

ABSTRACT

Title of Thesis:

PLOT BY PLOT: DEVELOPING AN
EDUCATIONAL FRAMEWORK FOR THE
VARIOUS GROWERS IN THE DC-
MARYLAND-VIRGINIA REGION

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There is currently a gap in the realm of urban agriculture that supports urban agriculturalists to the same extent as rural agriculturalists. Currently, most technical assistance falls onto the shoulders of individual Extension Agents to aid urban growers in their efforts. This in turn leads to inconsistent technical support, often tied to a person and not a specific position or programming. Furthermore, this results in inconsistent programming that does not reflect the needs of the many different urban growers.

This thesis explored the various urban agriculturalists of the DC-Maryland-Virginia (DMV) region to better understand who they are as individuals (i.e. archetypes), how they operate their growing sites (i.e. typologies). By bringing together those two components, a foundation for an educational framework could be created for technical assistance providers to utilize. This would result in a unified approach to technical assistance, providing common language and guided approaches.

An exploratory mixed methods design was used, with an initial qualitative analysis of 12 interviews set up the basis for a survey analysis of 26 survey respondents. These results would

create a finalized educational framework for the various urban agriculturalists in the DMV. This thesis was conducted into four phases: interviewing, surveying, analysis, and development.

The interviews of Phase 1 discussed archetypes and used both urban growers and urban agriculture experts as the sample populations. This allowed for multi-perspective ground truthing to the archetype analysis. The survey of Phase 1 conducted ground truthing to the found archetypes with a different but larger sample size of just the urban growers population, and also explored the related themes to urban agriculture and how it relates to typologies of operations. Phase 3 examined the archetypes and typologies separately, and together in similar groupings. Finally, Phase 4 developed a foundation for an educational framework for urban growers that placed liked-group archetypes and typologies into similar approaches.

Past research from other contexts on archetypes (from Campbell et al., (2023)) and typologies (from Jansma et al., (2024)) was replicated in the DMV during Phase 1 and Phase 2. The three main archetypes from Campbell et al. (2023) –The Business-Minded, The Leaner, and The Visionary –were all seen in the area. Additionally, a new archetype –the Self-Determined Agroecologist –was created to adjust for individuals who factor in the local food systems resilience into their growing motivations. Only five of the six main typologies from Jansma et al. (2024) were seen in the DMV. This included The Community Park, The DIY Garden/Farm, The Community Garden, The Social Farm, and The Urban Farm; the Zero-Acreage Farm was not seen. The Community Garden, the Social Farm, and The Urban Farm were the most prevalent operational styles.

The finalized educational framework created four approaches to urban agriculture in the DMV: “Exposure to Urban Agriculture Approach” (The Leaners and The DIY Garden/Farm) “Community and Green Space Approach” (The Visionaries with The Community Gardens),

“Food System & Food Security Approach” (The Self-Determined Agroecologists with The Social Farms), and “Business Planning & Land Tenure Approach” (The Business-Minded with The Urban Farms).

The Business-Minded often paired with the Urban Farm, were larger, required more formal labor, and grew food to sell it to others. The Visionaries often paired with the Community Garden, having mid-sized operations, relied heavily on themselves and volunteer labor, and grew to feed themselves. Finally, the Self-Determined Agroecologists often paired Social Farms, were in peri-urban/suburban areas, relied on the most varying degrees of labor inputs, and grew food to donate to others and supplement their nutritional needs.

The Phase 1 interview results showed that The Learners were already supported group of urban agriculturalists, and appeared to be satisfied with the current technical support means. But, The Learner archetypes were not fully explored as they did not represent themselves in the Phase 2 survey and may need further research to explain this lack of presence. The other operational styles (Community The Park, The DIY Garden/Farm, and The Zero-Acreage Farm) also had low representation in the survey and may need more research to be fully understood. Further research that explores the distance and pathways between each of the approaches would be beneficial in expanding the framework as well.

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GROWERS IN THE DC-MARYLAND-VIRGINIA REGION

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Dedication

A heavy theme you, reader, will see throughout my thesis is the sense of “community”. And I would not be here today, completing this work without those who have supported, loved, and encouraged throughout this process.

First and foremost, I dedicated this body of work to my family: Cheryle, Eddie, and David. You are my home and my everything –supporters, caretakers, cheerleaders, soundboards, comedians, motivators, and inspiration. I am incredibly blessed, proud, and grateful to have you as my mother, father, and brother. I could and would not be here today without you all. Thank you. Thank you. Thank you.

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List of Abbreviations

- **“The Census”**: United States Census Bureau
- **DC**: District of Columbia
- **ERS**: Economic Research Service (Division of the USDA)
- **HFPA**: Healthy Food Priority Areas
- **HFAI**: Healthy Food Availability Index
- **MD**: Maryland
- **DMV**: DC-Maryland-Virginia
- **US**: United States
- **USDA**: United States Department of Agriculture
- **VA**: Virginia

Chapter 1 Literature Review of Urban Agriculture and Its Role in the Changing and Modern Food System

Agriculture is an industry that touches all lives in this world. It can be scaled to any degree, from the global food supply chain, feeding millions, to an individual self-sufficiently growing food for themselves. However, the larger we scale the agricultural, the more pressures and breakpoints arise. Like a bridge without proper suspension and support, a collapse is inevitable with too much traffic.

The United Nations (UN) reported in 2022 that the world population reached eight billion people. While population growth rates are slowing, it is still at a positive rate, and life expectancy is expected to elongate by four years by 2054 (United Nations, n.d.). With people living longer –and still having more people needing food –many push for urban agriculture as means to diversify agriculture production, localize the food system, and to aid meeting the UN Sustainable Development Goals of minimizing global hunger in developing countries and the Global North (Yuan et al., 2022).

The COVID-19 Pandemic's Effect on the Global Food System

The global COVID-19 pandemic of 2020 (and the subsequent years to follow) pushed agriculture passed its breaking point, causing a systematic collapse of our food system. The fragility of the current, post-pandemic food supply chain stemmed from impacts that prevented global food production and distribution, resulting in many health and economic disparities during the pandemic (Béné, 2020). Despite being classified as "essential workers", growers, producers, processors, and distributors could no longer operate at typical capacity due to social distancing

and those contracting COVID-19. Processing and distribution streams especially became the most affected, as production became bottlenecked and left a limited capacity of food available. Many consumers also lost their jobs or could not work to the same capacity, leading to reduced wages. In combination with these two factors, food became a highly expensive and sought-after commodity (Mahmood, 2024).

The consequences of having food become an excessively competitive commodity exacerbated the already weakened “pain points” in our food system. Food prices skyrocketed and took several years to decrease. According to the United States Department of Agriculture's (USDA) Economic Research Service (ERS), “In 2022, food prices increased by 9.9%, faster than in any year since 1979” and continued to rise between 1.2%-3.4% the five years following the pandemic (Stewart et al., 2026, section “Recent Historical Overview”). More individuals have become food insecure long-term, with those new to food insecurity rising 3.8% in 2021 and 8.0% in 2023 (Sheinberg et al., 2025).

This momentous event has brought forth many social, political, economic, and ethical issues to the current day, with ensuing downstream effects on the global food supply chain. The food system, as a whole, would be forever changed with the reemergence of concepts such as “food security”, “food sovereignty”, “local food systems”, and “food resiliency”. This has pushed many to support their local growers and economies –in a decentralized fashion– to create resilient communities to decrease reliance on the traditional centralized global food supply chain.

The term “food resiliency” arose in the 2000s-2010s in the United States to reflect the rise in cases of food security needs during extreme situations, such as aftermaths from human-based and natural disasters (Pingali et al., 2005). Now, especially after the COVID-19 pandemic,

food insecurity rates still remain high and the agri-food sector faces pressures from labor shortage, supply-chain pressures, and lack of supportive policies (Salisu et al., 2024).

Furthermore, as the specific populations at risk are often minorities (and facing other environmental injustices), there is a need to bring nutrient-dense food to areas with not just large populations but also large minority populations. Specifically, this means addressing highly populous, diverse urban areas. In the first year of the COVID-19 pandemic, Hispanics and Black individuals were experiencing food insecurity at rates twice as high as white populations (Wolfson et al., 2021). In 2023, the USDA ERS reported that 13.5% of all American households experienced some level of food insecurity (USDA, n.d.). If these trends continue, we could see up to a quarter to a third of minorities facing food insecurity.

The Urban Population's Access to Food

According to the United States Census Bureau, 80% of the American population lives in urban regions (US Census Bureau, 2026). Literature reviews of various research on food insecurity indicated that the most at-risk populations are children (Cook, 2008; Cook & Frank, 2013; Nord, 2009). Compounding factors such as parental/guardian employment, health, school meal programs, and access to full-service grocery stores exacerbate the gaps between meeting the needs for food security for children. Additionally, most racial minority populations live in urban regions compared to rural regions, which are predominantly white (National Center for Education Statistics, 2023). This means most of the population, and the already at-risk groups, are in urban regions.

Yet, an emerging approach to combat rising food insecurity rates is to incorporate local growers and providers into the various levels of food supply chains and emergency plans for municipalities. For example, Baltimore City, Maryland, incorporated the terms “food resiliency”

and “local food production” in 2013 in its local food plan for 2013-2023 period (Biehl et al., 2018). From the food plan, follow-up efforts included the development of mapping urban agriculture in the city limits and rolling out the initiative “Homegrown Baltimore: Grow Local”, a local policy effort to increase local food production and distribution (Buzogany, 2024).

Strategies like these often include the use of urban agriculturalists (such as urban farmers and community gardeners) to grow food for the immediate community and themselves. This minimizes or eliminates the need for various distribution methods –which have their own set of barriers to overcome. This includes shipping times and cost, organizing procurement, and finding distribution sites (Richardson et al., 2024).

These barriers are quite immense and take a toll on the global food supply chain. Calculations for the global food system emissions include emissions from transportation, production itself, and any subsequent land use changes. It is estimated that transportation alone makes up close to 20% of these global food system emissions. Produce in particular needs refrigerated transportation and makes up 36% of this total 20% (Li, 2022).

Even internally in the US, food mile emissions may potentially outweigh the benefits for “locally sourced food”. In Texas, it is estimated that livestock move the most across the state and contribute the most food mile emissions with “126 kt of CO₂ emissions annually”, doubling in comparison to produce (Lee & Stoeltje, 2025). Even then, Lee and Stoeltje (2025) critiqued that food mile emissions models are not factoring in proper road networks and using straight-line and efficiency assumptions instead of analyzing by the actual routes taken by transportation services, with a “relative error ranged from 3.0 % to 8.6 %...[and an] overall relative error was 5.7%”. (p. 7) Analysis done within the USDA indicated similar critiques, that the latest technology advancements that aid with communication, tracking, and transportation (i.e. software for

quality, improved and expanded refrigeration, and packaging) are not being properly incorporated for their respective and newer emissions contributions to global food system emissions and food mile emissions (Wang, 2000). For now, it appears food emissions calculations are under-estimating the impacts of agriculture. This highlights the need for food that grown and distributed for its immediate community members. Not only does urban agriculture increase the access to food, it decreases the impact agriculture as an industry has on the environment.

Land Use Changes

In addition to the need for locally sourced food, there has been a decrease in the traditional, large-acreage rural spaces for large-scale food production. In 1992, Bell proposed the “Urban-Rural Continuum Effect,” implying that there is a particular transition from urban to rural, and impacts the sociology and personal identifies of those areas. That transition of late is becoming less varying, with less available land mass for rural communities and becoming urbanized more immediately (Bell, 1992). Bell (1992) suggests that urbanization needs to be incorporated into land use planning and decision-making, especially for the sake of sociology. Moroney & Castellano (2018) confirmed the “Urban-Rural Continuum Effect” in the modern decade and from a land-use perspective. They showcased the exaggerated changes from a soft gradient to the stark loss of farmland, and that rural residents were majorly concerned about the loss of food production land (Moroney & Castellano, 2018).

The change in land-use and availability for agriculture production changes the size and distribution of farms. Literature review and census analysis in 2021 indicated that farms of less than two hectares account for 84% of all farms worldwide, utilizing only around 12% of all available and in-production agricultural land. In turn, these small farms only produce about a

third of the world's food supply (Lowder et al., 2021). Additionally, these small farms are being pushed to merge into large farms (i.e. larger than 50 hectares). Not only that, they are becoming less cropland and more large-scale pasture ranges (MacDonald, 2020). Only croplands over 2,000 acres saw a significant increase in farm size from the 1980s to 2017 (MacDonald, 2020). These large farms make up only 1% of all the world's farms but supply the remaining majority of the world's food supply (Lowder et al., 2021). In America, "About 6% of U.S. farms market foods locally through direct-to-consumer sales" (American Farm Bureau, n.d., column 2, par. 4).

Diving deeper, Spangler et al. (2020) utilized open-source USDA data and Farm Bill land-use policies from 1933 to 2018 to calculate that agricultural land (cropland, forest-use land, grassland/pasture/range, and other) is in fact, shrinking to urbanization and specialized industries, especially on the East Coast. Most of the cropland in the US is concentrated in the Midwest. In the eastern half of the US, the majority of farms are between 600-800 acres, while in the western US farms are 1,000-10,000 acres. Finally, crop production is being dominated by corn and soybean. The largest concentrations of these crops are in the Midwest and Southwest, aligning with the largest farms in America. Counter, "counties of high diversity are concentrated along the Southern Seaboard, Fruitful Rim of California and the Pacific Northwest, and the Northern Great Plains" tend to be the smaller farms in the country (Spangler et al., 2020, p. 11).

This information indicates that instead of having diverse farms diffused throughout our lands and populations, we are increasingly concentrating operations and minimizing access to locally sourced food. In 2008, locally sourced food was only 1.9% of all food sales, and in 2012 it had a revenue \$6.1 billion (Low & Vogue, 2011; Low et al., 2015).

Instead of strengthening our food system, we are setting our system up for the same stressors and pitfalls seen during the COVID-19 pandemic. Food system research is just now incorporating concepts like internal sustainability or cyclicity (i.e. circular bioeconomies). While food system frameworks may begin to incorporate some of these concepts, there is still a lack of depth to the utilization of urban agriculture. Specifically, literature review by Zou et al. (2023) indicates:

‘urban food systems’, ‘city’, ‘urban’ are also lacking, and the only keyword relating to urban study found in the clusters was ‘urban agriculture’; which implies the potential research gaps in developing sustainable urban food systems through the lens of circular principles. It also implies that the terminology of urban food or urban food systems is not popular. (p. 10)

The Role of Urban Agriculture in the Modern Food System

While rural agriculture faces increasing land use pressure, there is the opportunity to turn the now concrete jungles of cities and urbanized areas “green” again. Urban agriculture is a viable opportunity make the local food system more resilient.

“Most attention has focused on how much food urban gardens and farms grow, but increasingly this is viewed as a reductionist view of how urban agriculture affects urban life” (Ilieva et al., 2022, p. 15). Urban agriculturalists bring a plethora of benefits to an urban setting. The increase of green spaces brings human and environmental health benefits, from decreased stormwater runoff to the improvement of local air quality. The ability to grow one’s own food is empowering and brings food and financial sustainability. This enhances the local food system while offering a unique set of social connections that improve the local communities’ mental

health and overall well-being (Ilieva et al., 2022). Simple social media pages for seed exchanges lead to formal community organizations that create stability and mutual aid.

Urban growers have stated that prefer to grow the foods they desire and are relevant to their specific diets. In turn, they visit the already limited supermarkets and grocery store options less. Especially in cultures where demographics (i.e., gender, marital status, ability/disability) affect one's income, those who traditionally don't work or have difficulty finding work are able to support themselves in newfound practices through urban agriculture (Frazier, 2018; Richardson et al., 2024; Vitiello & Wolf-Powers, 2014). Urban agriculture brings people outside and into their community; enhancing their micro-habitat.

Additionally, urban agriculture can be a consistent and accessible source of fresh, locally sourced food in an urban setting, compared to the current norm of weekly farmers markets. Research on consumer behavior indicates that those who frequent urban farmers' markets are white women in their 30s-40s who have at least a college graduate's education level (Elepu & Mazzocco 2010). In areas like Baltimore City, MD or Wards 7 and 8 in DC, the racial minority is white (United States Census Bureau, 2025; Burton, 2025). Farmers' markets are not in these neighborhoods nor are they part of the normative experience, despite being priority areas for healthy food access. Even if farmers' markets were more accessible, or at least more prevalent throughout the week and year, research indicates that people still do most of their shopping at grocery stores despite the high interest in the quality of production at farmers' markets (Dodds et al., 2014). Urban agriculturalists can sell on-site (if allowed by their municipality), attend farmers' markets, donate to food banks, and supply to local grocery stores consistently than a once-a-week farmers' market.

Urbanization in the DMV Region

The DC-Maryland-Virginia region (or the DMV) is a hub of culture, innovation, and merging populations on the East Coast in the United States. In the last decade, the US Census states the DMV region has experienced an average of a 9% increase in population growth, making it one of the top urban centers in the nation. All three regions are seeing an increase in population density, meaning more competition for land and land use. Maryland grew by over 400,000 people from 2010 to 2020, with the population density increasing by 6.45%. D.C. grew by over 80,000 people from 2010 to 2020, with the population density increasing by 12.5%. Virginia grew by over 630,000 people from 2010-2020, with a population density increasing by 7.3% (United States Census Bureau, n.d.).

Places like Baltimore City, MD, Richmond, VA, and Washington D.C are already highly urbanized areas. Their neighboring regions, plus the influence from the nation's capital on immediate neighboring jurisdictions in MD and VA, create more urban transitions, or peri-urban regions, to these urbanized hot spots. Peri-urban regions are less ideal for traditional, rural farmland as well. The American Farmland Trust's "Farms Under Threat Dashboard" explored farmland and land use change from 2001-2016. Maryland was one of the lowest-ranking states for available farmland. Virginia was below average (at 6.6%), DC had no data collected, and 12.1% of Maryland's land use is dedicated to urban infrastructure and transportation. (American Farland Trust, 2026). In turn, these locations are prime spots for urban agriculturalists.

With agricultural zoning often being converted to residential and commercial, urban agriculture could be a solution to improve the food system viability in this region to balance land-use changes and local needs. However, the three regions in the DMV have varied and inconsistent services for urban agriculture, making it difficult to give consistent and uniform

support to a potentially growing urban agriculture industry. Maryland's Department of Agriculture has a few programs for urban agriculture, D.C. has an Office of Urban Agriculture, and Virginia's agricultural state staff does not support urban agriculture. But there is a federal-level USDA Urban Service Center in Richmond, Virginia (Infrastructure-Grants, n.d.; Urban Agriculture, n.d.; United States Department of Agriculture, 2023).

Given the varied assistance provided, the growing populations and densities, and the need for a resilient food system, an educational framework that better understands the different types of urban agriculturalists and their operations in the DMV is crucial to the future success of urban agriculture in these regions. A framework that understood their interests and motivations, coupled with how they technically grow, would lead to more success for urban growers in the DMV, resulting in a more resilient local food system.

Chapter 2 Exploring Urban Agriculture Archetypes and the Various Growers in the DMV Through In-Depth Qualitative Interviewing

Overview

Urban agriculture has been at the mercy of its local socio-political system, as municipal and state policies, land use opportunities, and changing demographics majorly impact the opportunities and barriers to urban agriculturalists. Currently, technical support for urban growers is resources made for small farms but adapted to an urban setting. However, as various past research has indicated, urban agriculture is unique and should not solely be compared to traditional and rural agriculture, leading to misguided translation of resources.

Previous research by Campbell et al. (2023) explored archetypes for the different growers in Oklahoma City, OK to better understand their motivations and needs to capture liked individuals into categories. As the DMV is far more urbanized and diverse compared to Oklahoma City, OK, it is important to assess Campbell's et al. (2023) results in the DMV before being generally adopted as a resource.

Through qualitative, in-depth interviews, 12 growers and experts across the DMV spoke about their motivations, histories, needs, and barriers as urban agriculturalists. The results of the interviews indicated that Campbell's et al. (2023) archetypes do exist in the DMV, but to varying degrees. Campbell's et al. (2023) archetypes – “The Learner”, “The Visionary”, and “The Business-Minded”—were found and reflected upon by the interview population. A major finding from these critiques did aid in the development of a fourth, new archetype: “The Self-Determined Agroecologist”. Branching from The Visionary, this new archetype teases out

aspects of community that are geared towards food system resiliency that The Visionary description was lacking.

The results of this research accentuate the importance of researching based upon an urban center's unique characteristics and creating tailored archetypes to those centers. Additionally, utilizing archetypes can allow for future success and research for educational and technical support for urban agriculturalists, as they provided catered classification to one's reasoning behind growing in an urban center. This in turn can help technical support providers in understanding the sources of motivation for urban growers, instead of making assumptions from other factors, such as current operational styles or barrier-based limitations.

Finally, this research shows the value of creating resources for growers, by growers and experts alike. Bringing in the growers' perspectives gives meaning to behavior, while the experts' perspectives give insight into execution of said behavior. By having multi-perspectives to ground truthing, it creates dimensional analysis that is ideal for work related to and in the social sciences.

Introduction & Literature Review

While urban agriculture seems like an obvious solution to improving the local food systems and mitigating the loss of traditional rural land mass, the lack of consistent political and institutional support has prevented what would have been a rich legacy of urban growers in the present day. By understanding the current state of urban agriculture, and the history behind it, only then can one properly research and support modern-day urban agriculturalists.

Examples of Urban Agriculture Policies Across the US

Urban agriculture policy has ebbed and flowed with changing populations, landscapes, city planning, and zoning layouts. Different urban centers of the United States have had their time leading the initiatives for urban agriculture.

In the beginning of the 21st century, research began seeing a shift in rural agricultural land, dividing its land mass across multiple and smaller operations. These operations resided in the then-developing peri-urban and urban areas of the Northeastern US (Rogus & Dimitri, 2015). However, policies that worked along with this land-use change were more predominately noted in the Midwest and Northwest, including cities such as Detroit, Michigan, Cleveland, Ohio, and Seattle, Washington (Popovitch, 2019). Specifically, Detroit had a massive population shift in the mid-1900s, leading to “an estimated 200,000 vacant parcels comprising a quarter of the city’s land area” (Popovitch, 2019, par. 3). The city’s comprehensive plan adopted language and policy that utilized urban agriculture for implementation and rejuvenation of these spaces. Cleveland created policy that supported economic activity for smaller and local urban operations. And Seattle updated its zoning policy to allow the use of community gardens on city land (Popovitch, 2019). Yet not every major city adopted such welcoming policies for urban agriculture.

Case Example: New York City, New York

New York City, New York, is one of the most globally recognized metropolitan areas, and often used as a case example for international comparison of urban centers with other countries outside the US.

In the 1970s-1990s, the city had the largest amount and activity of community gardens, preceding many of these other urban centers previously mentioned (Campbell, 2016). In 2007, the city planned its next long-term sustainability plan, “PlaNYC”. Due to political lobbying,

especially by commercial business who did not want to lose their cheap capital and ability to buy large scopes of land, PlaNYC purposefully excluded any designated language on “community garden”, “farm”, “agriculture”, and food” due to this rivalry of land use as a means to minimize the outreach of local municipal power. This contrasts what occurred in cities like Detroit, Cleveland, and Seattle. After four years of citizen campaigning and City Council efforts, the grassroots effort of the “FoodWorks” agenda was successfully incorporated. This included food systems dialogue and efforts in the city’s sustainability plan. In 2011, PlaNYC 2.0 was released, and the plan then included a specific food systems chapter (Campbell, 2016).

To this day, New York City still lacks a comprehensive plan that would address several municipality-level issues, such as urban agriculture (Angotti, 2015). However, the city did pass legislation in 2021 to create “The Mayor’s Office of Urban Agriculture” to support the legacy of ever-persistent urban agriculturalists in the city (NYC Urban Agriculture, n.d.).

National Nuances in Urban Agriculture Policies & Definitions

New York is not an isolated case; at the national level, confusion about language and policy planning is seen. The USDA lacks a definitive and cohesive definition of “urban agriculture”. The response given on their webpage as of 2025 states:

“Currently there is not a statutory or single formal definition of urban agriculture. The definition differs depending upon policy, state, or the community. The definition is often dictated by local policy (especially policy particular to funding/programming) and may not make sense for all communities who are technically participating in urban agriculture. The definitions are often community specific.” (Urban Agriculture National Agricultural Library, n.d.)

Therefore, these agriculturalists are often at the mercy of their specific municipality's political atmosphere, as there is no federal-level safeguard for what is "urban agriculture". While not every municipality is as exclusionary as PlaNYC was in 2007, some are more progressive and inviting with urban agriculture –like Baltimore City, Maryland. There, urban agriculture was integrated into the all-hazards mitigation plan (Biehl et al., 2018).

These two extreme cases highlight the gradient of experiences an urban agriculturalist can experience in their specific and unique municipality. This may cause urban agriculturalists to go to general agriculture research to supplement their understanding. However, the average urban agriculturalist cannot rely on general farming guidelines that are designed for their rural counterparts to translate appropriately to the setting, resources, and populations in need in an urban setting.

These restrictive political shifts are not limited to massive metropolises like New York or the United States: this issue is evident globally, including cases in India, Germany, Italy, Spain, the European Union, and many other states in the United States. Some issues include the association of farming with only rural spaces, that only wealthy individuals can afford to farm in urban settings, and confusing/conflicting definitions of "urban" and "urban agriculture" (Campbell et al., 2023; Frazier, 2018; Goodluck et al., 2024; Jansma et al., 2024; Pölling et al., 2016; Pölling et al., 2017; Reynolds, 2011;).

Rodríguez et al. (2022) stated that "urban agriculture is not synonymous to rural agriculture on a smaller scale" (p. 2), as its roots in many countries often tie to Indigenous populations finding alternative means to grow food in normally non-arable land, while enhancing biodiversity. Cities are largely non-arable and lack biodiversity; the shift in the physical

landscape does not take away the essence of urban agriculture of growing in non-traditional methods.

Long-Term Impacts from Policy on Urban Agriculture

Finally, it is important to note that policy does have long-standing impact on the success of urban agriculture. Analysts at Investigate Midwest explored USDA Census of Agriculture data from 2012 to 2022 to determine trends in urban agriculture operations. New York only had six additional farms recognized and Detroit had 22 additional farms added. The city leading the expansion of urban agricultural operations was Baltimore City with 143 farms or a 22% growth (Felder, 2025). The cities that once led urban agriculture in production and policy are now tapering out, with new cities on the rise.

Baltimore City, and the other urban centers of the DMV are growing; so is their urban agriculture. To maximize and properly support that growth for long-term operational success, policies, technical services, and operational understandings need to comprehend the various types of urban agriculturalists seen in the DMV. Otherwise, branches of urban agriculturalists may wilt and die off, leading to an artificial and unsustainable growth in the industry.

Lack of Urban Agriculture-Specific Technical Resources

A key component to long-term success is clear policy, guidelines, and resources. In the US, the USDA oversees urban agriculture. However, the USDA does not have a formal definition for “urban agriculture”. It is left up to individual states, and even local governments, to define the practice in order to hold up policy and regulations of urban agriculture. The federal reference to its own online resources state:

Urban agriculture includes the cultivation, processing and distribution of agricultural products in urban and suburban areas. Community gardens, rooftop farms, hydroponic, aeroponic, and aquaponic facilities, and vertical production are all examples of urban agriculture. Tribal communities and small towns may also be included. (United States Department of Agriculture, n.d., FAQs, Question 1)

This often leads to policies that reflect urbanization trends and local agricultural and environmental goals of those individual states and municipalities. Depending on local resources and commitments to urban agriculture, definitions can vary and can be confusing.

How Urban Agriculture is Defined in the DMV

DC defines “urban agriculture” as follows: “‘Urban Agriculture’ means the practice of growing, cultivating, processing, and distributing vegetables, fruits, grains, mushrooms, honey, herbs, nuts, seeds, and rootstock within the District” (Food Policy Council and Director Establishment Act of 2014, 2014).

Maryland does not have explicit language defining “urban agriculture”. Instead, the state has a State Urban Agriculture Property Tax Credit. It defines the following: “Urban agricultural property” is a property not in agriculturally classified land, in a priority funding zone, with a size of one-eighth of an acre to five acres. “Urban agricultural purposes”, simply, are defined as indoor and outdoor crop activities, environmental mitigation activities, community development activities, and economic development activities (Property Tax Credit – Urban Agricultural Property – Alterations, 2026).

Virginia does not have policy defining or a statute for “urban agriculture”. Their definition for “agriculture” follows suite:

“‘Agricultural operation’ means any operation devoted to the bona fide production of crops, animals, or fowl, including the production of fruits and vegetables of all kinds, meat, dairy, and poultry products, nuts, tobacco, nursery, and floral products and the production and harvest of products from silviculture activity” (Code of Virginia, 1981).

Impacts on Urban Agriculture from Inconsistent Support

In addition to the confusion from local jurisdictions’ rules, regulations, and long-term sustainability plans, public programs often lack an urban agricultural expert and/or funding to make urban operations successful. Quite often, the knowledge of urban agriculture is tied to a specific person, not a specific position, as there are very few departments in local governments that house an “urban agriculture” sector –and what department it falls under varies by jurisdiction. Thus, this pattern creates a short-term institutional knowledge source that leaves once that individual leaves their position. This also means the jurisdiction must have the staffing and budgeting capacities to create new urban agriculture-specific positions to overcome these barriers and have the ability to maintain this position(s) long-term (Center for Agriculture & Food Systems et al., 2025).

Today, urban agriculture is seen as a threat to the norm, instead as an integral part to supporting the local food system through means of community-centric growth, sustainability, and resilience. While traditional and rural farmers have a rich history of established technical assistance from various government, non-profit, and private entities (with decades of research and integration of practices), urban agriculture lacks both the time and bodies of knowledge needed to be on par with its rural counterparts.

The lack of growth for urban agricultural operations likely stems from a wide variety of issues. This can include the competition of vacant lands for commercial operations or the

pushback of the small-scale (and often non-commodified) approach to urban operations. From the intensive reparations to turn city soils fertile to learning the vast technical skills needed to succeed in the urban setting, urban growers face an uphill battle just to grow food (Richardson et al., 2024).

Research Problem

Grouping urban agriculturalists by liked characteristics streamlines the support technical service providers can provide while also recognizing urban agriculturalists as formal members of the food system's structure.

Jung (1969) described “archetypes” as original, collective, and relative behaviors. While often used in literature and psychology, the concepts of categorizing people by similar traits can be applied in other social sciences. Traditional and large-scale agriculturalists often get lumped by commodity or production style, giving themselves denoted “archetype” titles. These “archetypes” or groups are often seen in the forefront of lobbying for the US Farm Bill. The Farm Bill is a historic and long-standing “omnibus, multiyear law that governs an array of agricultural and food programs”, such as major commodity production, crop insurance, credit, and research (Johnson and Monke, 2022). These top lobbying groups represent grain producers, sugar producers, dairy farmers, and pharmaceutical/biotechnology companies (Hanrahan, 2024).

Archetype analysis is not novel for agricultural technical support and classification; nevertheless, the range of archetype development is limited. Thompson (2025) determined four archetypes to the viewpoints and production styles of agriculture, and Banson et al. (2016) explored eleven systems archetypes in Ghana for more sustainable approaches to production. These analyzes were focused on large-scale production however, making their translation, once again, not properly transferable to urban agriculturalists.

Urban agriculturalists, like most small production operations, produce differently than large-scale and traditional operations. As the Food and Agriculture Organization of the United Nations states, “evidence presented so far suggests that regions dominated by large landholdings often exhibit smaller yield gaps, as these farms benefit from economies of scale, advanced technology and optimized resource use” (FAO, 2025).

The only archetype analysis currently performed specifically on urban agriculture was done by the Oklahoma State Extension for urban agriculturists in and near Oklahoma City, OK (Campbell et al., 2023). However, Campbell’s et al. (2023) work was only done in the state of Oklahoma and may not translate well to other states with different urban/rural makeups and populations. This raises the need to replicate and explore Campbell’s et al. (2023) work in other urban regions. The DMV is far more urbanized than Oklahoma City, OK. As of 2023, the DMV is the seventh most populous urban center in the US, with Oklahoma City not even being in the top 10 (US Census Bureau, 2026). Thus, this urbanization and consequent characteristic differences of the two urban centers create the possibility that Campbell’s et al. (2023) work is not fully transferable in its current state.

Research Purposes and Objectives

The purpose of this research was to encapsulate the DMV’s unique experience with urbanization and urban agriculture. By accumulating the various urban agriculturalists’ histories, barriers, and intents into a categorial system, experts and technical assistant providers can use the resulting developed resource to streamline support through a common language of terms and characteristics of their constituents (urban agriculturalists).

By determining the barriers and experiences of urban growers, and coupling Campbell’s et al. (2023) archetype work, this research aimed to create a baseline understanding of what is

“an urban agriculturalist” in the DMV. By then identifying the archetypes of the DMV, this research could then lay the foundation for an educational framework tailored to the DMV urban agriculture sector that reflects the different types of growers, their intentions, and motivations.

The specific research objectives were as follows:

- Connect with growers and experts to understand and document their backgrounds, interests, understandings, and motivations related to urban agriculture, specifically in the DMV.
- Identify to the degree to which the archetypes found by Campbell et al. (2023) exist in the DMV (if at all), with any potential gaps in the archetype descriptions, and possible additional archetype(s).
- Identify learning barriers related to urban agriculture’s landscape in the DMV, and determine if there is a relationship with archetype placement.
- Analyze the role urban agriculture plays to the growers of the DMV region to set up a foundation for further research on the characteristics of urban agriculture operations.
- Analyze the experiences of growers and experts in the DMV to create a foundation for an education framework that supports long-term success for urban growers through archetype classifications.

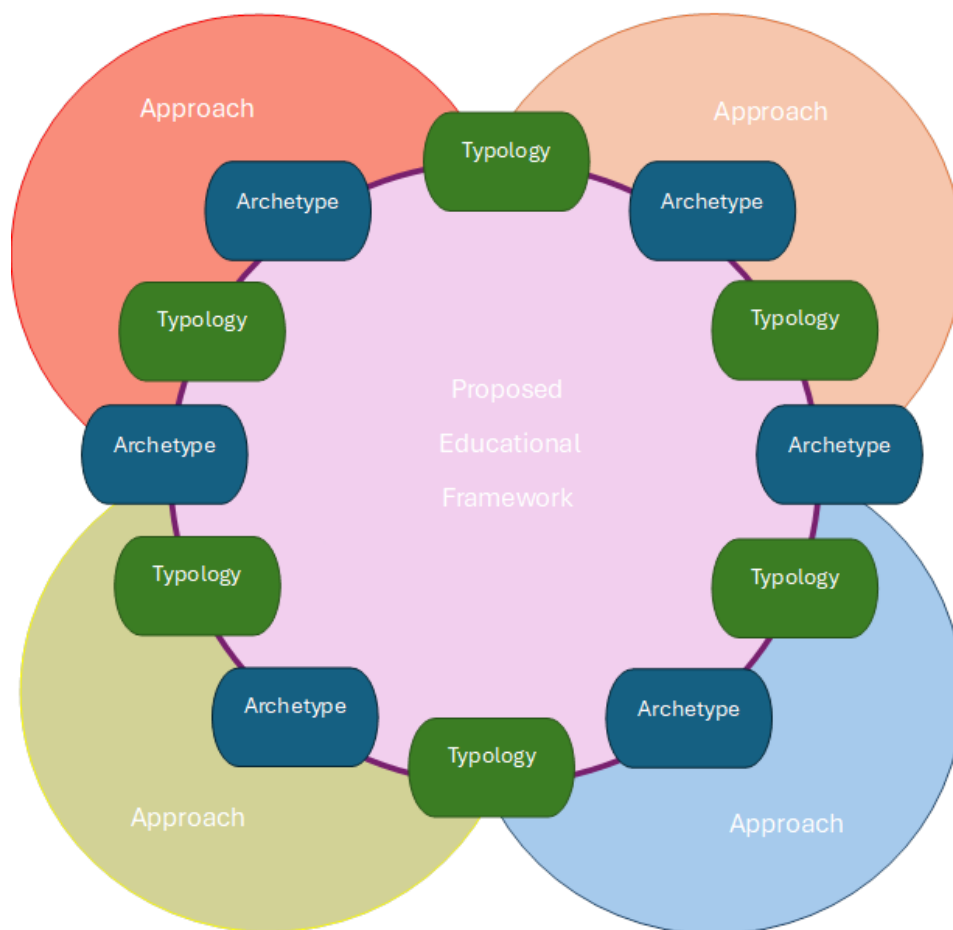
Conceptual Framework

The proposed conceptual framework for how archetypes and typologies can be grouped can be seen below in Figure 1. This proposed conceptual framework intended to showcase work completed throughout the whole thesis. It used both archetypes and typologies to create

groupings that lead to similarly styled approaches to urban agriculture based upon those growers' motivations and how they run their operations.

Figure 2.1

Proposed Educational Framework, Including Potential Approaches for Archetypes & Typologies



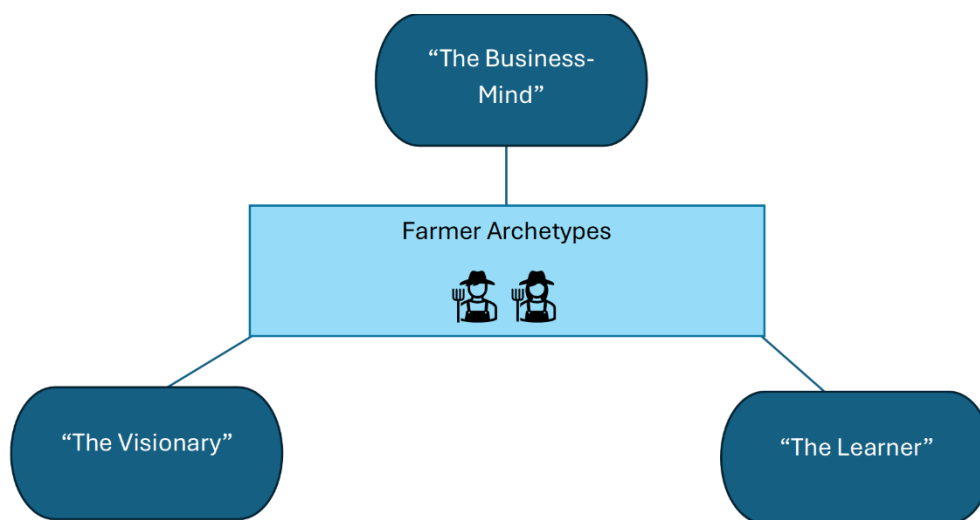
Note. Combining works from Campbell et al. (2023) and Jansma et al. (2024).

From the work Campbell et al. (2023), three main archetypes of urban farmers were discovered, seen below in Figure 2. This framework builds upon these three archetypes: “The

Visionary”, “The Business-Mind”, and “The Learner”. “The Visionary” sees urban agriculture as a way to enhance the biodiversity and community for all aspects of environmental health; it is a way to bond people with one another and with nature. “The Business-Mind” sees urban agriculture as a means of production and income, while being able to play in the local markets. Finally, “The Learner” sees urban agriculture as a novice approach to growing and this individual is often new to growing and agriculture in general (Campbell et al., 2023).

Figure 2.2

Farmer Archetypes



Note. Figure adapted from concepts by (Campbell et al., 2023).

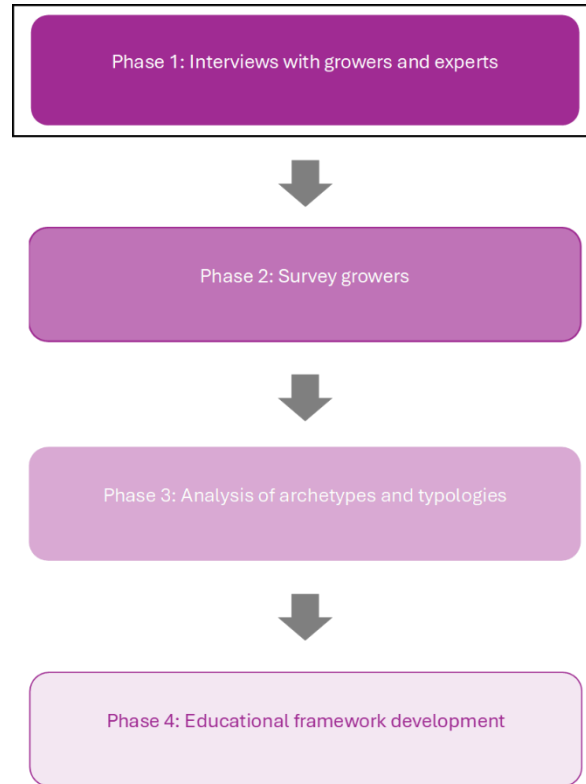
All three archetypes have unique goals and preferences when it comes to urban farming, distilling their complexities down to a few main characteristics. This in turn aids technical service and assistant providers in understanding the various needs of different growers.

Methodology

This research's overarching study design was an exploratory mixed methods design, seen below in Figure 3 (Creswell & Guetterman, 2018). In four phases, this research aimed to first understand urban growers as individuals through interviews in Phase 1. Building on the interviews, Phase 2's survey was developed based on the results of the archetype analysis and other major thematic trends that emerged from the interviews. Additionally, aspects of Jansma's (2023) typology assessment in the UK were used to ground truth operational typologies in the DMV. Phase 3 involved analyzing the archetypes and typologies separately, then integrating them to suggest group formations. Phase 4 included the foundation into the educational framework for the urban agriculturalists of the DMV.

Figure 2.3

Overall Thesis Methodology Flow Chart



This chapter specifically covers the research of Phase 1. Virtual, qualitative, in-depth interviews were conducted with growers actively growing food in the DMV or experts holding roles as technical assistant providers in the DMV. Therefore, Phase 1 only covered analysis related to urban agriculturalist archetypes.

Conducting Interviews

The aim of the interviews was to discuss with urban agriculturalists, urban agricultural commodity experts, government officials, and industry personnel directly to hone in on the archetypes proposed by Campbell et al. (2023). All the interviews were conducted online,

through Zoom, for up to one hour. Research questions were sent in advance to allow participants time to prepare. The interview research questions covered a variety of topics, including defining urban agriculture, the history of the individual in urban agriculture, resources, barriers, production, and archetype analysis. The exact research questions can be seen in Appendix 1. Interview analysis was conducted in NVivo, version 14.24.3. This included inductive coding, deductive coding, and thematic analysis.

Determining “Experts” and “Growers”

The qualitative, in-depth interviews covered two main populations: urban agriculture experts and urban agriculture growers.

Those considered “experts” were local leaders of urban agriculture, including, but not limited to: heads of non-profits and informal/formal organizations and networks, various university staffs, Extension staffs, and government officials (local, state, and federal) dedicated to urban agriculture. Some means of recruiting and networking included reliance on personal connections and introductions through purposive and convenience sampling, plus exploring positions across different levels of government, social media, and publicly available conference and outreach materials. Keywords like “urban agriculture”, “regenerative agriculture”, “small-scale farming”, and “sustainability” were often used to explore position titles.

Those considered “growers” were that actively growing food for consumption and production in urban spaces, ideally for several years. “Growers” were identified by similar means, such as recruiting and networking through reliance on personal connections and introductions, social media, publicly available conference and outreach materials, but also exploring recent grant awardees for various programs across the DMV, highlights from local news networks, and any publicly identified operations in any mapping resources.

