REVIEW OF D.C. URBAN AGRICULTURE POLICY

A Comparison of Two Cities

PUBP 500

MACKENZIE NELSON

VICTORIA GLASGOW

JUSTIN THOMPSON

HEATHER DONODEO

Contents

Executive Summary

Urban agriculture has a profound impact on the lives of city residents and strength of their communities. Producing food within city limits offers a resilient food system that can weather supply or climate challenges, provides a place for people to gather, shares education about not only plants but healthier eating, and bolsters the local economy.

Prominent cities that have industrial and racially segregated pasts have acknowledged how urban agriculture is crucial for bettering their residents' lives and have implemented policies to encourage the practice. We were hired by Washington, D.C. to examine the efficacy of its policies and analyzed it by comparing it to those of Baltimore, Maryland due to geographical, historical, and demographic similarities.

- Both programs had substantial policies providing urban agricultural programs, more inclusive zoning, and funding for incentivizing urban farms. Unlike Baltimore, Washington D.C. did not have a clear definition of what urban agriculture entails. Neither program clearly delineated the metrics they would use to evaluate said policies, nor provided data that would help benchmark the situation before the policies made progress.
- Both cities have a high level of community involvement. Some nonprofits and farms partnered with their respective cities; others provided the support, education, and resources that the cities themselves did not.
- Neither city had easily accessible and transparent data regarding urban agriculture: data required for metrics was instead provided by urban agriculture farms or community groups as part of their own reporting.
- Both cities invested considerable time and effort in prioritizing the creation of urban agriculture policies and plans, yet the lack of clearly defined metrics in the policies and plans makes for patent difficulties in evaluating progress.

To better encourage, provide, support, and incentivize urban agriculture, D.C.'s policies will be more effective if it:

- Clearly delineate definitions and ensure that they are consistent across all policies and regulations

- Implement policies that streamline permitting, require contaminant testing, and consider watersheds in urban farms
- Codify partnerships between the city and community partnerships by recognizing and sponsoring community groups
- Provide transparent and accessible data for and regarding programs
- Provide timely, discoverable, and easily understood metrics on urban agriculture

These changes can make existing policies more effective and thus create an urban environment in which residents' health and communities flourish.

Introduction

As cities face greater growth and diversity of land uses, so too will the need for flexible food sources increase. Several policies and initiatives have already begun to address the growing issue of supply chain resiliency through urban agriculture. This practice encompasses the cultivation of fruits, vegetables, grains, and livestock within urban settings to either directly provide city residents with produce or for commercial use.

Our team has been hired by the City of Washington, D.C. to evaluate its urban agriculture policy and assess its effectiveness with regards to public health, poverty, and economy. In doing so, we compared D.C.'s policies with those of Baltimore, Maryland due to the city's proximity and the similar urban agriculture challenges both cities have faced.

In our analysis, we will identify the low-hanging fruit and best practices in urban agriculture, how Washington, D.C. and Baltimore compare, then provide a summary on actions that the city should take after applying our evaluation metrics.

If you have any questions about our methods or resources, please feel free to contact us.

Defining the Problem

Urban Agriculture is gaining popularity as a solution to food deserts, food inequity, and poor health. Additionally, growing crops within city limits also mitigates environmental issues urban

areas often face such as watershed issues, soil health and quality, and even crime rates. In response, cities across the country have sought to provide policies and programs to support urban agriculture for their communities.[1] Unfortunately, metrics remain difficult to ascertain, making it difficult to comprehensively understand how effective these programs are. Washington D.C.'s policies, which include both an Urban Farming Land Lease Program and tax incentives to use land for agricultural purposes, are relatively new policies that would benefit from evaluation and recommendations. Since comprehensive and consistent metrics are lacking, this study will evaluate D.C.'s urban agriculture policies by comparing them to Baltimore, Maryland. We will compare policies of the two cities using federal recommendations for urban agriculture, which will guide our policy recommendations to further their effectiveness.

Washington D.C.'s Program

Legislation History

Washington D.C.'s urban agriculture program began in 1986 when the city passed the Food Production and Urban Gardens Program Act of 1986, which created the city's initial definitions and program guidelines.[2] An increased emphasis on urban agriculture in the last two decades resulted in subsequent legislation: in the 21st century, the D.C. Urban Farming and Food Security Act of 2014, passed in January 2015, was the initial success story of these efforts because it established guidelines and a tax credit program for D.C. property owners to develop land for urban agriculture.[3] While these programs benefited the city, more work was needed to construct a robust urban agriculture program. The city passed the Urban Farming and Food Security Amendment Act of 2015, which focused on updating definitions, revising tax credits, and land-lease programs.[4] Despite these legislative changes, the District's urban agriculture program was still struggling to properly function, especially in the land-use categories where the city had difficulty in addressing usage. The Urban Farming Land Lease Program was passed in 2021 to establish the Land Lease Program and clarify applicant qualifications, which remains in effect

[1] Wooten, Heather and Amy Ackerman. "Seeding the City: Land Use Policies to Promote Urban Agriculture." ChangeLab Solutions, October 2011, pg. 4-5.
[2] Food Production and Urban Gardens Program Act of 1986, D.C. Law 6-210 (passed Jan 30, 1987), accessed 21 Sep 21 at https://code.D.C.council.us/D.C./council/laws/docs/6-210.pdf.
[3] B-20-0677 – D.C. Urban Farming and Food Security Act of 2014, D.C. Act 20-599 (passed Jan 26, 2015), accessed 21 Sep 21 at https://lims.D.C.council.us/Legislation/B20-0677?FromSearchResults=true.
[4] B21-0293-Urban Farming and Food Security Amendment Act of 2015, D.C. Act 21-676 (passed Feb 15, 2017) accessed 21 Sep 21 at https://lims.D.C.council.us/Legislation/B21-0293?FromSearchResults=true.

until September 2021[5]. In January 2022, D.C. will implement the Food Production and Urban Gardens Program, once again updating definitions and revising the program[6].

Evaluating D.C.'s Program

While urban gardening received national attention during the Obama Administration, the D.C. program has largely been the result of local community groups. The city's population is supportive of urban agriculture, but according to a 2011 Georgia Organics study, the city has not developed sufficient policies to support its stated objective of increasing food production within the District. The study reported D.C. had "36 community gardens, almost 27 acres under cultivation, and almost 2,000 community gardeners".[7] To the outsider, this presented the view that these spaces were readily available for public use, but these plots were actually in higher demand than the program anticipated. Such a supply failure resulted in longer waiting lists and insufficient available or reserved land.[8] This was only the beginning of the issues with D.C.'s program, especially after demographic information was factored in. Another 2012 study noted that the predominately African American-populated Wards 7 and 8 had a need for urban agriculture in that the city only maintained one supermarket per 70,000 people, and one out of five recipients of food stamps did not have a neighborhood grocery store. This directly contrasts in wards 2 and 3, which have significantly higher levels of income and a supermarket per 11,881 residents.[9] The report explains that "this lack of access to healthy foods makes it difficult for families to eat nutritiously, fueling the country's growing obesity epidemic and the severe health problems that accompany it."[10] Even though the District displays a need for fresh produce and a growing recognition of the solutions offered by urban agriculture, *The Washington City Paper* critiqued D.C.'s progress in 2019 and found that there was no detailed regulation or guidance on acceptable pollutant levels, mediation factors, or standards for alternative methods of agriculture such as aquaponics or raised garden beds which did not use the soil. The author specifically attributes the

---

[5] Urban Farming Land Lease Program. D.C. Law. § 48–402.01 (passed January 1, 2021), accessed at https://code.D.C.council.us/D.C./council/code/sections/48-402.01.html.

[6] Chapter 4. Food Production and Urban Gardens Program, § 48-401 – 48-411. P.L. (passed Jan 1, 2021) accessed 21 Sep 21 at https://code.D.C.council.us/D.C./council/code/titles/48/chapters/4/.

[7] Goldstein, Mindy, et al. "Urban Agriculture: A Sixteen City Survey of Urban Agriculture Practices Across the Country", Tuner Environmental Law Clinic, 2011, pg. 58, Turner Environmental Law Clinic, accessed 13 Oct at https://web.archive.org/web/20120106222532/http://www.georgiaorganics.org/Advocacy/urbanagreport.pdf

[8] Ibid, pg. 58

[9] Hagey, Allison, Rice, Solana, Flournoy, Rebecca. "Growing Urban Agriculture: Equitable Strategies and Policies for Improving Access to Healthy Food and Revitalizing Communities." PolicyLink, policy.link.org, 2012, pg. 15, accessed 13 Oct at https://www.policylink.org/sites/default/files/URBAN_AG_FULLREPORT.PDF.

[10] Ibid, pg. 15.

lack of specificity to the ineffectiveness of the program. Despite awarding land to several willing farmers, the plans could not move forward until the city addressed ambiguities in soil contamination remediation.[11]

Regardless of these critiques, Mayor Bowser and D.C. City Council do include urban agriculture as part of D.C.'s planning. In *Sustainable DC 2.0 Plan Online*, Mayor Bowser provides three food goals related to urban agriculture:

> FD1.1: Implement the "Urban Farming and Food Security Act" and expedite the process to make public and private lands available for a variety of urban agriculture uses...
>
> FD1.2: Develop food-producing landscaping on five acres of District public spaces distributed throughout the eight wards...
>
> FD1.3 Develop and support school gardens and garden-based food system education to engage DCPS and charter school students...[12]

These goals demonstrate that the mayor prioritizes urban agriculture in the district: however, there are no metrics provided to support the implementation and evaluation of these goals.

