

Economic Impact of UDC Farmers Market



Xiaochu Hu, Ph.D., Kamran Zendeheel,
Ph.D., and Dwane Jones, Ph.D.

*Center for Sustainable Development College of
Agriculture, Urban Sustainability and
Environmental Sciences University of the District
of Columbia*

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*Xiaochu Hu, Ph.D., Kamran Zendehdel, Ph.D, and Dwane Jones, Ph.D.
With research support from Maria Watkins and Ghude Hare*

*Center for Sustainable Development^{1,2}
College of Agriculture, Urban Sustainability and Environmental Sciences
University of the District of Columbia*

Run by Center for Sustainable Development (CSD), College of Agriculture, Urban Sustainability and Environmental Sciences (CAUSES) on every Saturday at the Van Ness Campus from May to late November since 2013, the UDC Farmers' Market brings local, fresh, and sustainable produce to Ward 3 residents and beyond. The economic impact of the farmers' market goes far beyond the sales value because the local spending causes a larger multiplier effect throughout the economy that will stay local, compared to the spending happens at grocery stores. Using the Sticky Economy Evaluation Device (SEED) methodology, it is estimated that UDC Farmers' Market in 2015 market season (mid-May to late-November) has an annual combined economic impact of \$432,717 in the District of Columbia's economy.

Operating 26 days per year, the UDC Farmers' Market is estimated to enjoy gross annual receipts of \$140,600. The CSD evaluation team also learned through its survey that the UDC Farmers' Market attracts approximately 300 shoppers per market day, which results in an estimated annual attendance of 7,500 shoppers³.

The impact of this public markets comes in three major perspectives: a) vendors, b) nearby businesses, and c) a region's economy through local and state taxes contribution. In addition, core market statistics such as shopper frequency, geography and important demographic details, as well as suggestions for improvement are captured in our survey.

¹ We sincerely thank Dr. Peter Moll, senior economist at the World Bank and Dr. Stephen Fuller, professor at George Mason University, for their suggestions and comments. We also thank Forest Hill Connections, D.C. for their support in collecting survey data.

² Part of the economic impacts on District of Columbia are calculated with assistance from Sticky Economy Evaluation Device (SEED), operated by MarketUmbrella.org

³ The shopper number is a conservative estimation

UDC Farmers Market

The UDC Farmers' Market locates on the west side of the Connecticut Street in front of UDC Law School at 4340 Connecticut Avenue NW, 20008. It manages 1,600 sq. ft. of space with eight vendors. The vendors pay an annual fee of \$150 to the CAUSES and their produce comes from farmers in 100 miles radius from the market. The main objectives of UDC Farmers' Market is to provide convenient access to fresh produce, to enhance social engagement, to enrich the community with useful knowledge that they can incorporate in everyday living and to improve the local economy by providing a useful source of income for many local farmers.

Our roles and responsibilities include overseeing the market and making sure it runs smoothly enough to seem as though it naturally occurred. We are also responsible for making sure that every vendor is in compliance with the Markets rules and guidelines as well as the regulations of the United States Department of Agriculture (USDA). As part of the mission of the Land-Grant University, we are also responsible for providing access to the market to low-income areas as well as educating the local community.

Neighborhood Statistics

The UDC Farmers' Market locates in the Ward 3 of District of Columbia. As Table 1 shows, this zip code area is highly educated and wealthy neighborhood, with over 90 percent of the population with college degree or higher and annual median household income of over \$100,000. This area also has a low percent of African American population, compared to the rest of the District, and a relatively large percent of female and older population.