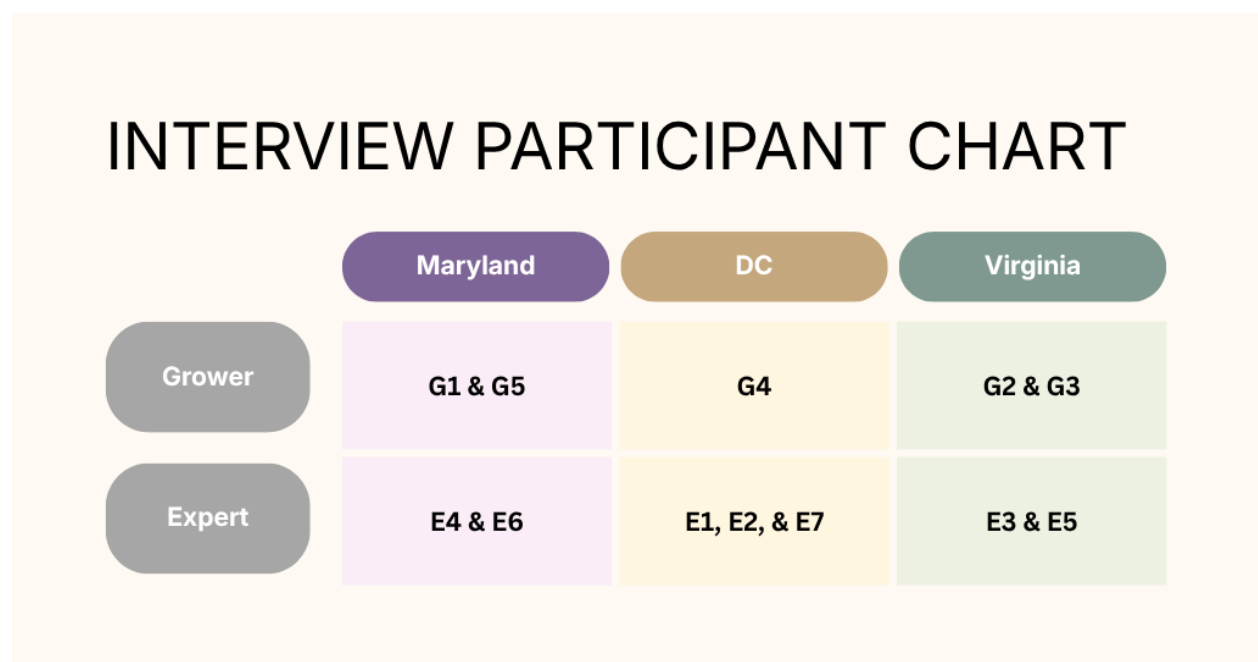
Snowballing recruitment methods were utilized only if possible connections were discussed during the interviewing process.

Analysis of Methodology

The following figure (Figure 4) breaks down the interview participants by grower, expert, and region. Each region had four participants of a mix of growers and experts.

Figure 2.4

Interview Participant Chart by Type and Region



Note. “G#” indicates a grower and “E#” indicates an expert.

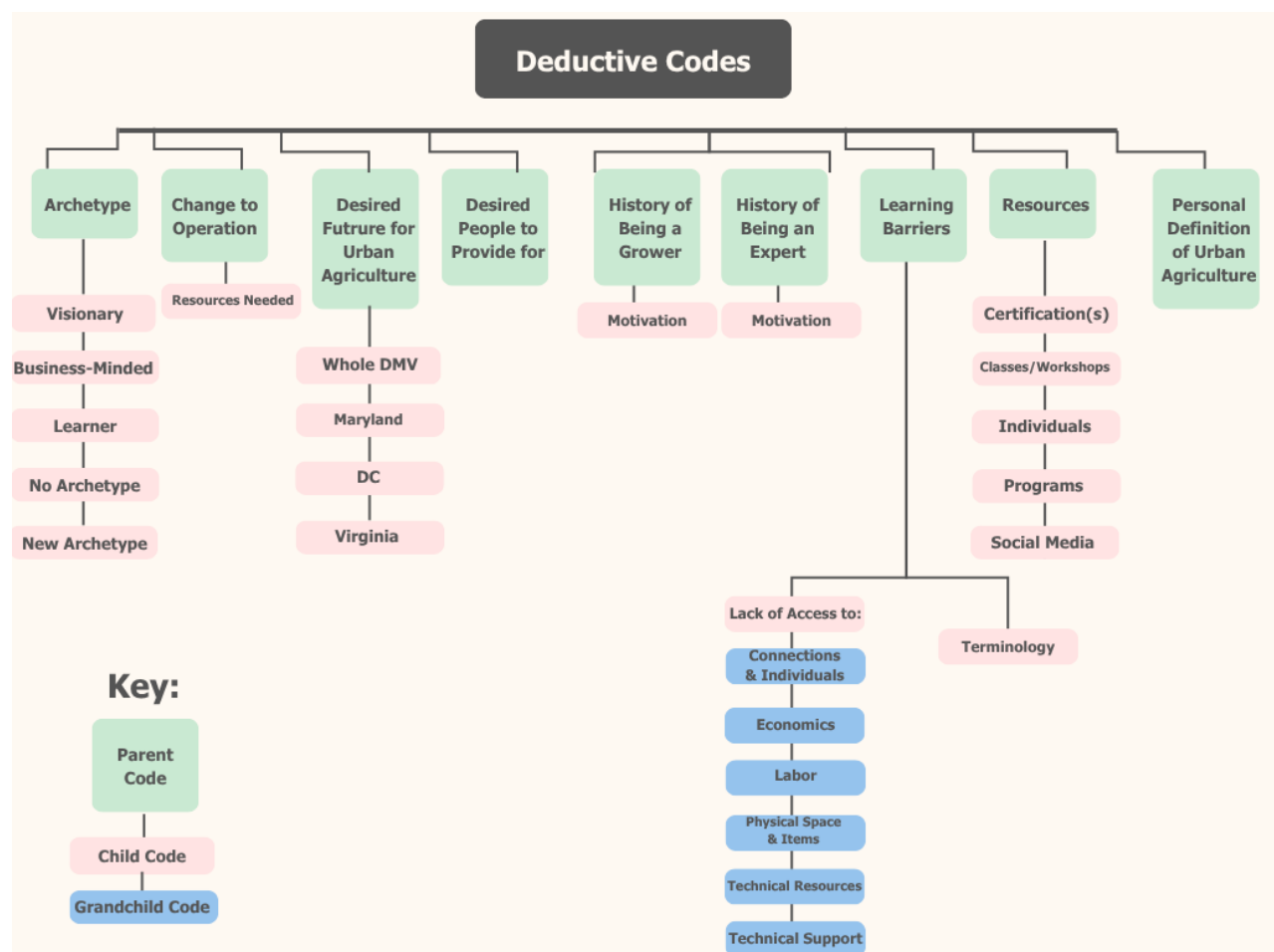
Deductive Codes

The deductive codes were used to reflect the interviewee’s direct response to the question to create a uniform summary of results. Respectively, the deductive codes were based

exclusively on the research interview questions and created only one parent code per research interview question. If a question asked for multiple responses, a subsequent child code (and in one case, grandchild code) was created. An example of such can be seen with the parent code “Resources”. The deductive codebook developed is found in Figure 5 below.

Figure 2.5

Deductive Codebook (Flow Diagram) for Qualitative Interviews of Growers and Experts in the DMV

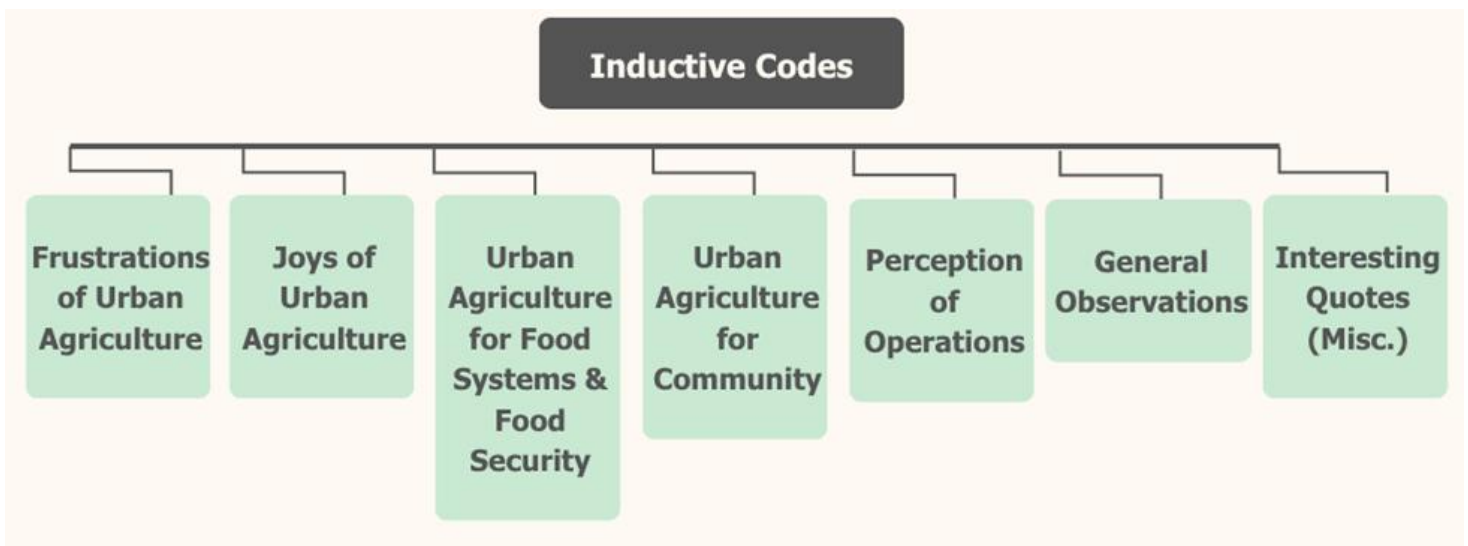


Inductive Codes

The inductive codes arose the various conversations held during the interview, either as emerging paths from questions or subsequent follow-up questions. These codes dove deeper into the reasonings behind the answers provided. Accordingly, the inductive codes were created based upon details found in the interviews that did not arise during the deductive coding process. There was only one parent code per code, and no child codes were created. The inductive codes served as the basis for the thematic analysis and were heavily referenced throughout the themes, subthemes, and trends. The codebook developed is shown in Figure 6 below.

Figure 2.6

Inductive Codebook for Qualitative Interviews of Growers and Experts in the DMV

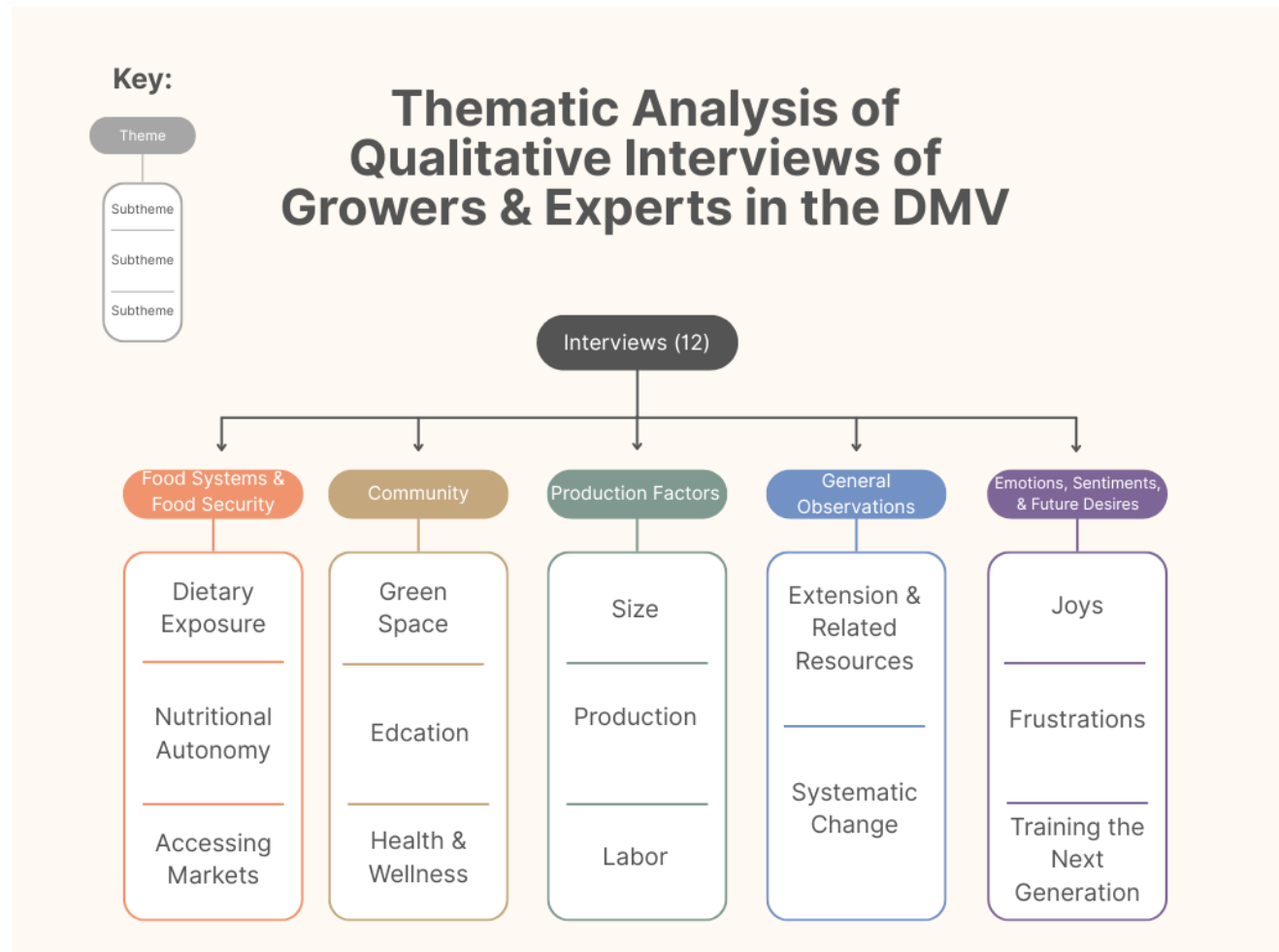


Thematic Analysis

Following the basics of Creswell & Creswell (2005), the thematic analysis used a mix of tools to create the designated themes. The inductive codes with the most references and cases, keywords (i.e., “food systems,” “community”, etc) with the highest counts, and automatic NVivo features, such as auto-theming and sentiment analysis, assisted with the development of the five major themes. The thematic analysis looks as follows in Figure 7. The five major themes were “Food System & Food Security”, “Community”, “Production Factors”, “General Observation”, and “Emotions, Sentiments, & Future Desires”. Coordinating subthemes are below each main theme.

Figure 2.7

Thematic Analysis for Qualitative Interviews of Growers and Experts in the DMV



Results

Analysis Across the DMV

Campbell's et al. (2023) original work focused on urban growers in the Oklahoma City, Oklahoma and the greater central Oklahoma region. As this research explored multiple urban

centers in a starkly different region of the country, it was important to determine any similarities and differences across each individual urban center, and the whole DMV region. While the DMV is often explored as a collective in terms of urbanization, each state and the district have their own unique characteristics in terms of populations and urbanization that need to be further analyzed.

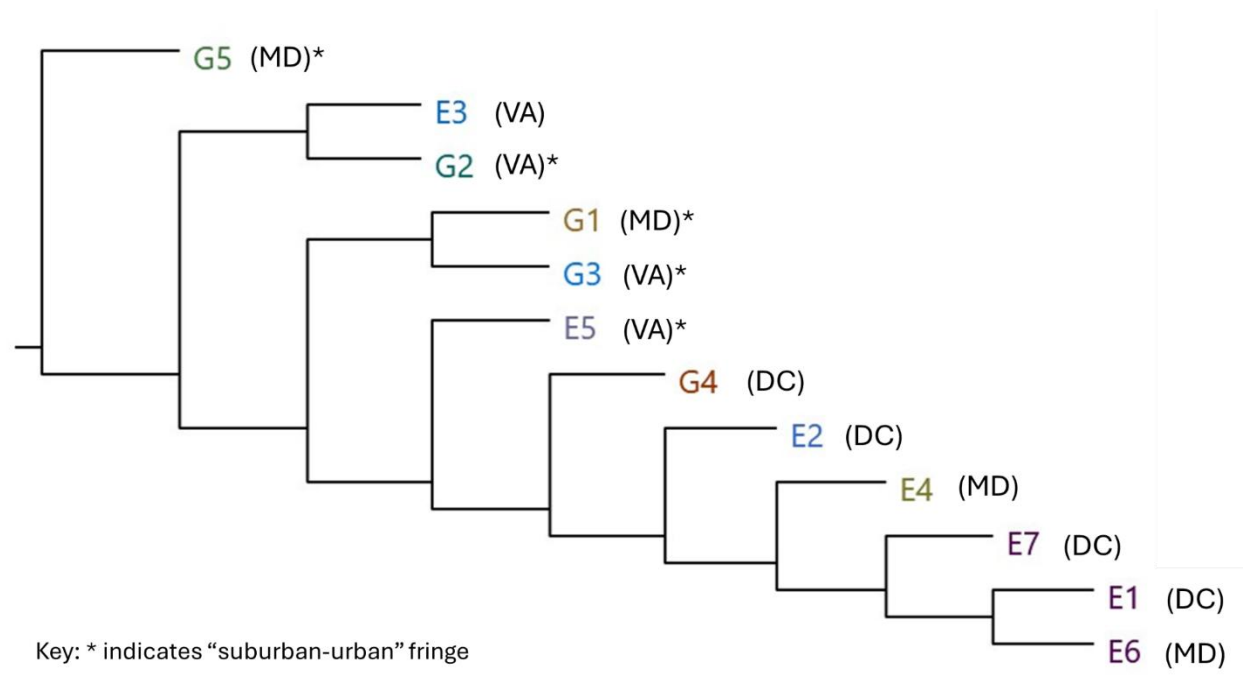
Using the NVivo software, a qualitative cluster analysis was conducted to compare each individual interview file to the rest of the collective samples. Similarly-spoken individuals are paired and clustered together, while more distinct individuals are branched further away from the collective sample. The cluster analysis can be seen in Figure 8. An interview at the top of the diagram is less associated with interviews at the bottom. For instance, interview G5 spoke very differently from the rest of the interviews. E1 and E6 spoke the most similarly.

Due to the smaller sample size of 12 interviews, a Sørensen-Dice coefficient statistical metric was used to compare the shared and unshared words across the two interviews. Sørensen-Dice is more ideal for categorical data of smaller sample sizes compared to Jaccard's coefficient, which indicates the ratio of the presence of similar words for each of the two interviews (Chugani, 2025). The goal was to see who spoke similarly overall, not the detailed degree of similarity between each of the interviews.

The cluster analysis aided in discerning motivations to growing –especially in regards to how desired communities are reached –and how urbanization impacts growing. These results were used throughout the thesis, by aiding in survey question development, interpreting survey results, and creating the finalized educational framework. More on these results can be read in Chapters 4 and 5.

Figure 2.8

Cluster Analysis Hierarchy Chart Depicting the Similarities Among Interviewees' Interviews



Note. An "*" indicates a grower or expert on the "suburban-urban" fringe or "peri-urban" area. Interview participant codes "G#" represent growers and codes "E#" represent experts. Which region they are from is in parenthesis. An interview at the top of the diagram is less associated with interviews at the bottom.

The initial interpretation of the cluster analysis of Figure 8 indicates who spoke similarly, i.e. individuals who spoke about the same shared experiences, used similar keywords spoken, and similar directional trends in emotions (i.e. spoke positively or negatively about a theme). Experts from DC and Maryland spoke more in tune, while Virginia experts and growers spoke alike to Maryland growers.

However, upon a more detailed inspection, by cross-referencing the interviewee's comments and locations of work with the 2020 US Census Demographic Data Maps (2020 Census Demographic Data Map Viewer, n.d.), we can see a mild trend of interviewees and their region's exact urbanization.

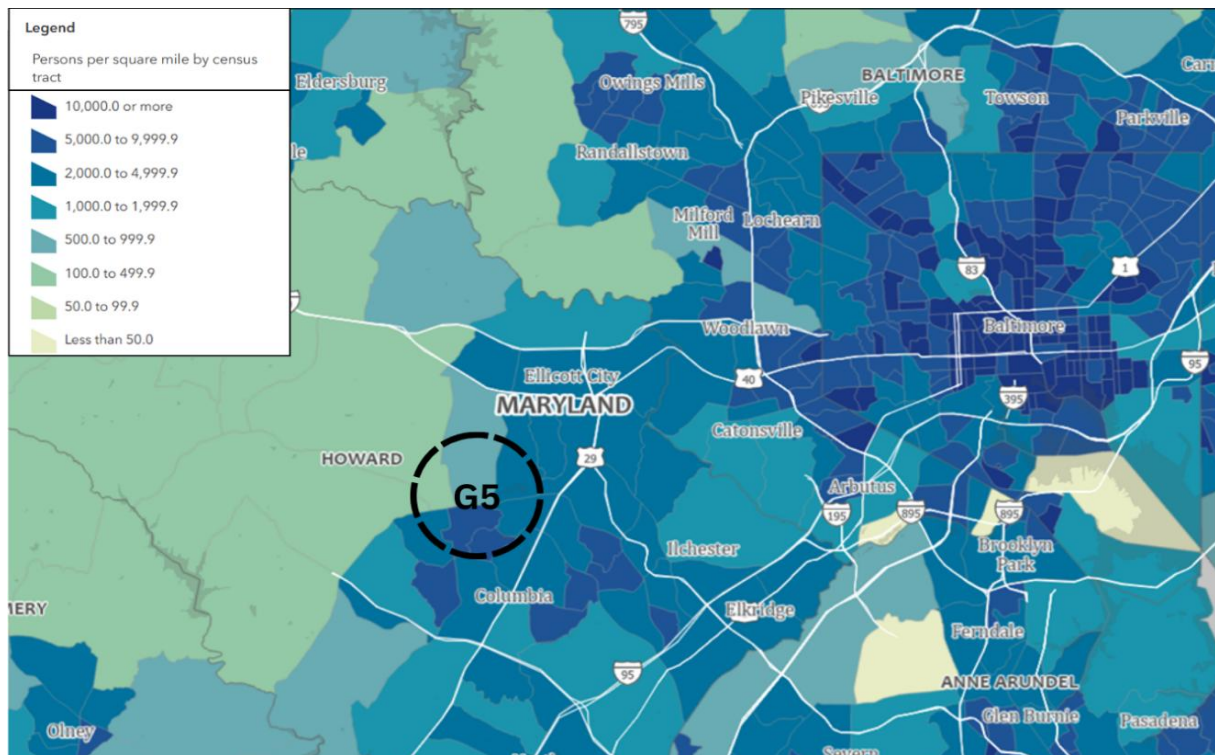
G1, G2, G3, G5, and E5 are in areas more classified on the urban-suburban spectrum, with many of the interviewees denoting that they are on the "suburban-urban fringe":

"Fairfield. We're not actually within the limits of the city of Richmond, and in fact, where we fall we're kind of on at least what is for this part of Virginia, what is sort of like the suburban fringe, because you go not too far and you end up in areas like Highland Springs and Verina that are as far as Henrico County is concerned, those areas are still rural." (G2)

An example can be seen with G5 in Howard County, Maryland, pictured in Figure 9. The exact location of G5's farm is kept within an obscure 20-mile radius to protect the farm's identity. As seen by a screenshot of the 2020 US Census Demographic Data Map Viewer, G5 is a prime example of the "Urban-Rural Continuum Effect" proposed by Bell in 1992. G5's farm is in an area that gradually moves away from urbanization, until it starkly contrasts with a highly rural area.

Figure 2.9

Modified Image of the 2020 US Census Demographic Data Map Viewer to Highlight G5's Growing Location in Retrospect to Urbanization



Note. The image was a modified screenshot of 2020 US Census Demographic Data Map Viewer to include the legend in the same frame.

Comparatively, E1, E2, E3, E4, E7, and G4 are often in areas considered “urban”.

“The district's kind of nice where it's just everything's urban...I think urban agriculture as a whole in D.C., Maryland, Virginia, realistically, given...how everything that is within 25 miles of the district could be considered urban.” (E7)

The intensity of urbanization can be seen in Figure 10, with population density in DC and the surrounding areas in the DMV being the darkest and therefore the most concentrated. This indicates most experts are housed in the hearts of the urban area, while the growers are more on the fringe. This can lead to skewed perspectives of what is “urban”.

Figure 2.10

Modified Image of the 2020 US Census Demographic Data Map Viewer to Highlight the DMV's Urbanization



Note. The image was a modified screenshot of 2020 US Census Demographic Data Map Viewer to include the legend in the same frame.

Defining “Urban Agriculture”

Despite shared interests among all 12 interviewees and a concise approach to defining urban agriculture as “*agriculture in urban settings*” (E5), what constitutes “urban” across the DMV remains inconsistent. G1 emphasized this: “*Urban agriculture. First of all, I’ll talk about the space and place. It’s not the suburbs. It’s a densely populated area and anything ag*” despite G1 themselves farming in the suburbs.

So, it is important to determine how each interviewee defines “urban agriculture” as it gives insight into personal characteristics that could affect archetype understanding and placement. Additionally, it helps in understanding the gaps between technical service providers and their constituents, and what is needed to bridge those gaps.

As this research aims to create an educational framework that intends to have a catered language for experts and growers, we cannot assume each individual interprets “urban agriculture” the same; the policy reviews in the literature review identified that the national government does not have a formal definition, DC has a formal definition, Maryland has an indirect definition, and Virginia has no definition for defining “urban agriculture”. Furthermore, Census data points currently used for urbanization only paint part of the picture. Data on what "agriculture " is in an urban setting is the second half.

Experts defined urban agriculture as “agricultural production in an urban setting”. Five of the seven expanded on said definition to include various production styles and a heavy emphasis that growers are supporting their direct communities, but have difficulty finding differences in the threshold for what is an urban grower and what is often a gardener:

“I think I’m more inclined to define it the way our farm manager and the people in the community are defining it, which is more like an urban agroecology. It’s not limited just to the growing of crops, the growing of food for consumption. It’s also creating the community around sharing what you’re growing, how you’re growing it, how you’re harvesting it, how you’re cooking it, sharing that.” (E1)

All five growers defined “urban agriculture” uniquely. The growers’ definitions of “urban agriculture” differed slightly from the experts by having more creative liberty in the definition. Again, like the experts, growers noted that it is more than growing in urban spaces.

The growers' comments featured the benefits agriculture brings to said urban spaces, such as improvements to the local community, ecology, and food system:

"My idea of it is just food production outside the traditional rural methods...I think there's a lot of creativity in it." (G2)

"I feel how people define urban can be ambiguous...But I think a couple of pillars that would be helpful to hold up the definition of [urban] agriculture would be like, where is it happening? Is it within the just physical boundaries of an urban center? And then who is it serving in the sense of is it serving people in that same urban center, or is it distributed elsewhere?" (G5)

These interpretations further illuminate the confusion in the current definitions –and more so the lack of formal definitions –when it comes to “urban agriculture”. This validates the need for a common language when it comes to an educational framework for urban growers and their related experts.

Archetype Analysis

All 12 interviewees believed the three archetypes by Campbell et al. (2023) do exist in the DMV. However, as described below, there is a division on the degree to which each of the three archetypes is seen, and whether the three archetypes are all-encompassing.

The Visionary: Urban Agriculture as a Way to Enhance the Environment

Six of the seven experts mentioned that the three archetypes are too limiting to encompass the urban growers of the DMV. Specifically, three of those six thought The Visionary was too balanced between community and environmental health. The saw community was a main motivator for growing in an urban space. These experts also took the time to define aspects of “community” beyond what Campbell et al. (2023) explored:

“But the agroecologists that I've spoken with, some of them are very grassroots...where we've got some power of our own, we can take care of each other a little bit with this food, as we don't have the great grocery stores, other parts of the city have, that's something we can do.” (E1)

“Because I really do think a lot of people see it as it's kind of in your visionary one. But I read that really more as like plant biodiversity and environmental health. And I really do think that there is this like human health aspect...People are looking for it. They're literally looking for community.” (E2)

“There's more of a socioeconomic priority than a strict either environmental or economic, so I think there's a possibility for a fourth archetype that has to do more with socioeconomic reasons that these people are doing what they're doing.” (E4)

Growers, conversely, thought The Visionary archetype is a valid archetype. But they did not see it have the same longevity in motivation compared to the other two archetypes. These critiques highlight that The Visionary's limited ability to become successful, especially for DMV growers:

“See, I'm a visionary. But I have to think about the business side of stuff, but I dream first.” (G1)

“So one [the visionary] absolutely exists. That's every hobby farmer ever.” (G3)

Despite the disputes on what is “The Visionary”, Campbell's et al. (2023) descriptors have merit still. The major themes that came from Phase 1's interviews align with statements from Campbell's et al. (2023) work for The Visionary. This includes: “Urban food systems build

community social structure”, and “The best way to address urban environmental problems is with urban agriculture”.

Years of experience were another key difference between Oklahoma growers and DMV growers. Campbell et al. (2023) stated The Visionary is “a largely new and beginning farmer group.” Campbell et al. (2023) based their “beginning farmer group” off of the USDA’s parameters of under 10 years of experience. This differs from this thesis, as those who categorized themselves as The Visionary mentioned at least five years of farming experience.

Cumulatively, the critiques to The Visionary showcase the importance of teasing out the concepts of “community” and “the food system” to anthropological and environmental levels. This allows for a better understanding of how different urban agriculturists prefer to approach urban agriculture. Understanding these critiques also aids in the understanding of the limitations and possible improvements for The Visionary archetype.

A Fourth, New Archetype: “The Self-Determined Agroecologist”

The other three of the six experts who critiqued The Visionary archetype stating it was too limiting preferred they would like to see a fourth archetype created instead of editing the definition of The Visionary. These experts mentioned characteristics of self-sufficiency and autonomy:

“I do feel like there's an archetype of a self-sufficiency element...there's a lot of interest in people just being empowered by knowledge and experience...And maybe that's just in like the learner category that you described, but I feel like there's there this more like empowerment element to it.” (E6)

“Many of the people who are really trying to grow for themselves as a part of independence and sort of a more food sovereignty perspective is seeing urban

agriculture as a tool of empowerment and a tool of both self and community empowerment. The idea of being able to feed themselves, feed their community...And sort of seeing urban agriculture as a mode of connecting to the food system.” (E7)

Growers tangentially echoed these comments made by this group of experts wanting a fourth archetype. Growers stated if they were to define a fourth archetype, it would encompass aspects that enhance food security to their local food system and experiences to food sovereignty. Tangentially, comments were made about the aspects from the competitions of local economics and disparities in income:

“Ideally, it would be cool if I fit into the “business-minded”, right? Because if growing food in cities would be profitable...but I think by the nature of it, it's just not...that's my bias is that I do look at urban agriculture as a means to expand food access. And as a potential solution to filling in gaps... I see urban agriculture is more of a response to the lack of food or to the lack of access to food.” (G2)

“I see a gap and I don't know if it needs to be a fourth archetype or not, but I do feel like a lot of my partners are motivated by either a social function. Like can we connect our communities and can we connect our community to nature, can we connect the economy?” (G4)

“I feel that's something in common to other urban growers is part of why maybe they have decided to stay in an urban space to grow instead of looking elsewhere is because of that connection to the community. So I feel like I am missing in those three definitions for sure.” (G5)

While Campbell's et al. (2023) definition of The Visionary hits these topics, it lacks specificity to what community and autonomy looks like in real practice. The Business-Minded has economic direction, while The Learner has an educational direction. The Visionary has no direction on how to engage with one's community and/or food system. The original Visionary characteristics are too broad, encompassing the ideas on food systems, community, environmental health, and climate change (Campbell et al., 2023). This new archetype, "The Self-Determined Agroecologist", gives direction, purpose, and idea to these practices. In doing so, this new archetype emphasizes those motivated by independent civic engagement, cultural relevance to their livelihoods, and finding means to support their specific diet.

The Business-Minded: Urban Agriculture for Production and Income

The Business-Minded archetype was mentioned by six of the total 12 individuals, three of whom were growers, and three of whom were experts. Interestingly, all six comments mentioned that they saw The Business-Minded archetype, but did not see it exist to the same parameters described by Campbell et al. (2023).

Growers specifically mentioned that it is quite difficult to be a commercial, for-profit operation in the DMV, citing barriers such as high-costs and the current farming models:

"I don't think by definition of what you said that the business archetype is strictly for production and market. I think there's a subset with that focus, because there are for-profit urban agriculture operations...But then there's a third item in that, because they want to either be a model for others. They either want to teach or mentor other people, so there's a component of that Visionary in the business production as well." (E4)

“If I was a millionaire, billionaire, I would not care about the business aspect of it. The only reason why I care about money is because I need to live. If somebody paid me just to live, I would love to just do this. To rely on grants is really silly in any aspect.” (G1)

“I honestly don't know anybody who's business-minded about it, who is actually making money on farming...I have never seen a business-minded individual actually doing farming. It's for people who are making money off of the things that are farming adjacent.” (G3)

This differs dramatically from Campbell's et al. (2023) research, which saw “The Business-Minded Farmer theme has a generally optimistic outlook recognizing there is a real opportunity for business success for urban farmers” and these growers highly disagreed with the statement “Full-time income from urban food production is practically impossible” (Campbell et al., 2023). Oklahoma farmers believed they could make profits at farmer's markets and just needed loans and stable employment to be successful in urban agricultural operations. Their issues arose from the lack of connection between state and federal programs that recognize the nuances of urban agriculture. While DMV growers and experts had similar sentiments, most believed an urban grower can only operate in the non-profit sector so they can apply for grants (and some still critique this option heavily), or become a highly niche operation specializing with value-added agricultural goods and services.

Again, there are concerns in the ability in The Business-Minded, as with The Visionary. The Business-Minded appear to have stronger motivation, or at least better means of becoming successful. Versus The Visionary who are lacking the ability to scale up their success. Economic

restraints hinder The Business-Minded operational preferences and success; The Visionary don't operate to their full success because they do not have preferences to begin with.

The Learner: New to Urban Agriculture

Finally, the least commonly seen archetype was The Learner; only five of the total 12 interviewees mentioned it. All five mentioned that while this archetype was common, it was hard for these individuals to scale to a level they would classify as an "urban grower". Instead, they associated this archetype with a "Master Gardener" or some kind of student in a program. These are often individuals with a lower commitment to urban agriculture but have a high initial interest:

"And I think we have probably the largest group is in 'The Learners' because they are new to getting out there and trying something different. They're starting from either from been growing a garden, for the last five, six years. Now I want to make sure that I can expand it to get it out into the community." (E4)

"And I think the people that Rooting DC and our current Master Gardener program fall a lot into the learner category, like something they're curious, they want to be a grower." (E7)

"'The Learner'; the biggest problem is that there's no way to scale. It doesn't exist... so few people make it through that grand canyon of distance between a gardener and a farmer... So the point is that I think see The Learners, and people want The Learners to be a thing, but there's no way to graduate from being Learner. It just doesn't happen unless you get a job with an established farm and you're able to take over as like their farm manager... The Learner, there are so many of them." (G3)

This aligns very closely to Campbell's et al. (2023) description of "The Learner":

"The Learning Farmer perspective highlights the need for more training and business skills as well as the importance of university research and resources for the success of urban farmers...The majority of sorters had less than 10 years of experience, making this a largely new and beginning farmer group." (Campbell et al., 2023)

Similar barriers were noted in Campbell's et al. (2023) work and in this thesis, where there is a need for farming business management skills, opportunities to experiment, and more formal education to fully development oneself to that status of an "urban farmer". Unlike the other critiques to The Visionary and The Business-Minded, The Learner has a laid-out trajectory for involvement for these urban growers. The key is finding the appropriate means and resources to ensure that The Learners are engaged properly and are motivated for long-term success.

Resources & Barriers

Once the archetypes were explored and critiqued, the next part of the interviews was to incorporate growers' experiences and comments to resources and barriers into the archetype analysis, if possible. The aim was to determine if those self-placed in similar archetypes faced similar trends to resources and barriers. The topics discussed were technical resources, economics, and physical space and items.

Experts and growers had a relatively equal understanding of resources, especially specific programs available, as nine of the total 12 interviews went into deep detail about programs offered. However, experts mentioned classes and hands-on experiences as the next top resource, while growers mentioned social media and community forums. Figure 11 compares some of the comments made by experts and growers.

Figure 2.11

Comparing Resource Avenues between Experts and Growers

RESOURCE AVENUES FOR GROWERS VS EXPERTS	
Grower	Expert
“But mostly I learned about microgreens through YouTube because I was looking for a solution. I’m a renter. I don’t have my own home.” (G1)	“And we also have the traditional community classes. We’ve got the master gardener, the master naturalist, then we’ve got composting, and we have soilless growing. We’ve got farm shelves, and we’ve got Pepco AgPod at one of our food hubs, our community college campus, where it’s all indoor growing, essentially in water with nutrients, right, hydroponics. We have an aquaponics lab on the campus that’s also open.” (E1)
“Honestly, Reddit, of other urban growers, thinking about drip irrigation, specifications and hoop houses and greenhouses and walk-in coolers and just seeing what other growers have done.” (G5)	“I think hands-on courses are definitely more impactful than virtual ones. Virtual doesn’t seem to translate at all to actually having your hands in the soil and actually building and growing things.” (E3)

Based on the deductive child code “Lack of Access” under the parent code “Learning Barriers”, six grandchild codes/categories were pre-determined as potential limitations to urban growers. “Technical Resources” (16 references), “Economics” (10 references), and “Physical Space & Items” (9 references) were the top barriers discussed among experts and growers. In each category, at least two experts and/or growers spoke about said category, showing these barriers as a shared issue and perception.

Technical Resources

When it came to “Technical Resources”, various experts noted that the current technical support is geared toward the Master Gardener program, and many fault the ability to scale up from this program in both knowledge and capacity:

“There's the Master Gardeners Program, but that's also a little bit more of a niche focus. And I think they're great serving as like volunteers, but that's not necessarily a compatible fit with what like our staff would need.” (E3)

Growers had similar sentiments, but very specific viewpoints to these comments. G2 spoke from a generalist perspective, stating, *“fundamentally we're resource poor”*.

G5 spoke about how information about agricultural production is not always transferable to urban contexts, especially in terms of size and growing styles:

“They have information about cover cropping in general, but it's using different seeds and different plants that are just require machinery that we don't have. And so it's conceptually the idea is there, but practically how it is done in the way that we need it to be done isn't always there.”

This deaconess between growers and experts shows where this proposed educational framework can bring harmony. Having multiple perspectives from different populations of growers and experts displays the complexity to urban agriculture in the DMV. It also presents the need to understand the current basis for growers, and why they feel their needs are not being met. Assumptions are being made by both populations; of themselves and of one another.

Economics

Discussions on economics took multiple directions. The overarching theme was being underfunded. G5 encompasses the theme well, stating:

“No farmers are exploiting their consumer base to become a millionaire, and to just sit on that chunk of change and do nothing to it. I feel that most, especially small-scale farmers, are thinking, ‘Can I repeat my bottom line so that I can be here next year?’”

Other aspects of the economics-related topics include a lack of funding for staff training, for farmer training, and for investment in operational needs (i.e. more land or equipment).

E2 spoke about an often-faulted issue in urban agricultural operations. They spoke about how urban agriculture often feeds the local community, especially those who are food-insecure, but many urban agricultural operations require volunteer labor, and those volunteers often cannot be the same people:

“I would say that the biggest issue or group that is sometimes challenging to access would be people from lower-income groups, who, in many cases, are actually maybe experiencing food insecurity. But those people are usually pretty time-poor, too. So, they often have jobs on the weekend, so they can't come and volunteer for four hours just for funsies, because it's a pretty day outside.”

Work outside the DMV showcases the inability for commercialization of urban agriculture operations as well. Kopyawattage et al. (2019) found in Columbus, Ohio that rural non-profit farms were the main competition for urban commercial farms in terms of market access, especially at farmers' markets, for CSA sign-ups, and for restaurant contracts. This study's interviewees shared sentiments about non-profit being the preferred business structure

for two main reasons: 1.) The ability to apply for grants and 2.) The consumer appeals to a business with “a social mission attached to it” (Kopiyawattage et al., 2019).

But G5 stated saturation and exhaustion to the non-profit sector, counteracting Kopiyawattage’s et al. (2019) results:

"This is a huge kind of systems/cultural level change that I would to see happen with the nonprofit space as a whole, but just the funding structure of it being a little more equitable/fair, but also maybe decentralized. It's just very challenging when your organization, your production, especially for farming, that is so specific and time-bound and is not always something that you can just rely on. Grants are always looking for something innovative and new and unique."

E5 spoke on a parallel issue with publicly funded urban agriculture research and resource development:

"A lot of our work that we're doing, it was very, very hard to do without the funding and without the capacity of some of these universities that are helping us right now. Especially when there's no payroll, we're just kind of like on the ground trying to form these co-ops together, but everybody also has to go farm....And definitely not with...the volatileness of the federal funding landscape."

So, while oftentimes it is more successful to be a non-profit organization in the urban agriculture sector, the DMV is seeing more saturation and exhaustion of accessible funds, programs, and grants, creating excessive competition and bottlenecking.

Physical Space & Items

Land, especially land with water access, was mentioned by two experts and one grower as a major barrier:

“Access to the land for growing is a big one. And again, then access to land with water because –I’ve seen this in Virginia and in D.C. –people don’t really have a spigot. They don’t have a tap. They got to drag the hose over.” (E1)

Castill et al. (2013) saw “both water access and water runoff were reported as barriers for urban agriculture in the greater Chicago metropolitan area” with almost half of their interview population stating issues. They discussed with their interviewees that it was “challenging to receive water from the city...A water line move to the site, 25 ft. from the street, [costs] \$25,000” (Castillo et al., 2013).

Three growers explained in detail about how the size of their operations forces them to rely heavily on personal labor because equipment is not catered for their operations. However, finding and paying for consistent labor was another complicated layer to this barrier:

“But, just fundamentally, we're just resource poor. And there's a lot that I could do with more resources. And specifically, equipment and labor. Because there's equipment that we're lacking that would save on labor, but then we're also trying to keep the size of the operation manageable. I try not to get too big for what we are, and the volunteers were able to bring in everything else. But certainly, in terms of urban agriculture sites, we actually have a ton of space. We have a lot of potential growing areas, and it's not necessarily being utilized right now because of those resource constraints. Fundamentally, the resource is money, because that could pay for labor, it could pay for equipment, it could pay for some of this that we're lacking.” (G2)

“So your gardener is doing most of the labor by hand. They’re doing the labor themselves. The gulf between when you have to go from one or two hands to

multiple hands, that's a massive barrier because it's not just finding people, but finding the money to pay them.” (G3)

“We need labor. I'm running essentially a one person program right now...funding structure as a whole is something that I would love to see change to make it just more accessible to meet the actual needs that are there.” (G5)

Biewener (2016) did a case study in Boston, MA exploring three different urban agriculture operations. This study explored:

First, that of whether the alternative food initiatives (AFIs) are able to provide ‘good jobs’ along with ‘good food’; second, the extent to which the AFIs engage in alternative economic practices by relying on non-exploitative forms of work; and third, the extent to which they foster spaces for enabling progressive social change by engaging in a reflexive local politics oriented toward creating sustainable, democratic, and equitable community food systems...In contrast, one of the reasons that TFP has been successful is that it does not rely on sales of food produce to maintain its economic viability. Instead, it relies on a considerable amount of transfers, including donations in the form of volunteer labor. Indeed, as noted at the outset, unpaid work has been a crucial factor in sustaining all three of the urban agriculture initiatives discussed here” (Biewener, 2016, p. 35).

Biewener’s (2016) work, and this thesis’s interviewees comments, show that urban agriculturalists prioritize their purpose of their operation and their personal motivations over profits and maximizing production. This again shows the need for archetypal research in urban agriculture, especially in the DMV, as not everyone is business oriented. Biewener’s (2016) work parallels this research in that labor structures affect the overall goal of the operation. Labor and operation mechanisms are further explored in Chapter 4.

Discussion

The results of the interviews show that every archetype of Campbell et al. (2023) is seen and discussed. Archetypes are a valid form of classification and technical support for urban agriculturalists. Therefore, it is appropriate for experts and other technical service providers to begin exploring ways recognize and support the different archetypes to urban growers and begin to elevate the current level of education for them.

These results do need to be caveated with the fact that with the discovery of the new archetype, The Self-Determined Agroecologist, the DMV is possibly a leader in urban agriculture in terms of addressing food security and access. Following suite, technical assistance providers may need to take a more system-thinking approach to these individuals to aid their success and explore areas of work related to public health and not just agriculture.

The Visionary's, The Business-Minded's, and The Learner's support described by Campbell et al. (2023) cannot be fully utilized as those growers did not face the same implications that the highly-urbanization of the DMV brings and impacts to urban agriculturalists. In turn, technical assistance providers may need to explore how intense urbanization impacts success and risk to urban growers, and then adapt that work regarding each archetype's motivations and characteristics.