A 2021 D.C. case study of the University of D.C.'s (UDC) efforts and partnership with the East Capital Urban Farm (ECUF) reviewed food hubs and related policies. This study sought to use the UDC-ECUF partnership as a model for the future of D.C. urban agriculture. The partnership highlighted historical equity concerns in D.C., noting the significant disparities in certain wards with Ward 3 having highly educated constituents with an average income of $116,000 and Ward 7 having a high poverty rate and average income below $60,000.[13] The study highlighted five policy "primary needs": "(1) need for policy changes, (2) need for profit, (3) need for performance, (4) need for proprietary technology, and (5) need for people."[14] The author also identifies the components of the UDC. model for urban food hubs: "(1) sourcing fresh produce in urban environment, (2) food preparation in the urban environment; food distribution in the urban environment; and (4) resources recovery in the urban environment", with an emphasis on decentralized distribution in contrast to the USDA's model, which requires a central processing

---

[11] Hayes, L. "Key Urban Agriculture Programs Delayed as City Swaps Who Will Manage Them." *Washington City Paper*, June 2019, accessed at https://washingtoncitypaper.com/article/179945/key-urban-agriculture-programs-delayed-as-city-swaps-who-will-manage-them/

[12] "Sustainable DC 2.0 Plan Online." Department of Energy and Environment, 2020, pg. 86-87. Accessed at https://sustainable.D.C..gov/sD.C.2.

[13] Jones, Dwayne. "Addressing Urban Health and Food Policy Through Resiliency Food Hubs: A Case Study from Washington, D.C." *Saint Louis University Journal of Health Law & Policy*, Vol. 10, Issue 2, Article 3, 2017, pg. 239-240, accessed at https://scholarship.law.slu.edu/jhlp/vol10/iss2/3.

[14] Jones, pg. 242.

facility for distribution.[15] Despite these lofty goals, the author highlighted a lack of needed policy and regulations to comprehensively address urban agriculture concerns such as those of environmental tests, stormwater and building permits, health and business policies, and enforcement mechanisms inadequately addressed for urban agriculture. The ECUP addressed these concerns with caution and applied for each of the permits; however, the cost to do so was significant and potentially prohibitive to other urban farmers.[16] Although Dr. Jones' study recognizes progress and best practices, it also identifies the need for significant improvement in D.C. policy.

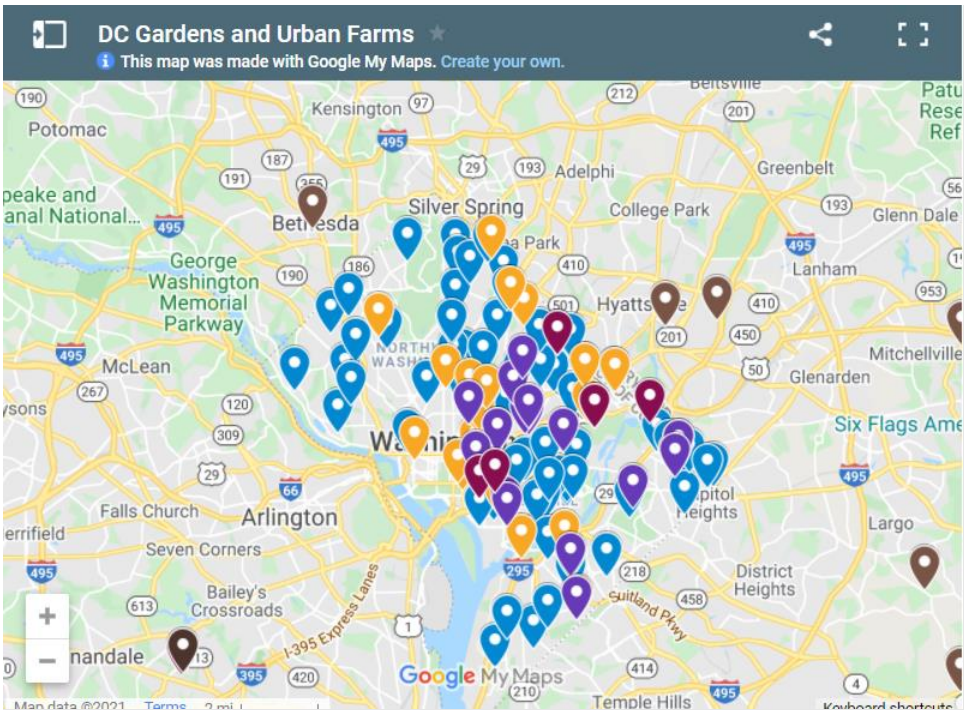
Community Involvement

While there has always been community involvement in urban agriculture in some form, the past decade saw a novel amount of large-scale organizational movement. In 2008, the Rooting D.C. community network started an annual free conference for D.C. urban gardening to educate, network, and focus on the community. While initially hoping for 25 partners, attendance surpassed expectations at 125 participants. Rooting D.C. recognized that "[t]here was a lot going on with urban agriculture in the city, but little connection with the community."[17] Many seemed to agree as the 2017 conference yielded 1,200 participants.[18]

With the success of Rooting D.C., other community network platforms began to take root in the city. In 2015, the D.C. Urban Gardeners (DUG) network established itself as an online, community-based network created to "inform and connect D.C. residents to resources, events, opportunities, forums, services and programs that support food access, healthy eating, urban agriculture and environmental sustainability in the greater D.C. area."[19] The DUG network website provides an extensive amount of information to support urban agriculture in D.C. From webinar courses to listserv sites, nutritional information to farming resources, DUG aims to create a space to support urban agriculture and includes a map of all D.C. urban farms and gardens. While DUG does collaborate somewhat with Washington D.C.'s governmental departments as a result of its remarkable impact on D.C. residents, it is not under the District's purview. DUG is, however, a direct beneficiary of any amendments to the District's urban agriculture legislation.

---

[15] Jones, pg. 242.
[16] Jones, pg. 245.
[17] "About Rooting DC", Rooting DC, n.d., accessed October 24, 2021 at https://www.rootingDC.org/about-the-event.
[18] Ibid.
[19] "About DUG", DC Urban Gardeners Network, n.d., accessed October 24, 2021 at http://dugnetwork.org/about/.



Map of D.C. Urban Agriculture Sites, community gardens listed in blue, education gardens in orange, urban farms in dark purple, public gardens in burgundy.[20]

DUG is not the only community group that helps realize the District's urban agriculture policy: the East Capitol Urban Farm group is another unaffiliated stakeholder that makes policies reality. The ECUF model did not stop at being an urban farm for the D.C.: it provided a multi-interest and interactive model that included "aquaponics, walking trails, raised community gardening beds, a community-operated farmers' market, integration of green infrastructure and urban agriculture, water efficiency strategies, a nature and discovery space for kids, a community plaza, and public art". ECUF developed this design in concert with community partnership, but the complexity and wide-reach of its program may exclude other or aspiring urban farmers.[21]

Assessment

Despite its beginnings in 1986, D.C.'s urban agriculture program suffers from incomplete policy and regulations. With laws that have yet to provide consistent definitions and recent assertions of vague definitions that prohibit the programs from progressing, there is still room for significant improvement. The emphasis displayed in Mayor Bowser's Sustainable D.C. Plan demonstrates that urban agriculture is seen as a solution to historic and current inequities in healthy food access as

[20] "Gardens and Urban Farms: Empowering Urban Communities Through Urban Agriculture." DUG Network, n.d., accessed October 24, 2021 at http://dugnetwork.org/gardens-and-urban-farms/#Map%20of%20All%20D.C.%20Urban%20Ag%20Sites.
[21] Jones, pg. 243-244.

well as the need for modern and innovative solutions. However, implementation and corresponding policies, particularly permits and licensing, need to be updated.

Baltimore's Program

Baltimore's History

Baltimore has decades of experience with urban agriculture program. Though most of its history is based on beautification gardens, the 1970s onward brought urban agriculture legislation to the city's government. However, since the focus on urban food production didn't surface until the 70s and there was not consistent measurement of urban agriculture in the following decades, there is little research or recorded data on urban agriculture in the city.[22] Despite this lack of information, Baltimore is still taking an innovative and modern approach towards the issues that harm communities such as food scarcity. Baltimore's urban agriculture plan, also known as the "Homegrown Baltimore Initiative", strives to meet goals outlined in the Baltimore 2019 Sustainability Plan as well as missions in the Baltimore Food Policy Initiative and the Vacants to Value Initiation.[23] The main goals of this program are two-fold: 1) to support small businesses by eating and buying local produce and 2) to provide cost-effective options for food consumption through farming. The Baltimore government adamantly believes its urban agriculture policies are the solution to providing food for all economic classes, which is reflected in how the Homegrown Baltimore Initiative outlines Baltimore's current urban agriculture plan, documents current efforts, and recommends alternative policy choices.

Policy History

The Baltimore Office of Sustainability was founded in 2007 and, at the time, focused primarily on Baltimore Greening Projects in conjunction with Baltimore's Parks and Recreation Department. The City's Community Greening Resource Network arose from this partnership and began to provide workshops, resources, and support for anyone interested in urban agriculture, as well as tool banks for those who did not have the supplies to garden.[24] The Baltimore Food Policy

[22]Poulsen, Melissa, et al. "Homegrown Baltimore: Grow Local Baltimore City's Urban Agriculture Plan." *Baltimore City Council*, 1 Nov. 2013, https://www.baltimoresustainability.org/wp-content/uploads/2015/07/HGB-Grow-Local-Final-Cover.pdf.
[23] "Homegrown Baltimore Plan: Grow Local." Baltimore Office of Sustainability, Jul 1, 2021, accessed November 19, 2021, at https://www.baltimoresustainability.org/homegrown-baltimore-plan/.
[24] "Baltimore Green Network." Baltimore Office of Sustainability, accessed at https://www.baltimoresustainability.org/projects/baltimore-green-network/.