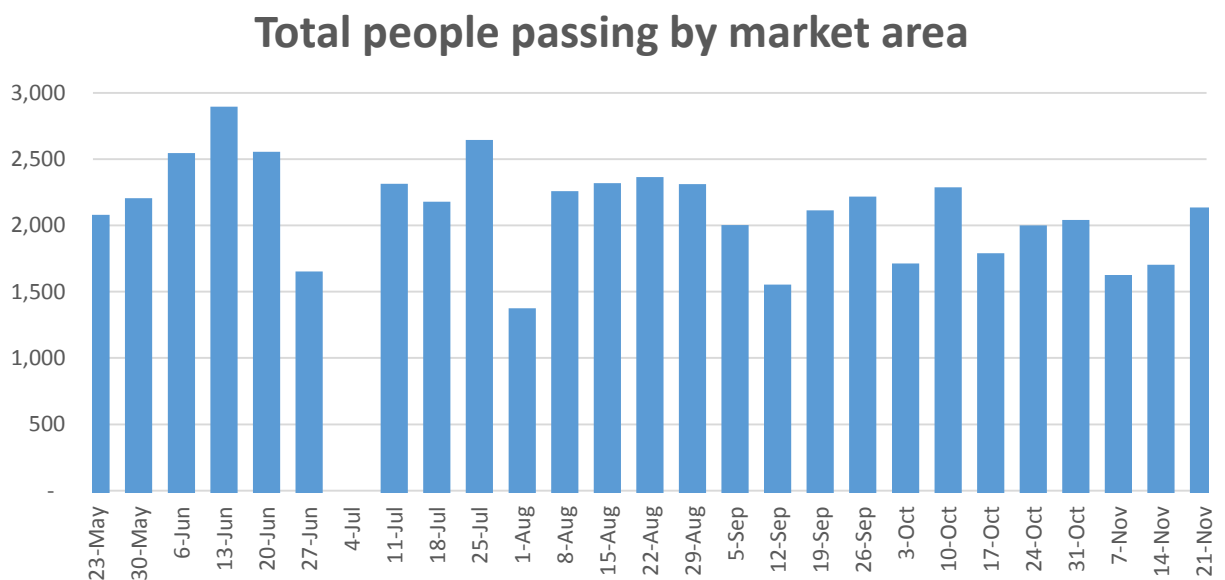
Table 1. Demographic characteristics of UDC Farmers' Market area compared to District of Columbia and United States, 2014

	Percent College degree*	Annual median household income	Percent African American	Percent female	Median age	Percent population of age 65+
Zip code 20008	90.2	107,651	6.3	55.9	35.9	15.8
D.C.	54.4	69,235	50.9	52.7	33.7	11.3
U.S.	29.3	53,482	13.0	50.8	37.4	13.7

Source: American Community Survey 2014. *among population aged 25 and above

CSD team counted the total people passing by the market area every Saturday during the market open time. UDC Farmers’ Market has 52,800 people as a market season total traffic. Figure 1 shows the total passing by number by market day. Average number of shoppers per market day is an important variable for the impacts calculation. Because the market area is on a busy street instead of a closed area, it is hard to differentiate shoppers from people who are just passing by. Numbers of shoppers also vary depending on the weather, temperature and time of the year. For a conservative result, we use 300 shoppers, including those who spent money and who looked but did not make purchase, which is 12-20 percent of the total market day traffic as our best estimation for the economic impact calculation.

Figure 1. Total People Passing by Market Area



Note: UDC Farmers’ Market was closed on July 4th, 2015.

Core Market Statistics Reflected in the Survey

CSD team randomly collected 140 two-page questionnaires across the market days in 2015. A reusable shopping bag with UDC CAUSES logo was offered to those who filled in the survey as a compensation for their time. The questionnaire was also put into an online format and was distributed by the Forest Hill community website⁴. Table 2 presents the core statistics of the results. An average shopper spent \$18.75 at the market and 46 percent of them also spend at nearby

⁴ Forest Hill is a nearby community including UDC Farmers Market area

business. The top five zip codes from where the UDC Farmers' Market shoppers reside are 20008 (67.6%), 20016 (9.2%), 20015 (7.8%), 20009 (2.8%) and 20002 (2.1%). About seven percent of the shoppers are from outside the District.