The DMV's Unique Urbanization

The interviews and the subsequent results show the importance of replicating work, especially in the highly urbanized and every-growing landscape that is the DMV. What is often considered "peri-urban" (according to the Census classification) still has impacts on the industry of urban agriculture. The DMV could be a forefront and even a way to potentially "predict" how

urban agriculture will evolve and spread across urban centers in the US. However, being a leader could mean being the first to experience new and different types of risk. Literature review from 1974-2019 by Komarek et al. (2019) found that most of the recent risk research is related to production and market risk. Financial, institutional, and personal risks get explored 80%-95% less than production and market risks.

These understudied categories were the same topics that the interviews mentioned as the largest barriers to their operations. Due to their smaller size, urban agriculture production is more manageable, yet markets are more niche. Hence, when discussing urban agriculture for future research and support, the analytical lens needs to be refocused on the individuals at hand and elevate the education beyond just agriculture production.

This was supported by “The Learner” being the least mentioned archetype for urban agriculturalists; growers in urban agriculture are more familiar in the topics and styles in agriculture than what is assumed, and the average urban grower needs support to enhance their operation, funding, and labor. This is also supported by the comments in the “Technical Resources” section/ Growers did not feel the current educational program is enough to support their needs, and they often go to outside online resources for help. This also stresses the importance of multi-perspective ground-truthing research, as without both perspectives introduced, this gap between grower knowledge and expert assumption would not have been observed, nor to its frame of reference.

Elevating Technical Support to Match Archetypes’ Needs

Some ways to close the gaps of educational needs for urban agriculturalists are fine-tuning the archetypes interests, and having each archetype create long-term objectives and goals. This could be facilitated by technical assistant providers with urban agriculturalists as they assist

and problem-solve with one another, or formally by future researchers exploring the motivations of archetypes to a deeper level. From the comments made in the interviews, The Learners are the entry point to urban agriculture, and current new and beginning farmer resources appear to properly support them. The other archetypes, however, seem less supported currently.

For instance, The Business-Minded in the DMV do not appear to see urban agriculture as a self-sustaining means for income. It does not defer them from urban agriculture, but they do not believe they will be successful long-term. Therefore, educational support for this archetype should include business-planning, labor planning, land and land tenure accusation, branding, and marketing. Their resources should be focused on ways to generate return on investment, which may not include solely maximizing profits from production. This could include niche crops, value-added production, and agrotourism.

One method is aiding with soil quality for land tenure and production stability. As earlier mentioned in the literature review, urban agriculture often faces the hurdle of improving the soil quality of their land. Conservation practices (such as cover cropping, no-till, or riparian buffers) are often subsidized or granted through state and federal programing, like through the Natural Resource and Conservation Services. However, those practices require long-term and multi-year commitments to the land. As Richardson (2016) states “Tenants under short-term leases possess little or no incentive to make long-term improvements to the property, including enriching the soil or building structures or infrastructure, as these improvements belong to the landlord upon termination of the lease”. (p. 808)

By improving agriculture production through conservation practices, urban growers can commit to their operations and long-term plan their production and capacities. If technical service providers create policies and technical support that entice long-term land tenure,

specialize conservation practices to an urban growing setting, and educational materials that highlight the need for early adoption for conservation, The Business-Minded individuals could hopefully remove some of their negative concerns about urban agriculture and begin to thrive in their operations.

For The Visionaries and the newly found Self-Determined Agroecologists, connecting through the various points in the networks of the local food and biodiversity systems in the DMV could allow them to thrive.

Visionary growers who do not have a space yet could be directly matched with growing areas that need green space rehabilitation, and a focus on biodiversity over maximizing production. For instance, since Baltimore City's Adopt-A-Lot program is competitive and difficult to enroll in, many individuals look to non-profit conservation easements, like Baltimore Green Space. These non-profits could beginning a match-making programs that connect upcoming private lease owners who may not want to oversee the land anymore but want to keep it as a green space with inspiring Visionaries who have committed plans to the land and the community.

Visionaries could also be motivated to work with biodiversity social efforts, like Master Naturalists or Weed Warriors, to aid in meeting their goal of improving the environment through agriculture production. This allows them to also build community, but for short-term impacts instead of long-standing ones desired by the Self-Determined Agroecologist.

Creating partnerships early on can guide planning and production for Self-Determined Agroecologists. This could lead to stability in the operation while also satisfying the purpose for the growers. For example, an urban grower could be partnered with a food bank to always grow

certain amount of a crop every year. This gives the grower insight and stability to the planning of the operation, and aid in their efforts to support their local food system and the food insecure.

For example, neighborhoods in food apartheid (areas with low access to food and/or low access to nutrient dense food), high immigrant and emigrant movement, or were historically redlined could be connected with Self-Determined Agroecologists who may need populations to supply food that is nutrient dense and/or culturally significant.

This archetype also prioritizes growing with intention and included growers who prioritized native plants and ingenious practices to their growing. G4 mentioned growing the “Three Sisters Crops”, the mix of growing corn, beans, and squash all in the same plot. This practice is historically an Indigenous practice of the Mid-Atlantic and Northeast of the US, from the Seneca, an Iroquoian tribe from where western New York State now resides (Marsh, n.d.).

Some other possible solutions for this archetype include coordinating CSA drop-offs near public transportation, adopting a food sovereignty mindset, educating them on Indigenous practices, and creating general infrastructure for year-round production that would allow stability in goods and services (Joyner et al., 2022).

Limitations & Recommendations

A larger replication of this study would be ideal to verify these results, especially with connecting more private sector experts and more urban growers in the interview population across the three regions.

However, the in-depth interviews did allow fruitful conversations that lead to validation to the research objectives. It is recommended that future urban agriculture research take a qualitative methodology to get a fuller picture of urban agriculturalists. Current quantitative work focuses heavily on production parameters and misses grower motivations and barriers.

Furthermore, using a multi-perspective ground-truthing approach gives insights to each viewer's perspectives, and where gaps in understanding occur. By having both growers and experts discuss the same topic independently, it showed where there were convergence and divergence of ideas, while giving dimensions to the results.

Conclusion

Campbell's et al. (2023) work in determining archetypes in urban agriculture serves as a strong foundation to explore urban agriculturalists in various urban centers. This thesis does show the importance of replicating Campbell's et al. (2023) work in each urban center as the population make-up, density, and overall agriculture production impacting the degree to which these archetypes were seen.

Urban agriculturalists are committed members to the agricultural industry, as well as those they feed and possibly serve. They have many strong interests, with varying needs. In addition to urbanization affecting archetype development and placement, it also impacts the types and intensities to barriers seen for urban agriculturists. Struggles in Oklahoma City, OK were not seen the same way as in the DMV. This even affected the full interpretation and experiences of an archetype, as with The Business-Minded and their immense struggles to make urban agricultural profitable and economically stable.

Finally, it is important to consider if archetypes are absolute, and the possibility to allow fluidity between archetypes. Many interviewees mentioned belonging between two archetypes, or felt that the original archetypes were not all encompassing. This led to development of The Self-Determined Agroecologist archetype.

It may be needed to think of these archetypes as phases in a life cycle, where one archetype may allow for another one to evolve. For instance, many new growers may be

classified as The Learner and eventually become The Business-Minded. Or someone may start as The Visionary and become The Self-Determined Agroecologist. The importance is not about putting growers solely into these categories but understanding their histories and motivations that has led them to these choices. Even if a grower does not fully identify with an archetype originally, or at all, having the process to discuss these major topics of motivation and planning will aid technical assistant providers with growers in reflecting, planning, and exploration their urban agriculture journey.

Chapter 3 Understanding Key Attributes & Growing Motivations of Urban Agriculture Archetypes in the DMV Through In-Depth Qualitative Interviews

Overview

The research objectives of Phase 1 of this research were to create an urban agriculture-specific educational framework that identifies the types of urban growers seen, their specific personal and operational needs, and ways to approach development and maintain success that could aid the educational and technical support gaps current urban growers face.

A total of 12 experts and growers across the DC-Maryland-Virginia (DMV) region were interviewed to better understand their histories and motivations for supporting or being urban agriculturalists. Exploring the archetypes of Campbell et al. (2023) in Oklahoma City, Oklahoma, lead to multiple conversations about urban agriculture in the DMV. The archetypes analyzed were “The Business-Minded”, “The Visionary”, and “The Learner”.

The results of these interviews lead to a thematic analysis that created five key themes: “Food System & Food Security”, “Community”, “Production Factors”, “General Observation”, and “Emotions, Sentiments, & Future Desires”.

The thematic analysis was used to classify urban agriculturalists into approaches seen in the finalized educational framework discussed in Chapter 5. This thematic analysis also aided in the creation of a new fourth archetype unique to the DMV’s culture (“The Self-Determined Agroecologist”).

This research highlights the importance of replicating work in each unique urban center across the nation, discovering how the make-up of an urban center shapes the motivations for urban agriculturalists in their growing practices, and using qualitative work to explain behavior and motivation.

Introduction and Literature Review

A key aspect to urban agriculture is not what is being grown, but who is the food being grown for. As urban agriculturalists have smaller operations, and often grow many specialty crops for direct consumption, their reach is more diverse and more unique than rural agriculture. Additionally, these growers grow in much closer proximity to the general public. This changes their motivations, interactions, and reach; there are opportunities for direct impact and feedback to and from their communities.

Nonetheless, the stability for urban agriculturalists depends on the trajectory of their urban center's land use and the advocacy by their technical support providers. Understanding and possibly predicting how land use may change by how the community interacts with urban agriculturists and vice versa could improve the longevity and success of urban agriculture. By understanding and recording why urban agriculturalists grow in an urban setting, one can create a rich history of context and support for the realm of urban agriculture, that can lead to advocacy and supportive policy.

How Agriculture Land is Changing Across the US

Agriculture in the United States is traditionally situated in rural communities due to the need for large amounts of land for production. These operations are either livestock- or crop-focused, and occasionally a mix of the two commodities. However, the distribution and location

of agricultural production have shifted in the modern century due to urbanization and land-use changes. Each state, or even cluster of states, now prioritizes main commodities to match their regional climates and economic patterns (Scott & Ruth, 2026). Crop production is primarily grain-focused crops in the Corn Belt with the Central Valley, and California dominating the nation's produce production. California, Iowa, Illinois, Minnesota, and Nebraska were the top states in 2022 for the highest valued crop sales (Scott & Ruth, 2026). In terms of livestock, the same states of Iowa, California, Nebraska –plus Texas and Kansas –were the highest valued livestock sales states. The states of the Southern Plains and Midwest are primarily cattle-based, with the Southeast being poultry focused (Scott & Ruth, 2026).

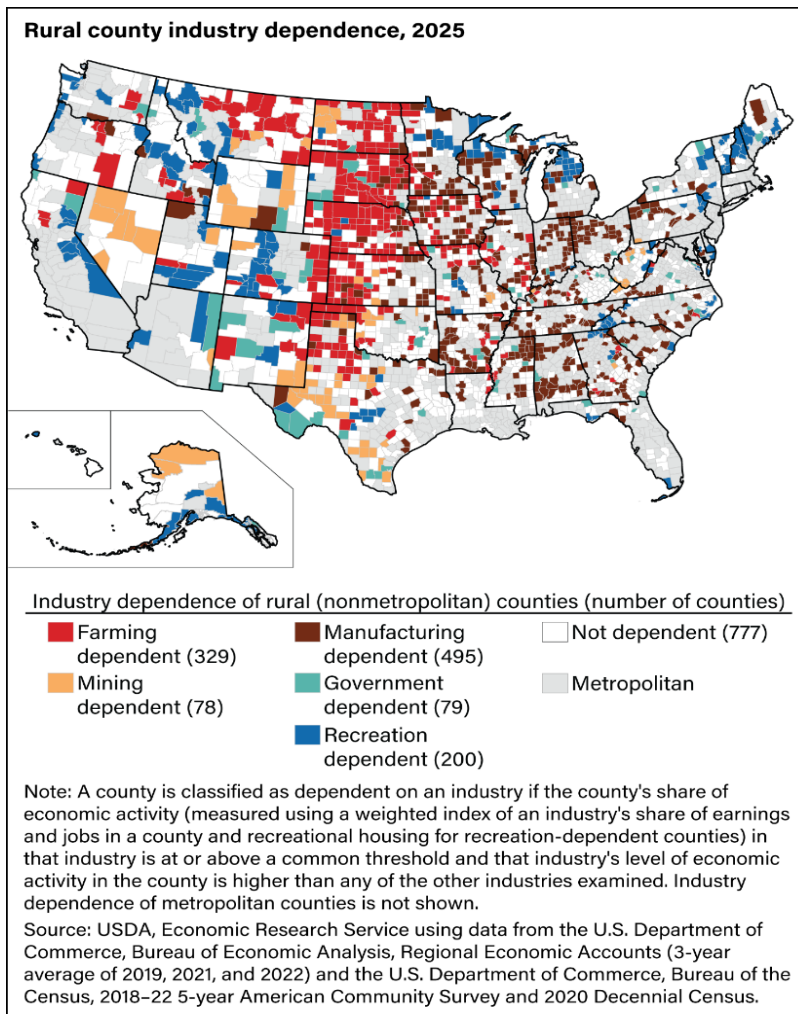
This conglomeration of agriculture production sites is reflected in trends in declining farm size and an increase in urbanization in the Eastern half of the US, specifically in the DMV region. In the 2025 USDA National Agricultural Statistics Service (NASS) report, “Farms and Land in Farms 2024 Summary” indicates the average farm size for the US is in the mid-400 acres, with Maryland and Virginia's average farm sizes sitting below the average in the 100-200 acres range (National Agricultural Statistics Service, 2025). DC was not studied in this report.

Additionally, there is a shift in the loss of nonmetro counties to urbanization from the Great Plains and Corn belt to the eastern states of the US (U.S. Department of Agriculture, Economic Research Service, 2026). No longer concentrated in the Great Plains and Corn Belt as in previous years, “nonmetro counties with a population loss during 2020–24 were found in most States, including the eastern half of the country” (United States Department of Agriculture, Economic Research Service, 2026). Other than Monterey County, VA, no nonmetro or rural county in the DMV is a farming-dependent county according to USDA ERS calculations (Ekmke et al., 2026). A “farming-dependent” count means agriculture aids in job availability and gross

sales in that region. County analysis like this shows how industry impacts local economies directly. The DMV, in fact, is primarily metropolitan as seen in Figure 1.

Figure 3.1

Rural County Industry Dependence, 2025

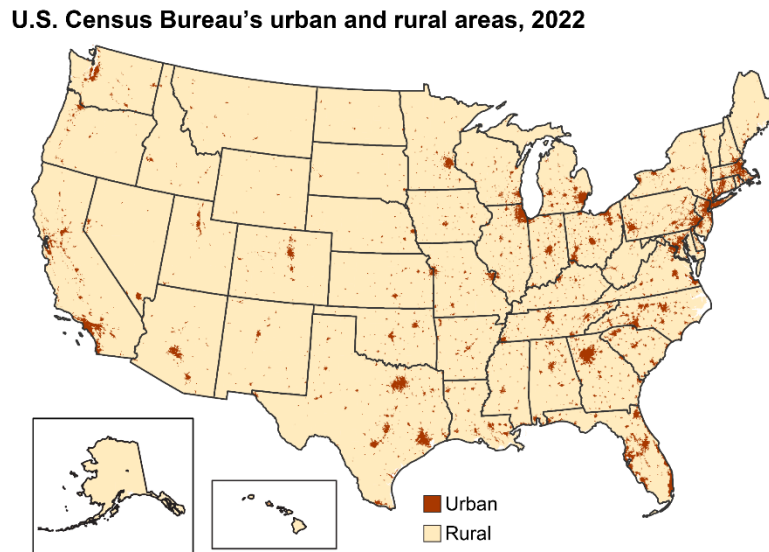


Note. Figure provided by the United States Department of Agriculture, created by Austin Sanders.

Overall, there is a trend of urbanization from the New England region pushing down to the DMV, as seen in Figure 2.

Figure 3.2

U.S. Census Bureau's Urban and Rural Areas, 2022.



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census.

Note. Figure provided by the United States Department of Agriculture, created by Kathleen Kassel and Austin Sanders.

Currently, Virginia ranks 19th and Maryland ranks 31st for the availability of locally sourced food (food that is grown and bought in state) (Escoffier, 2025). DC was not included in this analysis. Opportunities for urban agriculture to strengthen the local food system are becoming more viable day by day.

Lack of Urban Agriculture-Specific Technical Resources

While the DMV is becoming a prime location for urban agriculture, the current state of its technical resources –especially publicly available ones –is less than par. Generally, urban farms turn to external organizations that specialize in urban agriculture for technical and financial support, such as assistance with purchasing land tenure, growing knowledge, permit application management, and business management. Often, these external organizations are non-profits. However, in order to get support from these non-profits (especially in terms of land tenure) the urban agriculture operation also must be a non-profit operation itself. Research from Sustainable Agriculture Research and Education (SARE) found that urban agriculture operations in growing metropolitans, including DC, have increasingly tighter margins, with “gardens originally intended to create community and provide affordable, healthy food for residents instead become inaccessible to lower-income families” and operations that want to focus on this intent become non-profits (Hinds, 2023, “The Stress of Rising Property Values on Community-Driven Gardens” Section, par. 4).

Being a non-profit operation is beneficial for most operations but does lead to issues in the market. Kopyawattage et al. (2019) found that non-profit urban agricultural operations out-competed commercial (for profit) farms in Columbus, Ohio’s farmers’ markets. While non-profit operations are a successful and viable option for urban agriculturalists, it is not the only option for growing in urban agriculture; it cannot solely meet the needs of enhancing local food system productions. Commercial operations stimulate the local economies, and at a large enough scale, can be a site attraction, or agrotourism stop, to bring business to the community. Furthermore, public urban agricultural operations, like community gardens and school gardens, offer educational support and give immediate hands-on experience and support, and exist outside of

these binary options of non-profit and for-profit. Choosing to be a non-profit limits urban growers at times.

Outside of operational status, urban agriculture support can come from agriculturally producing entities, which is the preferred avenue from a production standpoint. However, urban agriculturalists' barriers are not limited to production. They face many other issues related to growing in an urban setting in particular. Compared to rural operations, urban operations face different zoning, permitting, and planning regulations and objectives. For instance, researchers from the greater Chicago metropolitan area interviewed city planners and urban farmers to discuss the impacts of the informality to urban planning for including agriculture. Some findings included that:

“In some jurisdictions, whether agriculture is permitted fell solely on the officials’ personal views. As one planner put it, ‘We are informal, so it really depends a lot on the personality of the zoning administrator.’ As such, urban farmers may find themselves at the mercy of the zoning administrator without a feasible legal recourse. Without zoning codes that recognize and protect small-scale agriculture, farmers are faced with uncertainty”. (Castillo et al., 2013, p. 160)

The team of Meenar et al. (2017) reviewed 80 municipalities policies on urban agriculture. Through their work, they found three main gaps in knowledge: “Planners need a complete typology of regulatory possibilities; a better understanding of how local, state, and federal legislations constrain or enable urban agriculture; and empirical evidence of the economic, social, and environmental impacts of urban agriculture” (Meenar et al., 2017, abstract). This puts pressure on planners to be urban agricultural experts, when their role encompasses all aspects to urban planning. Unless there is a designated urban agriculture planner

or technical service provider of some sorts, it can fall onto the growers themselves to advocate for their planning needs.

Research Problem

There is a gap in the current body of knowledge for an overall guiding framework and related resources for technical assistance providers –like land-grant university Extension agents– to aid urban farms in the development of their operations. While all fifty states of the US have land-grant universities and Cooperative Extension offices, there is not a USDA Urban Service Center in every state (Find Cooperative Extension in Your State, n.d.). These centers offer technical, financial, business, and agricultural assistance through in-person appointments with Farm Service Agency and Natural Resources Conservation Service staffs. Currently, there are 17 centers in 15 states (United States Department of Agriculture, 2023). These centers are currently heavily concentrated in the Midwest and the Southwest/West Coast. The USDA defers those not near an Urban Service Center to reach out their local Extension office for assistance (United States Department of Agriculture, 2023). Urban agriculture Extension agents are prevalent, but not normative, especially compared to the structure of their county agent counterparts.

Research Objectives

The specific research objectives were as follows:

- Identify key themes related to urban agriculture and growing in the DMV region to better understand growers' histories, motivations, and barriers.
- Further analyze Campbell's et al. (2023) archetype for urban agriculturalists to the specificity of the DMV.

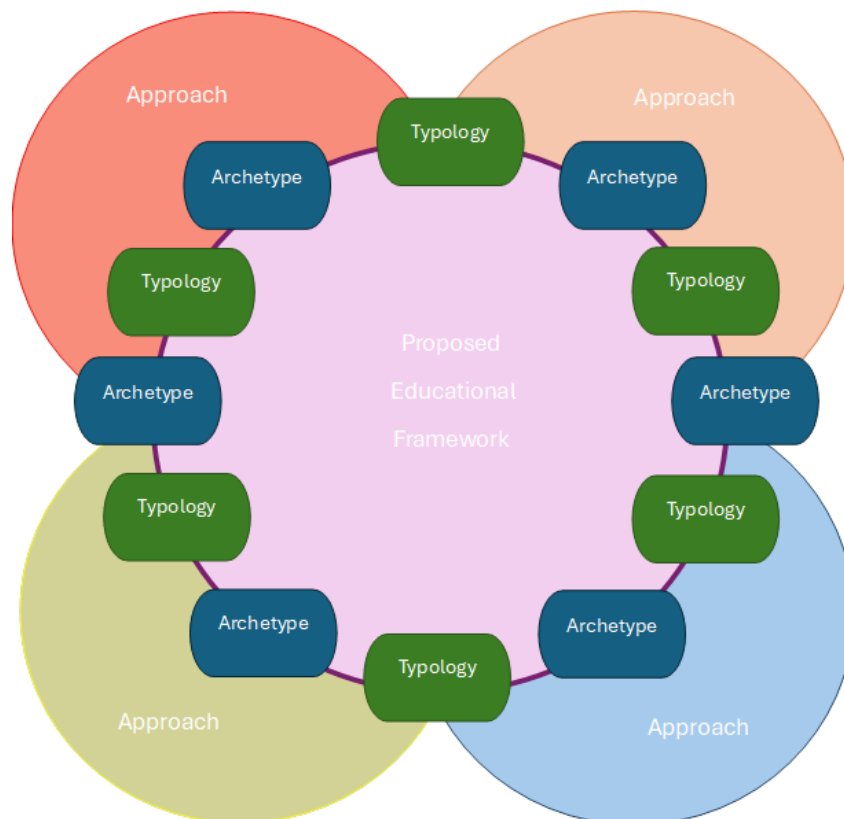
- Relate key themes found to the DMV-specific archetype analysis to better support classifications, and with later on operational typology assessment.
- Create a long-term support system through an educational framework specific to the DMV's urban agriculturalists, their experiences, and found archetypes.

Conceptual Framework

The potential pathways for grouping the archetypes and typologies in the proposed conceptual framework are seen in Figure 3 below.

Figure 3.3

Proposed Educational Framework, Including Potential Approaches for Archetypes & Typologies

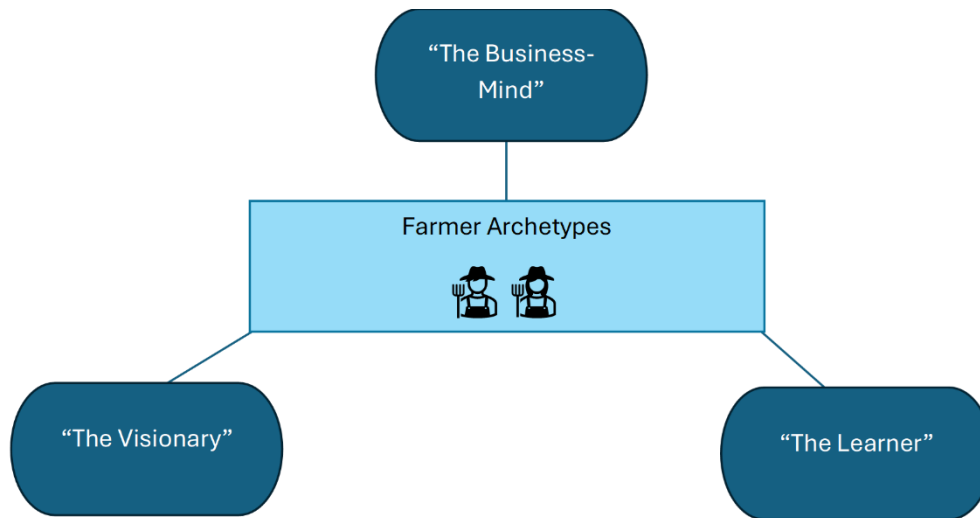


Note. Combining works from Campbell et al. (2023) and Jansma et al. (2024).

The three main archetypes stem from the analysis of urban growers seen in Oklahoma City, Ok (Figure 4).

Figure 3.4

Farmer Archetypes



Note. Figure adapted from concepts by (Campbell et al., 2023).

Methodology

Chapter 3 used the same exact methodology as Chapter 2, as this an extension of Phase 1 of this thesis's four phases of research. A repeat of the visuals for the methodology will be kept in Chapter 3 to serve as a reminder of the process and the codebooks used.

Figure 3.5

Overall Thesis Methodology Flow Chart

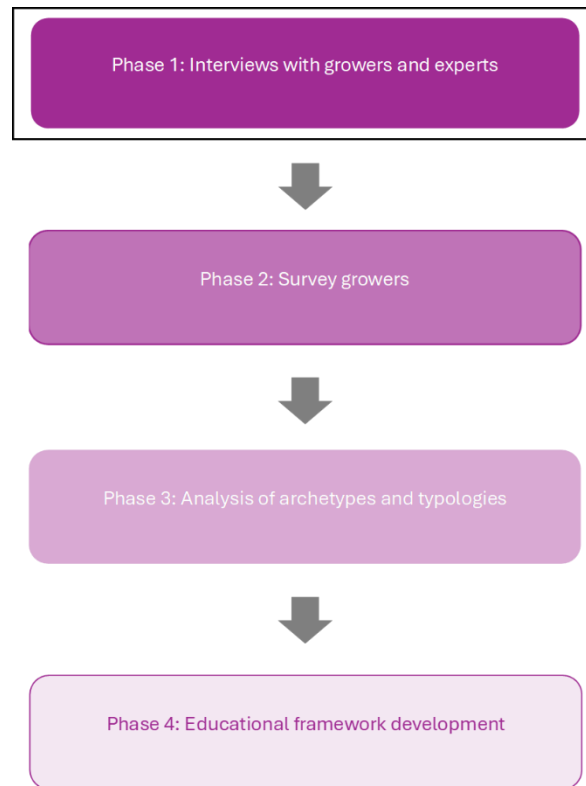


Figure 6 showcases the breakdown of the interviewees by region and role.

Figure 3.6

Interview Participant Chart by Type and Region

INTERVIEW PARTICIPANT CHART			
	Maryland	DC	Virginia
Grower	G1 & G5	G4	G2 & G3
Expert	E4 & E6	E1, E2, & E7	E3 & E5

Note. “G#” indicates a grower and “E#” indicates an expert.

Figure 3.7

Deductive Codebook (Flow Diagram) for Qualitative Interviews of Growers and Experts in the DMV

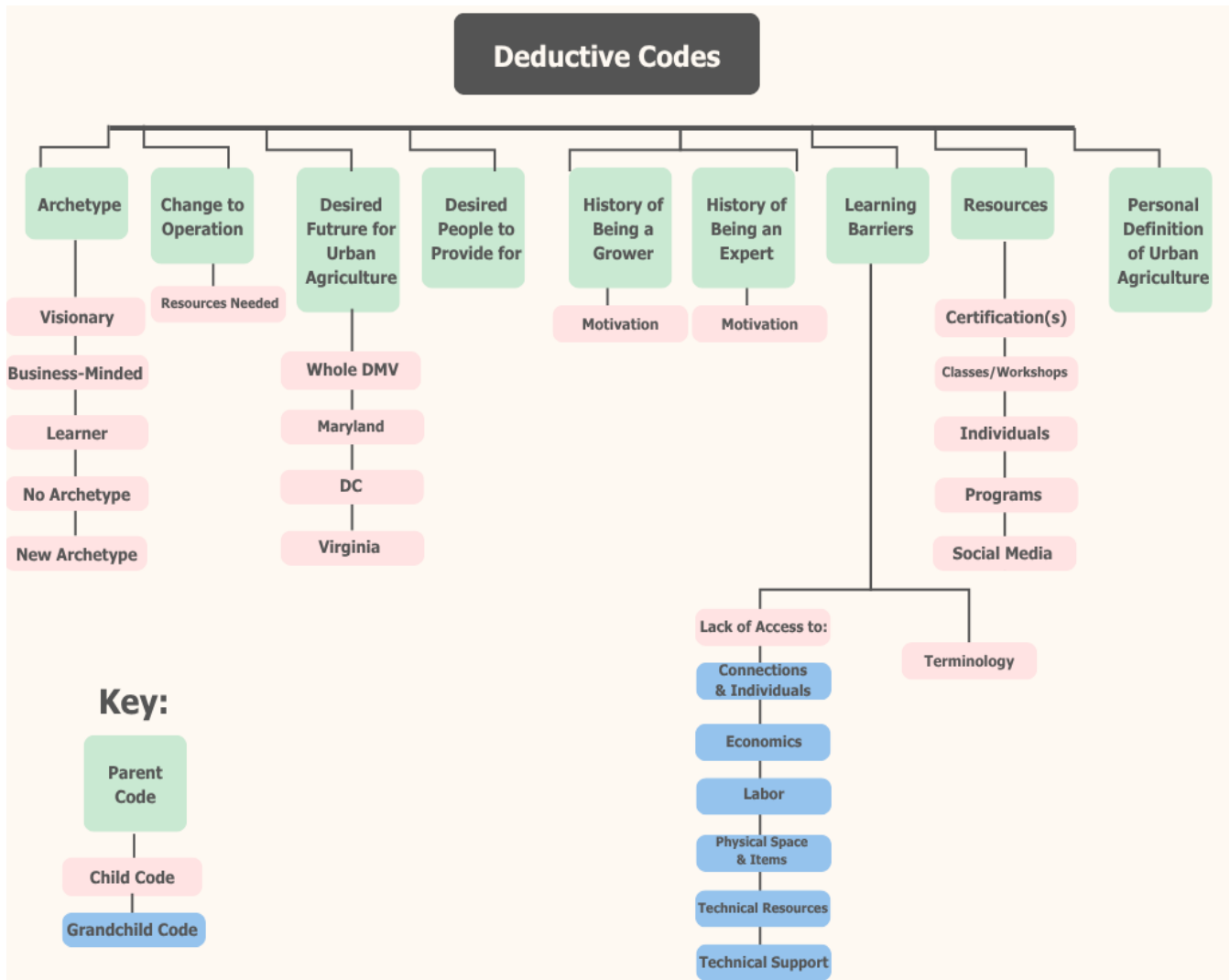


Figure 3.8

Inductive Codebook for Qualitative Interviews of Growers and Experts in the DMV

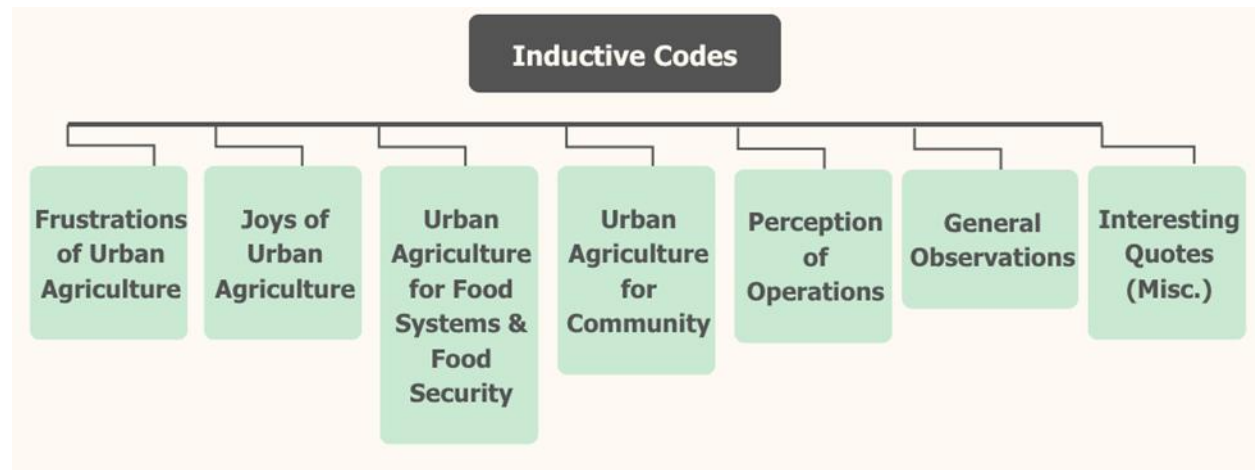
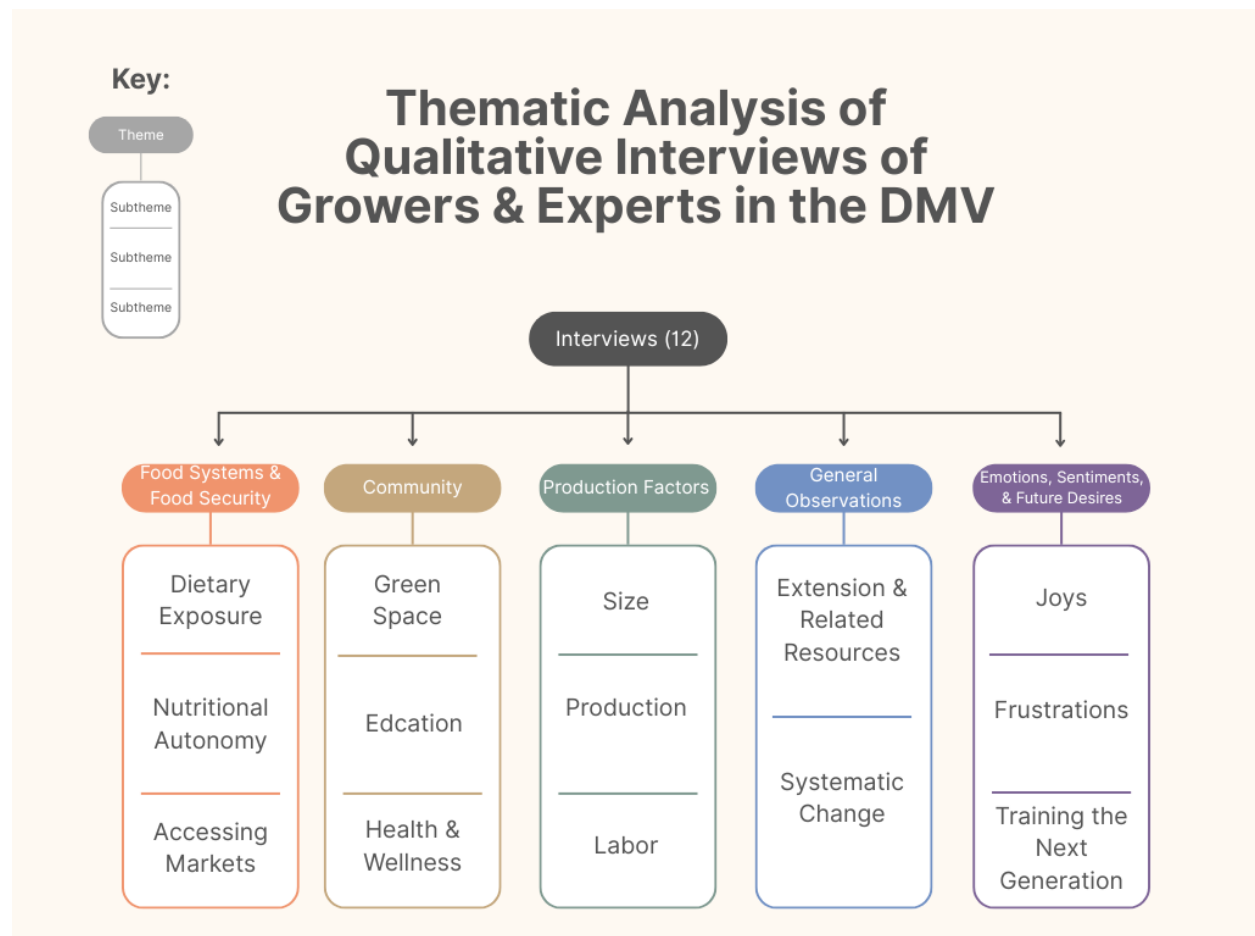


Figure 3.9

Thematic Analysis for Qualitative Interviews of Growers and Experts in the DMV



Results

Urban Agriculture for Food Systems & Food Security

"Many of the people who are really trying to grow for themselves as a part of independence and sort of more food sovereignty perspective is like sees urban agriculture as a tool of empowerment and a tool of both self and community empowerment...I really identify with that other archetype [Self-Determined Agroecologist]. Urban agriculture is about community and about feeding the community, but also bringing community together for empowerment and sort of seeing urban agriculture as like a mode of like connecting to the food system."

The subthemes for this theme include: "Dietary Exposure", "Nutritional Autonomy", and "Accessing Markets". Matching quotes can be seen in Appendix 2.

This theme was the driver for creating the new, fourth archetype "The Self-Determined Agroecologist". This thematic analysis aided in teasing out what was the interpretation of "supporting the community" that created confusion and discourse for "The Visionary" archetype's role. Those that pushed for nutritional autonomy, in particular, pushed for a new archetype.

Dietary Exposure

These comments are from interviewees who had urban agriculture be the first time for them and their constituents are exposed to the concept of where their food comes from and how food is grown. Urban agriculture was a gateway for many to concepts such as healthy eating, finding and consuming nutrient-dense foods, and making conscious and intentional dietary choices. G1 states:

"I wish now as an adult that someone had told me or taught me how to grow food or plant flowers or how to till the land and sow the seed...so instead of using the garden because I didn't know anything about it, I coped with eating highly processed food from down the corner store, being a little greedy kid, eating anytime somebody would give me something to eat." (G1)

Dietary exposure is not exclusively about being exposed to healthy eating concepts. It is also about the access and the ability to make decisions related to healthy eating. Grubb and Vogl (2019) explored food literacy in the Twin Cities, Minnesota, one of the most urban areas in the state. Similarly to “urban agriculture”, “food literacy” lacks a formal definition to the concept. The consensus for “food literacy” for now is the decision-making regarding healthy foods and diet. This study explored community garden growers, and it found that those who garden have an increased food literacy score. But those with high formal education and more years devoted to gardening had higher scores compared to those with less formal education and less committed experiences. Hours per week gardening did not statistically impact food literacy scores, even though most of the survey population spent less than ten hours a week gardening.

This is supported by the comments made by the interviewees across the DMV about how it takes time to invest in a community and their own urban operation to get tangible impacts for themselves and others. It takes time, per week and over years, to learn about food literacy and urban agriculture. Especially if there has historically underserved populations that have systemic issues related to their access to food, it makes this journey to learn even more difficult.

The most exasperated example of food insecurity seen in the DMV is in Baltimore City, MD. Baltimore City’s “Black Butterfly Effect” and the history of historical redlining impacting

community and city development highlights the long-term effects that can lead to low food literacy rates and just general poor food insecurity.

Baltimore City's Department of Planning oversees the work of the Food Policy and Planning Division (FPP). The FPP delineates, explores, and works with Healthy Food Priority Areas (HFPA) to increase food security in Baltimore City's local food system. The city has 428 Small Grocery and Corner Stores, with a below average score of nine on the Healthy Food Availability Index (HFAI). There are only 53 supermarkets in the city, and these have a high score 27.7 on the HFAI. (Lee, 2022). The HFPA's regions line up with the regions denoted as the "Black Butterfly" seen by the work of the National Community Reinvestment Coalition (White, 2021).

E6 works with urban growers in Baltimore City. They mentioned the long-term city development and planning have impacted their urban agriculture pathway:

"So in Baltimore, this was a historically redlined city. And that kind of delineation between the neighborhoods in the beginning of the creation of the neighborhoods has basically defined the entire ecosystem of our city. So we have patterns of disinvestment in certain areas. We have patterns of investment in other areas. And all of that relates really strongly to health and wellness and general like resources for the residents here. It has created a lot of segregation, as well as limited access to resources. So a lot of our members are located in neighborhoods that don't have access to as many resources as the 'white L' of the city. A lot of our farms were founded to provide the services that were lacking in these neighborhoods. Whether it be revitalizing green space that was previously a vacant lot or a dumping ground for neighbors' trash. Or them being a productive

garden space. So a lot of people were really trying to put positive energy back into the communities that they live in and create spaces that were beautiful and productive and enjoyable, as opposed to just, basically fallen to the wayside.”

While not every major city reflects Baltimore City’s history and lasting impacts, many cities and urban regions do have histories of disinvestment in terms of urban planning, workforce development, and long-term care of the space. DC’s Wards 7 and 8 are historically underserved and high priority for regional improvement, especially in terms of immediate and public infrastructure:

“Now, D.C. is also known for having food deserts. So Wards 7 and 8 have famous limited access to grocery stores. And of course, these are folks who don't always even have cars. So it's not just that you don't have a lot of choice about where to shop. You've got to get on the bus with the kids or maybe your older mom and try to navigate all of this. So our questions didn't get at this, but the sense of could it be a more pleasant, a completely different experience if your neighbor's bringing you over a bunch of things you can eat versus having to kind of go track it down, getting to the store, if that's a really difficult journey for you.” (E1)

Nutritional Autonomy

As Grubb and Vogl (2019) showed, those with less formal education benefit better from urban agriculture to improve their food literacy than those with formal education. Again, the amount of time per week is not as crucial as the longevity of exposure, but the commitment long-term over years. This theme of “Urban Agriculture for Food Systems & Food Security” is more than highlighting the issues but finding tangible solutions for urban agriculturists and those they help provide for long-term.

The interviewees mentioned the need for successful long-term land tenure to get their operational standard to a level that could consistently support their communities. This would lead to growing to the capacity for the community consistently and not just for their own personal interests with occasional excess. It would also mean growing to provide nutrients that are often lacking in the avenues that food insecure individuals often are acquiring food from –such as food pantries or small/corner stores. This often leads to poorly received food, and at times, humiliating experiences. Many of the interviewees stated methods on how to match production to community needs:

“I think there's the ability to fill some of those micronutrient gaps, like vitamin C, vitamin A, and iron. I think there are micronutrient groups that I think urban farming could actually target and then try to grow crops specifically to fill some of those micronutrient and dietary diversity gaps.” (E2)

“But the other big group that I think we serve directly is food-insecure folks. Last year, we got over 50% of our produce donated...We grew 122 daily values of vitamin A from those crops...There's a nutrient gap. Often, people are getting their calories, not their nutrients. So, we've really focused on leafy greens production and donation to try to help address that.” (G4)

“I think [the food insecure] is a population that I would love to continue serving as much as possible because of having that [personal] experience going into food pantries and seeing so much of it is shelf-stable food that isn't going to meet people's nutritional needs. And a lot of the produce, the ‘fresh produce’ that is provided in food pantries, are seconds from large-scale distributors, sometimes grocery stores... And so the pantry managers have to go through and just find

what is actually edible. And we are the most consistent and sometimes only providers of fresh quality produce for all of our partners... I just hate that the message that the pantries are receiving such spoiled food gives to those people and it says, 'just is here, you are less than, this is what you have access to' versus the point that people who have the most challenges to meet their nutritional needs should be given access to nutritious food." (G5)

Accessing Markets

Overall, experts explored this theme more than growers. No grower saw themselves as The Business-Minded archetype despite offering critiques and comments about how to access markets for the local food system.

Experts saw urban agriculture as a means to address local food security issues, with general positive trends in the dialogue as hopefully solutions to their constituents' food systems. Still, the growers who prioritized addressing issues in the local food system and talked heavily about this theme were more critical about the entry points for growers and consumers to locally grown food. These growers also mentioned the lack of support for maintaining high-quality, nutrient-dense food, especially for those in dire need of food security. This division was a crucial point in created "The Self-Determined Agroecologist" archetype to bring forward grower-based desires instead of relying on previous work by Campbell et al. (2023) that was expert-based interpretations of growers.