Initiative was established in May 2010 as part of the Food Policy & Planning Department, which planned to focus on revamping the local food economy and improving resiliency in food systems.[25] In April of 2014, Maryland updated its tax code to allow for urban agriculture tax credits which would provide financial assistance and incentive to those considering starting urban farms, and in 2015 Baltimore City Council enacted the "Baltimore Property Tax Credit – Urban Agriculture"[26] that gave farmers 90% off their property taxes if the parcel 1) is used for urban agriculture for five years, 2) can produce a minimum threshold of value of $5,000 annually, and 3) is not used for any other purpose that would incur additional property taxes.[27] The Homegrown Baltimore Land Leasing Initiative, a partnership between the Departments of Planning and Housing & Community development, gives a five-year lease for city-owned land for family at $100 per year to eligible farmers as an incentive as well.[28] During the 2021 session, the Maryland General Assembly introduced a bill to establish an Urban Agriculture Grant Program within the Maryland Department of Agriculture and an Urban Agriculture Grant Fund.[29] This piece of legislation was approved by the Governor May 18, 2021[30] and will increase annual expenditure by at least $100k annually to fund grants that support urban agriculture[31]. Overall, Baltimore has been very active in implementing policies that encourage urban agriculture within city limits.

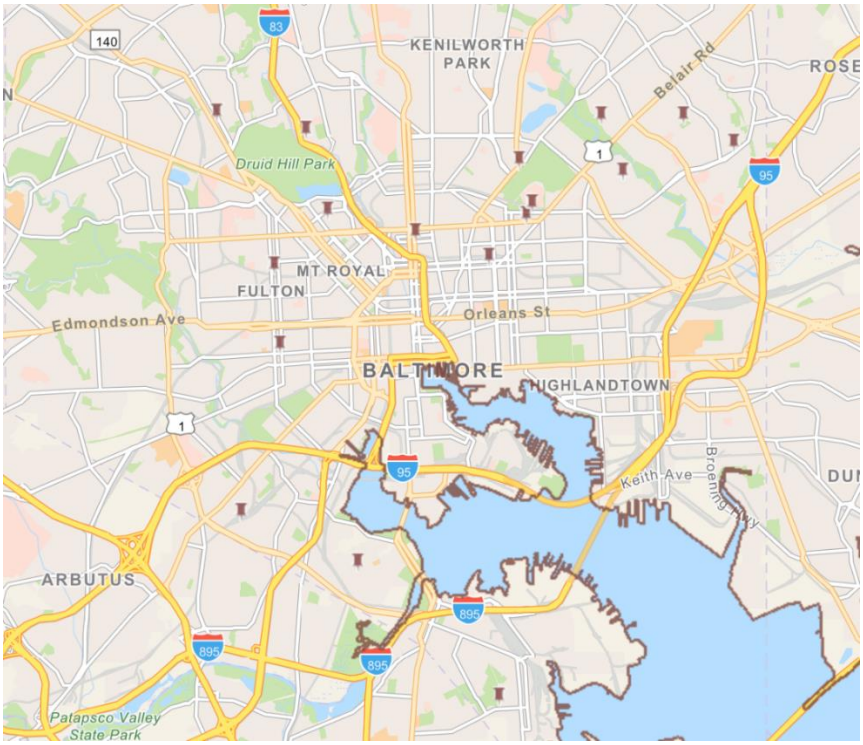
Evaluation of Baltimore's Programs

In a 2011 study, Baltimore already maintained a population of 620,000 with 2.7 million living in the Baltimore Metropolitan Area. Additionally, the city earned 10th place in the 2008 SustainLane city sustainability rankings, specifically ranking 17th in the category for "Local Food and Agriculture".[32] Even in keeping in mind that Maryland is a "conservation minded" state, Baltimore

[25] "Baltimore Food Policy Initiative." Baltimore Development Corporation, accessed at http://baltimoredevelopment.com/initiatives/baltimore-food-policy-initiative/
[26] "Urban Agriculture." Baltimore Office of Sustainability, November 10, 2021, accessed November 19, 2021 at https://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/homegrown-baltimore/urban-agriculture-2/.
[27] "Urban Agriculture." Baltimore Office of Sustainability, November 10, 2021, accessed November 19, 2021 at https://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/homegrown-baltimore/urban-agriculture-2/.
[28] *Ibid*.
[29] Department of Agriculture—Urban Agriculture Grant Program, Maryland HB 269. (bill took effect July 1, 2021), accessed November 19, 2021 at http://www.mgaleg.maryland.gov/2021RS/fnotes/bil_0009/hb0269.pdf.
[30] Department of Agriculture—Urban Agriculture Grant Program, Maryland HB 269. LegiScan. (bill took effect July 1, 2021), accessed November 19, 2021 at https://legiscan.com/MD/bill/HB269/2021.
[31] *Maryland HB 269*. maryland.gov. (n.d.). Retrieved November 19, 2021, from http://www.mgaleg.maryland.gov/2021RS/fnotes/bil_0009/hb0269.pdf.

[32] Goldstein, M., pg. 10.

has distinguished itself as a "leader" in urban agriculture through policy, planning, partnerships with schools, and even forming a Baltimore Food Policy Task Force.[33]



The image above provided by John Hopkins is a GIS map showing urban farms recognized by the University as of 2021.[34] Personal or private urban farms might not be pictured, leaving ambiguity in our evaluation of how large the community impact is.

An entire chapter in the Baltimore 2019 Sustainability Plan is dedicated to Urban Agriculture, demonstrating the priority it has with the Baltimore government. The first goal is to "[c]reate agriculture land-use policies that encourage urban farms and local food production" and ultimately provide farmers the support needed to create financially viable urban agriculture ventures.[35] The chapter also touches on the ways that Baltimore will measure success of the programs, although the actual metrics themselves are unfortunately not provided. The city plans on evaluating number and location of projects, acres of land used, number and location of farmers, number of residents participating in educational opportunities, and improvements to

[33] *Ibid*, pg. 10.
[34] "Maryland Food System Map." John Hopkins Center for a Livable Future. IIS windows server, accessed November 19, 2021 at https://gis.mdfoodsystemmap.org/map/#x=-8600388.674532637&y=4687424.322558925&z=6&ll=2,505,3.
[35] FINISH pg.65-66, accessed at **https://www.baltimoresustainability.org/wp-content/uploads/2021/04/SustainabilityPlan_03-02-20-Compressed.pdf**

infrastructure in historically disinvested communities: current figures of these evaluative criteria were not provided in the chapter.[36]

Community Involvement

Community efforts in Baltimore have resulted in great success. In 2019, there were more than 20 urban farms, along with 100 community and school gardens.[37] Many of these efforts are supported by interest groups such as the Farm Alliance of Baltimore which includes urban farms, neighborhood growers, and other stakeholders in the community.[38] Groups such as these work to recognize the efforts of farmers and other growers in the community while expanding the reach and impact of their networks. The Farm Alliance of Baltimore's mission is to not only address concerns of obesity, climate change, and community support: they also note that the sale of fresh produce directly benefits the local Baltimore economy[39]. Other efforts by farmers, such as that of Real Food Farm, work to support existing community markets, deliver food to senior homes as well as other community centers, and deliver produce within a 1-mile radius of the farm for free.[40] This farm, like many of Baltimore's community groups, believes that the greatest barrier to healthier diets is food access and hopes to improve human health via urban farms.

We found that community groups in Baltimore are considered when it comes to policy creation, help carry out said policies, and gather their own information which offer raw data for metrics. It appears that the City of Baltimore has not taken advantage of these networks to gather transparent information for measuring the success of these programs.

Limitations

Soil contamination is a grave concern in historically industrial urban areas, and this must be considered when attempting to grow food for human consumption. While a Johns Hopkins University report found that "soil, water, and produce from urban farms and gardens in Baltimore

---

[36] Ibid, pg. 66.
[37] "The Sustainability Plan." Baltimore Office of Sustainability. (n.d.), pg. 51, accessed November 19, 2021 at https://baltimoresustainability.org/wp-content/uploads/2019/02/Sustainability-Plan_Ch5-1_Community.pdf.
[38] "Our mission and values." Farm Alliance of Baltimore, September 23, 2021, accessed November 19, 2021 at https://farmalliancebaltimore.org/about-us/our-values/.
[39] *Our mission and values*. Farm Alliance of Baltimore. (2021, September 23). Retrieved November 19, 2021, from https://farmalliancebaltimore.org/about-us/.

[40] Gnadinger, Tracy. "Urban Farming Helps Local Communities in Baltimore." University of Maryland, UMB Go Green, n.d., accessed at https://www.umaryland.edu/gogreen/news/food/urban-farming-helps-local-communities-in-baltimore.php.

City [had] low levels of lead and other metals,"[41] researchers with the Johns Hopkins Center for a Livable Future found in June of 2021 that about 96% of soil samples and 95% of irrigation water samples collected contained heavy metal contaminants.[42]

In addition to potential threats to human health, limitations exist within current City policies themselves. Only one urban farm had taken advantage of Baltimore's Tax Credit program due to the restrictiveness of the program: 100% of the land must be used for agriculture, which precludes any farmers who want to live on their land.[43] Even though they provide plots through the Adopt-a-Lot program, the city can take back the lots with 30 days' notice[44]. Additionally, even though Baltimore offers loans and grants, it cannot be ignored that starting an urban farm requires significant start-up cost and planning that not all interested farmers may have access to.

