gender was found to be a third characteristic with a substantial influence on how people engaged with urban agriculture. Men and women varied significantly as urban agricultural producers in terms of how they practiced and the benefits they experienced. Participation in the AGRUPAR program was dominated by women: at the time of research, the program was 67% female. The predominance of women was most likely due to the fact that many of the women in the program were housewives, a traditional and common role for women in Ecuador, and urban agriculture was an activity that could easily be incorporated into their domestic roles. In contrast, the men of the program tended to be older (62 years old on average as compared to 49 years for women) and often took up urban agriculture as an activity once they had retired.

In terms of economic benefits of urban agriculture, there were stark differences between men and women (Table 11.3). While a higher proportion of women engaged in the sale of garden products (77%) compared to men (61%), men generally experienced greater economic returns on their garden sales. When women sold their garden products, they earned an average of $119 a month from sales. Men, in comparison, earned an average of $215 a month, nearly $100 more on average! Consequently, men were much more likely to be in the top quartile of earners: 41% earned over $200 in sales each month, compared to just 19% of women sellers. However, while men had greater absolute income from urban agriculture, women reported experiencing greater relative gains: 59% of women said their income had increased since they started a garden, compared to 42% of men. Importantly, 18% of women said their income had increased a lot, while just 5% of men gave the same response.

Beyond the differences in earnings, men and women also differed in the social benefits they experienced; women appeared to make more gains in developing relationships and engaging with others in their communities as a result of participating in the AGRUPAR program. When asked if they had developed

Table 11.3 Gender summary

	Women		Men		Total	
	%	*n*	%	*n*	%	*n*
	84%	161	16%	31	100%	192
Sell garden products	77%	124	61%	19	75%	143
Avg monthly earnings from sales (USD)	$119	124	$215	19	$131	143
Top quartile of earners[a]	19%	22	41%	7	22%	29
Experienced an increase in income since joining[a]	59%	72	42%	8	57%	80
(Increased very much)	(18%)	(22)	(5%)	(1)	(16%)	(23)
Developed relationships with others in program	81%	125	55%	17	77%	142
Developed relationships with others in community	82%	131	67%	20	151%	80
More active in community	82%	130	55%	16	78%	146
More confident speaking in public	75%	111	62%	18	73%	129
More confident with others	94%	150	72%	17	91%	171
(Much more confident)	73%	117	31%	9	67%	126
More self-confident	97%	149	79%	22	94%	171
(Much more confident)	84%	130	25%	7	75%	137

[a]Percentage calculated based on total number of producers who sell products, not total number of producers

relationships with others in the program, the vast majority of women (81%) said they had, while slightly more than half (55%) of men said the same. Similar responses were given regarding whether or not they had developed relationships with others in their neighborhood because of their participation in AGRUPAR, with 82% of women and 67% of men responding that they had. Women were also much more likely to say that they were more active in their communities, with 82% replying affirmatively compared to 55% of men.

In their personal lives, women also experienced more significant changes as a result of their participation in the program. Across all three measures of changes in personal confidence, women experienced substantially more gains than men. In the case of increased confidence speaking in public, men and women made comparable gains, with 75% of women and 62% of men saying they felt this had increased. In the two other measures, however, there was more difference between the responses of men and women. When asked if they had more confidence in their opinions when talking with family and friends, nearly all women (94%) said they experienced an increase, with 73% saying it had increased a lot. While a majority of men said this area of confidence had increased (72%), just 31% said it had increased a lot. Similarly, when asked if they had more confidence in themselves as a result of participation, nearly all women (97%) said yes, with 84% saying they had a lot more. Men experienced gains as well, with 79% responding that their confidence in themselves increased, but just 25% said it had increased a lot.

11.4 Discussion: How Producer Characteristics Influence Urban Agriculture

The findings from the AGRUPAR case study demonstrate how the personal characteristics of producers can influence how urban agriculture manifests and the benefits associated with it. Research showed that while participation in the AGRUPAR program had generally positive effects in the lives of participants across the board, the degree varied among different groups based on migration history, age, and gender. While this is a single case study in a specific context, findings underscore the importance of taking producer traits into consideration when studying urban agriculture.