However, the reach of urban growers and their urban operations appears to be limited. Urban agriculturalists noted that they had to find multiple and creative outlets to impact larger masses outside the immediate residing neighbors of their operations. Additionally, they noted it

took lengthy periods of time to 1.) find these unexplored avenues and 2.) successfully navigate these novice routes:

"I want it to grow within neighborhoods that are already in dire need of healthy foods. I want support from communities and local governments. I want it to spread away from just the I-95 corridor...Food apathy is not just a city issue. It's a statewide issue. (E4)

"And like part of the problem is like restaurants. They don't like to buy in small batches. They like to have regular venues. Like they will be the first ones to buy from Cisco. And they say they're 'farm to table', but that 'farm' is meant as a farm that can keep them regularly supplied in this volume. Well, that's not how farms work. That's not how seasonality works. Like you can't have strawberries in December if you're trying to be good to the land." (G3)

Urban Agriculture for Community

"All we're left with is employment and a nuclear family. And that is really not good. So I found this green space to be just a lovely third space where a community was formed. It almost has the cadence of like a faith tradition congregation. It's once a week, you meet up, and there's a spirituality to being outdoors. There's an ethos of giving back and working together, and community. So it's spiritual, it's given back, it's social." (G4)

The subthemes for this theme include: "Green Space", "Education", and "Health & Wellbeing". Matching quotes can be seen in Appendix 3.

Comments under this theme follow similar trends to the previous theme of “Urban Agriculture for Food Systems & Food Security”, where urban agriculture brought exposure. However, in this theme, exposure did not stem into the paths of food and nutrients, but with connections to nature, education, and communities. Many who contributed to this discussion saw themselves or other growers as “The Visionary” archetype.

Green Space

Interviewees mentioned that green spaces are for the immediate community. They are third spaces related to connecting with others and moving away from co-existing in the same city space:

"A lot of our farms were founded actually to provide the services that were lacking in these neighborhoods, like revitalizing green space that was previously a vacant lot or a dumping ground for neighbor's trash." (E6)

However, urban agriculture is more evolved than just agriculture in an urban setting and bringing green spaces to needed areas. Urban agriculture can aid in “defining” community in a realistic and practical sense. Urban/general planning could benefit from using components of urban agriculture and creating policies that allow these practices that naturally lead to fostering community.

E2 echoed many of these possible concepts and added specific examples of how urban agriculture could build “community”:

"I think is really important about urban agriculture is that there's an agriculture space and a community space. And so having a space where you can have yoga, meditation, crafting nights, comedy, a birthday party, a wedding, come in and read a book. For those who have a connection or want to connection to the

environment...I think that's just how it is in urban space. People are looking for it. They're literally looking for community...And urban agriculture provides space...I think if you don't approach urban agriculture from having a some aspect is community-oriented, or growing together...I feel like you miss out."

G4 furthered this notion of what that "community building" looks like:

"And then as for volunteers, I think mostly the lonely and the intellectually curious, those lacking outdoor space who can't do a traditional plot or don't have the patience for the waitlist or travel too much. It allows people to be active, really active, intensive farmers and gardeners without needing a space for it, which is such a startup cost or the consistency needed to keep it alive by themselves. Or maybe they just don't want to garden by themselves in their backyard. They want to be part of a community and happy to garden as they go."

Finally, E6 discusses how the act of just physically being in the same space bring strangers together:

"Having an excuse to engage with people was really cool for me. And then sharing the food. I realized food was such a platform for discussion for people. It was a way to engage with your neighbors. It was a way to engage with conversations about politics and economics and values, and all these kind of larger issues."

Beyond building community, urban agriculture works to recognize the community and its various members, especially in terms of growing specific or culturally-relevant food:

“It’s not limited to the growing of crops, the growing of food for consumption. It’s also creating the community around sharing what you’re growing, how you’re growing it, how you’re harvesting it, how you’re cooking, sharing it.” (E1)

“Food and foodways has stories and identity wrapped into it. For instance there’s Central Americans with the cosmology of the people coming from corn. Anthere’s just a lot of different cultures across the world. And if you are in a diverse space of like agriculture and food means recognizing things like tradition and values.” (E3)

Education

Rural agriculture often creates commodity-based groups to support open another. Small, rural farms that do not qualify for certain commodity groups have created similar groups to support one another as growers and fill in the gaps of technical resources. “Farmer group activities, whether self-initiated or NGO-supported, constitute forms of resistance and aspirations for alternative practices, structures and institutions, exemplified by cultivation of viable alternatives to dominant agricultural paradigms” (Byaruhanga et al., 2025, p. 8).

It is interesting to see this thesis’s urban growers interviewed mentioned positive notes of support from one another in terms of community. No grower mentioned a competition of technical support or resources, only competition in terms of accessing markets and branding. Many growers noted how there was “community” among the fellow growers to allow for success of the industry as a whole:

“The other thing that really helped was going to different site visits at other farms and meeting other farmers and going to workshops and attending conferences with other growers. And it’s a community that I feel is really special and found to

be very welcoming and supportive where everyone seemed to have everyone's back and was so quick to share resources or knowledge or whatever it was. And as a beginning farmer, that was super helpful for me because I didn't study agriculture in school." (G5)

"And so that's something that's really important to us as technical service providers is that we aren't always the people teaching, but sometimes we want to tap into the folks within our network who have that area of expertise and really uplift them as a resource in the work as well. So oftentimes when we're hosting a workshop or a class, we'll either host it at one of our member farms or ask one of our members to facilitate it. So again, we're kind of giving back to that community and uplifting them as experts in the field as well." (E6)

Health & Well-Being

Finally, the lasting community impacts and the permanent structures of urban operations allow for places to foster long-term development and habitual changes. These notes were observed more by experts than the growers themselves:

"I'm not giving people food. I'm giving them a skill. I transfer knowledge about a skill that they'll have forever. You can never unlearn how to cultivate the food once you work with it." (G1)

"I've seen the impact of that within our farm members and their neighborhoods as well. Just a neighbor kid who walked by a million times finally starts volunteering and then their mom starts buying food from the garden and things can really grow and impact can be stronger from those moments." (E6)

Production Factors

"I would say there are three kinds of farmers. There's the gardener who is really making food for themselves. And there is a Grand Canyon of difficulty going from being a gardener to a small farmer. And that's kind of where most folks in my orbit kind of live. And then the other one is when you want to scale from being a small farmer to being a big farmer, like talk about another Grand Canyon." (G3)

The subthemes for this theme include: "Size", "Production", and "Labor". Matching quotes can be seen in Appendix 4. These results in particular were useful in shaping the design of the quantitative survey seen in Chapter 4 to tease out how labor, production, and size impacted archetypes and typologies. Additionally, many growers mentioned that if there were more consistency and support by experts in this theme, that would classify themselves as The Business-Minded archetype instead of other archetype placements.

Size

Both growers and experts noted that growing in an urban space follows no exact model to replicate. Each space is different, unique, and generally working with smaller and irregular parameters.

"So they're [urban growers] really operating in relationship to their communities and are able to identify the needs that they see in their spaces and then respond to them. So it's not just, "one size fits all", you put a farm here and now you get X, Y, and Z benefits. It might not benefit that specific space." (E6)

"Oftentimes urban agriculture is very much initially, at least my gut instinct is to think of small scale. You're working with tighter spaces, you're maybe working with more unique growing styles, growing techniques." (G5)

Furthermore, growers were divided into two bodies of work: individuals with previous agriculture work and who shifted to an urban setting, and those who are growing for the first time and it happens to be in an urban setting. Because of this division in the types of growers, it presented a possible trend that there are not multiple generations of urban growers. We may now be seeing the beginning to the longevity of new wave of urban growers again:

"There are only a handful of urban ag operations that have been operating for say, more than 5-10 years." (E4)

"Because all the sort of older folks who ran small farms or knew how to do all this, they're in their 80s, 90s, they're three generations back, and so it's really, really hard to find any kind of mentorship for anything that's going to be outside the industrial model." (G3)

G3 at the end of this quote highlights a caveat to points previously mentioned that while there is a sense of support in the urban agriculturalists community, they do not have the means to elevate themselves to long-term and generational success. By having most urban growers being first time farmers in an urban setting regardless of their background, there is a lack of sunk assets and the ability to replicate and reproduce results (Inwood et al., 2013). Between the lack of mentorship capacity and the lack of a uniform growing model, it further displays the need for an educational framework that has various categories for growers and their operations.

Production

This need for a framework that is diverse in its growers and growing styles was seen again in the items grown. Participants stated urban agriculturalists grew depending on size, production technology, and desires. This category was a strong baseline for archetype placement for individuals, and showcased early discussion of the typologies of operations seen:

"The only thing I would say is that there are a lot of very different models of urban farming. This way of a very communitarian way where we all grow in beds together, as if it was a mini farm. And so, the productivities are going to be different, your goals are going to be different, but most people are not going to be growing enough food in their small veggie plot to donate food." (E2)

"Urban agriculture includes backyard growers, it includes our urban farms, it includes our community gardens, it includes our school gardens. And it also includes controlled environment ag, whether that is in an individual's home or backyard. And our many flower farmers." (E7)

Labor

The themes of labor focused on aspects of being understaffed and inconsistent, often relying on volunteers. Those who primarily spoke about labor barriers were growers, not experts:

"And we are decentralized. We are communitarian. We are all volunteer." (G4)

"We need labor. I'm running essentially a one person program right now." (G5)

" And some of the biggest barriers to that are one equipment. Equipment is not designed for this. Equipment is designed for the industrial farms. And then as you kind of go down in scale, you go up in labor." (G3)

General Observations

"This is a huge kind of systems/cultural level change that I would to see happen with the nonprofit space as a whole, but just the funding structure of it being a little more equitable/fair, but also maybe decentralized. It's just very challenging when your organization, your production, especially for farming, that is so specific and time-bound and is not always something that you can just rely on. Grants are always looking for something innovative and new and unique." (G5)

The subthemes for this theme include: “Extension & Related Resources” and “Systematic Change”. Matching quotes can be seen in Appendix 5.

This theme showcased the importance of the future typology research seen in Chapter 4, as this theme also covered comments on the various growing models that are not formally standardized, and therefore hard to replicate. Likewise, the technical resources currently available do not recognize many forms of urban agriculture beyond a hobby or part-time commitment. Which goes against many of the comments made that urban agriculturalists have reached beyond food production; including educational opportunities, community support, and non-edible agriculture production.

Extension & Related Resources

Both growers and experts mentioned that the Master Gardener program offered by Extension was an excellent steppingstone for those to enter the urban agriculture space. However, many noted it is the only formal steppingstone, and there is a lack of an elevated grower program for those with established spaces, production plans, and long-term goals. These

quotes aided in the understanding of The Learner Archetype, as it was often mentioned as the preliminary archetype to urban agriculture:

"In my personal experience, the line between the master gardeners, who traditionally were focused on ornamentals, and then the master naturalists, who are focused on habitat, has gotten blurred, as more and more people do want to provide food for themselves, and food for the environment. I do not see a hard line on that anymore." (E1)

This quote by E1 reflects the similar “line” that was needed between The Visionary and The Self-Determined Agroecologist. Urban agriculture has become very interwoven with environmental and biodiversity intentions:

"I think the Master Gardeners program is one of the only things, but I think even 'Master Gardeners', the term itself is complicated. And so I think that there are barriers just by the term of 'Master Gardeners'. But I think we could be relying more on people we train in a similar format to that to be training other people in their neighborhood. But giving them some resources and some funding to cover what is not free their time to be educating others." (E7)

Systematic Change

Emotions, Sentiments, & Future Desires

"I think training more young farmers, farmers of color, farmers that are bringing in more sustainable agriculture practices and are more permaculture kind of agroecology-centered focuses that are bringing more healing to the land and how we're producing foods. And not just training people but providing them pathways towards viability." (E3)

The subthemes for this theme include: “Joys”, “Frustrations”, and “Desire for Training the Next Generation”. Matching quotes can be seen in Appendix 6.

It is important to note that there were three times as many codes for “Frustrations” as to “Joys”. 10 of the 12 interviews commented about joys, while all 12 commented about frustrations. Experts were more succinct in their explanations while growers had longer lists of frustrating issues. These discussions on emotions pushed those who were on the cusp of two different archetypes into their preferred placement. Additionally, this theme shows that any type of typology research purely based upon production parameters would miss these desires, motivations, and possible barriers that shape how an urban grower operates beyond their physical growing space.

Joys

Experts and growers talked deeply about the joys of urban agriculture. Experts had their own personal joys and relayed the joys of their constituents. Many of the comments of the “joys” came from either the actual practice of farming and being active in an outdoor space, or supporting the community with direct and visible impacts:

"I really love that piece of it --community and farming. And more personally, I just really love working outside... And I love being able to have access to fresh grown, regeneratively grown produce. I love to cook, I love eating. And so having access to the best stuff is you can't beat it...And it also can be very healing space as well. I feel regenerative ag gives me a sense of purpose when it can feel climate change is impending, we're already feeling the impacts of them on our farm, negative impacts from climate change...And there's still so much food

insecurity and need. And so that is really fulfilling work for me and can be very grounding and centering." (G5)

Frustrations

The main two topics of the “Frustrations” theme circled around poor urban planning that hinders the growth for urban agriculture, and the economics of small-scale farming. Experts critiqued the federal funding and budgeting patterns more compared to growers. Additionally, experts focused on finding more permanent structure and laboring for growers on their behalf. Growers themselves voiced concerns about environmental and public health, marketing, and finding funding for branding and advanced educational opportunities and networking:

"This idea that planning is part of sustainability. And then when you look at planning and sustainability, the incorporation of food is not always included, even though it touches on so many of the things we discuss. How do we allocate land use? How do we ensure people are healthy? What are the costs of our practices and policies, including the cost of transporting food a long way, right? That's a big toll. People are very divorced from their food." (E1)

"And so there's that classic challenge that small scale farmers, and urban growers having that need to have revenue be their driving source for their operation. Sometimes you have to price something at a price that it just makes it inaccessible... Even if it's not cost, it can be time or access because you might have to go to a farmer's market to do it and that is not within everybody's means or be a part of a CSA or something of that." (G5)

Desire for Training the Next Generation

This theme was heavily discussed by experts, with five of the seven experts discussing the need for more formal education that reaches intermediate growers and utilizing the space of urban agriculture to diversify farming demographics. This is an interesting topic as there was no formal interview questions that prodded this topic in particular.

Many current beginning farmer programs undermine the many topics laid out in this chapter's thematic analysis, as they are often for rural operations and focus heavily on the production and agricultural sciences related to farming. Small-farming resources on the other hand, get undermined in their own right, as hobby gardening or for individual production. As seen throughout these interviews, there is viability and stability to urban agriculture, especially if there could be technical resources that push current growers through the chokepoints they are experiencing from the lack of specific and catered support:

"But what I think is lacking is either an advanced level program that follows up the beginner or an intro to urban farming or small-scale farming. And the other thing is, either local governments or even state governments agencies need to get a little bit more involved in helping in get these beginning farmers started." (E4)

"I think training more young farmers, farmers of color, farmers that are bringing in more sustainable agriculture practices and are more permaculture kind of agroecology-centered focuses that are bringing more healing to the land and how we're producing foods. And not just training people but providing them pathways towards viability." (E3)

"Thinking about how we're actually empowering people to have the tools and education and the literal educational resources to really scale Extension." (E7)

Discussion

This overall thematic analysis was the basis for developing The Self-Determined Agroecologist archetype and proved that replicating Campbell's et al. (2023) work in the DMV was needed. It also aided in understanding why some individuals chose certain archetypes despite having strong emotions/desires for certain leading characteristics of other archetypes.

Additionally, the theme of "Production Factors" supported the development of the typology analysis and specific survey questions of Phase 2 of this thesis –which can be read more into in Chapter 4. Ultimately, this analysis brought forth discussion parameters that would be useful for decisionmakers to utilize when discussing the role and importance of urban agriculture; key aspects to Chapter 5's conclusion and education framework recommendations.

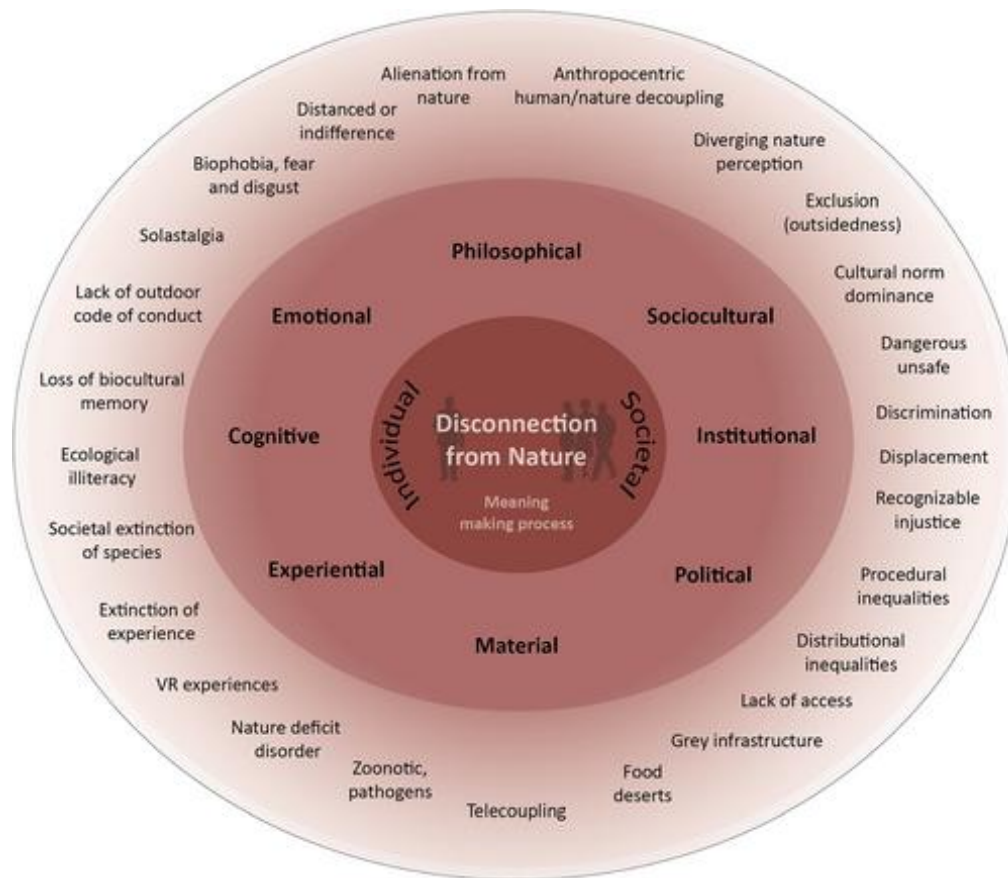
Beyond supporting the later phases of this thesis's research, this thematic analysis brought light to factors outside of production. Factors such as how urban agriculture in the DMV brings community together through green space, improving public health, and supporting the varying demographics seen in the highly diverse region that is the DMV.

Green Spaces Improving Public Health

Incorporating green spaces is a beneficial aspect to urban agriculture but also public health efforts. Research has indicated that humans spend less time outside and are becoming deficient in many aspects of personal and social well-being from this lack of exposure to nature. Beery et al. (2023) explored deficiencies related to the lack of exposure to nature instead of the traditional approach for the body of work to explore the benefits to being in nature. These deficiencies can be summarized in the "Wheel of Disconnection" seen in Figure 10.

Figure 3.10

“Wheel of Disconnection”.



Note. Provided by Beery's et al. (2023) open-access publication in Nature.

<https://besjournals.onlinelibrary.wiley.com/doi/10.1002/pan3.10451> No changes to the figure were made.

This research emphasized the systematic and non-singular causality that comes from not interacting with nature and green spaces. It is more than lack of access; it is social norms, acceptance in public spaces, political motives for public lands, and an individual's viewpoints of their relationship with nature and wildlife (Beery et al., 2023).

Especially when access to nature and social interactions are limited (i.e. during the COVID-19 pandemic), mental health suffers more, especially for those “associated with a younger age cohort, female respondents, students, individuals who were not physically active” (Garrido-Cumbrera et al., 2022). Puhakka (2021) found similar results that nature, especially for those often indoors, aids physical activity, mental health, and young adult development.

But building that community through green space is quite difficult at times, especially if there is a lack of leadership and commitment to the practice. In the DMV, the Baltimore Farmer’s Alliance, RootsDC, Future Harvest’s Beginner Farmers Program, and the Mid-Atlantic Black Farmers Cacus as some urban grower-centric groups that, at times, focus on utilizing green spaces and/or growing in urban spaces while building community among farmers and the general public. Many of these programs were built by the goals of their constituents, not by initiatives made by governments or universities. Only when these programs get large enough do they get enough recognition and support from public entities. Sometimes, public decision-makers can hinder the success of these groups.

For instance, farmers in Chicago were interviewed to understand community capacity parameters to urban agriculture for similar themes found in this thesis. Those results indicated that community building is a bottom-up approach but often ends at the top with local leadership and policymakers. They often gets stalled or prevented due to a disconnect between the top and bottom. Lofton et al. (2022) stated:

“Leadership is a significant component of strategies for building community capacity, but it was not mentioned as part of the solution or as part of the process of building capacity. Lack of perceived leadership is not unusual because often urban agriculture can be siloed.”

Public leadership needs to be involved in when urban agriculture is acting as a green space for the public. Again, the importance of these third, green spaces is about doing to work with and for others, not just for one's self and in isolation. When that cannot be done, urban agriculturalists face many frustrations, and feel limited in their capacities as growers. Those in leadership roles need to find ways to integrate themselves with the practices of urban agriculture and not hinder their impacts and success.

Urban Agriculture Supporting Urban Demographics

As mentioned in Chapter 1, 80% of the population lives in urban regions. These urban regions are extremely diverse in their demographic make-ups (US Census Bureau, 2026). Urban regions are generally populated by younger, working adults. The most urbanized region in the DMV is DC. For instance, DC's average age is 34.8, with two people per household, with 18% of the population in DC is people under the age of 18 (District of Columbia, Overview of the State, 2025). As mentioned in Chapter 1, many of those at risk or experiencing food insecurity are children. Urban agriculture can aid in meeting these many aspects to feeding an urban population. It can support those most at risk, by bringing food directly to the community, only done so with supportive planning and technical assistance that allows urban agriculture to grow and expand.

Additionally, urban growers are more diverse than rural growers and can therefore better mirror the needs of their diverse consumers. While it was not a research question, age, race, and sexual orientation was brought up by the growers in the interviews as comments to serving diverse populations as they felt they need. All the growers in this research were under the age of 45. G5 in particular spoke about how urban agriculture builds space for minority groups and diversifies "what a farmer looks like":

“I feel that there is something that draws me to urban agriculture a little bit more is seeing other queer and trans people in the space...because I think that is important with the amount of baggage and stereotypes that come with agricultural spaces in a lot of ways as being unfriendly to people who hold those identities. When I found that there's actually so many people who are very friendly to it and it's very open and welcoming in a lot of ways.”

Additionally, urban agriculture’s younger demographics are aiding in the efforts to diversify and support America's overall need for producers. According to the USDA, “the average age of all producers was 58.1, up 0.6 years from 2017” (USDA Releases 2022 Census of Agriculture Data, 2024). American producers are getting older, meaning there are fewer farmers entering the agricultural production space. According to USDA analysis of the demographics of farmers by age and experience:

“There were 1.9 million farms and ranches (down 7% from 2017)...There were just over 1 million farmers with 10 or fewer years of experience, an increase in the number of beginning farmers from 2017 of 11%. Beginning farmers are younger than all farmers, with an average age of 47.1... The number of producers under age 35 was 296,480, comprising 9% of all producers” (USDA Releases 2022 Census of Agriculture Data, 2024).

The current national agricultural support systems are catered to generations not often seen in urban agriculture, nor in those who desire to interact or potentially benefit from those services.

Limitations & Recommendations

As the interview population was spread across three regions, it was hard to create distinct trends to themes at times. Replicating this research with a larger population of experts and

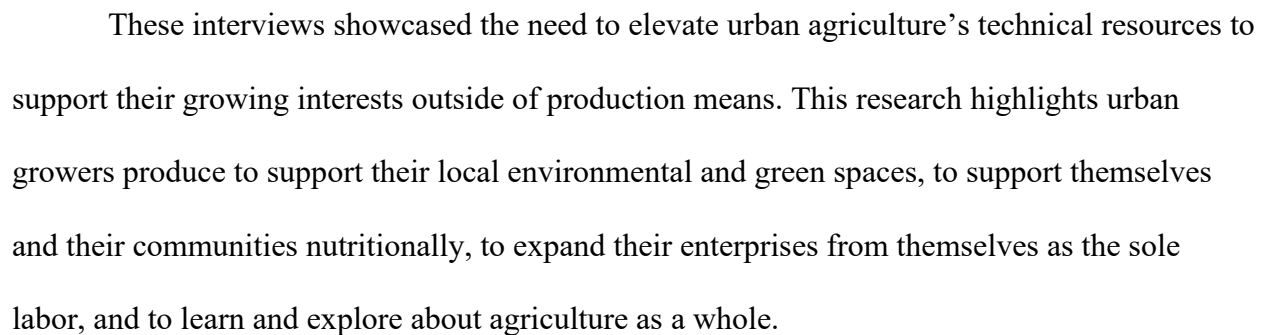
growers would be ideal to increase reliability of these results. Some individuals that could be explored more fully would be more private sector experts and more urban growers.

While the top research objectives to this research were not focused on such detailed thematic analysis to the histories and motivations of urban growers, these interviewees provided such rich oral storytelling that it would be subverting to their experiences to not denote the many themes and subthemes to their collective backgrounds. Future research should encompass each of the specific individual themes found in this chapter. Such research could include policy review of municipalities for land use, permitting, and technical support. Or, it could include quantifying the reach and impact urban growers have to the community. Payen's et al. (2022) literature review of production capacity found that leafy greens, like lettuce, were the most common and largest yielding produce by urban growers. Fruiting vegetables that are very water-dense, like cucumbers and tomatoes, had the largest differences in yield production. Taking this work to the next level and following and tracking how many people are impacted, or how many nutrients servings, likewith how G4's operation calculates, would be highly beneficial in quantifying aspects of localizing the food system for food insecurity and resiliency.

Conclusion

The word cloud as seen in Figure 11 was developed from the inductive code "Food Systems & Food Security" and then auto coded in NVivo for the top words and sentiments related to the word "food". As seen in the word cloud, "food" takes a human-centric standpoint. It is about creating opportunities and access to healthy foods, especially for those experiencing food insecurity and living in food apartheid. According to all 12 of the interviews, "food" in urban agriculture is not about the growing practices of food, but about the growing of networks, communities, and systems that bring those in need to those who can provide.

Auto Coded Word Cloud Created from the Inductive Code “Food Systems & Food Security” in NVivo.



99

growers voiced many concerns about the needs of the localized communities, and the stressors of not being able to size up and expand their operations to their true desires. However, with these frustrations, they still voice joy for their work.

Chapter 4 Validating Archetypes & Exploring Typologies of Urban Agriculturalists in the DMV Through a Quantitative Survey

Overview

To understand urban agriculture operations, and how they relate to grower's interests, this thesis had a quantitative survey sent to urban growers in the DMV region to identify their grower archetype and operational typology placements. The survey explored characteristics to archetypes and typologies, including growing motivations, growing barriers, labor parameters, and impacts from urbanization. Common archetypes and typologies were paired based on frequency of results and commonalities of interests.

There were six typologies explored: "The Urban Farm", "The Community Park", "The DIY Garden/Farm", "The Zero Acreage Farm", "The Social Farm", and "The Community Garden". Only five of the six main typologies were seen in the DMV. The Community Garden, the Social Farm, and the Urban Farm were the main operational styles.

There were four archetypes explored: "The Business-Minded", "The Learner", "The Visionary", and "The Self-Determined Agroecologists". All except The Learner was seen in the survey population.

The Business-Minded often paired with the Urban Farm, were larger, required more formal labor, and grew food to sell it to others. The Visionaries often paired with The Community Garden, having mid-sized operations, relied heavily on themselves and volunteer labor, and grew to feed themselves. Finally, The Self-Determined Agroecologists often paired

with The Social Farms, were in peri-urban/suburban areas, relied on the most varying degrees of labor inputs, and grew food to donate to others and supplement their nutritional needs.

DC growers were smaller operations (less than one acre), fully urbanized, and only The Business-Minded or The Self-Determined Agroecologists. Maryland growers were the most diverse in style, production, urbanization, archetype, and typology. Virginia growers were likely to be larger operations (over five acres), in peri-urban/suburban areas, and more likely to be The Visionaries.

Introduction & Literature Review

As the previous chapters of this thesis have indicated, there are trends and development of archetypes of urban growers in the DMV. However, at times, growers that self-identified as a certain archetype differed from the key preferences or practices of said archetype. To ground-truth the archetype research from Phase 1 of this thesis, Phase 2 worked with a larger sample size to determine the accuracy of the comments of the interviews. Additionally, the goal of this thesis is to create a comprehensive educational framework that integrates both grower archetypes and operational typologies. Therefore, the other main aspect to the survey of Phase 2 was typology exploration. There is a need to see if there are any trends and possibly groupings with archetypes and operational typologies. Phase 3 explored these trends and possible groupings.

By having a classification for the different urban agriculture operations in the DMV, it values these operations' outputs and impacts. Currently, the identity of a "small-farm" is too broad in terms of size and impact. This label can undermine the efforts of urban agriculture operations, as they face unique challenges and smaller margins for error compared to larger operations. Also, urban agriculture operations may not be able to fully utilize the current technical resources available, especially for "small farms", as they are not adequate or

transferable to their exact operational needs in an urban setting. Having multiple classifications to operational styles properly reflects the various works of urban agriculture.

Methods to Growing in an Urban Setting

Urban agriculturalists employ many different methods of growing to compensate for the limited space, contaminated soils, and limited resources compared to the basics found with rural agriculture. Urban agriculturalists often have to be unique or extremely resourceful, utilizing repurposed lands, rooftops, walls, and backyards. Some examples include vertical farming, aquaponics, hydroponics, aquaculture/aquaponics, raised beds, using biosolids or bringing in soils, or utilizing phytotechnology to remove contaminants (Yuan et al., 2022).

Small Farm Logistics

While urban agriculture has the opportunity to fill in the gaps for local food production, there are many limitations to the efficiency and scalability of these operations. When farming operations are smaller, the equipment, economies of scale, and the margin for profit are much tougher to overcome with limited space, labor, inputs, and outputs.

In an urban setting, operations are often on the lower end of the USDA's definition of a "small farm". Farms under 10 acres are a small share of farms, comprising less than 15% of all farms and less than 5% of farm sales (Newton, 2014). According to the USDA ERS, data from the early 2000s indicates those that are significantly profitable focus on specialty crops, or one type of product, and work in niche markets. Yet, for the rate of return on equity relative to internal labor costs, farms with sales of less than \$100,000 had negative rates of return, while farms with sales of \$100,000 or more had positive rates of return (Newton, 2014).

Furthermore, data from early 2026 indicates more confounding statistics on the economic struggles of small farms, especially in non-rural regions. Only commercial operations make most of their household income on the farm, while other types of operations (i.e. residential and intermediate) are losing money on the farm, and most residential operations make most of their income outside the farm (U.S. Department of Agriculture, Economic Research Service, 2026). High-value crops and operations (i.e. fruits, nuts, vegetables, greenhouses, and nurseries) make up about 10% of household income for farmers. And every region in the US (except for the Northern Great Plains and the Heartland) is losing money on farming (U.S. Department of Agriculture, Economic Research Service, 2026).

These statistics indicate that being a small farm is very challenging and requires dedicated labor, a strong business plan, and a committed production style. Despite these hurdles, urban agriculturalists are able to feed themselves and their immediate community and, at times, serve as food hubs for other services such as donation drop-off/pick-up or nutritional education.

Plus, small farms have immense biodiversity and environmental regenerative properties that are much needed in urban settings. Ricciardi's et al. (2021) literature review and meta-analysis found that "smaller farms, on average, have higher yields and harbor greater crop and non-crop biodiversity at the farm and landscape scales than do larger farms". (abstract)

This is crucial for urban agriculturalists who are trying to determine their operation style and if it matches their intended needs as successful growers. "Success is defined as continuing in business for 5 years without a decline in farm real estate asset value", compounded by the factors of "growth" and "survival" (Key, 2022, abstract). According to Key's (2022) findings:

Success rates are higher for those that receive government payments, have relatively high productivity, have DTC sales, produce grains, oilseeds, dry beans, or dry peas, or produce

milk or dairy products. In terms of producer characteristics, success rates are higher for farmers who are younger, or white, or male. (p. 206)

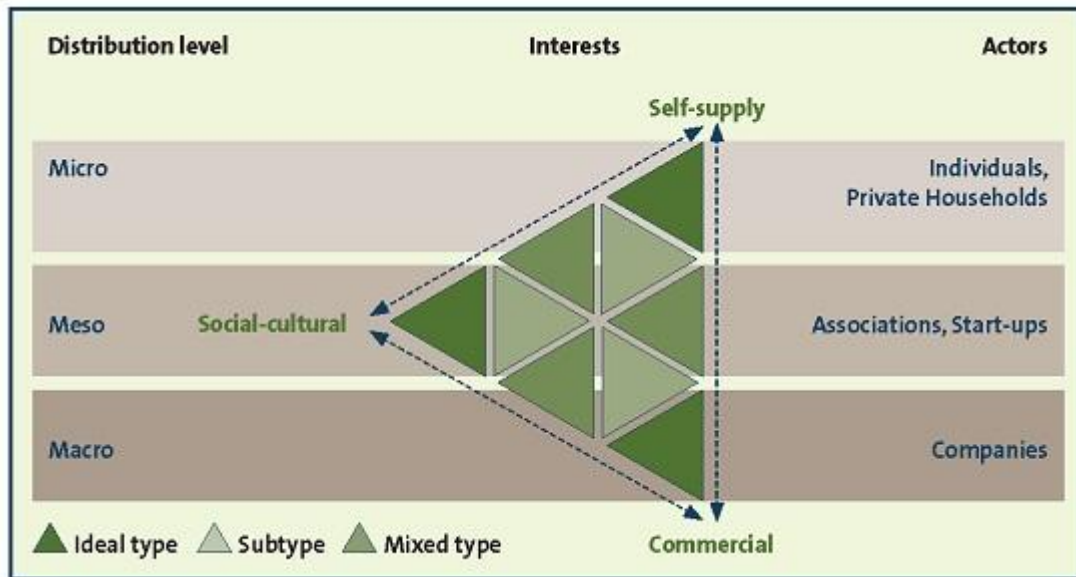
Additionally, those who own their land or rent out portions of their land to others also perform better than their renting counterparts. Being a woman-led operation affects growth, survival, and success, while age has a U-shaped trend where being under 30 but over 70 has a higher likelihood of being successful (Key, 2022). And again, similarly found in the 2026 update from the USDA ERS report on small farm off-farm incomes, farms in the Eastern Upland and the Southern Seaboard (where the DMV resides) have slightly lower success rates than other regions across the US (Key, 2022).

Previous Typology Works Related to Urban Agriculture

Classifying urban agriculture operations with their intent and impact is not a novel concept. It is often coupled with other forms of theory and modeling, especially in terms of technical assistance or urban planning. In Germany, Krikser et al. (2016) explored typologies of urban agriculture for building and processes for decision-making. Their work highlights the importance of varying layers to classification, as a “typology allows prediction or increased understanding by integrating the views of multiple scales and actors, as well as interests and motivations” (Krikser et al., 2016, p. 13).

Figure 4.1

Graphic Abstract of the Works of Kirkser et al. (2016) for Creating Typologies of Urban Agriculturalists in Germany



Note. Provided by Krikser et al.'s (2016).open-access publication in MPDI.

<https://www.mdpi.com/2073-445X/5/3/28> No changes to the figure were made.

Many other researchers across Europe have utilized this work or have done similar concepts of typologies and classification to operations, growing styles, and market avenues. However, work similar to this is limited, and not often about the “success” nor their reasonings for their operational style. Roedel et al. (2026) looked at typologies from the perspective of biodiversity and the impacts of pollinator management in the Northeast. Other works related to typologies and the “success” of operations is not seen prevalently, at least not in the US.

Research Problem

Key (2022) also notes a limitation to their research: unobserved factors could affect regression estimates, and they need further research on the “whys” of behavioral decision-making. These unobserved factors mentioned could be personal characteristics, such as motivation, desires, and intentions as growers. Many surveys conducted by the USDA ERS and

subsequent research analyses are heavily based on logistical operational parameters; such as size, profits, costs, and demographics. These surveys lack a human-centric approach to the food system. By not surveying farmers' intents, motivations, barriers, understandings, and needs, these types of research overlook the human component of supporting farmers –supporting farmers themselves.

Research Purpose & Objectives

This research aimed to use a mix-methods approach and connect previous qualitative work with quantitative work to highlight these “unobserved factors” Key (2022) when it comes to urban farming success. By understanding urban agriculturalists as individuals and understanding how their operations are executed, this research aimed to determine the “whys” of challenges, barriers, and needs.

The end goals of the research objectives were to create an urban agriculture-specific educational framework that identifies the types of urban growers seen, their specific personal and operational needs, and ways to approach development and maintain success that could aid the educational and technical support gaps current urban growers face. This education framework would explain the “whys” of success through a uniform language between growers and experts.

The specific research objectives were as follows:

- Compare/Contrast the typologies found by Jansma’s et al. (2024) to the DMV (if at all), with any potential gaps in the typology descriptions, and possible additional typology(ies).
- Determine if there is a relationship between found grower archetypes and explored operational typologies.

- Develop a foundation for an educational framework that intends to support the long-term success of the various urban growers found in the DMV through the previous qualitative interviews and these quantitative survey results.

Methodology

A multi-phased, mixed-methods design was utilized for this thesis. Phase 1 explored who urban agriculturalists were as individuals through in-depth interviews. Archetypes were found and developed. These interviews and subsequent results guided Phase 2's survey design. This survey is the focus of this chapter's "Results" section. Phase 3's analysis and potential groupings is seen in the "Discussion" section of this chapter.

The survey had three main features:

- 1.) further ground-truthing archetype analysis while,
- 2.) exploring other key attributes that arose from Phase 1's thematic analysis and,
- 3.) utilize features of Jansma's et al. (2024) typology assessment in the UK to ground truth operational typologies in the DMV.

Jansma's et al. (2024) Past Typology Survey as Basis of Survey Development

While Jansma's et al. (2024) typology assessment's exact questionnaire was not used, the basic elements and flow were adapted to the specific research objectives of this thesis and the study's location of the DMV. These basic elements included: spatial, production, operational, and community dimensions. This thesis's survey also had the finalized operational typologies found by Jansma et al. (2024), and the previous Phase 1 work covering archetypes and barriers to urban agriculture.

Phase 1's work was included in this Phase 2's survey to apply those findings to a larger and different research population to give rigor to those findings, while allowing for cross-analysis between archetypes and typologies. This research's overall methodological flow chart can be seen in Figure 2a/2b. The exact questionnaire for the survey can be seen in Appendix 7.

Figure 4.2a

Overall Thesis Methodology Flow Chart (Phase 2)

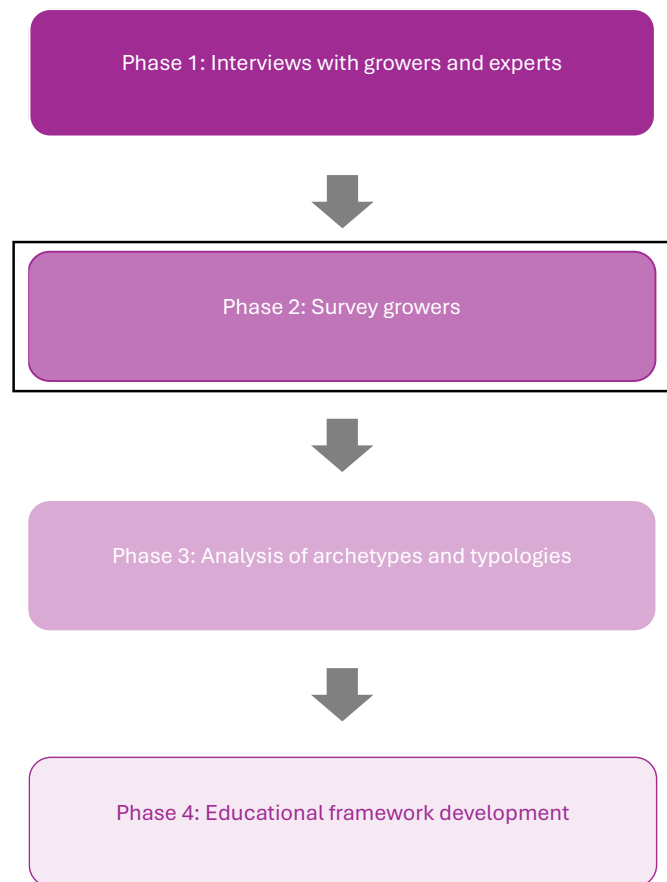
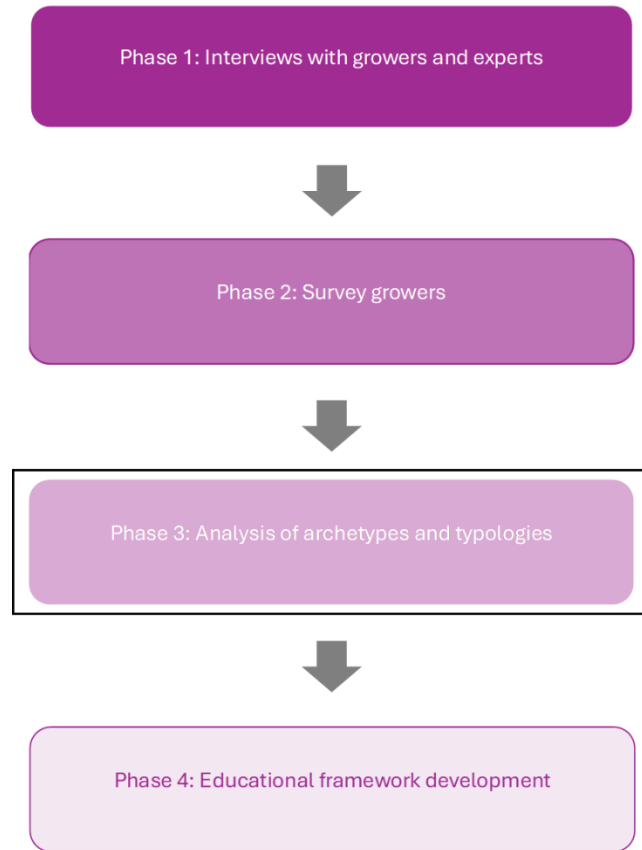


Figure 4.3b

Overall Thesis Methodology Flow Chart (Phase 3)



Survey Outreach and Targeted Populations

The survey was sent to various individuals from multiple streams of connection. Relying on personal and professional connections, Phase 1's participants were reconnected to complete the survey. Online resources (i.e. farmer's markets websites, partnering farms with state agencies, popular farms off of social media, etc) were explored, and 85 individuals were emailed the survey. 20 experts and listservs were also utilized to circulate the survey to large audiences and snowball sampling.

Survey Response and Analysis

The survey itself was 27 questions broken up over eight sections. There were 36 attempts to the survey. 26 individuals fully completed it and were used as the survey population for the analysis. Those other 10 responses were omitted from the analysis as they did not pass the vetting questions and did not answer any logistical questions. The 26 responses kept and analyzed fully answered the whole survey and had a 100% completion rate from these respondents. Six respondents came from DC, four from Virginia, and 16 from MD.