Methodology

To better understand the history and extent of urban farming in both Washington, D.C. and Baltimore, Maryland, we had to take a deeper look at when urban farms and urban agricultural planning began in each city, the historical contextualization of urban agriculture programs, and how much time they have had to develop. We found that changes in legislation regarding zoning and other government efforts had a great impact on the development of urban agriculture. For example, Baltimore's zoning ordinances now allow urban agriculture in almost all areas that are

[41] Milburn, Darcy and Natalie Wood-Wright. "Report: Analysis of Baltimore City's Urban Farms and Gardens Finds Safe Levels of Metals at Vast Majority of Sites." John Hopkins Bloomberg School of Public Health, June 3, 2021, accessed at https://publichealth.jhu.edu/2021/report-analysis-of-baltimore-citys-urban-farms-and-gardens-finds-safe-levels-of-metals-at-vast-majority-of-sites

[42] Santo, Raychel et al. "The Safe Urban Harvests Study: An Assessment of Urban Farms and Community Gardens in Baltimore City." John Hopkins Center for a Livable Future, June 2021, accessed at https://clf.jhsph.edu/sites/default/files/2021-06/the-safe-urban-harvests-study-an-assessment-of-urban-farms-and-community-gardens-in-baltimore-city.pdf

[43] Cribbs, Jonathan. "Urban Agriculture 'on rise', but still facing challenges." The Delmarva Farmer, American Farm Publications, November 15, 2019, accessed at https://americanfarmpublications.com/urban-agriculture-on-rise-but-still-facing-challenges/

[44] Steve Kilar, The Baltimore Sun. "More Protection Sought for 'Adopted' Open Space." *Baltimoresun.com*, Baltimore Sun, 5 July 2013, https://www.baltimoresun.com/business/bs-bz-adopt-a-lot-sales-20130702-story.html.

zoned residential.[45] Community support and advocacy also played a pivotal role in the growth of the urban farming community in both cities. While both cities have made significant strides in expanding their programs, 1) some citizens are still prevented from benefiting, 2) there is a lack of data on current urban farms, and 3) there is unclear information on the full extent of the program's impacts. In researching the history, successes, and limitations, we can identify what areas should be improved.

With this in mind, we used the USDA's Urban Agriculture Toolkit as well as the other studies cited in this paper to include Dr. Jones' study on the ECUF to provide the basis for comparison between the two cities. Although there are a multitude of means of comparison, we chose start-up costs, land acquisition and incentives (ie. tax abatement), environmental contamination regulation, additional permits required, and community involvement and partnership as the main areas to focus on. For each of these, we reviewed whether policies were already passed, in progress, or not yet proposed. We also reviewed whether action on implementing these policies was started, being developed, or not incorporated. Lastly, we reviewed whether there were metrics readily available to determine the efficacy of these programs and to ensure transparency of these programs. Using a simple stoplight system, we charted the progress of the two cities and highlighted where they needed to improve, allowing for the means to compare the progress of the two cities. We could then determine where D.C.'s program lagged behind Baltimore's and the corresponding policies and actions, leading to our recommendations.

Comparison of the Programs

Federal Program Recommendations

We used the USDA Urban Agriculture Toolkit as a basis for the federal recommendations. The Toolkit identifies significant components of starting and maintaining an urban farm to be business planning, available land access, soil quality, water, capital and financing for the farm, infrastructure, and market development.[46] Along with other studies such as the UDC study previously discussed and our research, we determined the main points of comparison for urban

[45] Turner, Tess. "Urban Agriculture: Lessons from Baltimore and Beyond." Advocacy@UNA-NCA, UNA-NCA Snapshots, Nov 12, 2020, accessed at https://medium.com/una-nca-snapshots/urban-agriculture-lessons-from-baltimore-and-beyond-5c1269effe03

[46] "Urban Agriculture Toolkit." US Department of Agriculture (USDA), n.d., accessed November 17, 2021 at https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf, pg. 4-5.

agriculture programs to be definitions, policies, community involvement and partnership, local government prioritization, and data collection and availability.

Definitions

One of the aspects highlighted during our research was the importance of definitions. The USDA does not actually have an urban agriculture definition and instead uses the Environmental Protection Agency's definition, which is:

> Urban Agriculture is part of a local food system where food is produced within an urban area and marketed to consumers within that area. Urban farming can also include animal husbandry (e.g., breeding and raising livestock), beekeeping, aquaculture (e.g., fish farming), aquaponics (e.g., integrating fish farming and agriculture), and non-food products such as producing seeds, cultivating seedlings, and growing flowers. Urban farms can also contribute to the revitalization of abandoned or underutilized urban land, social and economic benefits to urban communities, and beneficial impacts on the urban landscape.[47]

This definition is inclusive of a variety of agricultural methods and products. The definition also includes a list of the benefits associated with urban agriculture. The D.C. policy does not reference the USDA/EPA definition and has struggled with consistent and effective definitions. D.C. also does not define urban agriculture but does define an urban farm as "any property in the District of Columbia that is used for the growing, cultivating, processing, and distributing of crops for profit, not for profit, or for educational purposes".[48] However, the Urban Farming and Food Security Amendment Act of 2015 defines urban farming as "the practice of growing food, flowers, or seeds within the District of Columbia for commercial purposes".[49] The discrepancy between a farm being "for profit, not for profit, or for educational purposes" and an urban farm being "for commercial purposes" allows for confusion regarding the applicability of programs and policies.

In comparison, Baltimore does have a strong definition and defines urban agriculture as "[t]he cultivation, processing, and marketing of food, with a primary emphasis on operating as a business

---

[47] "Urban Agriculture." Environmental Protection Agency, n.d., accessed November 11, 2021 at https://www.epa.gov/agriculture/agricultural-crops#UrbanAgriculture.

[48] "Definitions." Code of the District of Columbia, § 48-401, Council of the District of Columbia, accessed 11 November 2021 at https://code.D.C.council.us/us/D.C./council/code/sections/48-401.html.

[49] Mendelson, Phil, "Urban Farming and Food Security Amendment Act of 2015", July 2, 2015, accessed 11 November 2021 at https://lims.D.C.council.us/downloads/LIMS/34178/Committee_Report/B21-0293-CommitteeReport1.pdf, pg. 2.

enterprise for income generation. Urban agriculture includes animal husbandry, aquaculture, agro-forestry, vineyards and wineries, and horticulture, and might involve the use of intensive production methods, structures for extended growing seasons, on-site sales of produce, and composting."[50] The important difference to note in this definition is the inclusion of urban agriculture having a "primary emphasis on operating as a business enterprise for income generation". The emphasis on a successful business enterprise for profit gain is not shared by either the USDA/EPA definition or D.C.'s definition. Although it does not appear to dissuade urban agriculture efforts in Baltimore, the emphasis on profit and business enterprise technically discounts urban agriculture aimed at non-profit, charitable, or education purposes. In our review of the program, this did not seem to be the case in practice; however, it could lead to issues if not rectified at the policy level, especially if corresponding requirements for profit was included in land-lease or tax abatement requirements. Additionally, defining it specifically for profit-based enterprises degrades the focus on equity and community partnership where profit-based practices may distance the community if such practices do not benefit the community as a whole, or even are just perceived as such.

Policies

In comparing the policies in D.C. and Baltimore, several differences are evident. D.C. urban agriculture policy began in 1986 but was not updated again until 2014-2015 and continues to be refined. The policies focus primarily on the Land Lease Program and the Tax Abatement programs, both of which comply with federal recommendations. Access to land is a significant barrier to urban agriculture, and the Land Lease program identifies and makes available urban public land for agricultural purposes. The tax abatement provides incentives to use or allow use of land for agricultural purposes. Additionally, D.C. requires experience in "agriculture production" but does not specify how much or more explicitly state what type, [51] whereas Baltimore specifies one year of agriculture-based experience.[52] D.C. provides for a base period of five years for each lease, with the ability to renew five years each time but not for a period of more than fourteen years. It also addresses soil contamination by declaring soil must be "substantially free of contamination" or use a method that removes the produce from contact with the soil such as raised beds or green houses. Additionally, the policy states that the Department will provide a website with available

[50] "Urban Agriculture in Baltimore City: Context, Resources, & Regulations", Baltimore Office of Sustainability, n.d., slide 36, accessed 11 November 2021 at http://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/homegrown-baltimore/urban-agriculture-2/.
[51] Urban Farming Land Lease Program. D.C. Law. § 48–402.01
[52] "Urban Agriculture." Baltimore Office of Sustainability.

vacant lots and how they are being used, yet our team could not find such a website.[53] As noted earlier in the UDC study, policies to include those regulating permits need to be clear and easy to understand.

Turning to the tax abatement programs for both cities, they each provide tax abatement for properties used for agriculture at 90%. In D.C., the area must be "actively" used for agriculture production and has a maximum abatement amount of $20,000.[54] D.C. also allows the abatement to be pro-rated for the amount of years the plot was used for agriculture.[55] Baltimore is similar but the land must be used for agriculture for five years, denotes a minimum annual threshold value of $5,000, and cannot be used for another purpose that would incur property taxes.[56] Unfortunately, we were unable to obtain metrics for these programs, but it is likely that such high tax abatement is an adequate incentive to allow land to be used for agricultural purposes. Reviewing the answers provided by the farms regarding what would improve D.C. urban agriculture, taxes were not addressed, suggesting either that farmers are happy with the current tax incentives or that they do not find they contribute to the allure of developing and maintaining an urban farm.