In the first case, the migration status of producers appears to affect the economic benefits that are associated with urban agriculture. Producers who had migrated to the city, especially those who had arrived in the 15 years prior, were less likely to engage in the sale of their garden products. Even when they did sell their products, they tended to earn less than producers who were from Quito. One possible reason for this difference could be that migrants were less likely to sell at AGRUPAR's *bioferias*, which was where producers earned the most in sales. While it is unclear why migrants engaged in urban agriculture in ways that were distinct from native producers, a potential factor that may have contributed to differences could be that producers from Quito had more extensive and embedded social networks within their communities. Having grown up in the city, Quiteños were likely to be more integrated into their communities and have greater familiarity with the people, places, and resources that enabled them to sell their garden products.

Based on these findings, it is important to consider the migration status of urban agricultural producers, particularly when evaluating potential economic outcomes. For urban agricultural programs, such as AGRUPAR, it may be beneficial to consider how migrants are situated differently compared to native producers and identify what additional support they may need in order to more fully experience the benefits of urban agricultural production.

Age also emerged as an influential factor in how producers engaged in urban agriculture and the benefits experienced. Different age groups differed in their motivation for engaging in urban agriculture; younger producers were more likely to value the environmental aspects of urban agriculture, whereas older producers placed a higher value on the enjoyment derived from the activity of gardening itself. In terms of benefits associated with urban agriculture, younger producers realized fewer economic benefits; they were less likely to sell their garden products and tended to earn less than older producers. In contrast, younger and middle-aged producers appeared to have experienced greater social and personal benefits, as they became more active in their communities and made greater gains in personal confidence as a result of participation.

Recognizing that producers of different backgrounds (in this case age) have varying motivations and interests behind their drive to practice urban agriculture is an important factor to consider when engaging with producers. This is especially important for programs such as AGRUPAR; understanding what motivates

participants to pursue urban agriculture, the benefits that they most value from it, and how these vary among different groups can help programs tailor the way they organize and deliver assistance to more effectively engage producers.

The third characteristic in this case study that had notable impacts on urban agriculture and the associated benefits was gender. While men and women both experienced benefits from engaging in urban agriculture, they benefited in distinct ways. Men experienced greater absolute economic benefits; they earned significantly more on average than women producers. However, it appears that women experienced greater relative economic benefits; although their income from sales was lower than men, they were more likely to say that their income had increased. Women also appeared to have experienced greater social and personal benefits. They were more likely to have developed relationships through participation in the program and had become more active in their communities as a result. They also experienced substantial, meaningful gains in personal confidence.

Considering how men and women are differentially situated to engage in and benefit from urban agriculture is essential for program administrators and evaluators alike. While the particular role that gender plays will vary from place to place, it is likely that in most contexts there will be notable differences between male and female producers. Understanding such differences is essential for accurately portraying the benefits associated with urban agriculture, as these will vary significantly by gender. Urban agricultural programs can acknowledge that men and women might engage in urban agriculture in distinct ways and develop an understanding of precisely what those differences are. This will enable programs to identify the unique needs of each group, in particular women, so that the program may provide additional, tailored support to help them realize greater benefits, such as the potential to bolster economic opportunities in this case.

11.5 Conclusion: The Many Faces of Urban Agriculture

In this chapter, the case study of the urban agriculture program, AGRUPAR, in Quito Ecuador provides an important lens for understanding urban agriculture more generally. While urban agriculture is practiced in some form by urban dwellers throughout the world, its ubiquity does not equate to uniformity. The form that urban agriculture takes, how it is practiced, who practices it, and the benefits derived from it are influenced by a multitude of factors. This case study focused on the influence of particular characteristics of urban producers, specifically the migration history of producers, their age, and, importantly, gender. The type of benefits urban agricultural producers of AGRUPAR experienced, and the degree to which they experienced them, varied among producers based on these individual characteristics.

In light of these findings, it is clear that the practice of urban agriculture is not a uniform phenomenon; because producers are situated differentially in the social context, the practice of urban production and the benefits associated with it do not accrue uniformly among all producers. Thus, when thinking about urban agriculture,

it is important to reflect critically on how it interacts with other factors in a producer's life to lead to differential outcomes.

For those interested in promoting urban agriculture, these findings make clear the importance of considering differences among producers. People from varying backgrounds engage with urban agriculture in distinct ways and bring into this engagement different interests and different capacities. This insight is necessary in order to avoid a one-size-fits-all approach that fails to meet the needs of diverse producers. Understanding these differences among producers will enable programs and other actors to customize their efforts and maximize their effectiveness.

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