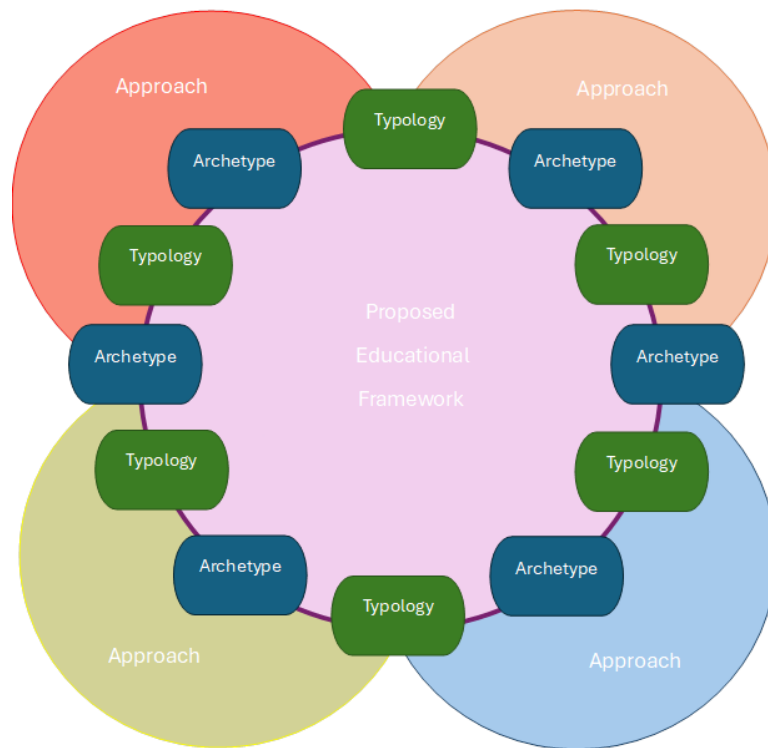
The survey results were analyzed in R Studio. The analysis explored trends among the whole survey population cohesively, by region (DC, Maryland, or Virginia), by urbanization (Urban or Peri-Urban/Suburban), archetype placement, and/or typology placement. Region, urbanization, archetype placement, and typology placement were all self-identified parameters selected by the respondents.

Conceptual Framework

The proposed conceptual framework for the end goal of this thesis can be seen in Figure 3. The conceptual framework intends to capture the multiple approach possibilities of from grouping archetypes and typologies.

Figure 4.4

Proposed Educational Framework, Including Potential Approaches for Archetypes & Typologies

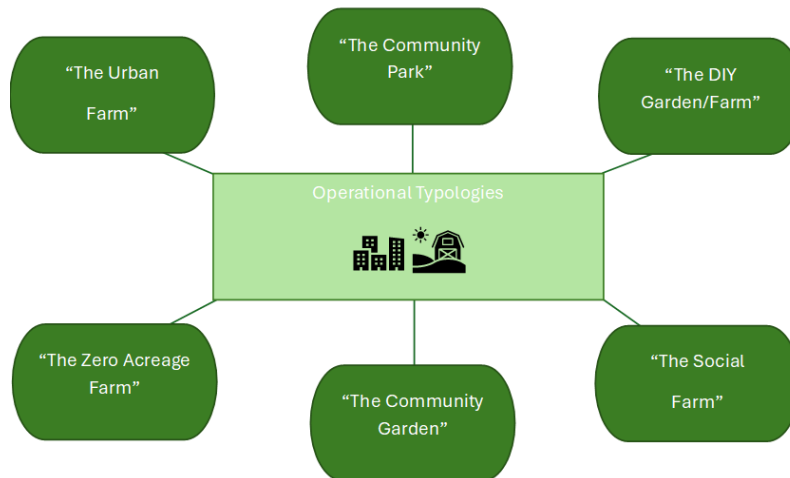


Note. Combining works from Campbell et al. (2023) and Jansma et al. (2024).

The six typologies found by Jansma et al. (2024) used in this survey can be seen in Figure 4. These typologies were created from and for the EU population and policymakers, making the framework somewhat transferable, but not fully.

Figure 4.5

Operation Typologies



Note. Figure adapted from concepts by Jansma, J. E., Veen, E. J., & Müller, D. (2024)

A typology is a classification where the types are mutually exclusive and based primarily on one specific attribute (The Editors of Encyclopedia Britannica, 1998). Jansma’s et al. (2024) worked with four major attributes: spatial, operational, production, and community to create the typologies. Their conclusion came to six typologies: “The Urban Farm”, “The Community Park”, “The DIY Garden/Farm”. “The Zero Acreage Farm”, “The Social Farm”, and “The Community Garden” (Jansma et al., 2024).

Results

Typologies

Urbanization

Survey respondents had the ability to identify themselves as either “urban” or “peri-urban/suburban”. The following definition was provided in the survey question to help delineate classification:

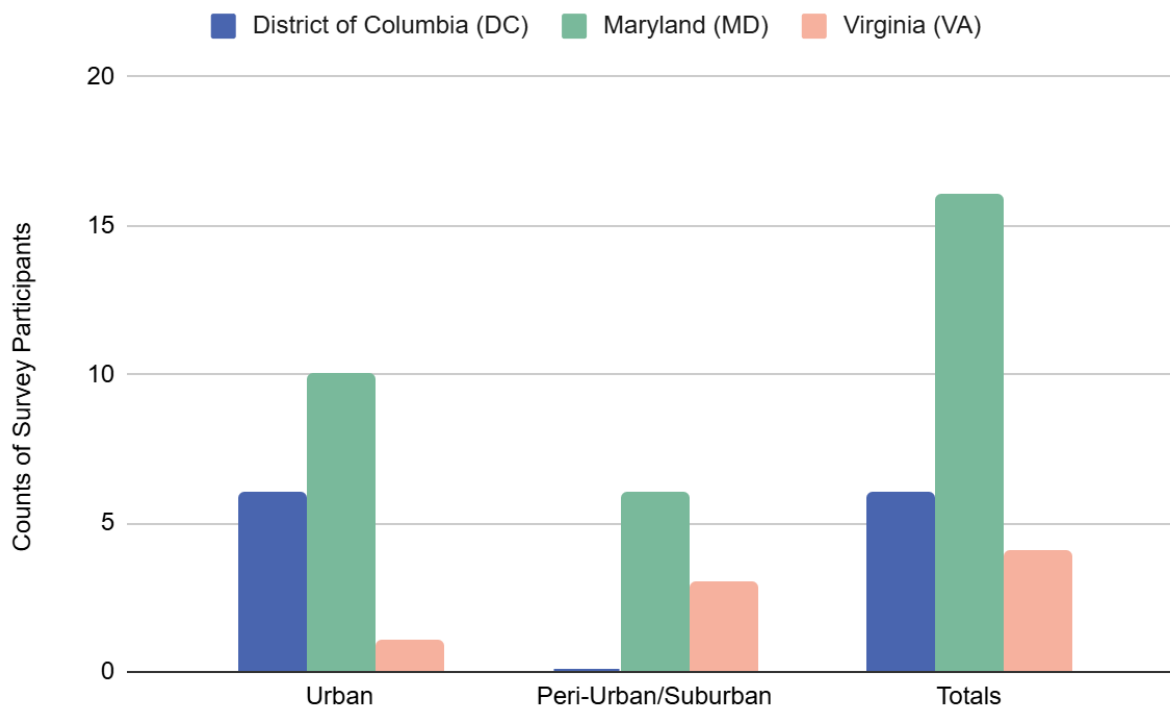
“According to the US Census, ‘To qualify as an urban area, the territory identified according to criteria must encompass at least 2,000 housing units or have a population of at least 5,000.’ Peri-Urban is on the outskirts of the Urban core, Suburban is within commuting distance of the Urban Core, and Rural is a significant commute with much lower housing density and population than the Urban Core” (US Census Bureau, 2024).

Peri-urban/suburban operations were kept and studied as these operations often face the same impact and challenges as urban, especially with urbanization trends growing into suburban areas. It also gives insight for the “Urban-Rural Continuum Effect” in the DMV (Bell, 1992).

DC operations were only in urban spaces, with all six respondents from DC indicating “Urban”. Maryland and more so Virginia, had both urban and peri-urban/suburban operations. Maryland had 10 “Urban” and six “Peri-Urban/Suburban” responses. Virginia had one “Urban” and three “Peri-Urban/Suburban” responses. The exact breakdown can be seen in Figure 5.

Breakdown of Number of Survey Participants by Urbanization and Region

Figure 4.6



Spatial Aspects

Understanding size aids with interpreting urbanization results, as well as it gives perspectives to typologies by ground-truthing Jansma's et al. (2024) characteristics to said typologies.

Most respondents grew only in one, personal space. Only six of the 26 respondents also grew in a shared space. Average sizes by region can be seen in Table 1.

Table 4.1

Average Size of Operation by Region.

Region	DC	Maryland	Virginia
Size (Sq Ft)	23,049	217,876.6	452,640
Size (Acres)	0.5291	5.0018	10.3912

Of the communal spaces, the average size was 106,343.3 square feet (roughly 2.44 acres). Communal spaces were only seen in DC and Maryland. And the communal spaces larger than one acre were only seen in peri-urban/suburban Maryland regions. This gives insight on the “Urban-Rural Continuum Effect” for the DMV, as spaces get larger the further away from the populous center of DC to the more suburban areas of Maryland and Virginia.

But it also ground-truths some of the differences between The Community Garden, The Social Farm, and The Urban Farm. As seen in Table 4.2 below, the larger, communal spaces in the peri-urban/suburban region are actually Social Farms or Urban Farms, while Community Gardens are in urban areas.

Table 4.2

Breakdown of Operational Typologies by Region and Urbanization

Region	Urbanization	Typology	Count
DC	U	CG	2
DC	U	DIY	1
DC	U	SF	3
MD	PU/S	CG	1
MD	PU/S	DIY	1
MD	PU/S	SF	2

MD	PU/S	UF	2
MD	U	CG	4
MD	U	CP	1
MD	U	DIY	1
MD	U	SF	3
MD	U	UF	1
VA	PU/S	O	1
VA	PU/S	UF	2
VA	U	CG	1

Note. “U” means urbanization and “PU/S” means peri-urban/suburban. “CG” means Community Garden, “DIY” means DIY Garden/Farm, “SF” mean Social Farm, “UF” means Urban Farm, “CP” means Community Park, and “O” means other.

These results indicate that available space impacts the ability for community foster. And that one does not need a large amount of space to create interactions. The average communal space is roughly 25% the size of the normal small farm in the US (10 acres). Urban agriculturalists in the DMV are doing more with less space.

Size, Labor, & Typology Placements

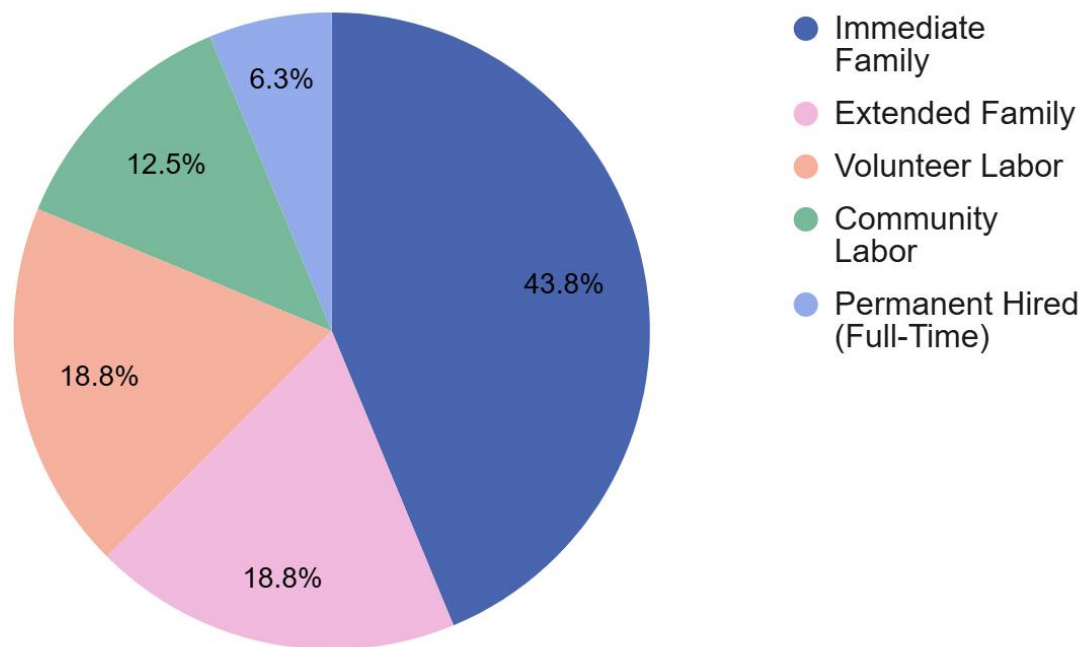
When looking at operational size with labor parameters, increasing size appears to have a correlation with commitment from labor. Until an operation gets to be in the range of 0.75-1 acre, no one across the whole survey reported permanent/full-time hired labor. Also, operations of this size (less than one acre) were either self-identified as The Visionary or Self-Determined Agroecologist archetypes, with either a self-identified as The Social Farm, DIY Garden/Farm, or

Community Garden typology classification. These are more community-driven archetypes, and smaller operational typologies.

Most people were the main contributor of their labor to their operation. The most common combination for labor was “myself” for the main labor contributor and “immediate family” as additional support. 44% of survey respondents reported this exact pairing, seen in Figure 6.

Figure 4.7

Additional Labor Pairings for those with “Myself” as the Main Labor Contributor to an Urban Agriculture Operation



Overall, “myself” with additional labor from “immediate family” with The Visionary archetype was the common combination, with 40% of the survey having this labor dynamic with

this archetype placement. The other main trend between archetype placements and labor dynamics included The Business-Minded archetypes that relied on permanent hired (full-time) workers as main labor providers more than any other archetype placement. Conversely, The Self-Determined Agroecologist archetypes were not often the main labor contributor to their operations but were more likely to be the additional labor contributor as “myself” than any other archetype.

Production

Products

Respondents were asked to select all the products they grow at their operation. Close to 40% of what people grow is nutrient dense food (i.e. fruits and vegetables). Production breakdown by region can be seen in Figures 7a, 7b, and 7c.

Figure 4.7a

DC's Production Distribution

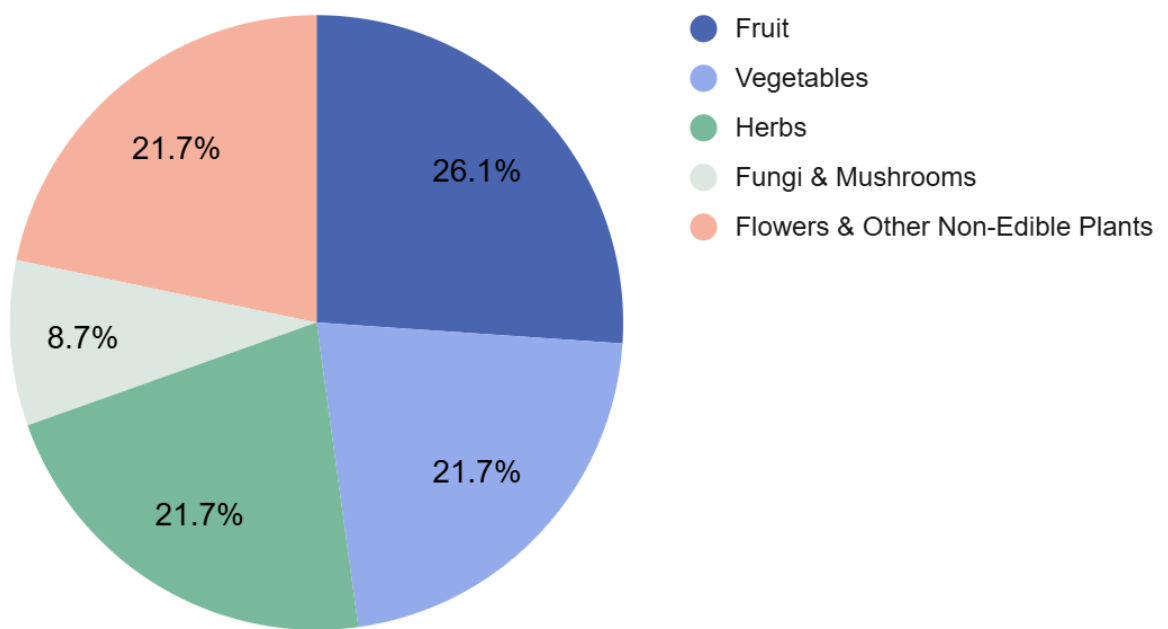
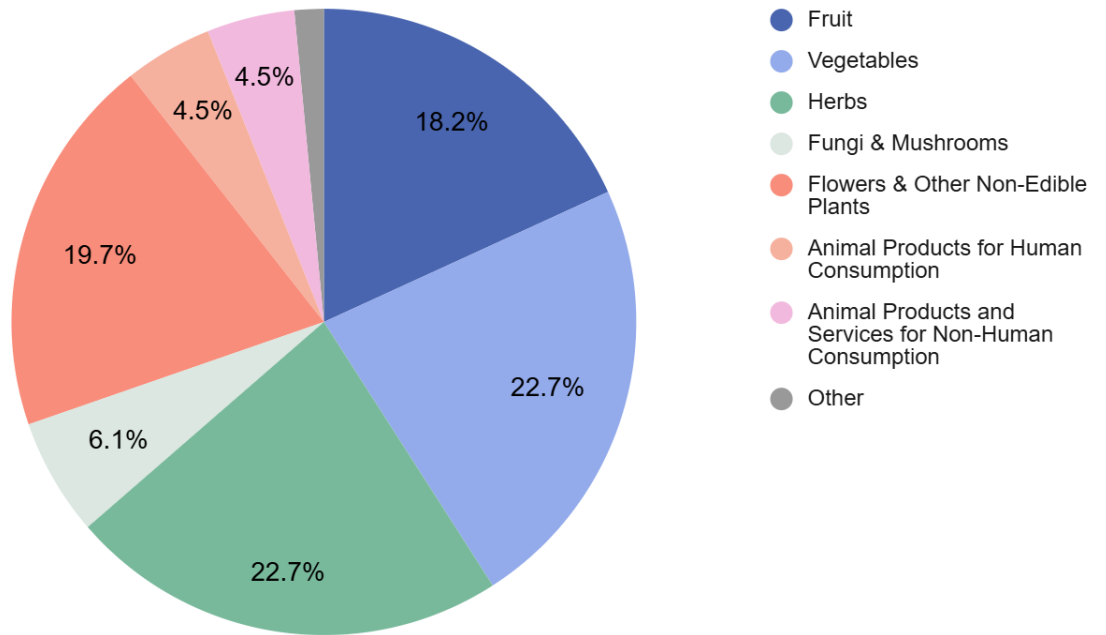


Figure 4.7b

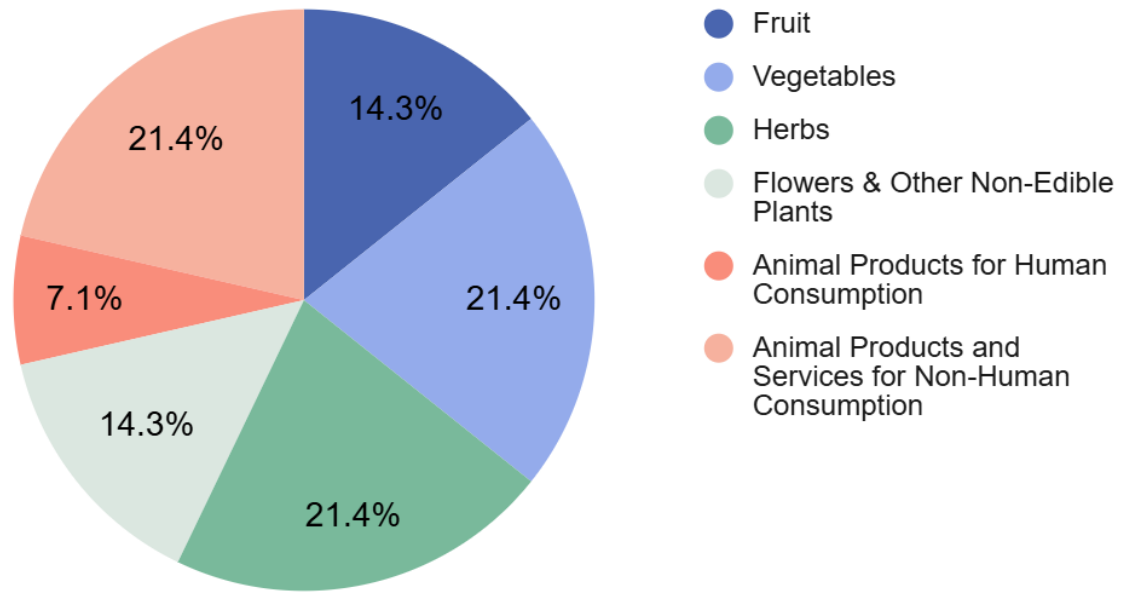
Maryland's Production Distribution



Note. "Other" is 1.5% of the production.

Figure 4.7c

Virginia's Production Distribution



Maryland growers had the most variety to their growing plants, with the top combination of products being various “Produce” and “Flowers & Other Non-Edible Plants”.

Urbanization and size appears to impact the ability raise livestock, as no one from DC reported raising animals. DC farms are the most urbanized and smallest in the region. Virginia farms are the least urbanized and largest in the region and have the most amount of animal production.

Channels of Distribution

Most of the archetypes and typologies utilized every channel of distribution offered in the survey. This includes formal/informal avenues, trading, and giving. Some channels were utilized more than others though:

- 81% of the survey respondents consume what they grow. This makeup is seen across most of the whole DMV, every archetype, and every typology.

- 77% of the survey respondents informally donate their products, by sharing their items free of charge with no items or services in return for the agriculture product. Every archetype and typology except Urban Farms utilized this channel of distribution.
- 58% of the survey respondents formally donate their products. Every archetype and typology except DIY Garden/Farms utilized this channel of distribution.
- 50% of the survey respondents barter or sell their items. Social Farms utilized this informal channel the most.
- In terms of diversifying marketing, only 31% accept discounts or assistance services and 12% sell on a “larger scale”, such as a restaurant or an aggregator. Urban Farms utilized this formal channel the most.

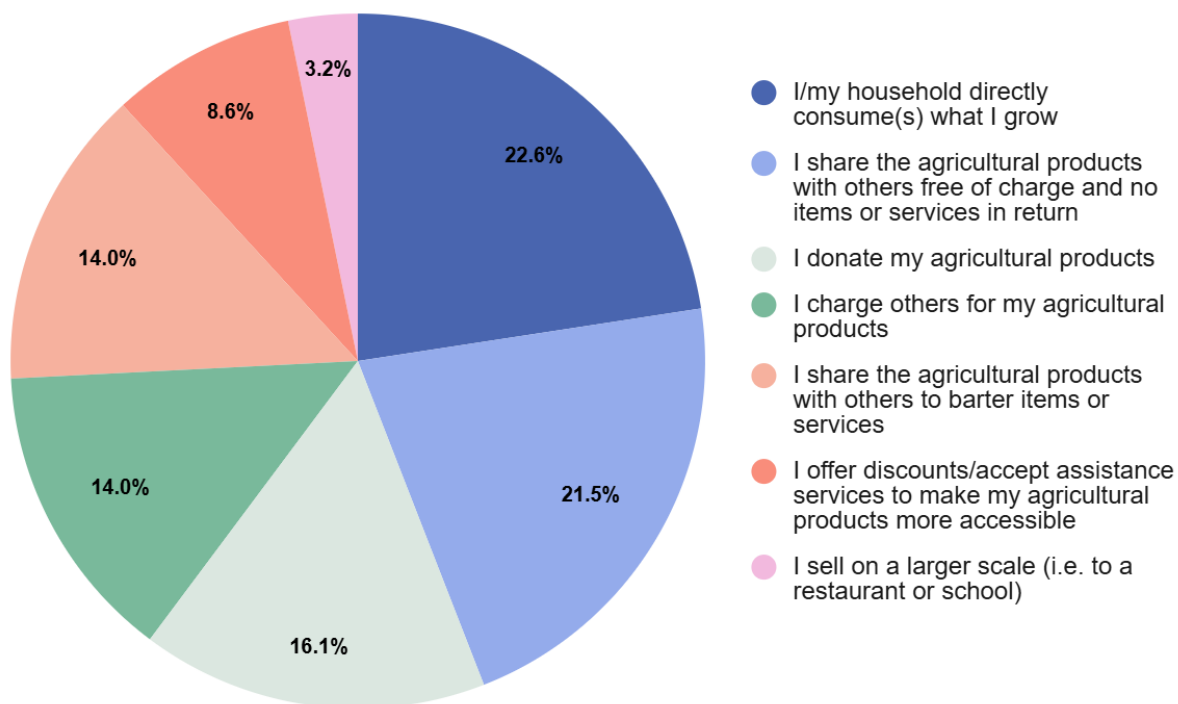
Production Planning with Archetype & Typology Placements

There were no duplicate pairings and rankings when analyzing production priorities, archetype placements, and typology placements, indicating everyone having a unique individual experience. However, there were trends with production priorities and archetype placement or typology placement. These trends aided with ground truthing of the descriptions of the archetypes and typologies and the accuracy of the self-determined placements into each.

"To feed myself/my household because we enjoy it and it brings us value, but we do not need it to survive" and "To feed my community, because it has a lack of access to healthy foods" were the top reasons for those growing in the DMV. All top reasons can be seen below in Figure 8.

Figure 4.8

Top Reasons for Why Urban Agriculturalists Grew Food in the DMV



In terms of archetypes, “To feed my community, because it has a lack of access to healthy foods” with The Self-Determined Agroecologist was the most common reasoning with an archetype placement, with 23% of the survey population stating this pairing. The Self-Determined Agroecologists were the most in agreement in terms of priorities for growing than the other archetype placements. The Business-Minded all had different priorities, and The Visionaries were mixed. 70% of The Visionaries did pick some reasoning related to growing for others and their needs, however.

The least common reasons for growing in the DMV were “to grow food for local businesses to keep the supply chain local”, “to bring green spaces to my residence”, and “to bring green spaces to others”. Interestingly, only one of The Business-Minded said “to grow food

for local businesses to keep the food supply chain localized" as their top priority, which should be one of the main priorities for this archetype across the board.

In terms of typologies and priorities, 15% selected "to feed my community, because it has a lack of access to healthy foods" while also selecting The Community Garden typology. DIY Garden/Farms did not prioritize feeding the community, while Social Farms prioritized feeding the community out of nutritional need, versus Community Gardens prioritized feeding the community as it was secondarily result to being a green space. Urban Farms had a very mixed response, but 67% of the "to grow food for local businesses to keep the food supply chain localized" responses were Urban Farm placements.

Archetypes & Typologies

This section focuses on ground truthing the archetypes and typologies individually, and potential pairings. The distribution of archetype and typology placements across regions and urbanization was analyzed as well.

Survey participants were asked to rank their agreement to statements related to their archetype and typology, before they self-placed their archetype and typology placements at the end of the survey.

The Business-Minded all agreed that "the economic bottom line is my top priority". The Self-Determined Agroecologists and Visionaries disagreed with the statement "I base my production on market trends". This ground-truthed that the Business-Minded are the economically focused archetype of the four.

For the statement "I base my production on my community's needs", The Self-Determined Agroecologists was more likely to agree with this than The Visionaries, supporting the notion of a new, fourth archetype that is food-system-centric.

For the statement “Helping my community for social change is my top priority” was mostly answered by Social Farm typologies, while Urban Farms disagreed with the statement “I base my production on my own personal needs”. This difference between the two typologies ground truths and highlights their unique characteristics and need for division. While both typologies are “farms”, meaning they are of a certain scale of production with more focused labor, Social Farms are farms that aim to connect people with one another while Urban Farms are farms that are focused on producing to certain capacity.

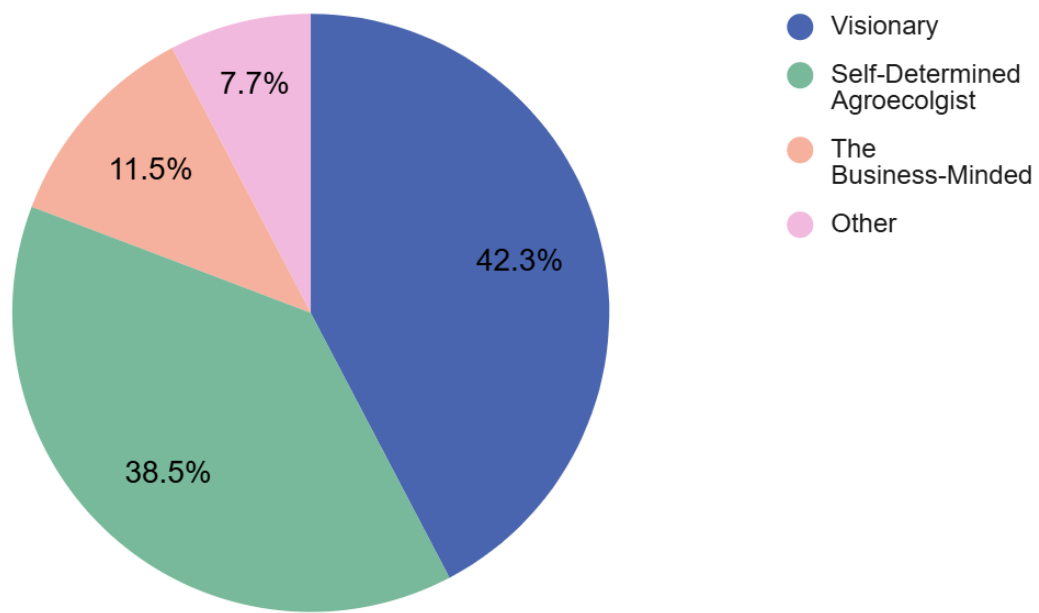
“Having food sovereignty and food access is my top priority” and “Helping my community for social change is my top priority” got most of its agreement responses from Social Farms and Community Gardens. This grounds truths that while the missions of these typologies are similar, their urbanization, labor, and size impact their typology definitions as seen with the previous results.

Archetype & Typology Distribution & Make-Up

For archetype distribution, The Learner archetype was not self-reported by any participant in this survey. The other three archetypes –The Business-Minded, The Visionary, and The Self-Determined Agroecologist –had an uneven distribution across the DMV. DC saw no Business-Minded individuals. Virginia saw no Visionary individuals. Maryland had the most of the Self-Determined Agroecologist, and a large portion of The Visionary distribution. The total make-up of the archetype distribution across the DMV can be seen in Figure 9.

Figure 4.9

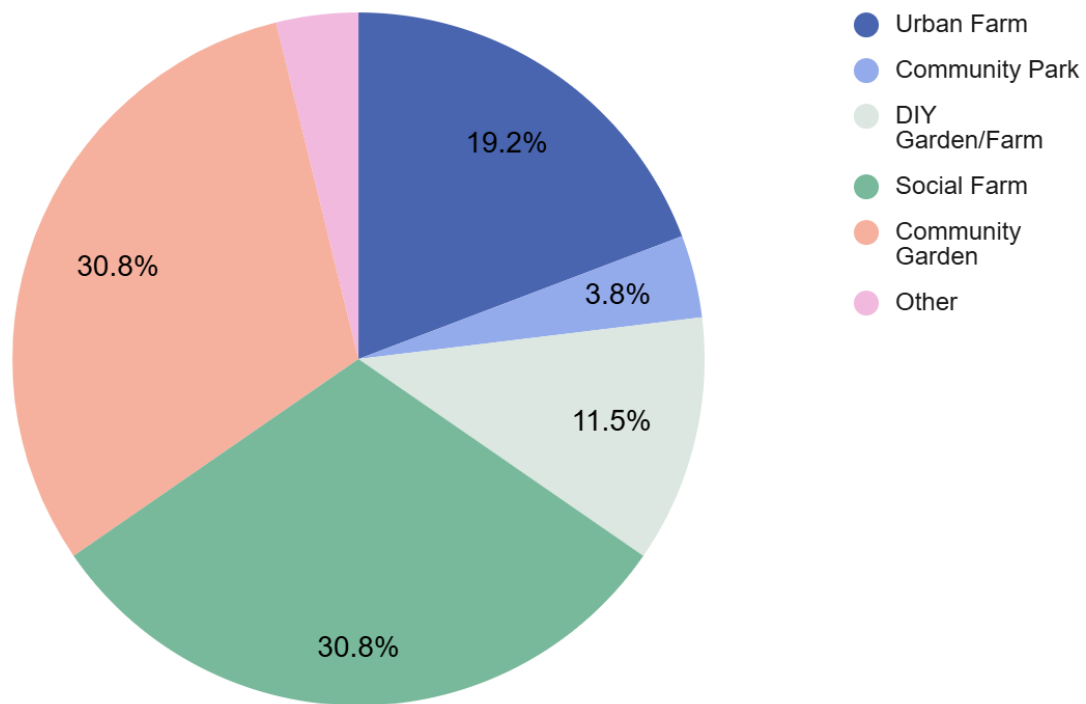
Total Survey Archetype Distribution Across the DMV



For typology distribution, The Zero-Acreage typology was not self-reported by any participant in this survey. DC saw a wide mix of the other five typologies with no preferred typology. Virginia had a mix of typologies but interestingly saw no Social Farm operations. Maryland was also a mix of operations but heavily leaning towards the Community Garden and Social Farm typologies. Maryland with Community Garden or Social Farm was the most common region and typology placement across the survey, with 38% of respondents reporting this pairing. The total make-up of the typology distribution across the DMV can be seen in Figure 10.

Figure 4.10

Total Survey Typology Distribution Across the DMV



Note. “Other” is 3.8% of the typology distribution.

Exploring archetypes with typologies, The Visionary with The Community Garden, and The Self-Determined Agroecologist with The Social Farm were tied as the most prevalent pairing. The Self-Determined Agroecologist paired with any of the five typologies, while The Visionary only paired with The DIY-Garden/Farm, The Social Farm, or The Community Garden typology. While these two archetypes were more flexible with typology placements, The Business-Minded only paired up with The Urban Farm or The Social Farm typologies.

Urbanization with Archetypes & Typologies

Most archetype and typology placements reside in urban areas across the DMV. The Visionary and The Self-Determined Agroecologist were the top archetype placements and they resided in urban areas. The top typologies were The Community Garden and The Social Farm in

urban areas. The most common archetype with typology pairing by urbanization was The Visionary with The Community Garden in urbanization (15% of survey respondents), followed closely by The Visionary and The Social Farm in urban areas (12% of survey respondents). The Business-Minded with The Urban Farm cross was only seen in peri-urban/suburban areas, however.

DC and Virginia had no teased-out trends with urbanization, archetypes, and typologies. Maryland did see that Visionary archetypes were in either the urban or the peri-urban/suburban areas, while 70% of the Self-Determined Agroecologists were in urban areas. Exact pairing can be seen in Tables 2-4 in Appendix 8.

Demographics

This survey population was primarily white (62% of the survey), middle-aged (50% of the survey), and roughly equally male or female. The most common age group was 36-45 year olds, with 50% of the survey population in this age bracket. The breakdown by gender and race can be seen in Figure 11a and by gender and age in Figure 11b.

Figure 4.11a

Survey Demographics Broken Down by Race and Gender

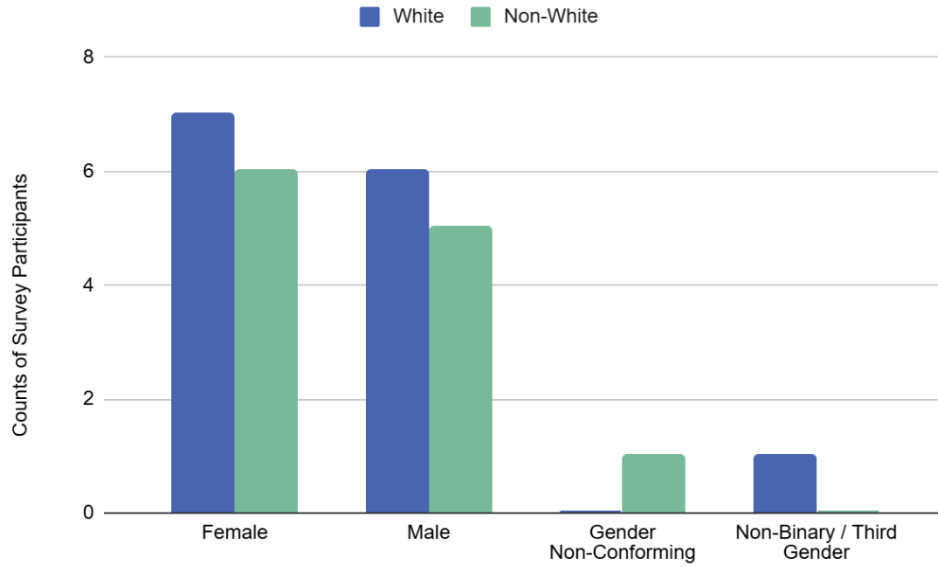
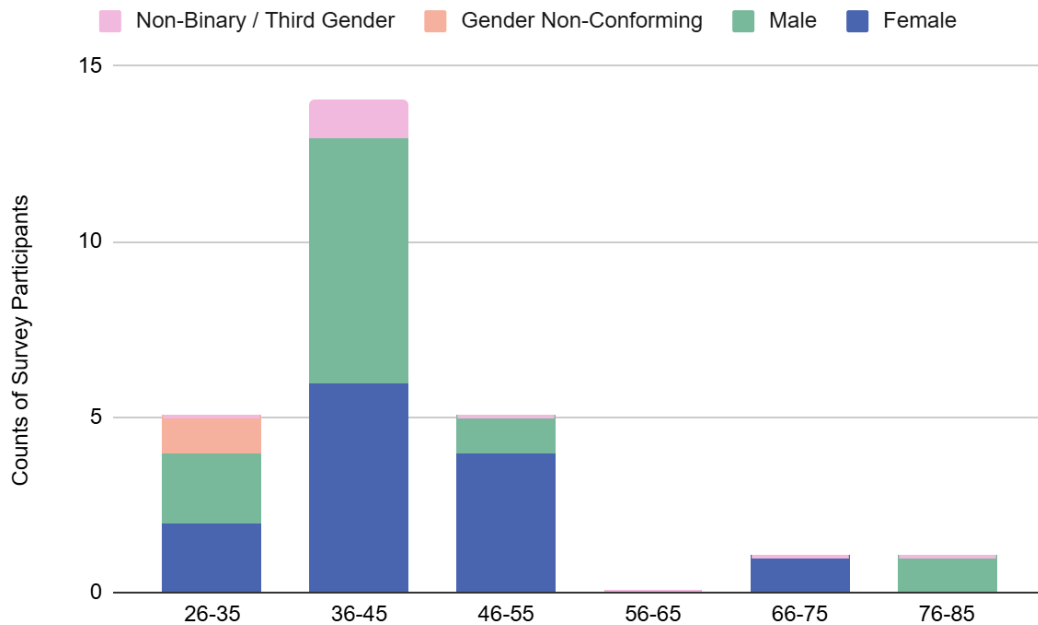


Figure 4.12b

Survey Demographics Broken Down by Age Brackets and Gender



In terms of demographics and archetypes, The Business-Minded were middle-aged white females, The Visionaries were young, white females, older woman of non-white races, or

middle-aged males. The Self-Determined Agroecologists were middle-aged woman of non-white races, and either very young or very old males.

In terms of demographics and typologies, The DIY Garden/Farms were exclusively female. The Community Gardens were mostly males. The Social Farms were mostly middle-aged females. The Urban Farms were either white or Asian or Asian Indian.

Discussion

What Does Urban Agriculture Look Like in the DMV?

In Chapter 2, a cluster analysis was conducted to analyze how the interviewees spoke about urban agriculture, and clustered them on similar speech patterns, approaches, and emotions to the topic. That analysis showed that DC growers, experts, and Maryland experts spoke alike, while Virginia growers, experts, and Maryland growers spoke alike. These results indicated that DC's urban agriculture population, and Maryland's expert basis are viewing urban agriculture in a more extremely urbanized viewpoint. Conversely, Virginias's urban agriculture population and Maryland's growers are viewing urban agriculture from a more peri-urban viewpoint. Some results in the survey conducted in this chapter reflect those sentiments.

First, the survey results support that DC grows in an extremely urban setting and Virginia in a more peri-urban setting. However, the sample population for the survey reported more urban operations for Maryland than the interview's sample population. This difference may be due to the different outreach methods and willingness to participate for each style of research. Giving one hour for a 1:1 interview versus a self-paced short survey can impact willingness to partake.

While it does not give concrete results on what urban agriculture looks like across the state –since no exact location parameters (i.e. address or zip codes) were collected in either

research methods –it does show that Maryland has the most diverse urban agriculture scene across the DMV. There could be potential partnership with DC and Virginia urban agriculturalists depending on the urbanization, not the proximity to the other regions. For instance, it may be beneficial to connect Baltimore City, MD growers with DC growers as they are both extremely urban areas with smaller operational sizes. Virginia growers could connect with Maryland growers in like-peri-urban regions to discuss growing methods and strategies with more small-medium range size operations.

Second, these mixed results highlight the need for varying forms of research to encompass urban agriculturalists across the DMV, and especially in Maryland. With the lack of formal definitions for “urban agriculture” from the federal and state levels, there is a lack of subsequent programs and resources that attempt to formalize the industry and collectively understand these growers. In turn, growers themselves do not recognize their impacts and efforts at times and may undermine their own efforts. This relates to psychological research explaining thinking, learning, and behavior on codification and labeling. Aslanov et al. (2022) supported Giffin’s et al. (2017) original work on that “showing that a label reinforces the perceived objectivity of a category”, and when you do not label something or someone, it diminishes their value for you as the perceiver, as well as them as the object.

Beyond classification, technical assistance providers and researchers can begin working on resources and programs that aid very small farms (i.e. less than 10 acres), that are quite labor-intensive, and growing to feed about a household. Most of the farms in this survey were under five acres, many were the main labor provider, and 80% of the survey population grew to consume that food directly. This differs from the current USDA Small and Mid-Size Farms program resources, as they are very technical and business-oriented for large scale production.

For instance, these resources cover topics such as accessing capital, risk management, and locating market opportunities (United States Department of Agriculture, 2026). Those resources are for production-heavy items such as cold storage, organic certification, or Good Agricultural Practice (GAP) certification for retailers (United States Department of Agriculture, 2026).

Those resources miss the objectives of urban growers in the DMV, who are trying to feed themselves and their immediate community members. These resources would only maybe benefit The Business-Minded archetype. Resources that meet all the archetypes' needs, such as ones about native species to the DMV, growing a variety of nutrient dense food, beginner friendly crops, labor safety guidelines, and creative ways to use smaller spaces would be more in-tune for the urban growers of the DMV. Especially since roughly 20%-30% of all of production was herbs, flowers, and other non-edibles, there is room to increase the proportion of nutrient dense food grown in the DMV.

Finally, urban growers in the DMV are much younger than the average farmer in the US. This changes their learning styles, ability to work, and personal schedules/responsibilities. Future research and program development should incorporate young generations' preferred method of communications (online and direct) and desires (diversity, uniqueness, and work-life balance) (Purdue Global, n.d.). As found in Chapter 2, growers said they prefer social media and community forums for learning resources. Especially since this differs from what experts mentioned, such as hands-on classes and formal educational programs.

Lack of “The Learners” Archetypes

It is quite striking that there were no Leaners in this survey population, especially given that interview comments in Phase 1 mentioned that most growers are probably Learners. This could be for a few reasons. First, as many commented in the interviews, Learners were probably

those who were Master Gardeners, and therefore possibly did not believe they qualified themselves as a qualified “urban grower” to complete the survey. This notion does create a paradox that most growers are probably Leaners, and therefore new to urban agriculture, are prime for the current resources and assistances, but do not view themselves as capable or “qualified” urban agriculturalists. And once again, when one does not have a label to appropriately identify one’s self, one can not fully meet their potential (Aslanov et al., 2022).

Second, it also does bring up the possibility that The Learners’ preferred typology for growing is not something formally noted by Jansma’s work. While the Zero Acreage Farm might contain backyard and home-based growing settings in theory, it does skew heavily at advanced technological practices like vertical growing.

Finally, another possibility may be that the interviewees’ perception of other growers is in fact incorrect and the survey reflects the true populous. Further research, especially with a larger sample sizes, is needed to confirm which of these possibilities may be true.