Level of Community Involvement and Partnership

Washington D.C. and Baltimore both have major groups focused on community involvement with urban agriculture: D.C. has DUG, while Baltimore has the Farm Alliance of Baltimore and a partnership with the University of Maryland. DUG was described earlier in this report, but it bears repeating the positive impact an organization such as DUG has had on the community and participation in urban agriculture. Such ventures, particularly ones as volunteer-run and community-focused as DUG, are integral to energizing the community through mentorship, hands-on-experience, alliance-building, bringing sponsorship from local businesses, and promoting entrepreneurship. As DUG describes itself, "Our volunteers are motivated and passionate urban gardening, food security and environmental enthusiasts, professionals and advocates from around the D.C.-Maryland-Virginia area, who design and manage the DUG Network's website and activities."[57]

Baltimore, Maryland government has the Food Policy Initiative (FPI). The FPI was created by the City Council to build more connections and partnerships with farmers and policy experts to ensure

[53] Urban Farming Land Lease Program. D.C. Law. § 48–402.01
[54] "Urban Agriculture." Baltimore Office of Sustainability.
[55] Reduced tax liability for certain urban farms. D.C. law § 47-868. (passed Jan 1, 2021), accessed 11 November 2021 at https://code.D.C.council.us/us/D.C./council/code/sections/47-868.html.
[56] "Urban Agriculture." Baltimore Office of Sustainability.
[57] "About DUG".

there are best agricultural practices within the city[58]. The Food Policy and Planning division is led by a Food Access, A Food Resilience, and A Food Systems Planner[59]. In addition to these, there is collaboration with the Food Policy Action Coalition and Resident Food Equity Advisors[60]. The Food Policy Action Coalition (Food PAC) is made up of over 60 members that represent nonprofits, universities, farms, businesses, hospitals, and residents[61]. In addition to the community's involvement directly related to the government, there are also plenty of organizations that are involved as well. Civic Works Real Food Farm is an organization that is working to improve food access in the City of Baltimore using local urban agriculture[62]. "Real Food Farm also provides field trips, summer programs, and internships for students and farming training opportunities for adults"[63]. According to their website, since 2009, Real Food Farm has grown over 60,000 lbs of food and educated over 3,000 people through their work and efforts within the Baltimore community[64].

Another aspect of community involvement is the partnership with local public universities. The University of D.C. (UDC) has an urban agriculture program that involves the earlier described ECUF. Dr. Jones' study of the effectiveness of ECUF in relation to D.C.'s program provided an extensive look at the characteristics of a successful urban farm which was incorporated into our study. This farm is not just run by the UDC, but it incorporates different levels of government involvement from the local D.C. government to the USDA and US Department of Interior, as well as local sponsorships.[65] It incorporates schools by providing each of the local schools with a garden plot, as well as providing a means for residents to request a plot.[66] Tia D. Jeffery, Associate

---

[58] *Food Policy & Planning*. Department of Planning. (2021, May 27). Retrieved November 29, 2021, from https://planning.baltimorecity.gov/baltimore-food-policy-initiative.

[59] *Food Policy & Planning*. Department of Planning. (2021, May 27). Retrieved November 29, 2021, from https://planning.baltimorecity.gov/baltimore-food-policy-initiative.

[60] *Food Policy & Planning*. Department of Planning. (2021, May 27). Retrieved November 29, 2021, from https://planning.baltimorecity.gov/baltimore-food-policy-initiative.

[61] *Food policy action coalition*. Department of Planning. (2021, May 24). Retrieved November 29, 2021, from https://planning.baltimorecity.gov/baltimore-food-policy-initiative/food-policy-action-committee.

[62] *Real Food Farm - Baltimore Urban Farm*. Civic Works. (n.d.). Retrieved November 29, 2021, from http://civicworks.com/programs/real-food-farm/.

[63] *Real Food Farm - Baltimore Urban Farm*. Civic Works. (n.d.). Retrieved November 29, 2021, from http://civicworks.com/programs/real-food-farm/.

[64] *Real Food Farm - Baltimore Urban Farm*. Civic Works. (n.d.). Retrieved November 29, 2021, from http://civicworks.com/programs/real-food-farm/.

[65] Jones, Dwayne, "East Capital Urban Farm: East Capital Urban Farm Project, A UDC Partnership Effort", n.d. , pg. 1-2, accessed November 26, 2021 at http://docs.UDC.edu/causes/ecuf/Urban%20Farm%20Partnership_One_pager.pdf.

[66] "East Capital Urban Farm Frequently Asked Questions." University of the District of Columbia: College of Agriculture, Urban Sustainability, and Environmental Studies, n.d., accessed November 26, 2021 at http://docs.UDC.edu/causes/ecuf/2.FAQs%20copy.pdf, pg. 3.

Professor of Nutrition at UDC, states the purpose of the farm: "The ECUF also represents a center of opportunity with a mission to empower the community to take part in efforts to tackle social determinants of health to improve wellness and food security".[67] Although community involvement is not determined solely by government policy, government must ensure that policy encourages community involvement just as DUG and UDC demonstrate the value of the combined efforts. Like D.C., another aspect of community involvement in Baltimore involves its partnership with state universities through the University of Maryland Extension. The University of Maryland Extension is a state-wide network of master gardeners, horticulturalists, and local farms all dedicated to providing education towards agriculture-based information.[68] Extension staff members are found state-wide, often interacting directly with local representatives, commercial farmers, and urban farmers to share their knowledge. Currently, the UME-Baltimore City staff are involved in the research-based Feed Our Future initiative, which seeks to educate residents on food access, environment, and healthy youth development.[69] While the information collected could be used towards Baltimore's sustainability plan, the initiative is conducted outside of its direct control. While the Baltimore-Extension relationship currently is that of an online network, historically this was not always the case. Prior to 1970s, the extension served as Baltimore's unofficial urban agriculture program. Until the early 1970s, urban agriculture beyond beautification gardens was not a priority of the city government as a whole even though it was for some representatives. The extension lost its status following the 1980s legislation but still acts as a voice for Baltimore urban farmers today. Most recently, the University of Maryland Extension conducted a 2019 needs assessment for Maryland urban farmers. The study determined that gaining income from only their farms and not from outside resources or occupations was the reason that contributed most to farm closure[70]. Baltimore is trying to address these concerns: however, as seen with the struggles of the Adopt-a-Lot program, it is not acting quickly enough to retain farmer involvement. Despite this issue, the University of Maryland Extension remains a valuable tool for community engagement for Baltimore residents.

---

[67] Jeffery, Tia, D., "Nutrition and Health Equity: The Role of Washington, D.C.'s East Capitol Urban Farm", St.Louis University Journal of Health Law & Policy, vol. 10, Issue 2, Article 4, 2017, pg. 259

[68]University of Maryland Extension. "About." College of Agriculture and Natural Resources, 2020, https://extension.umd.edu/about.

[69]University of Maryland Extension (UME) Office in Baltimore City. "What Is Feed Our Future?" *College of Agriculture and Natural Resources*, 2020, https://extension.umd.edu/locations/baltimore-city/about.

[70]Little, N. G., et al. "Results of a Needs Assessment of Urban Farmers in Maryland." *Journal of the NACAA*, edited by Donald Llewellyn, vol. 12, no. 1, 1, June 2019, https://www.nacaa.com/journal/index.php?jid=971.

Local Government Prioritization

Mayor Bowser's opening in "Sustainable DC: Sustainable DC 2.0 Plan" promises inclusivity in D.C., a community-driven approach, and to make D.C. "the healthiest, greenest, most livable city in the country…"[71] As previously stated, the plan has several specific goals to urban agriculture, showing it as a significant priority for the city and mayor. Not only is D.C. creating and updating policies, which it references in the plan, but it is specifically identifying urban agriculture as a means of putting its sustainable city goals into practice.[72] In the first paragraph of the Food Section, the plan states "How the District grows, sells, eats, and disposes of food has far-reaching effects on our communities, health, and sustainability…The District has expanded the number of urban farms and community gardens that provide community spaces and fresh food to residents…"[73] The plan also notes that D.C. has 18 urban farms as of publication, as well as 62 farmers markets and 73 active community gardens.[74] The plan also identifies the goal of "expand[ing] agricultural uses and production within the district" and a target of "20 additional acres, including public right of way and rooftops, under cultivation for growing food" by the year 2032.[75] This demonstrates a desire to continuing building the program and the perceived benefit of the program at the D.C. local official level.

Data Collection and Availability

We made repeated attempts to obtain metrics on D.C.'s Urban Agriculture program by emailing and requesting data from local D.C. officials from both city council and offices associated with D.C.'s urban agriculture program such as the Department of Energy's Urban Agriculture office. Unfortunately, we repeatedly received responses that the office did not have that information available. However, we did find an ARCGIS-based website called "Feeding the City—D.C. Urban Farms" that highlighted ten of the 17 identified D.C. urban farms and provided the websites for the other seven. Additionally, the authors of the website asked several of the farms what would help urban agriculture in D.C. Five referenced public support in their answers; five referenced policy-related needs; four responded with suggestions involving funding; two suggested education-related improvements; and two suggested increased government involvement to include higher prioritization.[76]

[71] "Sustainable D.C.: Sustainable D.C. 2.0 Plan", 2017, www.sustainableD.C..org, pg. 3.
[72] Ibid, pg. 86.
[73] *Ibid*, pg. 81.
[74] *Ibid*, pg. 83.
[75] Ibid, pg 86
[76] "Feeding the City—D.C. Urban Farms.