Lastly, it is important to not undermine the smaller-scaled growers, especially in terms of urban agriculture and the strength of the food system. Research from over a decade ago gave the same critiques, and it appears that no major movement on this issue has been fully quantified:

“Emphasize the need for more research and empirical data to appraise the role of home gardens in crisis and post-crisis situations, as well as assessing their economic value and their impacts on food security, nutrition, economic growth, and gender issues”. (Galhena et al., 2013, abstract)

Archetypes Seen in the Survey

While The Learner was not seen, The Visionary, Self-Determined Agroecologist, and The Business-Minded were well represented in the survey population and gave deeper insights into their characteristics and behavior.

The Visionaries were motivated by aspects of community, as they placed themselves with the two most socially involved typologies (The Social Farm and The Community Garden). This supports this thesis's earlier critiques of needing to have direction to The Visionary for its community-driven motivations.

Having The Self-Determined Agroecologist being one of the top archetypes validates it as a needed archetype. Many of those individuals could have mis-identified with another archetype, like The Visionary, and could and given a false representation of their growing motivations for The Visionary. While The Visionary and The Self-Determined Agroecologists answered similarly to many of the barrier questions, they differ in statements about food access and security. While both archetypes agreed with statements supporting the community, The Self-Determined Agroecologists agreed more often and strongly about growing to feed their community. The Visionaries agreed more often and strongly about growing to create a green space.

The Self-Determined Agroecologists were the only archetype found to be unlikely in leading their operation and overseeing it means. This aids in separating it out from The Visionary. This result also implies that there is possibly a current gap in the current body of work for labor in terms of creating resources for those involved in an urban agriculture operation, but not the ones leading it. Quite often, new and beginning farmer resources are about starting your own business, but not many discuss how to support an operation that is established. Some

support for The Self-Determined Agroecologist could be focused on leadership and team building.

The Business-Minded archetype had the most interesting display of results, as they had the least opinionated answers to the barrier questions. They also had the most inconsistent results among their archetype, lacking cohesion compared to The Visionaries and The Self-Determined Agroecologists. Finally, this archetype is supposed to be economic and market driven but did not always align with statements and opportunities for economic growth. The lack of direction from The Business-Minded could stem from issues mentioned in Chapters 2 and 3. This could include the cost and need for labor, expense land, the struggle to be for-profit, and the lack of funding from programs.

In Chapter 2, the interview results indicated that The Business-Minded had the means to become successful and were limited by the lack of access and support to said means. The survey results bring forward some of these nuances. The Business-Minded were split in their decision-making because they are at the crossroads of being profitable, but also supporting their community. The Business-Minded were the only archetypes to sell their products at a discount and to grow to formally donate food. They have the production means to create enough of an inventory, but do not always have avenues to always make it profitable.

Typologies Seen in the Survey

The Community Garden, The Social Farm, and The Urban Farm were all seen fairly close to Jansma's et al. (2024) original work. What differed in the DMV was labor parameters and interest in the community.

Interestingly, half of those “myself-immediate family” labor pairings were The Community Garden typologies. Looking into The Community Garden labor parameters overall, these operations rely heavily on group work that is not exclusive or permanent. None of The Community Garden typology placements reported “permanent hired (full-time)” labor.

Comparatively, Urban Farms ran heavily on the main farmer as the main source of labor. But additional labor was usually paid workers (full-time or temporary). Only Social Farms and Urban Farms had paid labor of some kind to be the main labor contributor.

Diving deeper into the makeup of The Urban Farm typology, Urban Farms were exclusively one acre or larger, required more consistent and larger labor teams, encompassed 67% The Business-Minded archetypes, and 80% were in peri-urban/suburban areas.

Many of the communal spaces were in peri-urban areas, and were Urban Farms. This differs from Jansma’s et al. (2024) work stating Urban Farms do not prioritize community interactions to the same degree as Social Farms and Community Gardens. Urban Farms are supposed to be far larger than both these typologies. It appears that in the DMV, Urban Farms sacrifice size, or at least are extremely limited in their land access, and instead prioritize on social interactions and community efforts. Most of The Urban Farms were The Business-Minded archetype, and earlier critiques mentioned how they too, divert their intentions between economic success and community involvement. The lack of size may impact the ability to be profitable, and in turn, these growers are motivated to support their community and vice versa to keep their production levels the same.

The Other Typologies

The Community Park, The DIY Garden/Farm, and The Zero Acreage Farm had little to no representation and so comments cannot be made on their typologies at this time. As this was a

smaller sample size, it is too premature to rule out these typologies in the DMV. Possible branding/naming issues could be a part of the lack of response. “Community Park” and “Community Garden” sound very similar. Their distinctions could come from colloquial differences between the US and the UK. In the US, “Community Park” sounds like a growing site on state or federal lands. That is not common practice in the US and instead see conservation practices prioritized over agricultural production (Stewart, n.d.).

As for The DIY Farden/Farm and The Zero Acreage Farm, the practices described for these typologies are usually advanced *-ponic* technologies (i.e. aeroponics, hydroponics, and aquaponics). Those utilizing these techniques may not be prevalent enough in the DMV, and/or are not using these techniques as their main agriculture practice and therefore do not identify with these typologies exclusively.

Limitations & Recommendations

The most significant limitation to this survey was the smaller survey population. Despite reaching out to over 100 individuals, having only 36 individuals attempt the survey indicates some disconnect between the researchers, the topic at hand, and the constituents. A longer survey window, in addition to utilizing more formal avenues such as reaching to experts and leaders in the industry to push the survey, most likely would have improved the response rate.

However, a 72% full completion rate of this smaller sample size still gives richness to this survey. The richness, however, is skewed to the Maryland region of the DMV, with over half the respondents being from Maryland. Completing this survey again, with an equal distribution of respondents from each region, would give a better reflection and saturation of the trends seen in this research.

Yet, this survey brings forward the importance of personal classifications (i.e. archetypes) to the normal classification of operational typologies. The work of Campbell et al. (2023) gives a good foundation of understanding of the grower themselves. The work Jansma et al. (2024) creates distinct categories to the operations. Melding these two concepts together showed some of the decision-making and exact pain points for certain growers. It highlighted where growers said one thing but acted out differently due to restrictions or parameters. Having research that gives the ability to tease out personal preferences, motivations, and barriers gives insight and possible predictability to assisting urban agriculturists moving forward for technical assistance providers. Conversations, resources, and support measures can now revolve around better planning by new and current growers being able to classify themselves and their operations. Strategic plans for each archetype, typology, and major pairing found in this research can begin to be developed.

Finally, additional research that explores exact economies of scales, like business structure, profit margins, and grants awarded, may help hone in the pairings of archetypes that have multiple preferred typologies. While groupings do not need to always be a 1:1 pairing, it is worth exploring for better business strategy planning, especially for trends and responses that were unclear or neutral.

Conclusion

The most distinct pairings of archetypes and typologies were “The Business-Minded” with the “Urban Farm”, “The Visionary” with the “Community Garden”, and the “Self-Determined Agroecologists” with the “Social Farms”. This survey ground-truthed the typologies and thematic trends included in earlier chapters of this thesis, with a strong representation and agree of what is “The Self-Determined Agroecologist” archetype, community and local food

security as major growing priorities, land-use competition may become too expensive for urban growers, and the Urban-Rural Continuum Effect is quite extreme in the DMV.

The DMV's urban agriculture industry could be a leader in the nation on how to support an interested grower population with limiting resources through mechanisms such as favorable land use policy, utilizing and prioritizing urban growers in local food system planning, and elevating technical support to more intermediate-level growers.

Chapter 5 Conclusion

Looking at this thesis's body of work in its entirety, the interviews and survey showcased distinct trends and similarities. Archetypes found in Chapter 2 were validated in Chapter 4's survey results. Typologies were found to be related to archetypes in Chapter 4, unified by the survey results and the thematic analysis of Chapter 3. Holistically, this thesis can move the conceptual framework into an actual functioning educational framework, with groupings of archetypes and typologies placed in similarity aligned approaches.

Pairing Archetypes & Typologies

Pairing archetypes and typologies has occurred in the US before. In Florida, Campbell et al. (2025), did similar work that classified urban growers with motivations and operational style. Those researchers' groupings were: "Newcomer Idealist Environmentalists" (similarly to The Visionaries and Community Gardens), "Ethical Civic Stewards" (similarly to The Self-Determined Agroecologists and Social Farms), and "Business-minded Community Builders" (similarly to The Business-Minded & Urban Farms) (Campbell et al., 2025). This research did analyze business structure and parameters of operations in more detail than this thesis. But it did lack some of the motivation and guidance this thesis did cover instead. While Campbell's et al. (2025) work and this thesis convergently achieving similar results, the nuance differences are quite specific to the pressures from the urbanization of the DMV and gives insight on how urbanization can impact behavior and trends to urban agriculture.

Visionaries and Community Gardens

The pairing of The Visionary and The Community Garden was the most prevalent combination of archetypes and typologies in the survey conducted in Phase 2. These individuals seem to have the most history with urban growing, as they felt positive about technical resources and where to find them, are from Maryland or DC, and are exclusively in urbanized areas.

These individuals seem to grow out of the joy of agriculture, with the intent of giving the harvest to others for various reasonings. They are the least like to barter for their goods. Their operational typology seems to drive their archetype placement, as Visionaries were either with The Community Gardens or Social Farms. These individuals care deeply about the community and often grow produce to aid with nutritional needs in their community. In return, their operation relies heavily on part-time and non-permanent labor. But these growers themselves care heavily for the operation and are often the main labor provider. They also felt the most optimistic of opportunities and the growth of urban agriculture. But, Community Gardens tended to be smaller, possibly limiting the reach of these operations.

This pairing has the most room for growth and maximization of space and resources, if properly coordinated through networking and professional development. This pairing could be a real tool in strengthening the local food system through hyper-local avenues. If tied with neighborhood associations, homeowner associations, and local networking groups, Community Gardens could utilize private funding to support their means. They could apply for grants or charge a small usage fee. Research that modeled how California community gardeners operated indicated that they would pay \$21 to help establish a new community garden and additional \$3 a month to double their garden size (Li & Long, 2024). This shows that community garden

members have a willingness to invest in their operations, versus expecting public resources to match their needs.

Additionally, gardening interests have increased in the last 20 years, with a significant amount of low-income houses beginning to grow their own food and younger generations (i.e. Millennials) have a very large interest in gardening (Porter, 2018). This aligns with this thesis's findings that most urban agriculturalists are under the age of 45.

There is much untapped efficiency to this pairing; but maybe that is why this pairing works. They do not stress maximization of operations and the importance of low-cost food like other archetypes. These individuals care about sustainability, not growth.

Self-Determined Agroecologists and Social Farms

The pairing of The Self-Determined Agroecologist and The Social Farms was the second most prevalent combination of archetypes and typologies. These individuals are seen in all regions and urbanizations, but prefer Maryland's urban areas. They have the most opinionated thoughts, giving most the "agrees" or "disagrees" out of all the archetypes to the ranking questions of the survey in Phase 2.

Their archetype placement drives their pairing more than their typology. The Self-Determined Agroecologist placed with all the found typologies in the survey. These individuals care about social change, urban agriculture advocacy, and food security –especially for their communities. Technical support for this pairing should focus on prioritizing growing and identifying nutrient-dense crops and practices. Since The Self-Determined Agroecologists themselves often only support and not lead their operation's labor dynamics, it is important to gear advice that allows them to be meaningful supporters to their operations.

This archetype has the most flexibility and could be used as a connector between fellow growers and the different operations. These individuals would be good advocates and potential decisionmakers. These operations would be ideal for demonstrations, volunteer drop-ins, and educational materials/experiences on-site. Other research in Baltimore City, Maryland has shown the positive benefits to perceived importance of having urban operations that are accessible, including “increased social connectedness, a transformed physical landscape, improved neighborhood reputation, increased access to fresh produce, and educational, youth development, and employment opportunities” (Poulsen et al., 2017).

Business-Minded & Urban Farms

67% of The Urban Farms were The Business-Minded archetype. This was the most well-defined pairing. These individuals relied on permanent hired (full-time) workers as main labor providers more than any other archetype placement. This exact combination of this archetype and typology only exists in the peri-urban/suburban areas. None were seen in DC. These individuals grew very pragmatically and indicated less risky behavior responses than any other archetype. Business-Minded individuals only paired with The Urban Farms or The Social Farms, indicating a certain level of commitment and needed size for their operations.

It came across that this pairing is the most uniformly organized. Unsurprisingly, Business-Minded are focused on maximizing profits, minimizing risk, and committing to long-term business planning. These operations are larger, and more likely to utilize channels of distribution that rely on some exchange, such as labor or formal economics.

However, since none of these pairings were in urban areas, it shows the reoccurring issue that land-use competition may be too extreme for urban agriculturalists to be properly funded and even profitable in urban areas. As mentioned several times throughout this body of work,

urbanization affects growers' actions despite their desires and motivations. The cost of land, the instability of land tenure, and the need for labor to compensate for the lack of specialized equipment for growing in an urban setting while also being small-scaled constricts the potential for urban agriculturalists in the DMV to make it a livable style of work.

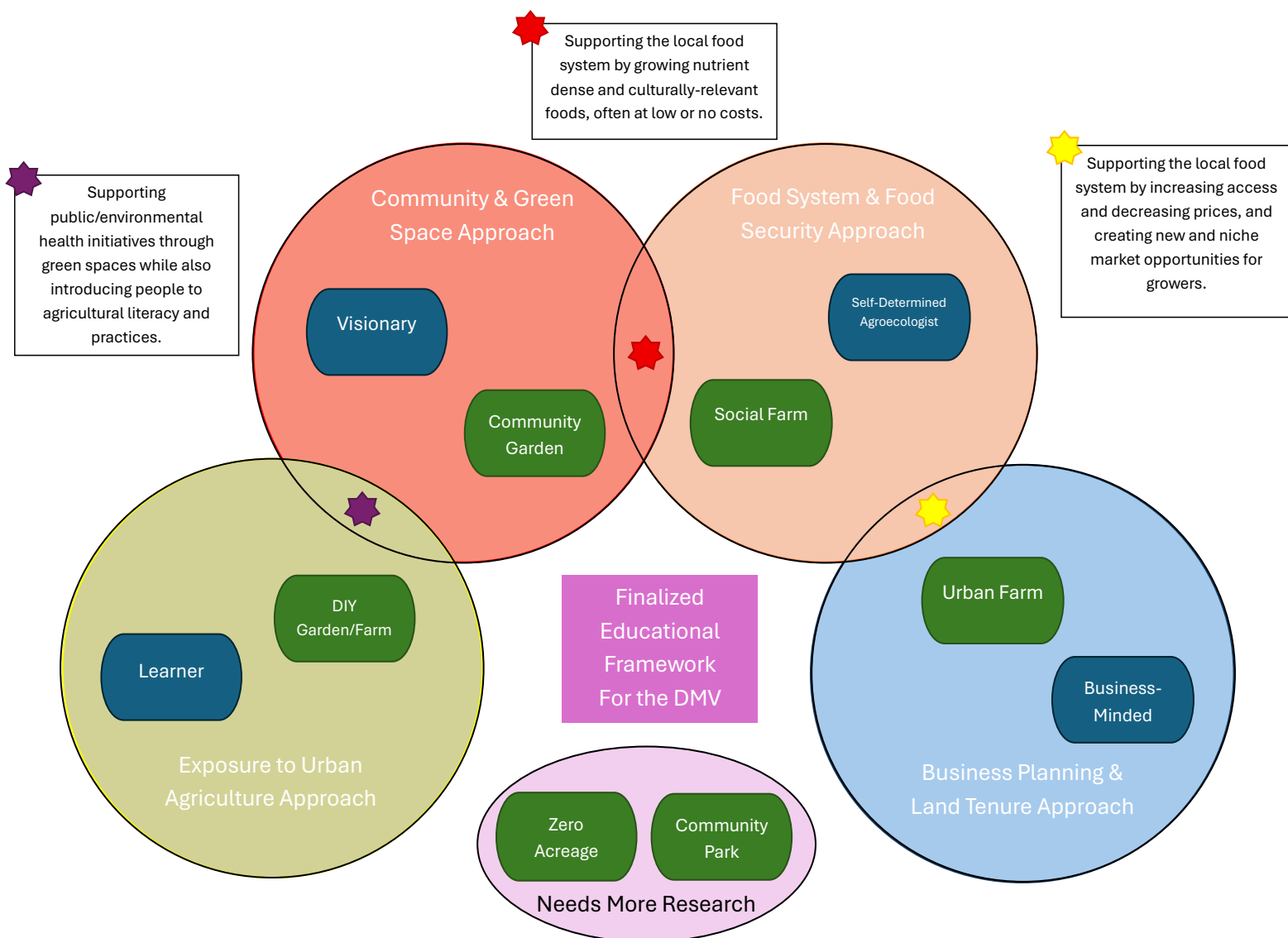
This pairing may need to utilize some aspects of the other archetypes and typologies, such as doing barter exchanges of labor for goods, applying for grants, or diversifying crop production to be more successful.

Updated Conceptual Framework

Through the interviews and the survey, the urban agriculturalists for the DMV self-classified themselves into different archetypes and typologies. From the thematic analysis and the survey analysis, pairings were created of archetypes and typologies, and each pairing was placed into an approach. The proposed conceptual framework can now be updated to reflect an educational framework that encompasses the dynamics of how archetypes and typologies can be grouped. The updated framework visual can be seen below in Figure 1.

Figure 5.1

Finalized Educational Framework for the Various Urban Agriculturalists of the DMV, Including Determined Approaches for Archetypes & Typologies



First, due to the lack of survey results of The Zero Acreage Farm and the limited results on The Community Park typology, more research is needed to support these placements.

The Learner and The DIY Garden/Farm are paired together in the “Exposure to Urban Agriculture Approach”. They are entry-level and seem themselves more in the Master Gardener or Master Naturalist programs offered by Extension and may not see themselves as full-fledge

urban growers and agriculturalists. They were under-represented in this thesis and need additional research to better support this approach.

Those in the “Community and Green Space Approach” are The Visionaries with The Community Gardens. They do not prioritize their production to be maximized for profits or outputs; they grow to sustain themselves and immediate others. They grow to reinvest into their community, especially revitalizing the area with safe green spaces for community members who could have historically been disinvested in. They take a human-centric approach to environmental health.

Comparatively, the “Food System & Food Security Approach” holds The Self-Determined Agroecologists and The Social Farms as they prioritize an anthropological approach to the food system, growing with intention to their practice. They push for high production, but with labor inputs from the community and outputs that reflect their nutritional and cultural needs.

Finally, in the “Business Planning & Land Tenure Approach” are The Business-Minded and The Urban Farms. These individuals are into urban agriculture for the long-term, with a larger investment. They have the most intensive productions, the largest operation, and care about making a long-standing living from this practice.

Now, the approaches do not exist independently, and there is overlap of interests and placements. “Exposure to Urban Agriculture Approach” meets “Community & Green Space Approach” where urban agriculturalists intend to improve their community specifically for environmental health but have lower agricultural and environmental literacy and experience. “Community & Green Space Approach” meets “Food System & Food Security Approach” with those who grow with the intent to keep food accessible and low to no cost. “Food System &

Food Security Approach” meets “Business Planning & Land Tenure Approach” with those who want to keep food accessible, but through niche marketing avenues.

Urban agriculturalists can sit in these placements permanently or can shift between these placements and approaches. They could find themselves in a journey that moves left to right, with new growers starting in “Exposure to Urban Agriculture Approach” and ending in meets “Business Planning & Land Tenure Approach” as they become knowledgeable and skilled over time.

This framework intends to allow urban agriculturalists to reflect on their histories, motivation, and limitations, and to focus on their success using these approaches. This framework allows urban agriculturalists and technical service providers to speak about intent. In turn, it begins to give catered suggested support to growers individually through a common language of terminology, and also strengthens the urban agriculture industry as a whole in the DMV. By recognizing these different approaches, technical assistant providers can begin researching and creating elevated resources specific to these intentions, and move beyond the basics of production, technology, and business-planning as the forms of support. Future research that explores the distance between each approach in time and resources needed would be very beneficial for the expansion of this framework. Other beneficial future research would be exploring the different pathways to and from each approach and motivations to why growers specifically shift between approaches. These recommendations would aid in making the framework more guided and easier to replicate in use.

Study Significance

This thesis highlights the importance of bringing other bodies of work to the localized area. While Campbell’s et al. (2023) and Campbell’s et al. (2025) respective archetype work

showcase that there are different types of urban growers, they do not reflect the intensiveness of urbanization the DMV is facing, and the pressures of land use and the need for local food that is put onto urban agriculturalists. This thesis found a brand-new archetype (The Self-Determined Agroecologists), found no presence of The Learner archetype, and no significant presence of three typologies (DIY Garden/Farm, Zero Acreage Farm, and Community Parks).

The thematic analysis of Chapter 2 brings forward the major intents and barriers to urban agriculturalists in the DMV. By realizing how urban agriculturalists need labor, start-up costs, and wish to strengthen their local communities and food system, local polices and governing bodies can begin to find new ways to support these growers for long-term success. These are some of the many touchpoints to integrate urban agriculturalists to overall urban planning. It can lead to better prioritization in resource allocation, and aid in reasoning to create supportive public resources and staffs.

Finally, this educational framework can be adopted by various technical service providers, like Extension Agents, to begin exploring specific parameters to the basis of the different approaches, archetypes, and typologies. Instead of exploring motivation, needs, or barriers, these technical service providers can now explore production items, growing methods, preferred networks, and intended consumers with more direction. Additionally, this frameworks for communication with growers to start from the same place, and lead with more structured support and intent.

Appendices

Appendix 1

Interview Questions for Growers

1. How do you define “urban agriculture”?
2. Can you describe your history and the motivation for you becoming an urban grower?
 - a. This can include time in agriculture in general, if you have grown in other spaces, and any mentors/organizations that assisted you along the way.
3. During your journey of learning how to grow in an urban setting, what types of resources or assistance (such as classes, individuals, programs, social media, etc) did you use? And what are your reflections and opinions on those resources?
4. Did you experience any learning barriers when beginning your urban agricultural journey?
 - a. Possible Barriers: language spoken/read, terminology, or lack of access to resources (i.e. internet, technical staff, networks, etc)
5. What types of people do you want to provide for (give, sell, teach, support, etc)? And who do you actually provide to?
6. If you could change one aspect of your current operation, what would it be? What resources would you need for that change?
7. Moving forward, what do you wish to see out of urban agriculture as a whole in [Maryland, DC, or Virginia]?

8. The purpose of this research is to create archetypes of urban agriculturalists to aid with technical assistance and improve the experience of growing in urban spaces. The following are three previously determined archetypes; do you see yourself as one, a mix of one, or none? If none, how would you characterize yourself?

a. The Visionary: sees urban agriculture as a way to enhance biodiversity for all aspects of environmental health

b. The Business-Minded: sees urban agriculture as a means of production and income, while being able to play in the local market

c. The Learner: see urban agriculture as a novice approach to growing and is often new to growing and agriculture in general

Interview Questions for Experts

1. How do you define “urban agriculture”?

2. Can you describe your history and the motivation for you becoming an expert/technical assistance provider for urban growers in your region?

3. What resources (such as classes, networking with specific individuals, programs, social media, etc) have you found to be successful in impacting and educating urban growers?

4. Did you experience any learning barriers when entering the field of urban agriculture in [Maryland, DC, or Virginia]?

a. Possible Barriers: language spoken/read, terminology, or lack of access to resources (i.e. internet, technical staff, networks, etc)

5. What types of people do you want to provide to? And who do you actually provide to?

6. What appears to be the main motivation for urban growers under your guise?

7. If you could change one aspect for current growers with no resistance/barriers to that change, what would it be? What resources would you need for that change?

8. Moving forward, what do you wish to see out of urban agriculture as a whole in [Maryland, DC, or Virginia]?

9. The purpose of this research is to create archetypes of urban agriculturalists to aid with technical assistance and improve the experience of growing in urban spaces. The following are three previously determined archetypes; do you see the urban growers you support as one, a mix of one, or none of these archetypes? If none, how would you characterize your urban growers? a. The Visionary: sees urban agriculture as a way to enhance biodiversity for all aspects of environmental health

b. The Business-Minded: sees urban agriculture as a means of production and income, while being able to play in the local market

c. The Learner: see urban agriculture as a novice approach to growing and is often new to growing and agriculture in general

Appendix 2

Matching Quotes for the Subthemes of Urban Agriculture for Food Systems & Food Security

E1:

- And our Master Gardener program, for example, grows seedlings in our hydroponics setups on the Van Ness campus that are then distributed to the D.C. public schools twice a year. So I think we try to be as responsive as we can when there's a demand.
- People would drive up, the way they might drive up for more nefarious activities, they drive up and slow down and kids would run over to the car with a box of produce. So they're meeting the need that they can see in their own community. Now, D.C. is also known for having food desert, right? So Wards 7 and 8 have famous limited access to grocery stores. And of course, these are folks who don't always even have cars. So it's not just that you don't have a lot of choice about where to shop.

- You've got to get on the bus with the kids or maybe your older mom and try to navigate all of this. So our questions didn't get at this, but the sense of could it be a more pleasant, a completely different experience if your neighbor's bringing you over a bunch of things you can eat versus having to kind of go track it down, getting to the store, if that's a really difficult journey for you.

E2:

- I would say that the biggest issue or like group that is sometimes challenging to access would be people from like lower income groups, who in many cases are actually maybe experiencing food insecurity, because we we try to, we donate as much of the food as possible. But those people usually are pretty time poor, too. So like they have jobs on the weekend, so they can't come and volunteer for four hours just for funsies, because it's a pretty day outside.
- And I think they also love food, like who doesn't love a fresh tomato from the garden in the heat of the summer, like popping cherry tomatoes into their mouth, right?
- So I think people do it for that. They do it for the volunteering, the community service, because we donate a lot of our food to food banks, too. The biggest thing I would really love to see is a connection made between neighborhoods who need more fresh fruits and vegetables. And can our urban gardens, our urban agriculture actually provide some of those that dietary diversity that is really needed in a lot of our urban environments. So we often will meet people all about this. Food apartheid, we used to call them food deserts. But food apartheid is we know is now a more appropriate term, because it was designed.
- Could there could they still grow the food then that could be provided free through either social networks or through some sort of distribution system or through like food recovery, or pantries, or soup kitchens, whatever you want to call them. I think there's the ability to fill some of those micronutrient gaps, like vitamin C, vitamin A, Vitamin C and iron. I think there are micronutrient groups that I think urban farming could actually target and then try to grow crops specifically to fill some of those micronutrient and diversity gaps, dietary diversity gaps. So that's something that I'm really passionate about. We're never going to fill the calorie gap just from growing wheat, rice. I'm not growing maize, or soybeans, in a urban environment, you're never going to meet that. That's just not realistic. But we could fill, maybe right now, gap, more so it's more about the dietary diversity gap. And that I think that urban farms could really start to fill.

E3:

- And prior to that, most of my career was in the Bay Area around urban food systems, primarily in San Francisco. But beyond that, working in not just growing spaces, but other aspects of food systems. So how to get healthy food access increased and education in low income communities. So a lot of my work has really been centered around an equity lens and the role that healthy food can play in promoting greater equity on socioeconomic and health basis.
- So I think some similarities and some assumptions right from around here are that the food that's being grown locally is not for local consumption.
- But a very increased need and some very clear disparities across what communities have access to which food and a lack of subsidies that allow for the foods that are grown locally and commercially to be accessible to people who are of low income backgrounds.

Again, in a place like Charlottesville, is similar physical size or geographic size to San Francisco. And there's not too much space in between where someone physically has to live and go to get healthy food options. But with prices and accessibility are still lacking. And so there's farmers markets here, but those are very expensive. There's a Whole Foods here that's very expensive, right. So to get the higher quality fresh produce excludes a lot of people.

- And so I had an idea, could we invest in training people to then have careers in maintaining those trees and working in agroforestry development in an urban setting? And thinking about nursery management and propagation and production and , distribution and kind of the different aspects that go within the food system can be viable career options for a lot of not highly educated or what we think is skilled workforce that the blue collar kind of jobs or at least aren't dependent on having a master's or a college education or whatever. So, I think we have more programs that are training people up and placing them in places so that they do have economic opportunities.
- We're growing food and getting it out to folks. So, we're a food justice-centered organization. And so, looking at the equity lens is front and center for us. And so, trying to address some of those health and food access disparities in the low-income communities here by providing fresh local foods is our focus.
- I think especially in urban spaces, we should be trying to set local production goals.
- like if a city commits to feeding X percentage of its population based off this food and we're going to hire people to do it, I think that that could be a huge value.
- But I also think by having a food justice background, being explicit about that, I think it's, we're in tricky political times of language around stuff like that. But what I've noticed in my career is that when it's not explicit, it tends to skew towards the more privileged and the more educated and the people with the most resources that are turning to our urban agriculture from their idealism. And that tends to be very, very exclusive space to people that aren't coming from that space.

E4:

- Urban agriculture is producing a farm product, primarily, healthy foods to, contribute to food apathy, healthy food prioritization areas, community engagement, workforce development, a lot of things that that traditional ag also does, but does in a very different manner.
- I think the main reason I hear people wanting to get into urban agriculture is the fact that there's limited resources for community members to have access to healthy foods. grocery stores either come and go or close and never open again. Corner stores only have processed food, so being able to say, hey, I just made my entire dinner from the urban farm around the corner. I think that's one of the main things that I hear why people want to get involved in urban ag. I think the other one that's follows pretty closely is to provide an education to the youth so that they know where their food comes from. And to give them the ability to go, hey, you could do this or something like this in the future when you get older.
- I want it to grow within neighborhoods that are already in a dire need of healthy foods. I want support from communities and local governments. I want it to spread away from just the I-95 corridor. There are opportunities across the state within the smaller incorporated areas. Food apathy is not just a city issue. It's a statewide issue. Rural areas

also have issues with distance to grocery stores and local food. so, these smaller operations can provide these, smaller municipalities across the state with, with opportunities.

- And I'd like to see urban agriculture accepted, by a wider group of the ag sector. I still think that there are folks that believe that this is a fad, a kind of a post-COVID push. I honestly believe that urban agriculture can be utilized for food supply, just as likely as some of the rural produce and vegetable operations.

E6:

- So in Baltimore, this was a historically redlined city. And so that really that kind of delineation between the neighborhoods in the beginning of creation of the neighborhoods has basically defined the entire, the entire ecosystem of our city. So we have patterns of disinvestment in certain areas. We have patterns of investment in other areas. And all of that relates really strongly to health and wellness and general like resources for the residents here. It has created a lot of segregation, as well as limited access to resources. So a lot of our members are located in neighborhoods that don't have access to as many resources as, the white L of the city. Are you familiar with the, white L of the black butterfly? So, yeah, a lot of our farms were founded, actually, to provide, the services that were lacking in these neighborhoods, whether it be, like I mentioned, revitalizing green space that was, previously a vacant lot or a dumping ground for neighbor's trash or whatever. Or then being, a productive garden space. So a lot of people were really trying to put positive energy back into the communities that they live in and create spaces that were beautiful and productive and enjoyable, as opposed to just, basically fallen to the wayside.
- So really being tied to the communities and tied to the neighborhoods that, like these operations are located in allows them to really, meet the needs of their neighbors and have, a much stronger impact in relationship with their communities. some of our farms are giving their product away for free. Some people are selling it at a discounted rate. Some people have, subscription services. Other people are "just show up when I'm here and we can get you food". so there's lots of different ways to navigate it. And basically, I think the benefit of having these gardens be kind of like independent and really run by the community allows them to be more of more service or of more, use to that neighborhood.
- I think most people are definitely trying to provide food access, probably first and foremost, but are also doing all of those other pieces. I think, again, it's very much neighbors want, committing, and investing in their own neighborhoods and wanting to promote, I think, maybe, like health and wellness, kind of the larger, health and wellness framework could be a way to narrow it in. Because then that kind of touches on, the environmental aspects as well as, the food access and greening and local economies and all that kind of stuff too.
- I would like to see like sustainable, healthy farms and farmers in every neighborhood. I think would be really cool.
- So, we have transit, we have schools, we have rec centers, and we also have urban farms because I think farms serve such a significant role. I think having that really be built into the ecosystem of a city would be great. We just have to figure out a sustainable way for it to happen.

E7:

- Who's actually intended to be supporting what I see as urban agriculture, which is residential, like the sort of food sovereignty urban agriculture.
- I would say food sovereignty and people being able to grow the foods that are most culturally relevant to them. I feel really privileged to be able to grow the two crops that are most relevant to me. And I would love everyone to be able to do that same thing. I think from a food system perspective, like wearing my day job hat. I think urban agriculture as a whole in D.C., Maryland, Virginia, realistically, given what you were saying earlier about like how Maryland and Virginia consider like everything that is within 25 miles of the district could be considered urban. Like it is all essentially urban suburban sprawl. But I think from a local sourcing perspective, our ability to source locally, the district, if you haven't heard yet, the Metropolitan Washington Council of Governments is launching this procurement challenge. And for many peer counties, like Frederick County is like, oh, we want to be purchasing from Frederick County. Like what can we be purchasing? And that's possible for them. So I would like it to be possible for us to say like, OK, we're making some small but not insignificant commitment to be purchasing, broadly the district's local purchasing as it stands right now is within any of the Chesapeake Bay states.
- And so I think that this idea of being to see urban agriculture from a broad definition be able to provide more of the food for the district, whether that's through direct district purchasing or through more pathways from farmer to consumer.
- The archetype I was talking about, about being like urban agriculture is about community and about like feeding the community, but also bringing community together for empowerment. and sort of seeing urban agriculture as like a mode of like connecting to the food system.

G1:

- So many things that people growing their own food would solve, right? If they do it sustainably, they would positively affect the watershed, pollination. Some people are what they call an overburdened and underserved communities where asthma is high because there's not enough trees and stuff around to help filter the air. And so chronic illness is happening as a result of the environment. And so if you cultivate your own food or you start to grow or care about what's growing in your neighborhood or advocate to get more trees or you start growing and have a healthy, let's say in three blocks, there's like four community gardens, you're starting to contribute or reverse some of the environmental issues. So I'm like, that's a big deal. But then also there's high food priority areas or food insecure communities. That's a really big deal because what's coming up now with some issues with food stamps and supplemental incomes with food. It's estimated 177,000 people, but I'm thinking that those are the card holders. When they have children, they don't really count them. So we're talking about probably a few more hundreds of thousands of people that will be affected as a result of some financial pullback on food institution.
- And the most vulnerable population would not be prepared. Most people are okay. But if you're working every day, you're working class and you are living check to check, you don't have time to prepare or ready yourself. You're mostly focusing on living day to day. And I'm thinking that preparing people with that new skill is absolutely necessary.

- There's some communities that are affected more than others with asthma, low birth, miscarriages because of the environmental issues. So it's not just about eating food and eating healthy. Also the, the mindset of people, if their belly is full, who cares what was in it? You know, who has time to care about those things? And a capitalist society, especially for the working class, is get what you can get and move on.
- And then we have this whole network of systems where the supply and chain is happening right in the state of Maryland. We're not pulling from different states or countries to feed people.
- Like it's saying what the spot was in several different community centers where we're growing, not just for the residents, but we have these high volumes of food line. Then we can pack it up and sell it to our neighboring cities and states, you know, then we're doing the exporting. And then the money would go back into the system that sustains these areas of like food hubs for the residents, sustain the business, but also any challenges that those communities have, it would be absorbed back into it. And then the state would make some money.

G2:

- And what continues to motivate me is everybody needs food, and so we just kind of need to keep figuring out ways to produce, quality food for people, and the more access that anybody has, something just to, everyone, I think, would benefit from any kind of exposure to growing food. and so, hence, that's something that I can get behind every day.

G3:

- Other people who have been doing it well are doing sort of the experiential, where they're being supported by short-term rentals in particular, they're being supported by campsites, they're being supported by like winery kind of type operations, where it's all based on the experience. And so they are very much supplementing their income through, in particular, agritourism. So if you're going to do the earth-friendly stuff, you have to do agritourism. If you're going to do the industrial model, you can do that, and there are two or three different ways to do that. The only other thing I have seen be successful, which is what we're trying to do here in Richmond, is when people have access to a way to do preservation of their food and get it shelf stable, that is legal. This is huge and difficult because a lot of our food safety rules are fair and reasonable, but they were also made 100 years ago, before modern refrigeration. There is no reason that you shouldn't be able to make a lot of foods that are perfectly fine if they're stored at a safe temperature.
- Yeah. And like part of the problem is like restaurants. Like I've talked to so many restaurants. They don't like to buy in small batches. They like to have regular venues. Like they will be the first ones to buy from Cisco. And you're like, you are literally billing yourself as a farm to table. And they're like, yeah, when we said farm, we meant farm that can keep us regularly supplied in this volume. And I'm like, well, that's not how farms work. That's not how seasonality works. Like you can't have strawberries in December if you're trying to be good to the land.
- I think there is a huge untapped market for local produce. And when I say produce, that is a super inclusive category. That is everything from a knitted sweater to a basket you

made to a fence made out of a hedge to native plants, to food, to beauty products, inclusive. When I say produce, there is a huge market for local produce.

- And I think there will be, maybe give it 50 years, a tremendous opportunity for marketing local produce if we can just get the cottage industries back off the ground and away from the industrial model. Because if I could buy bread from the lady down the street, I would. If I could buy eggs from, well, I sell eggs, but my neighbors are like, oh my God, I will pay \$4 a half dozen for eggs where the chickens have names. Because it makes me feel safe and it makes me feel part of a community. I like that. If only we could unlock some of these dumb laws and regulations,

G4:

- But the other big group that I think we serve directly is food insecure folks. We, last year, we got over 50% of our produce donated.
- So, we're both feeding our volunteers and donating food towards food insecure individuals.
- Sometimes there's a caloric gap, which is horrible. Often, there's a nutrient gap. Often, people are getting their calories, not their nutrients. So, we've really focused on leafy greens production and donation to try to help address that. So, I'd say those are the people we do help. I think I kind of pivoted from would to do.
- The idea both that we are providing nutrients and food, but also maybe exposure. Just the idea we grow some weird crops.
- So in 2025 so far, we've donated 34%, a lot lower than last year, but trying to push that up.
- So you can see just leafy greens and herbs. We grew 122 daily values of vitamin A from those crops.

G5:

- This pairs two very big, important parts of my life with food systems work and working outside in different ecosystems and being in tune with the land and trying to be a part of restoration projects and working to make the outdoors a more accessible place and getting people excited about being outside and getting them connected to where their food comes and caring about that. So it was this marriage of all of these different passions of mine that came together in specifically, I would say the regenerative, small scale and urban agricultural scene.
- And it also can be very healing space as well. I feel regenerative ag gives me a sense of purpose when it can feel climate change is impending, we're already feeling the impacts of them on our farm, negative impacts from climate change. Right now is a perfect example with the government shutdown and our food assistance partners are in huge need of produce and we're in one of the wealthiest counties in Maryland and the country, even in Howard County. And there's still so much food insecurity and need. And so that is really fulfilling work for me and can be very grounding and centering.
- I mean, my dream is just to provide for me, I think everyone deserves access to the highest quality of produce. So ideally I want to provide to everybody. I don't want there to be any barrier to access the food that I would grow.

- But it's a very different style than providing food for people who are then bringing home and using themselves. The common denominator for all those people that we serve are that quote unquote need. And so I distinguish that from specifically food insecurity. A lot of the people who receive our produce are experiencing food insecurity, but also because some of the organizations are open to pretty much anybody, you wouldn't have to be experiencing food insecurity to receive the food that we provide. And I think that is not a bad thing in any way. I think it's good to have that just open access.
- I think that is a population that I would love to continue serving as much as possible because of having that experience going into food pantries and seeing so much of it is shelf stable food that isn't gonna meet people's nutritional needs. And a lot of the produce, the quote unquote fresh produce that is provided in food pantries are seconds from large scale distributors, sometimes grocery stores. And it is grocery store produce, which already is at a different quality than hyperlocal or generally grown produce from a nutritional standpoint, quality standpoint, flavor standpoint. It also just doesn't look good. it's not appetizing looking a lot of the times, sometimes it is genuinely spoiled. And so the pantry managers have to go through and just find what is actually edible still. And we are the most consistent and sometimes only providers of fresh quality produce for all of our partners. So that feels we're serving a specific need there. That can be really fulfilling. And it's just really tough. I just hate that, the message that receiving such spoiled food gives to those people to be like, it just is here, you are less than, this is what you have access to versus the people who have the most challenges to meet their nutritional needs should be given access to nutritious food. So that's a big piece of it.
- I also that we're able to provide culturally considerate food as well.
- It's hard for them sometimes because the populations they serve change a lot. But generally we can get some information about what they are interested, what the clients are interested in receiving. And if not that, then they can at least give some amount of demographic background.
- Not only is it food that is like, looks better than the other food, but it's something that brings some amount of familiarity. So it's like, it's going to the person's home or wherever they're cooking it. And they know what to do with it because they've seen it before. So yeah, that is who we serve on that.
- Are these people gonna even have the funds to purchase our food? And we're like, we wanna get the food there no matter what, but now do we have to find this new way to fund the food getting there, which impacts our ability to actually grow the food. So yeah, funding structure as a whole is something that I would love to see change to make it just more accessible to the, or to just meet the actual needs that are there. I feel that also the other things the funders might not always be grounded in what the challenges that are trying to be solved with the resources they're giving are. And that creates issues and there's weird power dynamics related to meeting funders needs as well. So then it forces the organizations to maybe pull in some of what their values are to meet the values of whatever the funder is, which I feel is also not a stable system. It creates an unstable food system.
- I would love every county in Maryland to have what Montgomery County has where they have a office of food security that has dedicated teams and resources to connect farms to, I mean, a big piece of it there is farms to food banks and food assistance services, but really an office that helps just connect farms to avenues for their food. But if I had to

choose and be picky, then I would say specifically to like, yeah, food banks and food assistance partners. I think having it kind of established at that county level is important in the size of it. the, at a state level.

- And then it's also helpful for the farmer because oftentimes there is abundance or excess that they were looking to somehow find ways to make revenue off of outside of their other, maybe CSAs or restaurant sales or direct to consumer, whatever it is. And it's just like, it's just, it's a win-win. It just makes sense to me. But it requires an investment in your food system. That is always the thing that we're arguing for that is challenging. And I think that is especially, it's just relevant all over. it's relevant in rural spaces. It's relevant in urban spaces, urban spaces, there's a lot more density, in terms of how many food pantries might be in a certain area. And then also how many growers are in that area.
- The other thing that Howard County kind of is doing with that office of food security that doesn't exist right now, right now it's a coalition. It's called the Local Health Initiative coalition, I think is what it is. ELHIC is the acronym, but more kind of buy-in from all levels of regenerative agriculture or urban agriculture, just agriculture being a part of public health and food access being a part of public health systems and just how much is connected to people being able to eat, things that are good for them and good in all sense of the words, good for them nutritionally, good for them spiritually, emotionally.
- Adding one more thing is connecting more public school systems to farms and farm fresh produce. We work very closely with the Howard County Public School System because we do garden installations at Title I schools and a lot of them are food gardens, food and pollinator, but a lot of them are food. And so I think that, yeah, that'd be really cool to have more, yeah, that more established route for farmers to make their way into the lunchroom in some way.

Appendix 3

Matching Quotes for the Subthemes of Urban Agriculture for Community

E1:

- It's not limited just to the growing of crops, the growing of food for consumption. It's also creating the community around sharing what you're growing, how you're growing it, how you're harvesting it, how you're cooking it, sharing that.
- And then we've got a native plant nursery at the community college where sometimes schools will walk over and get things. And we just had a giveaway at a tabling event for Oxen Run Day over in Ward 8, which is the ward in the district with the lowest education levels, the lowest income levels, the highest minority levels. So we try to, we're pretty responsive. We try to develop these relationships. I think the seedling giveaways are really cool because it's almost all volunteers that do this, including that distribute these to places throughout the city. So the teachers can then come and pick them up.
- Maybe because it's DC and the racial politics of DC are so embedded in how the city is grown and how the land's been divided and used over time. There's also seems to be a subgroup of people who are all about this agroecology. We grow because we can and we can share with our neighbors who need some food.

- People would drive up, the way they might drive up for more nefarious activities, they drive up and slow down and kids would run over to the car with a box of produce. So they're meeting the need that they can see in their own community.
- So there's a lot of providing for themselves and the community.

E2:

- But we approach urban agriculture from a community perspective, not individual boxes.
- I think is really important about urban agriculture is that there's an agriculture space and a community space. And so having a space so where you can have yoga, meditation, crafting nights, comedy, like we've done it all.
- There's like literal physical barriers to entry to community members. And so to the extent that you can create, like the people like feel like it's their space, and they don't just have to garden there, they can have a birthday party, they can have a wedding, they can come in and read a book. That's one of the things and it is a struggle because there are people who are going to come in like the other day, like somebody made a little fire in the garden. I don't know why. People who like are in a city for a job for this for that, but who have a connection or want to connection to the environment. And so I think the community part is just very natural, the people who seek out green space, and green space that they can feel like is theirs, like they can like get dirty, not just I'm going to go to Malcolm X Park and play in the drum circle, which is great. But I actually want to I want to get my hands dirty is like a special kind of person. And so that naturally builds community. I think that's just how it is in urban space. People are looking for it. They're literally looking for community. And urban agriculture provides space. It's like a bar, but it's not a bar, it's not a dance club. It's, it's a garden. And it's it just happens to have this very, like a social vibe to it, I think, in the city.
- People know that like being outside makes keeps them healthy. That there's all this research now that shows being outdoors is like good for your mental health, socializing, like a lot of us work from home, especially after COVID. Like we were all stuck indoors. And everyone wanted to come to the garden. Like during COVID, I was turning people away because we were trying to do a little bit of distancing and keeping people space. We had the first outdoor concert then, and people are like in tears. They're Oh, I've been stuck inside. And so I think people do it a lot for their mental health.
- I think if you don't approach urban agriculture from having a some aspect is, community oriented, or growing together. I feel like you miss out. Because I think it's more fun. When you have like a buddy, literally, that's how I made all the best my best friends. But I think leaning into the community part of community agriculture, I think is really important

E3:

- So, that sense of community is really important and has been kind of an informal, hands-on progression of just growing over the years more so than having a class or a degree or something in agricultural practices.
- A sense of culture and identity and community building with food. Like one of our gardens is right in the neighborhood and seeing neighbors coming out and interacting and waving to the staff and that kind of piece are coming out. What are you growing today? Can I grab some of that? There's a kind of intangible piece that's really underrated and

community building around growing spaces and mental health and stress reduction that can go in places that might be higher stress environments and have a place to be in a green space and a calmer space, right? And like the impact that that can have as well, aside from the more tangible like health and food insecurity pieces.

- Also highlighting the cultural community aspect of food, just again, is maybe even that's a space in there, especially if you're working in a diverse community. Food and foodways has stories and identity wrapped into it. There's Central American, cosmology is people coming from corn. And there's just a lot of different cultures across the world. If you're in a diverse space of like what agriculture and food means in terms of tradition and values. And we often think about agriculture just as the growing practices, but not the consumption practices. And I think the culture and identity piece of that for better or worse. And basically, we were just talking earlier about a former plantation that's being converted into a school ground space. And so there's a very real history here too that was very harmful around agricultural practices that I think also needs to be acknowledged for healing.

E4:

- Urban agriculture is producing a farm product, primarily, healthy foods to, contribute to food apathy, healthy food prioritization areas, community engagement, workforce development, a lot of things that that traditional ag also does, but does in a very different manner.
- The embedded community that is amongst the urban ag growers, all of them are willing to help a neighbor, a neighboring farmer. They do things cooperatively and collaborate, like products, to maybe a purchaser that needs more than what one operation can handle. So they come together so that they can meet that need. But a lot of it is just focusing on the immediate community around their location.
- I think I think the other thing is either there is more of an open network of urban ag communities that are willing to share information.
- But it's still comes back to including the community. There's more of a socioeconomic priority that than a strict either environmental or economic, so I think there's a there's a possibility for a fourth archetype that has to do more with socioeconomic reasons that these people are doing what they're doing.

E5:

- I would say the passion for my community, the passion for learning how to grow. I would say the lack of exposure in my childhood to these things really made me passionate about learning about those things and then sharing that with people who also share the same passion.
- Some examples are community, food production, desire for green space, second career, just for spit balling purposes. I would say community health and wellness, food access, passion, legacy.

E6:

- They were also doing all of this programming and neighborhood engagement and greening and really, fostering relationships with their community. And that has just continued to be as important as, the production side of things.

- And I enjoyed being outside in the city and basically was, there's no other job where you can just, hang out, in a green space in the city and, interact with your community in this way. So, I really felt, the value of being kind of, having an excuse to, engage with people was, really cool for me. And then sharing food. I realized that food was such a platform for discussion for people. It was a way to engage with your neighbors. It was a way to engage with, conversations about politics and economics and values and all these, kind of larger issues. And so, I just became committed to continuing the work. I really like working with my hands.
- So in Baltimore, this was a historically redlined city. And so that really that kind of delineation between the neighborhoods in the beginning of creation of the neighborhoods has basically defined the entire, the entire ecosystem of our city. So we have patterns of disinvestment in certain areas. We have patterns of investment in other areas. And all of that relates really strongly to health and wellness and general like resources for the residents here. It has created a lot of segregation, as well as limited access to resources. So a lot of our members are located in neighborhoods that don't have access to as many resources as, the white L of the city. Are you familiar with the, white L of the black butterfly? So, yeah, a lot of our farms were founded, actually, to provide, the services that were lacking in these neighborhoods, whether it be, like I mentioned, revitalizing green space that was, previously a vacant lot or a dumping ground for neighbor's trash or whatever. Or then being, a productive garden space. So a lot of people were really trying to put positive energy back into the communities that they live in and create spaces that were beautiful and productive and enjoyable, as opposed to just, basically fallen to the wayside.
- So really being tied to the communities and tied to the neighborhoods that, like these operations are located in allows them to really, meet the needs of their neighbors and have, a much stronger impact in relationship with their communities. some of our farms are giving their product away for free. Some people are selling it at a discounted rate. Some people have, subscription services. Other people are "just show up when I'm here and we can get you food". so there's lots of different ways to navigate it. And basically, I think the benefit of having these gardens be kind of like independent and really run by the community allows them to be more of more service or of more, use to that neighborhood.
- So really providing, hands-on opportunities. And I've seen the impact of that within our farm members and their neighborhoods as well. just a neighbor kid who walked by a million times finally starts volunteering and then, their mom starts buying food from the garden and, things can really, grow and impact can become stronger, from those, moments.
- Because, again, that it's important to us that's done within the neighborhood that they're serving and within the intention of the organization themselves.
- I think most people are definitely trying to provide food access, probably first and foremost, but are also doing all of those other pieces. I think, again, it's very much neighbors want, committing, and investing in their own neighborhoods and wanting to promote, I think, maybe, like health and wellness, kind of the larger, health and wellness framework could be a way to narrow it in. Because then that kind of touches on, the environmental aspects as well as, the food access and greening and local economies and all that kind of stuff too.

- And also I think there's a lot of like overlap and combinations, of the two, right? I think even our members that have like really strong, successful businesses are also like thinking creatively about how they could like be in community with their neighbors or other growers or continue to like provide for the city that has like provided for them.
- So again, we're kind of like giving back to that, that community and uplifting them as experts in the field as well. So there's like more, opportunity for mentorship, which I think is also important to technical assistance in urban agriculture and yeah just more opportunity for collaboration in the future as well.

E7:

- The food policy council, urban ag working group, has been doing monthly tours of different growing spaces in the district.
- Like there's no way that we can be educating 800,000 people about growing in their backyards. And yet through the, I think the Master Gardeners program is one of the only things, but I think even Master Gardeners is a little bit, the term itself is complicated. And so I think that there are barriers just by the term of Master Gardeners. But I think we could be relying more on people we train in a similar format to that to be training other people in their neighborhood. But giving them some resources and some funding to cover what is not free their time to be educating others.
- And then I think the other reason why like there are we have incredible rec centers, we have incredible libraries. And I think our farms serve as like this place that is not at all government, like many community gardens that are not, even if they are on DPR land, have really no government intervention. And so they can be really safe spaces for people to be having really important conversations. And realistically, like our places you don't have to necessarily reserve or pay for in the same way if you want to be bringing friends and community together in a way that like otherwise I think is the same in New York or other really dense urban areas where it's just people don't have enough space to have more than a few people in their homes.
- So that's something that I don't know that I have a word for that archetype, but the idea of like being able to feed themselves, feed their community. And without it necessarily being about income.
- The archetype I was talking about, about being like urban agriculture is about community and about like feeding the community, but also bringing community together for empowerment. and sort of seeing urban agriculture as like a mode of like connecting to the food system.

G1:

- That's my goal to build the community. And I know what it is. I need more people because I'm doing all the things I'm getting burnt out. Socially I'm burnt out, like introverted. My battery is dry. I have to like shut in for the rest of the day. So my next phase, especially with this grant is to build a team to help me build and cultivate community to do more outreach and make the thing is, it's transformational impact. I'm not giving people food. I'm giving them a skill. I transfer knowledge about a skill that they'll have forever. You can never unlearn how to cultivate the food once I work with you.

- So when I get in the face of people who I think, oh, we can build community together. And they're like, let's smile and act nice, but kind of ghost me when it's time to reciprocate the support that I've given or for them to show up like I anticipated them to show up.
- It can't be just like this entity that comes in. It needs to be ingrained. It needs to be a part of, and one of my proposals is that in these community centers, these rec centers, that there's some agricultural space or station, I call them hub stations, where they're learning about something. They're learning about the environment. They're learning about pollination. They're learning about cultivating food. They're learning about soil types and how to fix it. They're learning connecting human health to environmental health, you know, pulling those two together while they're in practice. And so a space to be able to do that, or I'm like, don't even create a new infrastructure.
- So I want to be in an open space where anybody can come in like a library system and learn about all things ag while practicing the skill.
- And I have this big vision that don't worry about work and, you know, focusing on the government coming in and fixing for you. You don't need to advocate, we'll lose this momentum. The people just need to understand the benefits of, you know, increasing green spaces around them. And of course, taking control of their own food source. And then the other main thing I haven't even talked about was tying communities back together. In this capital society, we're mostly solo, we're mostly taking care of ourselves in our own home, but we become more communal, more community focused. Those types of things would then become systems, you know, block by block by block in the city.
- And then we have this whole network of systems where the supply and chain is happening right in the state of Maryland. We're not pulling from different states or countries to feed people.

G3:

- Most of your urban ag sites are really going to be run out of what I call plastic warehouses. So a lot of our urban ag is really going to be either sort of in the community garden model, where you have a bunch of raised beds, or it's going to be people doing stuff in hoop houses. And really the only folks that are sort of doing anything in a way that's going to be nominally profitable are people doing stuff in hoop houses.
- And that's a big problem because a lot of what FSA and ag and like all of those sort of organizations, they're all on the industrial model, which is grow as much and specialize as much as you possibly can, which is very, very different from the folks like me or the folks who are coming at it sort of from more of an environmental aspect who want to investigate permaculture, who want to have these sorts of layered operations where you have chickens interacting with food, interacting with compost, and you have a lot of these things going on. So the industrial model is deeply not earth friendly in any way.
- And that's been the hardest part about it is that the more I look for mentorship and the more I look for community and the more I'm like, what are you doing? What are you doing? And everybody's just like, I don't know. I'm figuring it out. And I'm like, this is a terrible system. And so that's kind of what's led to some of my advocacy is I'm like, guys, like I am a process nerd. I'm an attorney. Like I work with the law, like let's fix this. And

it's kind of fascinating how we're doing exactly what you're doing is people really still trying to just get their arms around the problem.

- So we actually have just sort of really embraced this idea that we need community. And so we have opened up our property to a native plant nursery that kind of uses our place as an experimentation.
- We have opened up our property to some folks nearby who keep bees. And so we have their bees.
- So the community, the education, the opportunity for people to be like, oh, you can do that on that small piece of land.
- And that, for me, is the biggest mission is to be like, hey, you have a neighborhood farmer. You have a whole series of neighborhood farmers. We can live next door to you. And it is a good thing to kind of combat the suburban idea of what farming is.
- And I think there will be, maybe give it 50 years, a tremendous opportunity for marketing local produce if we can just get the cottage industries back off the ground and away from the industrial model. Because if I could buy bread from the lady down the street, I would. If I could buy eggs from, well, I sell eggs, but my neighbors are like, oh my God, I will pay \$4 a half dozen for eggs where the chickens have names. Because it makes me feel safe and it makes me feel part of a community. I like that. If only we could unlock some of these dumb laws and regulations,

G4:

- So we're left with employment and nuclear family. And that is really not good. So I found this green space to be just a lovely third space where a community was formed. It almost has the cadence of like a faith tradition congregation. It's like once a week, you meet up, there's a spirituality to being outdoors. There's an ethos of giving back and working together and community. So it's spiritual, it's given back, it's social.
- Yeah, I mean, people, it's all communitarian. Nobody's fucking paying me. I'm only here because the people in the community, which I love, and the people in community all feed back in.
- So it's really about meeting people, getting them plugged in, encouraging them to kind of adopt something. You know, if they have a plant they've worked with, check on it every week, get to know it. So, yeah, people give back in huge ways. It's all about the people power. It really is decentralized.
- And, you know, we just had a couple of people who kind of focused on it. We learned some lessons about how to like intercrop and how to do it with other crops and the timing and placing. And that's just something that wasn't super in our wheelhouse as a community, and that we hadn't really done it in an organized, consistent way. But we did it this year, we learned a lot. And next year, we're definitely gonna do root vegetables again, you know.
- We are a disproportionately young adult. My former community in Columbia Heights was a lot more families and kids. This is a lot of people in their 20s and 30s. Not entirely. You get elderly people, you get families, you get kids and high schoolers, but it's pretty heavy, like young professionals. It definitely skews white with Asian folks well represented. We've got plenty of Black and Hispanic community members, but when you look at the Columbia Heights community and the U Street neighborhood community,

there's a demographic gap there. I think that all of those factors play in from income, just kind of like economic privilege, education, upbringing, cultural priorities. I think all those play a part, but also I think there's a reinforcement of social networks that when you walk by a space and you see a certain group of people in there, that can have a filtering effect on whether or not you feel comfortable entering that space.

- There was so much effective community engagement there that I think he really spearheaded, and that kind of fell apart when that community, that was part of the issue, was around who had the right to be organizing community events, and we're like, we are here interfacing with the community produce.
- And that could have a downstream impact. And then as for volunteers, I think mostly the lonely and the intellectually curious, those lacking outdoor space who can't do a traditional plot or don't have the patience for the waitlist or travel too much. It allows people to be active, really active, intensive farmers and gardeners without needing a space for it, which is such a startup cost or the consistency needed to keep it alive by themselves. Or maybe they just don't want to garden by themselves in their backyard. They want to be part of a community and happy to garden as they go.
- I think a lot of people come to Temperance Alley for the social element they really have no personal there are even a couple people who just don't even pretend to do the plants they just show up and chat they just I've got a buddy Alex Goldman who every time he shows up like Alex you're going to do anything today you know because he's just there to like hang with people so those are those are the gaps that I think I see that I think kind of a like social community motivation yeah a lot of people

G5:

- Cause the other thing that really helped was going to different site visits at other farms and meeting other farmers and going to workshops and attending conferences with other growers. And it's a community that I feel is really special and it's a very like, I found it to be a very welcoming community and supportive where everyone kind of seemed to have everyone's back and was so quick to share resources or knowledge or whatever it was. And as a beginner farmer, that was super helpful for me cause I said, I didn't study agriculture in school or anything that.
- And it just would always make me feel excited and happy to be a part of that community. Cause that's the other piece that's really important to me is the community side of well life in general but the community is so important to agriculture. And I feel they go hand in hand where you can't have community without agriculture cause people need to be fed but you also really can't have farming without community because the idea of a farm is to feed people. And if you were just feeding yourself, I guess that could be a personal farm but that's kind of a homestead at that point. And also farms are just such big pieces of work that require community support in one way or another. And so it's kind of creating that relationship with the community and oftentimes the community kind of has to take that leap of faith that their farm is gonna provide for them and then provide those resources for the farm to be able to do that.
- It's a cool community to be a part of. I also feel an important part of it for me was seeing some of those personal identity things represented as well. So seeing other queer farmers is always huge and not that they don't exist out of urban spaces, but I feel that is something that draws me to urban agriculture a little bit more is seeing other queer and

trans people in the space and how like, I mean, this is so true in so many fields, but the idea of asking someone to picture a farmer and then what stereotypically is then thought of versus what your farmers actually look whenever, you don't, people don't see farmers because we're so disconnected from our food system. So I think that's a huge part for me too is showing that there's space for queer and trans farmers in the agricultural field because I think that is important with the amount of baggage and stereotypes that come with agricultural spaces in a lot of ways as being unfriendly to people who hold those identities. When I found that there's actually so many people who are very friendly to it and it's very open and welcoming in a lot of ways. And obviously there's a lot of work to do and there's plenty of spaces that are very unfriendly.

- So sometimes it takes a long time for someone to respond and we've all been there. So we all kind of get why that is. And also having like, it's taken a couple of years to kind of get those networks created. And so the knowledge is there and you know the knowledge is there because people are doing it and people are feeding their community. But having the access to the, what's the right word? The tools for the communication, maybe the group chat isn't made or maybe there isn't a forum or whatever it is. I feel that's something I've always, as a beginner farmer, I always wanted more of is that connection to other, hyper-local growers were dealing with the same things that you are in the sense of like, it was an unseasonably wet season or whatever it was and other people, in that specific area, how are other people dealing with it?
- But I feel that's something common to other urban growers is part of why maybe they have decided to stay in an urban space to grow instead of looking elsewhere is because of that connection to the community.
- But this idea of making sure the community can also take care of itself.

Appendix 4

Matching Quotes for the Subthemes of Production Factors

E1:

- And when we've gone out and done these interviews with the gardeners, and in that role, I'm at DC, I realized people define themselves as a gardener. We've gone to houses where they've got herbs, and pots, and tomatoes, and then we think they're a grower.
- So sometimes it's very responsive, very reactive. If somebody comes to us and they have something specific they want.

E2:

- And we have been farming there in like a community, we call it communitarian farming, ever since then. And so our methods are very different than your sort of traditional urban farm where people have their own plot.
- But we approach urban agriculture from a community perspective, not individual boxes.
- I guess the only thing I would say is that there are a lot of very different models of urban farming. And so, I think I kind of gave you a little bit of our vibe. But I, a lot of it also depends on what kind of model of urban farming are you practicing, because there's the DC Parks and Rec have like a sort of a way of doing it. And then ours is this very communitarian way where we all grow in beds together, as if it was a mini farm. And so,

the productivities are going to be different, your goals are going to be different, I think, too. most people are not going to be growing enough food in their, small veggie plot to, donate food. But if you grow it on, a semi, I want to call it, it's definitely not like industrial scale at all. But we have the kale bed. And it's we're managing kale and the bed in that and the pests and the nutrition and everything. You can have higher productivity. So it's just something that I think is really cool.

E3:

- And so people like donating their yard space to cultivation. And so I think that's another potential workforce development opportunity of looking at how to have private land that could be contributed to growing food that can get distributed out to the community. And I think there needs to be heavy resources into work like that.
- I think if we really want to look at viable urban strategies and viable food accessibility and addressing some of the systemic barriers that we have, there needs to be a lot of investment and subsidies that make it so it's viable. Because if you look solely on a private commercial setting, the cost just goes way up. If you need to pay your farmer a living wage, you have to pay rent at city prices, utilities at city prices, right? The cost for one tomato goes up pretty significantly. And so I don't think that that in itself is a very viable model, other than, again, those niche kind of specialty markets. So we need to be looking at how can we subsidize the cost of the land and the cost of the labor? And I think with growing displacement needs and cost of living challenges, we also need to be making sure how can that happen in a way that the labor is being paid living wages and the price of consumption isn't pricing people out who need it the most.

E4:

- And then, agriculture would be the production of, food, fiber, for your community.
- I know that there are community gardens that that are not just for consumption, individual consumption. They are getting food out into the community. And that has probably been the hardest thing for me in my position is to network and find who knows these people, because some of them don't believe that they are in a category that could be eligible for a program. And they get they get kind of jammed up in the term community garden instead of urban farm. And they don't think they're able to do anything with the Department of Agriculture and things like that. And eligibility is very, really very minimal, when it comes to being able to get things done. But I wish there was a way for the outlying non Route 95 corridor folks to to get in touch for me to get in touch with them.
- So there are only a handful of urban ag operations that have been operating for, say, more than five to 10 years. There's only a handful, to be honest.
- and I'd like to see urban agriculture accepted, by a wider group of the ag sector. I still think that there are folks that believe that this is a fad, a kind of a post-COVID push. I honestly believe that urban agriculture can be utilized for food supply, just as likely as some of the rural produce and vegetable operations.
- it's a mindset change. It's a paradigm change within the ag sector and a lot of people will resist it until they can't anymore.

E5:

- I think that now I do have a more holistic view of what like urban and innovative production looks like.
- So my, I would intentionally be trying to like work with the community based, either community guardian or like production focus, but like urban community based folks, less of innovative, but I do know about those things too.
- I preface that I was on the board for the Mid-Atlantic Black Farmers Caucus. We cover Virginia, Delaware, Philadelphia, Washington, DC, and Baltimore. So I just came from the Baltimore conference. A lot of our producers are urban producers. I say that to say that cooperative activity is something that I really would like to see more in the urban space. A lot of the larger farmers kind of form the co-ops because they have to, and because the inputs are large and more expensive. I would love to see urban farmers coming together more so we can figure out how to share expenses, resources, and knowledge. With that aggregation as well, I would love to see production-based farms in urban settings. The percentage of just community gardens versus the actual production-based profit business making models that we see is totally off. So I would making businesses in the urban agriculture space and aggregation where people can come together and actually make wholesale things happen at an urban production scale.

E6:

- To me, urban agriculture is any type of production, whether it be food or flowers. apiaries. We've got folks doing, fiber growing, aquaponics, hydroponics. so really producing goods, agricultural goods, in an urban setting. We have mushrooms in there, too.
- Often are thinking about, too, if there's, a certain, level or, threshold of production that, sets someone apart from being, a backyard grower or, a farmer, necessarily.
- I know for the Farm Alliance, when it was, founded, it was very important to the founding members that there was this, a high level of production and people wanted to be, taken seriously. And, kind of, wanted it to be validated that you could grow, a large amount of food in a small space in the city and have it be, viable and productive.
- And so we've kind of seen a little bit of a shift in people, focusing, using their space more towards community venue space, as well as productive growing space. So that's kind of a change we've seen in terms of defining it.
- I think the important part of our membership is that all of the members are autonomous from the farm alliance. So they're really operating in relationship to their communities and are able to identify the needs that they see in their spaces and then respond to them. So it's not just, this, one size fits all, you put a farm here and now you get X, Y, and Z benefits. It's well, that might not benefit that specific space.
- So I think definitely the resource sharing and the network and the connection is a huge piece to the sustainability of our members. I think a lot of members, unfortunately, I think a lot of our farms might not have made it this far had there not been this network supporting them.
- I think most people are definitely trying to provide food access, probably first and foremost, but are also doing all of those other pieces. I think, again, it's very much neighbors want, committing, and investing in their own neighborhoods and wanting to promote, I think, maybe, like health and wellness, kind of the larger, health and wellness

framework could be a way to narrow it in. Because then that kind of touches on, the environmental aspects as well as, the food access and greening and local economies and all that kind of stuff too.

- I do feel like there's like an archetype, like I was talking about, like sort of like the self-sufficiency element. I don't know if that would like fit into these, but I feel I feel like there's a lot of interest in people just like being like empowered by knowledge and experience. And maybe they're not necessarily pursuing a business career or they're thinking it's going to change their neighborhood or whatever, but just like they like know how to do it if they had to. Or and like if they had to, or when the time is right for them to pursue it, I feel like that's maybe kind of something that I see happening.

E7:

- So I like for me personally, urban agriculture includes backyard growers, it includes our urban farms, it includes our community gardens, it includes our school gardens. And it also includes like what is controlled environment ag, whether that is in an individual's home or backyard.
- But I define urban agriculture also as our many flower farmers here in the district. And I think a stretch when it comes to like home gardeners as to people who are just growing flowers versus food. But I think that the ability for people to provide their own flowers is also a kind of agricultural sovereignty that I really admire and respect.
- It is so funny because to be eligible for our urban agriculture tax incentive programs, it has to be at least half an acre. And I just laughed because my part of DC, no one has anything close to half an acre.
- So the last eight years, eight and a half years have been like all within that space of really helping our growers at lots of different levels, grow their own foods, but also think about how they can process them and what are the pathways for them to generating some revenue for themselves from what they grow.
- Like space is such a premium in the district, being able to have a single bed in a community garden. There were wait lists that were many years long, hundreds of people long. And then this competition of like, well, why are you growing flowers? Like I could be growing food in that like that sort of like.
- And so more of our parks and rec facilities have moved to this communal farm model where you can come and volunteer. You can come and help in the farm and you also can harvest and take the food you want from the space because we are producing enough for everyone and more than enough for the people who want to be growing, but also for the people who are food insecure. And so I think that's a really interesting, like an important shift we've made as the district in that way.
- I do think the district does have an incredible amount for our scale of people who are producing and selling food. That there is actually, quote unquote, real agricultural production. And one thing we hear a lot is like the tension between ag land and housing is active. That's real. And this idea that, we can never grow enough to feed everyone in the district, even if we were to be growing on all of the district. And I think some of our controlled environment ag folks would disagree.
- Most of the urban growers I work with are commercial growers.
- And then nonprofits who I'd say their primary motivation is, yes, to feed their communities, but also educational.

G1:

- So validating from the business side that what the sprout is viable, potentially viable. I just got to work at it and then contracts.
- So one of the challenges and barriers is personal. That is a major negative part of my business.
- The gardener, the farmers and the growers, some of them, I think they view me as like competition, which is so silly because I felt like I wasn't much, I wasn't doing much. I'm like, I'm out here just teaching people how to cultivate food, but I don't think it will ever, it's never a threat to you. But I'm recognizing that people see something in me that I don't really see in myself yet. And the accomplishments I made, I'm like, those are nice, but I'm not where I want to be.
- Not to mention some of the challenges with some of these non-profits. If they're creating impact by giving food and not transformational impact by teaching how to do food.
- It can't be money because some of the people have been standing for a very long time. And also there are some people whose reputation you just mentioned and everybody knows.
- Some of the people that have challenged me are tied to the land. I know that sounds crazy, but I'm thinking logically, that's probably what it is, that I have found a niche in agriculture that people truly see as a really good solution, but maybe they aren't able to take advantage of it because they're tied to the land. And then also get this part, if in ag, the agriculture community isn't really a priority in the first place and it's generally ignored.

G2:

- It wasn't a less populated area it was on private land, so that's a big difference from working there and working here is, the context was more rural, it was on private land, and it was also a for-profit farm. And so I think it's one of those things where those factors together, even though they welcomed volunteers in and they were doing a lot of direct marketing the overall context of them, it was just a more traditional market garden rather than something that I would classify as urban agriculture, even though it was still within, pretty easy reach of, market and population centers, just in the sum total. I don't consider them to be, have been an urban farm, and I don't think that they would use that label for themselves either.
- But there's this general sense of people aren't going to just buy from me set up under a pop-up tent on the front lawn of the school. So there's that.
- I think Richmond's really, I would say, yes, definitely, urban city, especially now. Richmond has had a really vibrant Black community and then it's also a really great example of how certain influences or legislation has come in and you can really see how they've changed the communities. And I think you can kind of see that with the sprawl of Richmond, too, in terms of big development happening in the city, what that sprawl looks like. I mean, just like any major city, you would see that, right? So you have this city. It's alternative arts, a lot of cities that don't have, the tons of money or tons of development, they start in arts. It's a place for people to go. They can, it's affordable, all that kind of stuff. And then the more that that grows, larger developments come in and push those smaller communities out. I think Richmond has exactly gone through that. And so, you're

seeing more, and it's interesting in terms of, land use. So, when we talk about urban agriculture, while there was a really good point in time where folks were developing spaces like Tricycle Gardens, like McDonald Gardens from Duran Chavez, you're able to use land in ways that aren't profitable. So, you can, like urban ag growing food, profits, all that kind of stuff. However, we're seeing a lot of vacant land now being used for developing housing, bringing in larger corporations for office buildings or just any kind of corporate development, essentially. So, that's kind of where we're at. So, land is being used for in terms of what that looks like for, I don't know, food production in the city. Luckily, we do have some established spaces. But, I think we're going to continue to kind of see that pull outside of the city center, if that helps bring context into what's going on here.

G3:

- Usually you wouldn't have an urban ag site that's bigger than an acre. It would be rare to have anything up to five acres.
- Because in urban environments you have a lot of soil contamination, so that's a real problem. So in order to, and it's not to say that hoop houses aren't farming. It just kind of really sets up an interesting dynamic between what is farming and who is a farmer, which bears a lot of tension because a hoop house is on the industrial model.
- The folks who are able to do it are able to do it when it's supplemented by something else.
- That's sort of the other thing is it's really hard to find mentors and mentorship because everybody's just really trying to figure it out. And a lot of times when people are trying to figure out, there's no safe way to fail, which is a huge problem in urban farming, is that you have to figure things out, have something else to sustain you until you figure it out enough and then be able to make enough, and there's no one who isn't doing it. Because all the sort of old folks who, you know, ran small farms or knew how to do all this, they're in their 80s, 90s, like they're three generations back, and so it's really, really hard to find any kind of mentorship for anything that's going to be outside the industrial model.
- Other people who have been doing it well are doing sort of the experiential, where they're being supported by short-term rentals in particular, they're being supported by campsites, they're being supported by like winery kind of type operations, where it's all based on the experience. And so they are very much supplementing their income through, in particular, agritourism. So if you're going to do the earth-friendly stuff, you have to do agritourism. If you're going to do the industrial model, you can do that, and there are two or three different ways to do that. The only other thing I have seen be successful, which is what we're trying to do here in Richmond, is when people have access to a way to do preservation of their food and get it shelf stable, that is legal. This is huge and difficult because a lot of our food safety rules are fair and reasonable, but they were also made 100 years ago, before modern refrigeration. There is no reason that you shouldn't be able to make a lot of foods that are perfectly fine if they're stored at a safe temperature.
- And I can't rent anywhere to do cold storage that's small enough for what I need, you know. So it's the scale that is always the issue. But if you have somewhere you can access a tool bank, you can access dry storage, you can access a commercial kitchen to do your food prep, that is absolutely critical to making urban farming work. You cannot make

urban farming work unless you have access to those sorts of preservation operations. And then things can go crazy. But it's just right now you have to be able to process your food if you're a small farmer. And it's so difficult to be able to do that.

- Sure. So in terms of I think kind of what you're getting at in terms of these typologies, I would say there's three kinds of farmers. There's the gardener who is really making food for themselves. They might share with the neighborhood and they're really good at their small situation. And then they want to scale and they might want to start selling to other people. And there is a grand canyon of difficulty going from being a gardener to a small farmer. And that's kind of where most folks in my orbit kind of live. And then, of course, the other one is, is when you want to scale from being a small farmer to being a big farmer, like talk about another Grand Canyon, right? And some of the biggest barriers to that are one equipment. Equipment is not designed for this. Equipment is designed for the industrial farms. And then as you kind of go down in scale, you go up in labor. So your gardener is doing most of the labor by hand. They're doing the labor by themselves. The gulf between when you have to go from one or two hands to multiple hands, that's a massive barrier because it's not just finding people, but it's the money to pay them.
- And this is where a lot of small farmers turn to animals because animals will do a lot of this work for you. So like the animals will do the turning. The animals will do the clearing. The animals will just sit over there and make a product for you. But the localities hate animals and they will work as hard as they possibly can to make it like by law. And this may be one of those cases I am setting up. Henrico County could walk in here and tell me that I am not allowed to have a single chicken on 10 acres because of the setback rules for agricultural. If somebody comes in and zones the property next door residential, all of a sudden setback rules apply to you, which is so illegal, but that's what they do. And then you'd have to fight that. So they have decided not to push my buttons yet because possibly because I'm so outspoken, but basically because I'm surrounded by residential property, I could not have a single chicken on 10 acres. And so this is the problem is that like, if you want to have green things and vegetables only, you're going to have an equipment problem and you're going to need to manage that at a scale that may or may not be financially possible for you. If you want animals to kind of pick up some of the slack for you, you're going to have to fight the legal structures. And so these are some of the scale issues. And then the last thing I'll say about barriers is access to land. Because of the way that the financing works, you can't buy land.
- I love the tool of a conservation easement. And people are like, yeah, that's a panacea. Like just start putting all these farms under conservation easements. And it's like, no, because increasingly farmers do not live on their farms and you can't buy land.
- Everybody has a nonprofit and the nonprofits are bullshit. But everybody, every small farmer I know has a full for profit and a nonprofit. It's the only way to make it work sometimes. Because nobody will give grants to a for profit. They're like, you should be making your own money.
- The only way you can make money is going to be on value add.
- They're only focused on the industrial model. And I am really worried that if we don't really hardcore start investing in a lot of our small farmers and those co-op models, farms are going to disappear in two generations. Like you, I can't afford to buy land. Damn sure can't afford to buy a working farm. So I've either got to inherit it or I've got to figure out how to start it and get there.

- They want people to keep people shopping at supermarkets. So I think Big Ag has either got a break or Big Ag has got to go downhill. Big Ag has got to loosen its grip somehow.

G4:

- And we are decentralized. We are communitarian. We are all volunteer.
- And the idea is that we would build up a library that in my like ideal world, we can even put it on our website and have it be like sortable. So you can search like harvest carrots, and like cross reference and see if there's like a little like clip comes up that tells you how to harvest carrots. So that's like a longer medium term goal that I would love is to have that kind of like resource building around the knowledge because it is kind of just in people's heads.
- I think time is a big barrier to urban farming. I think that is just huge.
- It took a young white community activist with lots of time on his hands to get the lease on the first hand. Not that it has to go that way, but I think there was privilege behind someone making, like, starting the project before even the question of who's going to be making it happen, or coming through the gates.
- I think that having some sort of like stipend or fellowship system um where the people who are dedicating like serious hours to this can get in some way remunerated I think that would be great and it's tough because there's like the social connections and community involvement standpoint but also could address some of the issues of access just that it like it takes some privilege to just spend a huge amount of your time volunteering and especially if we're asking one volunteer to do like a shift of serious work not just be like there with everyone else volunteering I think that would be a good shift and would really help us organizationally uh with just kind of like consistency and professionalism.
- We've done organized like giveaways to other spaces but it just got me it has got me thinking I imagine that a lot of spaces end up with like extra crops in the spring or even a lot of spaces do seed collection and have extra seeds in the fall or they have extra irises that they can divide that they don't necessarily have space for but some kind of organized resource sharing like the like uh mycorrhizal fungus connecting the roots of the trees to like redistribute resources and spread information like Doug and Rooting DC connect organizations and they advertise events but I wonder if there could be some kind of resource sharing around.

G5:

- So describing ourselves as an urban agriculture farm doesn't necessarily always feel accurate. That is not a super helpful answer in terms of how I define it, but I feel it's how I define it is something that is nuanced and there's gray space for it. And in many ways, I feel it's a feeling that you get kind of with it. And it's also very related to kind of the community that surrounds you.
- If people heard the term urban agriculture and they could imagine a style of growing that... I don't know, because it really depends on the city because you can... Oftentimes urban agriculture is very much initially, at least my gut instinct is to think of like, okay, also a small scale. You're working with tighter spaces, you're maybe working with more unique growing styles, growing techniques, but then I would consider the Black Butterfly Farm in Baltimore an urban agriculture production. And they are in a pretty open field and look similar to spaces that are more rural as well. So none of that is helpful in

necessarily finding a specific definition. It's more so, I guess, bringing up more questions than answers. But I think a couple of pillars, I think that would be helpful to hold up the definition of agriculture would be like, who, where is it happening? Like, is it within the just physical boundaries of a urban center? So location is part of it. And then who is it serving in the sense of like, is it serving people in that same urban center or is it kind of being distributed elsewhere? So I think location and population served are would be two important aspects because I said, with growing style, it's so varied or it can be so varied.

- We have used both and sometimes in the same grant urban for define ourselves urban agriculture and suburban. And sometimes we say urban-suburban, urban/ suburban agriculture because as an educational farm in some of our demonstration gardens, it is mimicking a style that would be possible in a more urban center if you don't have access to inground planting. But then we also offer styles of growing that are more available to people in a suburban setting that might have access to a yard or a lawn space. And then we also have a 10th of an acre plot that is more of a market garden style, which would be more of that quote unquote traditional small scale regenerative ag.
- And I would say from my perspective, my experience at least, whether or not they claim to be regenerative, a lot of the urban agriculture productions I've seen are lean more towards regenerative. Oftentimes because they have to, because it's more cost effective and they were probably working with poor quality soils and it just makes sense to use those practices.
- This is a huge kind of systems, cultural level change that I would to see happen with the nonprofit space as a whole, but just the funding structure of it being a little more, I guess equitable, fair, just all of that, but also maybe decentralized or it's just very challenging when your organization, your production, especially for farming, that is so specific and time-bound and is not always something that you can just like, grants are always looking for something innovative and new and unique. And sometimes what you're doing is meeting the need of your community and you're doing it well and you just need help with labor or you just need help with materials or whatever it is. And a lot of grants, we've been lucky to create some relationships to find some that are able to meet those more, but a lot of grants and funders as a whole want that shiny new thing and aren't interested in funding that more sustained projects, sustained work. And that creates a system that leaves the growers at the whim of the funders. And so that creates a really destable food system or not destable, unstable food system in the sense that there's people who are relying on our produce as for their nutritional needs, their day-today basic nutritional needs that are at the whim of people who have a lot of resources. And it's like, there's lots of steps in between there. there's definitely importance of the nonprofits keeping their funders accountable. And I would to see that happen more in, but that means every nonprofit has to do that. And there's a scarcity mindset in nonprofit worlds that's really challenging that creates a competitive environment. It's very collaborative as well, but it's very competitive in when everyone's competing for the same chunk of resources that is a small kind of amount of resources there that the funders who have, the funders offering those resources have a lot more resources to give, but it's everyone kind of fighting for the whatever amount they've decided to give that year. It's something we've been experiencing a lot recently with grants getting cut and we're really lucky that we're even able to have our donations be quote unquote purchased from some of our food pantries because the grant, the people who are providing the grant decided to pretty much cut all

domestic funding and go towards international with the, as soon as USAID got shut down.

Appendix 5

Matching Quotes for the Subthemes of General Observations

E1:

- And when we've gone out and done these interviews with the gardeners, and in that role, I'm at DC, I realized people define themselves as a gardener. We've gone to houses where they've got herbs, and pots, and tomatoes, and then we think they're a grower.
- People were very familiar with it, and ran into a couple of people for whom it wasn't really an ideal fit to speak with them. But there are so many people in leadership positions in DC government, who are familiar with all that's going on, and including the need why we're doing this. And then there's so many smaller groups and farms, even in DC, which, as a researcher, you'll appreciate, it leads me to think, what else is going on here, to try to uncover that we have this very rich history of people using the land to support themselves and share their, with their catch and their produce.
- I run into a lot of people who are growing as they want to make this a career. They want to grow and they want it to be big enough that they can support themselves and their families.
- Maybe because it's DC and the racial politics of DC are so embedded in how the city is grown and how the land's been divided and used over time. There's also seems to be a subgroup of people who are all about this agroecology. We grow because we can and we can share with our neighbors who need some food.
- Transportation, education, almost everybody that we talked to in the focus groups also wanted to know where can I get more information? Some we had reached through our volunteer base, our master gardeners, but others didn't even know about these programs. And then even though we have all of them, I'm not sure they realize they can take that class.
- Some of the spaces that we've heard about get locked at certain times of the day. So if you're working all day and then you either need to take a bus or drive over to your plot because you're bringing your water or you've got tools, that's tricky, right?
- There was, in some cases, reference to needing more beds that were raised to meet an older population.
- What was interesting was hearing in some of our focus groups, how people do this, and how they'll go to someone and say, wait, how did how were you able to extend, your zucchini growing season, and then people share that knowledge, as well as sharing the actual product from the gardening.

E2:

- If you show up to a farming on the weekend, there's a couple things, but some people are just they're afraid of pulling a crop, most people are afraid that they're going to weed a crop.
- So usually, it's stuff like that people are afraid or I had one person who didn't understand how to harvest, like different crops require harvesting in different ways.

E3:

- So I think some similarities and some assumptions right from around here are that the food that's being grown locally is not for local consumption.
- I think hands-on courses are definitely more impactful than virtual ones.
- But I think there also needs to be a distinction of like the type of programming and the importance of the goals. Unless we have really kind of radical policy change, I don't think urban agriculture is going to be anything that can be done on a commercial scale successfully. I think it serves a lot more place to be education-centered and exposure-centered, which I think is crucial for someone who's never seen a broccoli grow or never tasted a fresh tomato or to kind of have a culture and value around the importance of fresh and healthy foods and be exposed to that and learn how to potentially go back and do it yourself.
- But I think with that too is like we really need to be investing in workforce training programs.
- There's the Master Gardeners Program, but that's also a little bit more of a niche focus.
- Think there's more of an interest of serving their community and wanting to work with plants and growing food. Like kind of the satisfaction from growing food, but not really having a formal education and growing practices.

E4:

- But what I think is lacking is either an advanced level program that follows up the beginner or an intro to urban farming or small-scale farming. And the other thing is, I think, either local governments or even state government agencies need to get a little bit more involved in helping get these beginner farmers started.
- I know that there are community gardens that that are not just for consumption, individual consumption. They are getting food out into the community. And that has probably been the hardest thing for me in my position is to network and find who knows these people, because some of them don't believe that they are in a category that could be eligible for a program. And they get they get kind of jammed up in the term community garden instead of urban farm. And they don't think they're able to do anything with the Department of Agriculture and things like that. And eligibility is very, really very minimal, when it comes to being able to get things done. But I wish there was a way for the outlying non Route 95 corridor folks to to get in touch for me to get in touch with them.

E5:

- So, maybe not just the knowledge, but the actual like resource or funding that comes from the workshop. I think that's that networking.
- I would say like land access. Like if I could change anything, it would be easier to green a city space that would need more direct funding.

E6;

- So in Baltimore, this was a historically redlined city. And so that really that kind of delineation between the neighborhoods in the beginning of creation of the neighborhoods

has basically defined the entire, the entire ecosystem of our city. So we have patterns of disinvestment in certain areas. We have patterns of investment in other areas. And all of that relates really strongly to health and wellness and general like resources for the residents here. It has created a lot of segregation, as well as limited access to resources. So a lot of our members are located in neighborhoods that don't have access to as many resources as, the white L of the city. Are you familiar with the, white L of the black butterfly? So, yeah, a lot of our farms were founded, actually, to provide, the services that were lacking in these neighborhoods, whether it be, like I mentioned, revitalizing green space that was, previously a vacant lot or a dumping ground for neighbor's trash or whatever. Or then being, a productive garden space. So a lot of people were really trying to put positive energy back into the communities that they live in and create spaces that were beautiful and productive and enjoyable, as opposed to just, basically fallen to the wayside.

- I think right now, it is very, trendy to be farming or growing food and that's great. But, making sure that there's accurate information, or that people aren't necessarily wasting their money on things that they think they need to buy because they saw someone using it on the internet.
- I think the trendiness is not a negative thing, but it does sometimes give people an unrealistic view of the amount of work that goes into stewarding.
- So I think definitely the resource sharing and the network and the connection is a huge piece to the sustainability of our members. I think a lot of members, unfortunately, I think a lot of our farms might not have made it this far had there not been this network supporting them.

E7

- And we've really invested in a lot of garden based education in schools, which I do think is really important. But we don't necessarily do a similar amount for seniors or just for folks who might be parents or people in a more like middle of their life, people in their 20s, like making ag accessible for those diversity of people. I think because there's a perception that it's very time consuming, it is targeted towards seniors and young people. But I think there's a way to make agriculture one be seen as a pathway.
- That is like a cultural shift that will like is not a resource challenge. It's like a larger systemic challenge for us to address. But I do think that making our resources accessible and culturally appropriate is important.
- We provide very well to students and we don't provide very well to residents, I'd say. And I think that like the idea of asking farmers to come down on their price where we're not paying the fair price for what we buy at the grocery store. And unfortunately, as we move to bearing more of the environmental externalities that we've been internalizing, and as we look at like shifting potentially some of the subsidies that we have that have supported industrial agriculture for so long, and in the current economic climate of tariffs, it's food is going to be more expensive. And recognizing that like food has a value because if you are growing it yourself, you like, you know so well how hard it is to grow.