Using the websites provided by "Feeding the City", we were able to determine the range of D.C. urban agriculture based on their voluntarily posted information. Unfortunately, due to the information being at the discretion of the farms itself and the desired audience, there was no conformity of the information provided. It was possible to determine that across the seventeen farms there is a wide variety of fresh produce available across multiple wards, particularly focused on Wards 7 and 8. Farms ranged from traditional soil-based farms to aeroponic, hydroponic, vertical gardens or rooftop farms. The farm websites referenced thousands of pounds of produce that otherwise would not have been accessible to residents. Additionally, the websites provided missions and visions of each farm, and our team noted that they rarely if ever mentioned profit-driven goals, instead of focusing on community, equity, and community. Although not tangible, these values were reflected in other metrics provided such as Common Good City Farm providing 25,000 pounds of produce free to residents, particularly those on government programs like SNAP and 125 boxes of produce to residents unable to leave their homes and dependent on the Produce Plus Direct program.

However, the fact that clear and discoverable metrics on the urban agriculture programs are not available is detrimental to assessing the program. Although the addition of any amount of fresh produce to increase residents' health is commendable, the lack of transparency in 1) how much produce is provided and newly available, 2) how many residents are involved in these programs and positive or negative benefits of their involvement, and 3) the demand for urban produce puts the programs in a precarious situation for future emphasis and prioritization within the city. As an example, the Sustainability D.C. plan mentions that "many residents wait for years to get off the waitlist for their neighborhood garden".[77] Including metrics on which wards have the greatest interest and the planned uses for such gardens can help the policy to match the need as D.C.'s program continues to grow. It can also demonstrate whether such programs are alleviating the social ills the program intends to mitigate and reverse. These will guide policy efforts as to where policy is succeeding and where it needs to be refined or refocused. Making these metrics publicly available allows the public to be active participants in engaging with these policies and ensuring they understand the benefits and potential areas of advocacy to their local government.

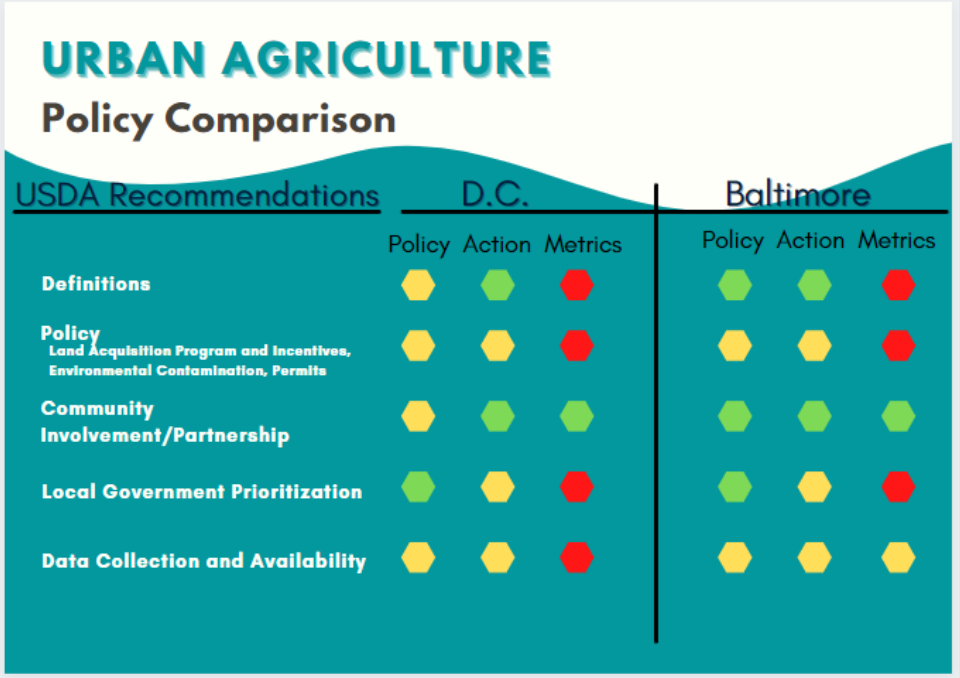
[77] "Sustainable D.C.: Sustainable D.C. 2.0 Plan." Department of Energy and Environment, 2020, pg. 86, Accessed at https://sustainable.D.C..gov/sD.C.2

Implications and Recommendations

Implications

To compare the programs and determine where we felt each program was, we developed a chart with the five aspects we highlighted earlier: definitions, policies, community involvement and partnership, local government prioritization, and data collection and availability. With those categories, we rated D.C.'s and Baltimore's program by policy, action, and metrics using a stoplight system: green for established and significant contribution to the program, yellow for in progress but needing more work, and red for absent or negligible. The chart provides insight into major areas of improvement needed and should be largely green for a sustainable and effective program.

Below is the chart we created to represent this analysis:



Reviewing this chart, both programs are fairly comparable with Baltimore exceeding D.C. in only a few categories related to policy and metrics.

For D.C., definitions are present in policy: however, they are inconsistent and change between bills. This can lead to confusion among urban agriculture participants and concern regarding consistency of the program. There are ongoing efforts to clarify the definitions, but they will need to be solidified and remain consistent in order to provide program stability. Definitions should be

inclusive of multiple agriculture-based activities to create areas for innovation such as new technologies in agriculture. The definitions should also include organizations beyond just for-profit to provide incentives to charitable and community-focused groups to focus on food sources in D.C. Government-provided metrics remain an issue throughout all categories, although community partners and urban farms themselves provide metrics. Of note, the community partners and urban farms are not governed in what metrics to provide or how to provide them, so government involvement in establishing standards of reporting would benefit the ability to analyze and compare the programs. These actions would move D.C. to green on our chart, indicating solid definitions with longevity and broad applicability.

It could be argued that definitions are not as important as action, and that focusing on them will distract from the more practical requirements of the program. As long as residents are participating, it is fulfilling its function. Perhaps more significantly, it could be argued that with ever-changing technology and demographics, a long-standing definition will not cover every instance. In particular, some may take issue with removing the requirement of an urban farm being "for-profit". Incentivizing farms that are unable to sustain themselves through profit could provide D.C. with either short-term farms that turn over quickly or become a burden on their communities. Without metrics to examine as to the nature of current farms and business models, this is difficult to predict. However, we still assert that given the nature of urban agriculture and depending on the high level of community involvement to continue, this will not be the case.

Reviewing the policy portions for D.C., there has been policy for an urban agriculture program since 1986 with further clarifications starting in 2014. However, as discussed earlier, D.C. is lacking companion policies in stormwater use, permits, testing for contaminants, and other relevant but tangential areas that would greatly clarify requirements for urban farms. Action continues, but it is still lacking. Public metrics are also not available to determine the effectiveness of these policies. These metrics would need to cover start-up costs of all city permits, utilities, and testing to determine the true cost and how the city could alleviate some of these costs. Conducting a survey of current urban agriculture farms would be an effective way to develop these metrics and determine where to make adjustments. As another note on publicly-available metrics, the majority of agencies and contacts we reached out to were more than willing to help and were supportive of our efforts. Unfortunately, they did not have the information we requested to provide for us, or only had small pieces.

The impact and extent of community involvement in D.C. urban agriculture cannot be over-stated. With partnerships like DUG and UDC, D.C. certainly has assistance in promoting, advocating for, training, and educating the populace on the techniques and benefits of urban agriculture. The

action taken by these partners and the metrics provided are essential to furthering the goals of resident health, access to fresh food, diminished diseases related to poor diet and exercise, and equity. Policies could do more to promote these interactions and should reflect the advocacy of these groups. For instance, ECUF has a portion of its program dedicated to determining and growing foods from different racial and ethnic backgrounds through the Ethnic Crops Program.[78] D.C can incorporate such initiatives into policy by creating incentives for diverse foods through grants or setting aside a portion of the land lease plots to non-standard foods. D.C. local government does recognize the importance of community, but it needs to proactively learn new ideas for providing an equitable system from the community.

We did not find any research criticizing community involvement in urban agriculture, but it is important to note that community organizations can bring their own biases into the program. For instance, the UDC-ECUF model favored incorporating new technologies such as their patented aquaponics system and teaching those technologies to the community.[79] However, given their patent on the system, this could introduce conflicts of interest into the program. Recognizing this, we still determine that the benefit of community-involvement outweighs these concerns.

The government of Washington, D.C. does have publicly stated urban agriculture goals that clearly explain the desired results of said policies. For action, it still needs to respond to issues such as farm waiting lists as well as update tangential policies regarding permits and contaminants. Metrics in the D.C. Sustainability plan were present but were too top-level to gauge the effectiveness of the program. Providing the public with a way to easily discover and understand urban agriculture metrics will demonstrate the impact of D.C.'s prioritization and allow increased advocacy from the public regarding where the local government could prioritize better. Creating a website listing the open sites and qualifications in plain language as well as estimated time to acquisition of the property would provide an easy means as long as it is kept updated. Providing these metrics could raise concerns of misinterpretation, misrepresentation, or criticism of the program. However, the lack of these metrics and the inconsistency of what farms provide themselves leaves little ability to truly examine the efficiency and achievements as well as the gaps and areas for improvement.