G2:

- It wasn't a less populated area it was on private land, so that's a big difference from working there and working here is, the context was more rural, it was on private land, and

it was also a for-profit farm. And so I think it's one of those things where those factors together, even though they welcomed volunteers in and they were doing a lot of direct marketing the overall context of them, it was just a more traditional market garden rather than something that I would classify as urban agriculture, even though it was still within, pretty easy reach of, market and population centers, just in the sum total. I don't consider them to be, have been an urban farm, and I don't think that they would use that label for themselves either.

- So, students and faculty and teachers, they get to kind of have this, first point of experience with us on the daily. you walk by and you see food growing and things like that. And so I guess my thoughts are marketing to the school students does a lot, if anything, see it every day or "I see that flower today". "I didn't see it a month ago". So I think that does a lot more, at least that's my idea.
- I think Richmond's really, I would say, yes, definitely, urban city, especially now. Richmond has had a really vibrant Black community and then it's also a really great example of how certain influences or legislation has come in and you can really see how they've changed the communities. And I think you can kind of see that with the sprawl of Richmond, too, in terms of big development happening in the city, what that sprawl looks like. I mean, just like any major city, you would see that, right? So you have this city. It's alternative arts, a lot of cities that don't have, the tons of money or tons of development, they start in arts. It's a place for people to go. They can, it's affordable, all that kind of stuff. And then the more that that grows, larger developments come in and push those smaller communities out. I think Richmond has exactly gone through that. And so, you're seeing more, and it's interesting in terms of, land use. So, when we talk about urban agriculture, while there was a really good point in time where folks were developing spaces like Tricycle Gardens, like McDonald Gardens from Duran Chavez, you're able to use land in ways that aren't profitable. So, you can, like urban ag growing food, profits, all that kind of stuff. However, we're seeing a lot of vacant land now being used for developing housing, bringing in larger corporations for office buildings or just any kind of corporate development, essentially. So, that's kind of where we're at. So, land is being used for in terms of what that looks like for, I don't know, food production in the city. Luckily, we do have some established spaces. But, I think we're going to continue to kind of see that pull outside of the city center, if that helps bring context into what's going on here.

G4:

- So public resources are huge, you know, especially for an urban farmer.
- So I think it really is a question of like decentralized knowledge gain, I think. And to some extent, I'm decentralized. Like I spend a lot of time researching and putting together a planting plan that I get approved, you know, that doesn't entirely get like crowdsourced out of nowhere.
- We are a disproportionately young adult. My former community in Columbia Heights was a lot more families and kids. This is a lot of people in their 20s and 30s. Not entirely. You get elderly people, you get families, you get kids and high schoolers, but it's pretty heavy, like young professionals. It definitely skews white with Asian folks well represented. We've got plenty of Black and Hispanic community members, but when you look at the Columbia Heights community and the U Street neighborhood community,

there's a demographic gap there. I think that all of those factors play in from income, just kind of like economic privilege, education, upbringing, cultural priorities. I think all those play a part, but also I think there's a reinforcement of social networks that when you walk by a space and you see a certain group of people in there, that can have a filtering effect on whether or not you feel comfortable entering that space.

- Our harvest is basically the big evidence point or output that we can quantify.
- It would depend on the grants because they're often focused or restricted.
- I think the top priority would be uh people and volunteers and removing some of that like socioeconomic barrier to participation.
- We've done organized like giveaways to other spaces but it just got me it has got me thinking I imagine that a lot of spaces end up with like extra crops in the spring or even a lot of spaces do seed collection and have extra seeds in the fall or they have extra irises that they can divide that they don't necessarily have space for but some kind of organized resource sharing like the like uh mycorrhizal fungus connecting the roots of the trees to like redistribute resources and spread information like Doug and Rooting DC connect organizations and they advertise events but I wonder if there could be some kind of resource sharing around.

G5:

- But urban agriculture, I feel there's just the face value definition of any sort of agricultural production growth in a urban setting. I feel how people define urban can be ambiguous.
- If people heard the term urban agriculture and they could imagine a style of growing that... I don't know, because it really depends on the city because you can... Oftentimes urban agriculture is very much initially, at least my gut instinct is to think of like, okay, also a small scale. You're working with tighter spaces, you're maybe working with more unique growing styles, growing techniques, but then I would consider the Black Butterfly Farm in Baltimore an urban agriculture production. And they are in a pretty open field and look similar to spaces that are more rural as well. So none of that is helpful in necessarily finding a specific definition. It's more so, I guess, bringing up more questions than answers. But I think a couple of pillars, I think that would be helpful to hold up the definition of agriculture would be like, who, where is it happening? Like, is it within the just physical boundaries of a urban center? So location is part of it. And then who is it serving in the sense of like, is it serving people in that same urban center or is it kind of being distributed elsewhere? So I think location and population served are would be two important aspects because I said, with growing style, it's so varied or it can be so varied.
- This pairs two very big, important parts of my life with food systems work and working outside in different ecosystems and being in tune with the land and trying to be a part of restoration projects and working to make the outdoors a more accessible place and getting people excited about being outside and getting them connected to where their food comes and caring about that. So it was this marriage of all of these different passions of mine that came together in specifically, I would say the regenerative, small scale and urban agricultural scene.
- And I would say from my perspective, my experience at least, whether or not they claim to be regenerative, a lot of the urban agriculture productions I've seen are lean more towards regenerative. Oftentimes because they have to, because it's more cost effective

and they were probably working with poor quality soils and it just makes sense to use those practices.

- Well, yeah, not coming from the ag from a career kind of perspective into it, there's a vocabulary that you have to learn, but I feel that's any kind of profession. And I feel that was amplified for me being in a nonprofit space because nonprofits love acronyms and love lingo. And especially a big reason why that is the case is because of being grant funded. And so then you have to use a specific language based off of what who your funder is to make it a more appealing ask. Yeah, there's definitely a learning curve there around the language used around it. And the whole reason your project exists, there's a lot of language that's used that isn't so well defined. And so people have their own kind of definitions and so learning things how much flexibility some of the vocabulary had around what people would consider regenerative ag or sustainable ag or no till or things that, which can make it a little bit harder to kind of ground yourself in the vocabulary as well.
- This is a huge kind of systems, cultural level change that I would to see happen with the nonprofit space as a whole, but just the funding structure of it being a little more, I guess equitable, fair, just all of that, but also maybe decentralized or it's just very challenging when your organization, your production, especially for farming, that is so specific and time-bound and is not always something that you can just like, grants are always looking for something innovative and new and unique. And sometimes what you're doing is meeting the need of your community and you're doing it well and you just need help with labor or you just need help with materials or whatever it is. And a lot of grants, we've been lucky to create some relationships to find some that are able to meet those more, but a lot of grants and funders as a whole want that shiny new thing and aren't interested in funding that more sustained projects, sustained work. And that creates a system that leaves the growers at the whim of the funders. And so that creates a really destable food system or not destable, unstable food system in the sense that there's people who are relying on our produce as for their nutritional needs, their day-today basic nutritional needs that are at the whim of people who have a lot of resources. And it's like, there's lots of steps in between there. There's definitely importance of the nonprofits keeping their funders accountable. And I would to see that happen more in, but that means every nonprofit has to do that. And there's a scarcity mindset in nonprofit worlds that's really challenging that creates a competitive environment. It's very collaborative as well, but it's very competitive in when everyone's competing for the same chunk of resources that is a small kind of amount of resources there that the funders who have, the funders offering those resources have a lot more resources to give, but it's everyone kind of fighting for the whatever amount they've decided to give that year. It's something we've been experiencing a lot recently with grants getting cut and we're really lucky that we're even able to have our donations be quote unquote purchased from some of our food pantries because the grant, the people who are providing the grant decided to pretty much cut all domestic funding and go towards international with the, as soon as USAID got shut down.
- But there's so many barriers to access with grant writing. You have to know it's a specific language with grant writing, it's a specific structure, it's logging into the portal is sometimes the hardest part. Federal grants, hate that, it's the worst. you need a degree just to log in, a degree in logging into the USDA portal is the worst. And yeah, I said, that

vocabulary, knowing what words to use to get that money, having a specific kind of time-bound project that is something that the grantor can understand.

Appendix 6

Matching Quotes for the Subthemes of Emotions, Sentiments, & Future Desires

Joys of Urban Agriculture

E1:

- I'm showing that as an example because I love how organic that was. We didn't go in with any intent.
- And the students were adorable. They would tell us why they were more nutritious and how they had grown them. So we may have developed a few budding farmers through that as well.
- It's really heartening to have so many students either say they've come into the program, the urban sustainability program, because they're growers and they want to learn more, or be interested about growing as part of the curriculum that we're going to cover.
- My students are more curious because they remember growing as a kid and they're not really into it now, but they remember it with family, grandparents, parents, aunts, and uncles. So that's really interesting for me. And we run into some of that with some of the interviews too, that there seems to be a sort of reverent sentimentalism around it. Like it's a happy memories.
- So I do think causes does a great job. And it's been really heartening for me to talk with policy leaders in DC. So many people know about this issue and they feel strongly as well.

E2:

- I just really love growing food. So I learned that from my dad. My dad grew a lot of our own food when I was a kid. And I've worked in agriculture, like my research is on agriculture. And I've worked and lived all over the world. But when I came to DC, I knew that I wanted to find a community garden or I wanted to be able to grow some of my own food.

E3:

- There's a kind of intangible piece that's really underrated and community building around growing spaces and mental health and stress reduction that can go in places that might be higher stress environments and have a place to be in a green space and a calmer space, right? And like the impact that that can have as well, aside from the more tangible like health and food insecurity pieces.

E4:

- So they come together so that they can meet that need. But a lot of it is just focusing on the immediate community around their location. That's been a very appealing and interesting thing that I've learned over the last few years.
- They just like to do their work. What I have found with urban ag is they want to talk about what they're doing because they know it's important for people to hear. And that

has been a genuine joy to see how many people actually want to just stand up and talk about what they're doing, even though they just got started six months ago. Maybe it's their first growing season. They still want to talk about it. And that's great.

E6:

- Because you're tending to something, you're caring about it, it's transforming, it's growing, and then you get to share it with other people. And I just thought that that was really beautiful and inspiring.

E7:

- But I grow all of the ground cherries for myself. And it's like, OK, that's one crop that I love that I know I can grow and I grow all the tomatoes I use. So I use tomatoes and ground cherries to my favorite things to grow. And so I have a tiny amount of space. I have a truly, very small household. A few tomato plants are plenty.
- But partly I'm for me growing food and knowing where my food came from was always really essential part for me.
- I think that I became really passionate in seeing what residents already knew what what tools they already had and where there were gaps.

G1:

- And I was able to start growing food with, I get paid to, to grow food with children, teach them a skill they can never unlearn with soil and seeds. And we would so grow harvest and prepare meals with what they grew. So it was quite fulfilling. I'm for, you know, it's a fulfilling passion.

G3:

- So just really that ongoing connection to the land. And I became an environmental lawyer basically as sort of the back door to that where I was like, these places and spaces really matter. And so what can I do to save them? And what can I do to help people protect them? And I've sort of developed a sidebar in agricultural law, things like the Right to Farm Act and helping people continue farming operations and find new ways to do things. Like worked on a case with a cemetery recently. And like, how can we make connections and turn cemeteries into living spaces instead of dead spaces, which is not actually a joke. It kind of is. I love it.
- And I just wanted to have that connection. It just always spoke to me that like, I love farming.
- And so I think that's the happy spot for me is that the people that I am getting produce to, that I'm selling produce to are just so entranced by the idea that you can have farming in your community, that that's worth it.

G4:

- Because the volunteers who come are receiving such a great service. They're getting free curated nature time and education.

G5:

- I really that piece of it, community and farming. And more personally, I just really working outside. I the activity of it. I how it keeps me kind of in tune with seasons. I the seasonality of it. And I love being able to have access to fresh grown, regeneratively grown produce. I love to cook, I love eating. And so having access to the best stuff is you can't beat it.
- And it also can be very healing space as well. I feel regenerative ag gives me a sense of purpose when it can feel climate change is impending, we're already feeling the impacts of them on our farm, negative impacts from climate change. Right now is a perfect example with the government shutdown and our food assistance partners are in huge need of produce and we're in one of the wealthiest counties in Maryland and the country, even in Howard County. And there's still so much food insecurity and need. And so that is really fulfilling work for me and can be very grounding and centering.

Frustrations to Urban Agriculture

E1:

- This idea that planning is part of sustainability. And then when you look at planning and sustainability, and I teach these now, the incorporation of food is not always included, even though it touches on so many of the things we discuss. How do we allocate land use? How do we ensure people are healthy? What are the costs of our practices and policies, including the cost of transporting food a long way, right? That's a big toll. People are very divorced from their food. So I think I came at this in a very iterative way. a lot of things were pointing towards it.
- And I think that's sort of focused in part of the problem that we have in these urban areas, we do not have a ton of space, there's waitlist to use the gardens.
- So for purposes of this project, we got all the way to the grower interviews before the National Park Service said, you cannot conduct surveys on any federal land. So we have enough growers. I'm sure we can find them. But that was a surprise, and that may be unique to the current administration and the issues the Park Service is facing under their leadership.
- And it's frustrating to see these partnerships cut, not even unravel a little bit.
- We cannot help you with this seemed frustrating. We've all worked together for a long time, all on the same side of these issues. And we just decided, yeah, they have it even tougher than we do.
- But are we reaching everybody? No. But I mean, I don't also hear people saying, I guess the biggest complaint is sometimes people say, I have tried to get into that Master Gardener class like for two years now, and I can't get in. And we think that's frustrating. But we do try to make sure there's a mix of participants from every ward. So if we get a lot of people applying from, wealthy Ward 3, they are not all going to get in. We need to make sure everybody has a chance to participate in there.
- That's the same thing with chickens. Among the Master Gardener volunteer group, especially, there are a lot of people who are trying to bring more of this into the schools. And in D.C. for a while, they had organized that, but I think they lost their funding. Trying to remember what I heard in my own policy actor interviews.

- My former boss is at USDA. I don't think they have anything these days. We went over to visit and it's, an empty building. It's very sad. But I do think there's some grassroots opportunities and maybe not too far from home too.
- Why aren't there more fruit trees? We have a non-profit in the district that puts together a map of where all the fruiting trees are. But again, if it's on federal land, you're not really allowed to take anything. So if it's a street tree, yeah, maybe you could get some walnuts, some service berries, but not on federal land. So that makes it tricky. So information, access, these artificial barriers, like not being able to take stuff on federal land. I mean, when we used to talk about this from a naturalist perspective, you can grow some for you and some for the habitat. But we're in a pretty urban area. I'm not sure the habitat are reliant on anything that's growing in Rock Creek. that's beyond my knowledge.

E2:

- There's like literal physical barriers to entry to community members. And so to the extent that you can create, like the people like feel like it's their space, and they don't just have to garden there, they can have a birthday party, they can have a wedding, they can come in and read a book. That's one of the things and it is a struggle because there are people who are going to come in like the other day, like somebody made a little fire in the garden. I don't know why

E3:

- And there's some online programs, but again, that doesn't necessarily translate to what the needs are. So, it's been hard to find a fit for having something that's more structured and kind of formal training to advance the capacity and the skills of our staff that are growing.
- I think there are some language barrier challenges within some of the communities we have and not the ability to communicate with all folks. There's large populations that are non-English speakers here. And so, that can create some challenges.
- And then, just the scale to, again, like we can't grow enough food for 10,000, 15,000 people or so to significantly rely on the food that we grow with a half acre. So, we're also exploring like how are there more opportunities within the city to access more growing spaces, which is tricky in a place that also sees a lot of housing, need for housing, which is also similar to San Francisco growing space competing with housing space and how to balance that.

E4:

- I know that there are community gardens that that are not just for consumption, individual consumption. They are getting food out into the community. And that has probably been the hardest thing for me in my position is to network and find who knows these people, because some of them don't believe that they are in a category that could be eligible for a program. And they get they get kind of jammed up in the term community garden instead of urban farm. And they don't think they're able to do anything with the Department of Agriculture and things like that. And eligibility is very, really very minimal, when it comes to being able to get things done. But I wish there was a way for the outlying non Route 95 corridor folks to get in touch for me to get in touch with them.

- How cropping rotation for these smaller operations affect their nutrient management plan and how difficult it is to get a nutrient management plan written without doing it like three times a year.
- I would love to hear the voices of urban ag and small farms, make it into Maryland Farm Bureau, make it into policy decisions during session. These folks need to be able to, to understand that going to Annapolis and testifying during a bill, especially if it comes with funding, is important. It can't just be one person. It has to be a collective with some oomph behind what folks are saying, so that they can be recognized right alongside those traditional rural agricultural operations.
- Especially coming out of the beginning farmer programs. Cause they go through this training and then have nowhere to go. And it's difficult to find that first patch of land.
- And I'd like to see urban agriculture accepted, by a wider group of the ag sector. I still think that there are folks that believe that this is a fad, a kind of a post-COVID push. I honestly believe that urban agriculture can be utilized for food supply, just as likely as some of the rural produce and vegetable operations.

E5:

- I felt like when I entered the field, there was a bootstrap resourcing going on. So it's hard to like really advance when you're starting from nothing, especially these on the ground initiatives. And then it's also hard to build network and team and capacity when you're starting with nothing because people don't want to work for free. They're trying to find the like meaning in things while they have all these other things going on. I think that's a barrier. And so that also lends to labor at the spaces. Let's see. I would also say just connections. So when I started as a technical assistance provider, we did food safety, gap certifications, food safety plans. Then we also did wholesale, packaging, wash pad, those types of things. I think it's hard to know all the players. Like it takes a long time to know all the extension people, all the farmers market people. Like it's a vast network. And then the farmers also are siloed a lot. Like the farmers are kind of just in their own little zone of doing things. So just knowing all the stakeholders would be like a large barrier.
- A lot of our work that we're doing, it was very, very hard to do without the funding and without the capacity of some of these universities that are helping us right now. Especially when like there's no payroll, we're just kind of like on the ground trying to form these co-ops together, but everybody also has to go farm. So I would say both producer-based and then extension and higher education back. Definitely not federal funding. I think that I am a young person and I have not seen much of how cyclical and the cycles and the volatileness of the federal funding landscape. I'm new here. So I feel like I'm kind of just being blatantly exposed to how untrustworthy, like I said, how volatile it is for our communities and for these urban producers, especially with the, we know the statistics and the demographics of these places in these urban places. So yeah, I would definitely say not federal funding.
- So they have a bucket of funding. So their first year, they didn't release the funding. The second year, they made an announcement that they were going to release the funding, then took it down. And then now this year, they don't know what they're going to do, if they're doing anything. So it's like the money's just sitting, but it's like everybody knows the money is sitting there. So anyway, it's just a very interesting dynamic of things.

E6:

- And I think that's something that's been challenging for some of our members is they're often in their earlier stages of learning and then they, also are running the show. And, I know that that can just be like a lot to manage, again, because there's so many demands for urban growers. You really can't just be a farm. You're also, a space for education. You're a resource. You're a community center. It's, even if you don't want to be, still a neighbor comes up to you and your whole day is thrown off, right?
- I think terminology is definitely a thing. I think welcoming spaces or, farmer spaces are sometimes very masculine, and super predominantly white. So, that can often be a barrier for people. I know I am also really short, so I was a small woman doing the work. I definitely had people commenting about my physical ability to do things. And so that I think can often be a barrier, even if it's not for me, but perceived by those around me.
- I think that getting more infrastructure support, or infrastructure support from the city would be really helpful. A lot of our members are challenged with water access or getting power to their sites.

E7:

- USDA doesn't include the district in its ag census because it's considered that it's not like there's not enough agriculture here. And I think that's something I'm really actively advocating for on a national level, like we actually do have plenty of agriculture here.
- The local networks to tap into, I think that like there are cultural barriers. Again, this idea of like what a gardener is and this idea that a gardener is like a pretty white, like it conjures an idea of like an older white woman with a hat in her garden. And I think the idea of then like what the image we have of a farmer and being like, how can we communicate that our resources really are for everyone?
- And I think restricting chickens are a really incredible part of food sovereignty, because you can be generating protein for very as well as lots of other cultures, like benefits of having chickens.
- Think the more plant based agricultural resource I would aspect with change is accessing land. And so land access is definitely the biggest challenge we hear over and over again, both for community gardens, residents and people who want to be growing commercially.
- And there's lots of areas that are underutilized or that the district owns as sort of buffer zones. What we've put in rain gardens. I love rain gardens. And there is a little tension between rain gardens and urban agriculture from a nutrient management perspective. But I think we could be growing in a lot more spaces and what resources we need.

G1:

- So I didn't really go to farmers or anything, but I got my break in validation when I was signing up for Baltimore city recs and parks and, I got a contract with them. I also signed up for innovation works boost program and it was quite validating them because I hadn't made that much money.
- So be patient. It's just, I feel like we're racing against the clock for anything devastating that could happen into our food system. And the most vulnerable population would not be prepared. Most people are okay. But if you're working every day, you're working class and you are living check to check, you don't have time to prepare or ready yourself.

You're mostly focusing on living day to day. And I'm thinking that preparing people with that new skill is absolutely necessary. So I get myself worked up into a panic about that.

- People aren't always jealous of the thing or the physical material thing. It could be charisma.
- There's some communities that are affected more than others with asthma, low birth, miscarriages because of the environmental issues. So it's not just about eating food and eating healthy. Also the, the mindset of people, if their belly is full, who cares what was in it? You know, who has time to care about those things? And a capitalist society, especially for the working class, is get what you can get and move on.
- And so we talk about agriculture and urban communities. It can't just be about food. It's not just about food. It's also the environment heavily. And people just dealing with stuff and they're not, they don't even know. They're like, well, I just have asthma. No, you live in an area where a lot of people have it. It's separated by area and space, but then there's another layer of race. Okay. There's a lot of farmers who are mostly white. I think I've only ever seen the white people that have like these huge cattle farms. The kids know how to wrangle goats and up North and they got 4-H programs that were really strong. And then you come into the urban space, which kind of makes sense that it's an urban space. So the priorities of the traditional family careers would be a little different if farms have always been up North. And then the urban space is like the career oriented place. And that kind of separates in agriculture too. So there's pockets of oasis of spaces where farming and gardening and the people who really want it. So they'll go get adopt a lot from Baltimore city, had these strong desires to and practice and will to keep their farms and gardens going. But then there's heavy industry on the outskirts in these suburban areas that farming is just second nature, healthy air, bountiful, healthy food, meat, industry, money, being able to continue the legacy and financial wealth with agriculture is really prevalent outside.

G2;

- I think like the collaboration between those entities, I think there are a lot different groups with similar end goals, but yet not a lot of like overlap in terms of like collaboration and communication.

G3:

- Because in urban environments you have a lot of soil contamination, so that's a real problem. So in order to, and it's not to say that hoop houses aren't farming. It just kind of really sets up an interesting dynamic between what is farming and who is a farmer, which bears a lot of tension because a hoop house is on the industrial model.
- And that's a big problem because a lot of what FSA and ag and like all of those sort of organizations, they're all on the industrial model, which is grow as much and specialize as much as you possibly can, which is very, very different from the folks like me or the folks who are coming at it sort of from more of an environmental aspect who want to investigate permaculture, who want to have these sorts of layered operations where you have chickens interacting with food, interacting with compost, and you have a lot of these things going on. So the industrial model is deeply not earth friendly in any way.
- That's sort of the other thing is it's really hard to find mentors and mentorship because everybody's just really trying to figure it out. And a lot of times when people are trying to

figure out, there's no safe way to fail, which is a huge problem in urban farming, is that you have to figure things out, have something else to sustain you until you figure it out enough and then be able to make enough, and there's no one who isn't doing it. Because all the sort of old folks who, you know, ran small farms or knew how to do all this, they're in their 80s, 90s, like they're three generations back, and so it's really, really hard to find any kind of mentorship for anything that's going to be outside the industrial model.

- Other people who have been doing it well are doing sort of the experiential, where they're being supported by short-term rentals in particular, they're being supported by campsites, they're being supported by like winery kind of type operations, where it's all based on the experience. And so they are very much supplementing their income through, in particular, agritourism. So if you're going to do the earth-friendly stuff, you have to do agritourism. If you're going to do the industrial model, you can do that, and there are two or three different ways to do that. The only other thing I have seen be successful, which is what we're trying to do here in Richmond, is when people have access to a way to do preservation of their food and get it shelf stable, that is legal. This is huge and difficult because a lot of our food safety rules are fair and reasonable, but they were also made 100 years ago, before modern refrigeration. There is no reason that you shouldn't be able to make a lot of foods that are perfectly fine if they're stored at a safe temperature. And that's been the hardest part about it is that the more I look for mentorship and the more I look for community and the more I'm like, what are you doing? What are you doing? And everybody's just like, I don't know. I'm figuring it out. And I'm like, this is a terrible system. And so that's kind of what's led to some of my advocacy is I'm like, guys, like I am a process nerd. I'm an attorney. Like I work with the law, like let's fix this. And it's kind of fascinating how we're doing exactly what you're doing is people really still trying to just get their arms around the problem.
- And that's one of the biggest frustrations with a lot of the sort of urban farms or the small farms going on in our area. So like there are a couple of farmers in our area who really capitalize on this idea of being the black farmer, which is a huge tension because there's like one person who gets to call themselves the black farmer and nobody else gets any air in the room, no matter how many black farmers there are, especially black women farmers, because this guy has kind of taken up the space and he gets volunteers. And so he doesn't pay labor. He gets volunteers who come assuage their guilt or touch the dirt or whatever it is that they want to do. So he's not paying people to do a lot of his work. And that feels frustrating. A lot of the community gardens also very volunteer-based. Shalom Farms. I love them. Sarah Whitney and I have worked together for several years now. Nice people. But like they are not allowed to sell at most of the local farmers markets because they undercut everybody's prices from the people that are trying to make money and the people who get to work with volunteer labor. And that is just a huge point of tension because of the way that I can't go out there and spend 20 grand on a tractor. I can't. And it would help a lot. It might help me get to the next level, but I don't have the cash to do that. And I don't have the cash to go out. And a lot of the programs through the feds and through the state and everybody else are reimbursement-based.
- And then I get reimbursed within 30 days is the theory. And I might get hit with a couple of interest payments because the federal government's always slow, but I just put it all on a credit card and then they pay me back. Like Soil and Water Conservation District, all

reimbursement based. And those are a pain in the butt because you have to go through so many layers of like, you have to get a contractor and you have to get three bids and you have to get drawings and you have to get like specs and you can't just go buy something. I tried for three months to get funding. I needed 1800 bucks in funding to buy a used horse trailer so that I could put shelving in it and I could have a mobile market and I could take food into neighborhoods and just basically say that like the county or a charity would be like, buy out the trailer for the weekend and I will go drop this off at places or however we could structure it. Nobody would give me 1800 bucks for a stock trailer because it wasn't new. I couldn't sit around and wait six months for reimbursement or three months or whatever. It couldn't hold that long. I needed to be able to like put money down. And then I couldn't even get reimbursed for it once I did it because everybody's like, oh, we needed to have the expense pre-approved. Like these are the kinds of things where it's just like, ah, I cannot buy used. I have to buy equipment new and none of the equipment is designed for a small farm. And then I can't in good conscience, you know, because I have a day job and I have a family and I have other things like I can only spend so much time physically doing the labor myself.

- And this is where a lot of small farmers turn to animals because animals will do a lot of this work for you. So like the animals will do the turning. The animals will do the clearing. The animals will just sit over there and make a product for you. But the localities hate animals and they will work as hard as they possibly can to make it like by law. And this may be one of those cases I am setting up. Henrico County could walk in here and tell me that I am not allowed to have a single chicken on 10 acres because of the setback rules for agricultural. If somebody comes in and zones the property next door residential, all of a sudden setback rules apply to you, which is so illegal, but that's what they do. And then you'd have to fight that. So they have decided not to push my buttons yet because possibly because I'm so outspoken, but basically because I'm surrounded by residential property, I could not have a single chicken on 10 acres. And so this is the problem is that like, if you want to have green things and vegetables only, you're going to have an equipment problem and you're going to need to manage that at a scale that may or may not be financially possible for you. If you want animals to kind of pick up some of the slack for you, you're going to have to fight the legal structures. And so these are some of the scale issues. And then the last thing I'll say about barriers is access to land. Because of the way that the financing works, you can't buy land.
- Apparently that is a riskier investment is land. I don't know. FSA wanted still like 525 on a direct loan and I would have had to put my house up as collateral and they will take your home, which they do that. FSA will do that, which is one of the things that farmers are so terrified about is that if they get a direct loan from FSA, they will take your home. If anything goes through, if you, if you have any problems, because they're notoriously hard to deal with, notoriously hard to find, like you are screwed, which is one reason people like to go through their local credit union is not through FSA because they don't have to put up that collateral, but then your interest rates are sky high.
- I love the tool of a conservation easement. And people are like, yeah, that's a panacea. Like just start putting all these farms under conservation easements. And it's like, no, because increasingly farmers do not live on their farms and you can't buy land.
- Because like I actually called, there was a pretty piece of land outside of Frederick that had an old mill on it. And I was like, okay, this is agritourism potential writ large. But the

county, apparently that's kind of the problem is that the county had been like, oh, well, you know, you can't have people in here. You can't have, because it's not ADA accessible. I'm like, it's a 200 year old mill. What do you want? And they were like, yeah, so it's going to need to be ADA accessible for you can allow the public in. I was like, what? Among other things.

- And so because of the way that especially no one works with native plants and no one works with heirloom varieties, we are having to figure it out from square one. And so that's why it always makes me crazy.
- Really that's kind of what we've been wrestling with is that there's a way to do it that fits in that industrial model, which we cannot afford to do because we can't afford the equipment. We can't afford the labor. We have lives, we have full-time jobs, so we can't do that. There are things that other people are doing that are extremely labor intensive, but again, we're kind of blocked out of that because we have to have the full-time job to subsidize what's going on over here. So we can't afford to fully commit to the thousand percent labor because we just need health insurance and we have a kid and like we need that financial stability. So what's left, let's find a niche. And I really, really, really, really wish there were fewer classes on let's understand your soil and like, here's how you get a hoop house versus here's how you take things you could largely find for free and with a little creativity and a little investment, turn them into a product that no one.
- Yeah. And like part of the problem is like restaurants. Like I've talked to so many restaurants. They don't like to buy in small batches. They like to have regular venues. Like they will be the first ones to buy from Cisco. And you're like, you are literally billing yourself as a farm to table. And they're like, yeah, when we said farm, we meant farm that can keep us regularly supplied in this volume. And I'm like, well, that's not how farms work. That's not how seasonality works. Like you can't have strawberries in December if you're trying to be good to the land.
- It's one thing to acknowledge the barriers. That's kind of the only thing that makes me itchy sometimes is that I'm like, why are you saying all this is possible when you can't do it?
- There are so, so, so many barriers to that in the legal system and in the regulations, in the way that we structure our markets. So what we need to happen is for legislators to start unlocking some of those barriers because there's so little risk. And that's our challenge, is we have to convince the legislators that it's worthwhile.
- And I think there will be, maybe give it 50 years, a tremendous opportunity for marketing local produce if we can just get the cottage industries back off the ground and away from the industrial model. Because if I could buy bread from the lady down the street, I would. If I could buy eggs from, well, I sell eggs, but my neighbors are like, oh my God, I will pay \$4 a half dozen for eggs where the chickens have names. Because it makes me feel safe and it makes me feel part of a community. I like that. If only we could unlock some of these dumb laws and regulations,

G4:

- At the former spot I worked at in Columbia Heights, that was a much more Hispanic community around it, so we worked really hard to have bilingual signage everywhere.
- I think that having some sort of like stipend or fellowship system um where the people who are dedicating like serious hours to this can get in some way remunerated I think that

would be great and it's tough because there's like the social connections and community involvement standpoint but also could address some of the issues of access just that it like it takes some privilege to just spend a huge amount of your time volunteering and especially if we're asking one volunteer to do like a shift of serious work not just be like there with everyone else volunteering I think that would be a good shift and would really help us organizationally uh with just kind of like consistency and professionalism.

G5:

- And so there's kind of that classic challenge that small scale or small scale farmers, urban growers have of especially production farmers that need to have revenue be their driving source for their operation. Sometimes you have to price something at a price that it just makes it inaccessible. And it's just representative of our food system right now that the best quality food that everybody should be eating has lots of barriers. Even if it's not cost, it can be time or access because you might have to go to a farmer's market to do it and that is not within everybody's means or be a part of a CSA or something that. So, yeah, I feel we serve a pretty diverse population, but kind of in almost two different realms, I would say.
- This is a huge kind of systems, cultural level change that I would to see happen with the nonprofit space as a whole, but just the funding structure of it being a little more, I guess equitable, fair, just all of that, but also maybe decentralized or it's just very challenging when your organization, your production, especially for farming, that is so specific and time-bound and is not always something that you can just like, grants are always looking for something innovative and new and unique. And sometimes what you're doing is meeting the need of your community and you're doing it well and you just need help with labor or you just need help with materials or whatever it is. And a lot of grants, we've been lucky to create some relationships to find some that are able to meet those more, but a lot of grants and funders as a whole want that shiny new thing and aren't interested in funding that more sustained projects, sustained work. And that creates a system that leaves the growers at the whim of the funders. And so that creates a really destable food system or not destable, unstable food system in the sense that there's people who are relying on our produce as for their their nutritional needs, their day-today basic nutritional needs that are at the whim of people who have a lot of resources. And it's like, there's lots of steps in between there. there's definitely importance of the nonprofits keeping their funders accountable. And I would to see that happen more in, but that means every nonprofit has to do that. And there's a scarcity mindset in nonprofit worlds that's really challenging that creates a competitive environment. It's very collaborative as well, but it's very competitive in when everyone's competing for the same chunk of resources that is a small kind of amount of resources there that the funders who have, the funders offering those resources have a lot more resources to give, but it's everyone kind of fighting for the whatever amount they've decided to give that year. It's something we've been experiencing a lot recently with grants getting cut and we're really lucky that we're even able to have our donations be quote unquote purchased from some of our food pantries because the grant, the people who are providing the grant decided to pretty much cut all domestic funding and go towards international with the, as soon as USAID got shut down.

- We rely on a lot of state level things CBT has the Maryland Climate Corps and the service year option and now it's Chesapeake Conservation and Climate Corps. And so that is quote unquote free labor for us in some ways. Some of them actually aren't fully free, but that is super helpful. But then that has us, it's tough because we have a program that relies on there's an amount of work that needs to be done that we don't have the resources to actually fund the amount of work that needs to be done. So we have to rely on these other systems that are not this year.
- The onus I feel is oftentimes put on the organizations themselves a lot, but having some sort of centralized structure to be able to mediate and do that connection piece, especially for farmers who don't really have time often to do that themselves.
- And then it's also helpful for the farmer because oftentimes there is abundance or excess that they were looking to somehow find ways to make revenue off of outside of their other, maybe CSAs or restaurant sales or direct to consumer, whatever it is. And it's just like, it's just, it's a win-win. It just makes sense to me. But it requires an investment in your food system. That is always the thing that we're arguing for that is challenging. And I think that is especially, it's just relevant all over. It's relevant in rural spaces. It's relevant in urban spaces, urban spaces, there's a lot more density, in terms of how many food pantries might be in a certain area. And then also how many growers are in that area.

Appendix 7

Survey Questions

Vetting Questions:

1. Are you at least 18 years old?
 - Yes, I am at least 18 years old
 - No, I am younger than 18 years old
2. Do you grow crops/vegetables or raise livestock in the DC-Maryland-Virginia (DMV) Region?
 - Yes- DC
 - Yes- Maryland
 - Yes- Virginia
 - No- Other
3. Do you grow crops/vegetables or raise livestock in an urban area?

According to the US Census, "To qualify as an urban area, the territory identified according to criteria must encompass at least 2,000 housing units or have a population of at least 5,000."

Peri-Urban is on the outskirts of the Urban core, Suburban is within commuting distance of the Urban Core, and Rural is a significant commute with much lower housing density and population than the Urban Core.

- Yes- Urban
- Yes, but Peri-Urban and/or Suburban
- No- Rural

Typology Questions

Spatial

1. How big is your growing space? Please type your answer in square feet or acres, and click next to your unit below. If you share your space with others, please answer just **your personal allocated section**, if that applies.

-
- ☐ Square feet
 - ☐ acre

2. If you grow in a shared space, how big is the shared space? **If you do not grow in a shared space, please skip this question and move on to the next.** Please type your answer in square feet or acres, and click next to your unit below.

-
- ☐ Square feet
 - ☐ acre

3. Do you grow in an indoor or outdoor space? Indoor includes high tunnels, greenhouses, shipping containers, buildings, and inside home residences.

- ☐ Indoor- all year
- ☐ Outdoor- all year
- ☐ Both Indoor and Outdoor- all year
- ☐ Outdoor in the warmer seasons, Indoor during the cooler seasons
- ☐ Other: _____

Production

1. What do you grow in your space? Please select all that apply.

- ☐ Produce- Fruit
- ☐ Produce- Vegetables
- ☐ Produce- Herbs
- ☐ Fungi & Mushrooms
- ☐ Flowers & Other Non-Edible Plants
- ☐ Animal Products for Human Consumption
- ☐ Animal Products and services for non-human consumption (i.e. animal feed, animal waste, and animal byproducts and services)
- ☐ Other: _____

2. Please answer the following set of statements from “Agree” to “Disagree”. You can only select one box per row.

Statement	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
I like to experiment with my production season to season					

I like to stay consistent with my production from season to season					
I base my production on market trends					
I base my production on my community's needs					
I base my production on my own personal needs					

3. Please answer the following set of statements from “Agree” to “Disagree”. You can only select one box per row.

Statement	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
The economic bottom line is my top priority					
Improving my local environment is my top priority					
Helping my community for social change is my top priority					
Having food sovereignty and food access is my top priority					

I feel competent in my growing skills to meet my top priority for growing					
I have all the resources I need to meet my top priority for growing					
I have enough land to meet my top priority for growing					
I feel confident that I will continue to be able to grow on my land in the future					

Operation & Services

1. Why do you grow in an urban setting? Please select only one as your **top** priority.
 - To feed myself/my household because we need it to survive
 - To feed myself/my household because we enjoy it and it brings us value, but we do not need it to survive
 - To feed my community, because it has a lack of access to healthy foods
 - To feed my community with culturally relevant foods
 - To grow food for local businesses to keep the supply chain local
 - To bring green spaces to my residence
 - To bring green spaces to others
 - An urban growing space was the only affordable option for growing compared to other land options
2. Please select **all** the ways you use, market, or distribute your urban agricultural products.
 - I/my household directly consume(s) what I grow
 - I share the agricultural products with others free of charge and no items or services in return
 - I share the agricultural products with others to barter items or services
 - I charge others for my agricultural products
 - I sell on a larger scale (I.e. to a restaurant or school)
 - I donate my agricultural products
 - I offer discounts/accept assistance services to make my agricultural products more accessible

Community

1. Who is the **main** labor contributor/organizer to your urban growing operation? You may only select one option.
 - Myself
 - Immediate family members

- Extended family members
 - Permanent hired workers (full-time)
 - Temporary/seasonal hired workers
 - Migrant laborers
 - Labor contractors or agencies
 - Community labor exchange (e.g., work-sharing arrangements)
 - Volunteer labor
 - Other (please specify)
2. Are there other **additional** labor contributors to your urban growing operation? If so, please select **all** that apply.
- Myself
 - Immediate family members
 - Extended family members
 - Permanent hired workers (full-time)
 - Temporary/seasonal hired workers
 - Migrant laborers
 - Labor contractors or agencies
 - Community labor exchange (e.g., work-sharing arrangements)
 - Volunteer labor
 - Other (please specify)
 - Other: _____
3. Please select **all** the additional activities that occur at your urban growing site outside of growing:
- Communal Gatherings
 - Mental Health/Stress-Reducing Activities
 - Nutrient and Wellness Guidance
 - Artistic/Creative Expression
 - Educational Resources and/or Experiences
 - No Additional Services
 - Other: _____

Barrier Questions

1. Please answer the following set of statements from “Agree” to “Disagree”. You can only select one box per row.

Statement	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
I find public technical resources (i.e. Universities, Extension, Government, etc) helpful for navigating my urban growing journey					
I find private technical resources (i.e. Consultants, Non-Profits, etc) helpful for navigating my urban growing journey					

I feel that the technical education resources I find are appropriate to my size and scale of urban growing					
I feel like I can fully understand and apply the technical education resources I find					

2. Please answer the following set of statements from “Agree” to “Disagree”. You can only select one box per row.

Statement	Agree	Somewhat Agree	Neutral	Somewhat Disagree	Disagree
I feel like urban agriculture is a properly funded sector of agriculture					
I feel like I have plenty of options for accessing financial assistance if I may need it for my urban growing site					
I believe my urban center where I grow prioritizes the success of urban agriculture					
I have access to all the physical items (i.e. tools, seeds, soil, etc) I need to successfully grow					
I find it easy to access all the physical items I need if I do not already have them					

Archetype Questions

- Among the potential urban grower personal styles, which single style **best** reflects you as a grower? You may only select one option.
 - The Visionary- sees urban agriculture as a way to enhance biodiversity for environmental and public health benefits
 - The Business-Minded- sees urban agriculture as a means of production and income, while being able to participate in the local market
 - The Learner- sees urban agriculture as a novice approach to growing and is often new to growing and agriculture in general
 - The Self-Determined Agroecologist- sees urban agriculture as a form of self-efficacy and empowerment, for oneself and/or the community
 - None

- Other: _____
- 2. Among the potential urban growing operational classifications, which single classification **best** reflects how **your operation** likes to grow? You may only select one option.
 - The Urban Farm- An operation generally larger than an acre, that is a commercial producing operation led generally by a farmer
 - The Community Park- An operation generally multiple acres, in a public space that serves to local community agriculturally, environmentally, and socially, often operated by said locals
 - The DIY Garden/Farm- A plot/allotment-based approach to farming that focuses on the individual grower's needs_
 - The Zero Acreage Farm- Extremely low acreage space that leverages advanced technology operations of all types
 - The Social Farm- An urban farming operation with a farming focus for human health (physical, mental, and emotional)
 - The Community Garden- A low to medium acreage, restricted space to serve the immediate community with agricultural and social benefits
 - None
 - Other: _____

Demographic Questions

1. How would you describe your gender?
 - Male
 - Female
 - Non-Binary
 - Gender non-conforming
 - Prefer not to answer
 - Other: _____
2. How would you describe your racial identity?
 - Hispanic or Latinx
 - African American or Black
 - Asian or Asian Indian
 - American Indian or Alaska Native
 - Middle Eastern or North African
 - Native Hawaiian or Pacific Islander
 - White (non-Hispanic or Latinx)
 - Prefer not to say
 - Other: _____
3. What is your age bracket?
 - 18-25
 - 26-35
 - 36-45
 - 46-55
 - 56-65

- 66-75
- 76-85
- 86-95

Appendix 8

Table 4.3

Typology Presence by Region.

Region	Typology	Count (Per Pairing)
MD	CG	5
MD	SF	5
DC	SF	3
MD	UF	3
DC	CG	2
MD	DIY	2
VA	UF	2
DC	DIY	1
MD	CP	1
VA	CG	1
VA	O	1

Table 4.4

Archetype Presence by Region.

Region	Archetype	Count (Per Pairing)
MD	V	7
MD	SDA	6
DC	V	4
DC	SDA	2
MD	B	2
VA	SDA	2
MD	O	1
VA	B	1
VA	O	1

Table 4.5*Typology Presence by Urbanization.*

Urbanization	Typology	Count (Per Pairing)
U	CG	7
U	SF	6
PU/S	UF	4
PU/S	SF	2
U	DIY	2
PU/S	CG	1
PU/S	DIY	1
PU/S	O	1
U	CP	1
U	UF	1

Table 4.6*Archetype Presence by Urbanization.*

Urbanization	Archetype	Count (Per Pairing)
U	V	8
U	SDA	7
PU/S	SDA	3
PU/S	V	3
PU/S	B	2
PU/S	O	1
U	B	1
U	O	1

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