Lastly, data collection and availability are patent issues in improving the D.C. agriculture program. They impact every part of our analysis and make policy review and public involvement difficult to determine. Although numerous offices and contacts were eager to help our project, only one seemed prepared to provide metrics, and that was only through a Zoom meeting during a

[78] Jeffrey, pg. 272-273.
[79] Jones, pg. 247.

time our team was unable to attend. As stated above, transparency and accessibility are needed for effective policies and programs.

We found that the Baltimore Office of Sustainability does define urban agriculture and provides other definition of program elements more consistently than D.C. does. Baltimore took extensive action in delineating the definitions by involving stakeholders and have make the definitions clearly known in their 2019 Sustainability plan: however, while metrics are provided in the plan, there is no measure of these metrics from previous years that will give readers a comparison of where the city has been or which direction said metrics could progress.

Baltimore has enacted multiple policies and programs to create incentives for people to farm in the city, but as previously mentioned, there is a discrepancy regarding soil contamination that only breeds distrust and confusion on whether it is safe to consume Baltimore-farmed food. While zoning laws have been progressive to include urban farming, they have been inflexible to include non-farming activities: farmers who wish to live on their farm, as many often do, cannot be eligible for the City's tax credit program. Most educational resources and support are provided by community groups rather than a central hub of information within Baltimore. There have, however, been recent increases in grants and loans available to prospective farmers, which lowers the start-up costs. Additionally, The Community Greening Resource Network is a partnership between city government and a community-based foundation that provides an excellent example of how government and communities can work together to promote urban agriculture and its equity-based goals. Should the city wish to strengthen its relationship with other crucial nonprofits such as the Farm Alliance of Baltimore, which promotes urban agriculture as well as advocates for the farmers and community, it should take further action and replicate this partnership for other existing groups.

Most urban farms within Baltimore give back to residents and the local economy via education, service, and strengthening community ties. Many farms within the city provide their own metrics to inform the public on their progress: Civic Works Real Food Farm states on its website that it's grown over 60,000 lbs of food and provided agricultural education to

over 3,000 people since 2009[80]. Overall, we score Baltimore's Community Involvement and Partnership with green lights in policy, action, and metrics.

Baltimore clearly states its prioritization of goals within the Sustainable Baltimore 2019 Plan. Even outside of the Urban Agriculture chapter, the plan ties urban agriculture into other City priorities such as "support growers to create financially viable urban agriculture",[81] "increase the number and use of safe, well-maintained indoor and outdoor public gardening spaces",[82] and "support students as environmental leaders and entrepreneurs, connecting green projects with economic sustainability".[83] The city took extensive action in creating such a comprehensive sustainability plan: it is a culmination of 2.5 years of research and over hundreds of conversations with community members.[84] Part of this emphasis stems from the fact that Baltimore was selected as one of three in the U.S. to implement the UN's 17 Sustainable Development Goals.[85] However, such prioritization is weakened by the inability to explain recent progress within the document or provide transparent, easily-accessible information. We have scored Baltimore with green lights for prioritization of urban agriculture within its policy and action, but with a red light for its metrics.

Like D.C., data collection specific to Baltimore policies on urban agriculture and their effectiveness is sparse. There is a lack of official city data collection detailing the urban farms and who is interacting with them. Increasing the availability of data related to Baltimore policies would improve the ability to recognize issues and gaps within the policies, as well as distinguish portions of the policies that work well.

Recommendations

The stoplight chart informs our recommendations to the city of D.C. The first is to hone the definitions used and ensure that definitions are consistent across all policies and regulations. Whereas definitions may seem an insignificant part of a program, clarity in what constitutes urban agriculture ensures residents understand who benefits from the tax abatement. This in turn leads to better and more informed applications to the programs. Second, policies

[80] *Real Food Farm - Baltimore Urban Farm*. Civic Works. (n.d.). Retrieved November 29, 2021, from http://civicworks.com/programs/real-food-farm/.
[81] "The 2019 Baltimore Sustainability Plan." Baltimore Office of Sustainability, n.d., pg. 53, accessed at https://www.baltimoresustainability.org/wp-content/uploads/2021/04/SustainabilityPlan_03-02-20-Compressed.pdf.
[82] *Ibid.*, pg. 34.
[83] *Ibid.*, pg. 38.
[84] *Ibid.*, pg. 5.
[85] *Ibid.*, pg. 6.

regarding the Tax Abatement and Land Lease program are in place and being implemented, but it is essential that D.C. examines tangential policies such as permits, contaminant testing, and watershed policies. ECUF spent $20,000 in permits without knowing whether they truly needed to do so.[86] Such costs are significant to most urban farmers and may dissuade them from any attempt to farm in D.C.

Third, D.C. must highlight and codify partnerships with the community and with community organizations. ECUF demonstrated the value of this through its wide range of partnerships and what it could offer the community through those partnerships in terms of a range of garden plots available to private residents and schools, education, training, technology, and outreach. Listening to the community will be essential to improving the program and ensuring it equates to the needs of residents. That being said, D.C. is doing well with community involvement, but could do better by reviewing policy to recognize and sponsor community-initiated groups such as DUG.

Fourth, D.C. is doing well to include urban agriculture as not just a portion but its first discussion point addressing food insecurity and inequities in its D.C. Sustainability Plan. It should continue to do so, but also use that venue to promote and provide substantial and specific metrics to the community regarding the status of urban agriculture programs, improvements being made, and progress being made. This leads directly to our fifth recommendation, and potentially the most important: D.C. needs to provide accurate, timely, discoverable, and easily understood metrics on D.C. urban agriculture. Metrics such as the number of farms; number of applicants; number accepted into the program; number rejected and reasons; acreage used, projected, and profitability of the acreage; programs supported by urban agriculture to include SNAP; and products produced, purchased, donated, and wasted in the program. As an example, each email we sent requesting metrics asked for: "the number of participants in the programs, the number of Urban Agriculture entities (urban farms, community gardens, both non-profit and for-profit), the number of public lots designated for urban agriculture, the number of lots already in use or being prepared for use, and the lots awaiting use. Additionally, if [contact] had any metrics on the amount of produce, profits of urban agriculture entities, number of residents served (even an estimate), and partnerships of the urban agriculture entities and local food markets or charities to support food equity."

[86] Jones, pg. 245.

These five recommendations based on our charts should help spur the D.C. urban agriculture program. However, we do have one remaining recommendation. This study was only able to evaluate D.C. against Baltimore's program, yet we came across studies looking at urban agriculture not just across the country but across the globe. D.C. should seek out successful urban agriculture programs worldwide with similar goals and solid programs to continue improvement and innovation. Using our chart can help evaluate multiple programs and provide D.C. guidance into the cities with whom to partner.

Conclusion

After researching the history of policy and community involvement in relation to urban farming within both Washington D.C. and Baltimore, Maryland, we were able to compare the two cities based on the amount of work put into developing and the continued focus on their policies. We then came up with recommendations for the City of Washington, D.C. on how they can improve their overall urban agriculture networks.

Five recommendations were found, including but not limited to improving the definitions used by the city in relation to urban farming policies and regulations as well as creating accessible and accurate metrics of the program. We found that the most important recommendation was D.C.'s need to provide accurate, timely, discoverable, and easily understood metrics. These are also recommendations in comparison to Baltimore, Maryland: more recommendations could possibly come to light if Washington, D.C.'s policies were compared to other cities.

Works Cited

Avins, Miriam, et al. “The 2019 Baltimore Sustainability Plan.” *Baltimore Office of Sustainability*, 2019, accessed 29 Nov 2021 https://www.baltimoresustainability.org/wp-content/uploads/2021/04/SustainabilityPlan_03-02-20-Compressed.pdf.

Baltimore Development Corporation. “Baltimore Food Policy Initiative.” *Baltimore Development Corporation*, 2016, accessed 13 Oct 2021, http://baltimoredevelopment.com/initiatives/baltimore-food-policy-initiative/

Baltimore Office of Sustainability. “Baltimore Green Network.” *City of Baltimore*, n.d., accessed Nov 2021, https://www.baltimoresustainability.org/projects/baltimore-green-network/.

Baltimore Office of Sustainability. “Baltimore Office of Sustainability Homegrown Baltimore Plan: Grow Local.” *City of Baltimore*, 1 Jul 2021, accessed 19 Nov 2021, https://www.baltimoresustainability.org/homegrown-baltimore-plan/.

Baltimore Office of Sustainability. “The Sustainability Plan.” *City of Baltimore*, n.d., accessed 19 Nov 2021, https://baltimoresustainability.org/wp-content/uploads/2019/02/Sustainability-Plan_Ch5-1_Community.pdf.

Baltimore Office of Sustainability. “Urban Agriculture.” *City of Baltimore*, 10 Nov 2021, accessed 19 Nov 2021, https://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/homegrown-baltimore/urban-agriculture-2/.

Baltimore Office of Sustainability "Urban Agriculture in Baltimore City: Context, Resources, & Regulations." *City of Baltimore*, n.d., slide 36, accessed 11 Nov 2021, http://www.baltimoresustainability.org/projects/baltimore-food-policy-initiative/homegrown-baltimore/urban-agriculture-2/.

Center for Sustainable Development. “East Capital Urban Farm Frequently Asked Questions.” University of the District of Columbia: College of Agriculture, Urban Sustainability, and Environmental Studies, n.d., 26 Nov 2021, http://docs.UDC.edu/causes/ecuf/2.FAQs%20copy.pdf.

CivicWorks. “Baltimore Urban Farm.” *Real Food Farm*, n.d, accessed 29 Nov 2021, http://civicworks.com/programs/real-food-farm/.

Code of the District of Columbia, § 48-401. "Definitions." *Council of the District of Columbia*, 7 Oct 2021, accessed 11 Nov 2021, https://code.D.C.council.us/us/D.C./council/code/sections/48-401.html.

Cribbs, Johnathan. "Urban Agriculture 'on Rise,' but Still Facing Challenges." *The Delmarva Farmer*, 15 Nov. 2019, *American Farm Publications*, accessed Nov 2021, https://americanfarmpublications.com/urban-agriculture-on-rise-but-still-facing-challenges/.

D.C. Act 20-599. "B-20-0677 – D.C. Urban Farming and Food Security Act of 2014." *Council of the District of Columbia*, 26 Jan. 2015, accessed 21 Sep 21, https://lims.D.C.council.us/Legislation/B20-0677?FromSearchResults=true.

D.C. Act 21-676. "B21-0293-Urban Farming and Food Security Amendment Act of 2015." *Council of the District of Columbia*, 15 Feb. 2017, accessed 21 Sep 21, https://lims.D.C.council.us/Legislation/B21-0293?FromSearchResults=true.

D.C. Law § 47-868. "Reduced Tax Liability for Certain Urban Farms." *Council of the District of Columbia*, 1 Jan 2021, accessed 11 Nov 2021, https://code.D.C.council.us/us/D.C./council/code/sections/47-868.html.

D.C. Law. § 48–402.01. "Urban Farming Land Lease Program." *Council of the District of Columbia*, 1 Jan. 2021, accessed 21 Sep 21, https://code.D.C.council.us/D.C./council/code/sections/48-402.01.html.

D.C. Law 6-210. "Food Production and Urban Gardens Program Act of 1986." *D.C. Law Library*, 30 Jan. 1987, accessed 21 Sep 21 at https://code.D.C.council.us/D.C./council/laws/docs/6-210.pdf.

DC Urban Gardeners (DUG) Network. "About DUG." *DUG Network*, n.d., accessed 24 Oct 2021 http://dugnetwork.org/about/.

DC Urban Gardeners (DUG) Network. "Gardens & Urban Farms: Empowering Urban Communities Through Urban Agriculture." *DUG Network*, n.d., accessed 24 Oct 2021, http://dug network.org/gardens-and-urban-farms/#Map%20of%20All%20D.C.%20Urban%20Ag%20Sites.

Department of Agriculture—Urban Agriculture Grant Program. "Maryland HB 269 (Prior Session Legislation)." *LegiScan*, 18 May 2021, accessed 19 Nov 2021, https://legiscan.com/MD/bill/HB269/2021.

Department of Agriculture - Urban Agriculture Grant Program, and Melissa R. Wells. “House Bill 269.” *Department of Legislative Services Maryland General Assembly*, 1 July 2021, accessed 19 Nov 2021, https://mgaleg.maryland.gov/2021RS/fnotes/bil_0009/hb0269.pdf.

EPA. “Urban Agriculture.” *United States Environmental Protection Agency*, 3 May 2021, accessed 11 Nov 2021, https://www.epa.gov/agriculture/agricultural-crops#UrbanAgriculture.

Farm Alliance of Baltimore. “Our mission and values.” *Farm Alliance of Baltimore*. 23 Sep 2021, accessed 19 Nov 2021, https://farmalliancebaltimore.org/about-us/our-values/.

Gnadinger, Tracy. “Urban Farming Helps Local Communities in Baltimore.” *University of Maryland, UMB Go Green*, n.d., accessed Nov 2021, https://www.umaryland.edu/go green/news/food/urban-farming-helps-local-communities-in-baltimore.php.

Goldstein, Mindy, et al. “Urban Agriculture: A Sixteen City Survey of Urban Agriculture Practices Across the Country”, *Tuner Environmental Law Clinic*, 1 Jun. 2011, accessed 13 Oct 21 at h ttps://web.archive.org/web/20120106222532/http://www.georgiaorganics.org/Advocacy/ urbanagreport.pdf

Government of the District of Columbia Muriel Bowser, Mayor. “Sustainable DC 2.0 Plan Online.” Department of Energy and Environment, 2020, accessed at 21 Sep 2021 https://susta inable.D.C..gov/sD.C.2.

Hagey, Allison, et al. “Growing Urban Agriculture: Equitable Strategies and Policies for Improving Access to Healthy Food and Revitalizing Communities.” *PolicyLink*, 2012, accessed 13 Oct 2 021, https://www.policylink.org/sites/default/files/URBAN_AG_FULLREPORT.PDF.

Hayes, Laura. “Key Urban Agriculture Programs Delayed as City Swaps Who Will Manage Them.” Washington City Paper, 7 June 2019, *Washington City Paper*, accessed 13 Oct 2021, ht tps://washingtoncitypaper.com/article/179945/key-urban-agriculture-programs-delayed-a s-city-swaps-who-will-manage-them/.

John Hopkins Center for a Livable Future. “Maryland Food System Map.” *IIS windows server*, 2021, accessed 19 Nov 2021, https://gis.mdfoodsystemmap.org/map/#x=-8600388.674532 637&y=4687424.322558925&z=6&ll=2,505,3.

Jeffery, Tia, D., “Nutrition and Health Equity: The Role of Washington, D.C.’s East Capitol Urban F Farm.” *St. Louis University Journal of Health Law & Policy*, Vol. 10, Issue 2, Article 4, 2017, pg. 249-278, accessed 29 Nov 21, https://scholarship.law.slu.edu/cgi/viewconten t.cgi?article=1043&context=jhlp

Jones, Dwayne. “Addressing Urban Health and Food Policy Through Resiliency Food Hubs: A Case Study from Washington, D.C.” *Saint Louis University Journal of Health Law & Policy*, Vol. 10, Issue 2, Article 3, 2017, pg. 239-245, accessed Oct 2021, https://scholarship.law.slu.edu/jhlp/vol10/iss2/3.

Jones, Dwane. “East Capitol Urban Farm Project: A UDC Partnership Effort.” *University of the District of Columbia*, n.d., accessed 26 Nov 2021, http://docs.udc.edu/cau ses/ecuf/Urban%20Farm%20Partnership_One_pager.pdf.

Little, N. G., et al. “Results of a Needs Assessment of Urban Farmers in Maryland.” *Journal of the NACAA*, edited by Donald Llewellyn, vol. 12, no. 1, 1, June 2019, accessed 29 Oct 2021, https://www.nacaa.com/journal/index.php?jid=971.

Mendelson, Phil, "Urban Farming and Food Security Amendment Act of 2015", *Council of the District of Columbia*, 2 July 2015, accessed 11 Nov 2021, https://lims.D.C.council.us/downloads/LIMS/34178/Committee_Report/B21-0293-CommitteeReport1.pdf

Milburn, Darcy and Natalie Wood-Wright. “Report: Analysis of Baltimore City’s Urban Farms and Gardens Finds Safe Levels of Metals at Vast Majority of Sites.” *John Hopkins Bloomberg School of Public Health*, 3 June 2021, accessed 19 Nov 2021, https://publichealth.jhu.edu/2021/report-analysis-of-baltimore-citys-urban-farms-and-gardens-finds-safe-levels-of-metals-at-vast-majority-of-sites

Poulsen, Melissa, et al. “Homegrown Baltimore: Grow Local Baltimore City’s Urban Agriculture Plan.” City of Baltimore, 1 Nov. 2013, accessed 19 Nov 2021 https://www.baltimoresustainability.org/wp-content/uploads/2015/07/HGB-Grow-Local-Final-Cover.pdf.

Rooting DC. “About Rooting DC.” *Rooting DC*, n.d., accessed 24 Oct 2021, https://www.rootingDC.org/about-the-event.

Santo, Raychel et al. “The Safe Urban Harvests Study: An Assessment of Urban Farms and Community Gardens in Baltimore City.” *John Hopkins Center for a Livable Future*, June 2021, accessed Nov 2021, https://clf.jhsph.edu/sites/default/files/2021-06/the-safe-urban-harvests-study-an-assessment-of-urban-farms-and-community-gardens-in-baltimore-city.pdf

Turner, Tess. “Urban Agriculture: Lessons from Baltimore and Beyond.” *UNA-NCA Snapshots*, 12 Nov. 2020, accessed Nov 2021, https://medium.com/una-nca-snapshots/urban-agriculture-lessons-from-baltimore-and-beyond-5c1269effe03.

University of Maryland Extension. “About.” College of Agriculture and Natural Resources, 2020, accessed 29 Oct 2021, https://extension.umd.edu/about.

University of Maryland Extension (UME) Office in Baltimore City. “What Is Feed Our Future?” College of Agriculture and Natural Resources, 2020, accessed 29 Oct 2021, https://extension.umd.edu/locations/baltimore-city/about.

USDA. “Urban Agriculture Tool Kit.” *United States Department of Agriculture*, Feb. 2016, accessed 17 Nov 2021, https://www.usda.gov/sites/default/files/documents/urban-agriculture-toolkit.pdf.

Wooten, Heather and Amy Ackerman. “Seeding the City: Land Use Policies to Promote Urban Agriculture.” ChangeLab Solutions, October 2011, pg. 4-5.

§ 48-401 – 48-411. P.L. “Chapter 4. Food Production and Urban Gardens Program.” *Council of the District of Columbia*, 1 Jan. 2021, accessed 21 Sept 21, https://code.D.C.council.us/D.C./council/code/titles/48/chapters/4/.