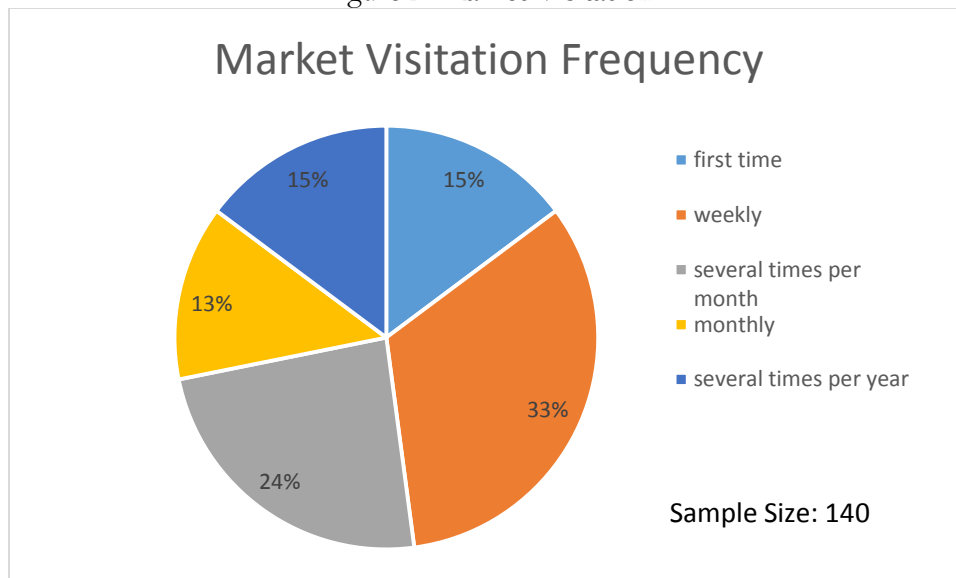
Table 2. Core Market Statistics from Survey Results (Sample size: 140)

Multiplier (District of Columbia)	1.36
Multiplier (Washington Metropolitan Area)	1.6517 ⁵
Days open for business each year	26
State + municipal state tax rate	10%
Total number of surveyed shoppers	142
Average number of shoppers (per market):	300
Estimated annual market attendance	7,800
Average (mean) dollars spent at the market (per shopper):	\$18.75
Percentage of shoppers who spend at nearby businesses (per market):	46%
Average dollars spent at nearby businesses (per shopper):	\$22.77
Gender ratio	F 58%/M 42%
Average vendor stall space (sq/ft):	104/Sq.ft.
Average number of vendors:	8
Average vendor gross receipts per market:	\$703

Source: CSD SEED survey, 2015

Figure 2 shows the frequency of market visit in the survey results. Of all 140 people being surveyed, 33 percent visit UDC Farmer Market weekly, and 24 percent visit several times per month.

Figure 2. Market Visitation



Source: CSD SEED survey, 2015. Calculated by Author

⁵ BEA 2010

Economic Impact Study

The economic impact study uses economic multipliers (Regional Industrial Multiplier Modeling System, RIMS) based on a traditional input-output model provided by Bureau of Economic Analysis (BEA). RIMS multipliers account for inter-industry relationship within regions and are used to estimate the total impact of the project on regional output, earnings or employment.⁶ The economic impact estimated by this method goes beyond the direct baseline effects. These multipliers vary by industry and state. Multipliers for the District and the Washington Metropolitan Area are 1.36 and 1.76, respectively. Therefore the metropolitan multiplier effects are also larger than the District's.

Market Economic Impact on Vendors

According to the American Farm Bureau (2010), farmers usually earn an average of just \$0.19 from each retail food dollar. The cost of processing, packaging, distribution, transportation, and retailing consumes the other \$0.81. And for highly processed and packaged foods, growers earn even less. But growers who sell food directly to shoppers, via public markets, receive 100% of retail food dollars. At UDC Farmers' Market, we had 9 vendors and they are providing fresh produce. It is projected that they have received an annual gross of \$140,600, and based on this number, the market has a \$191,210 economic impact upon market vendors. Table 3 shows this market's economic benefit to its vendors.

Table 3. Economic Benefit to UDC Farmers' Market Vendors, 2015 Market Season

Average gross receipts (per market):	\$5,624
Average gross receipts per market sq. ft. (per market):	\$3.51 / sq. ft.
Projected gross annual receipts:	\$140,600
Economic impact inside market (using multiplier effect):	\$191,214

Source: CSD SEED survey, 2015

Market Economic Impact on Nearby Businesses

By increasing the number of consumers visiting the Market's neighborhood, the UDC Farmers' Market increases the revenue collected by local businesses. It is estimated that because the existence of UDC Farmers' Market, the nearby business have received an addition of \$6,830 per market day and \$177,574 in the 2015 market season. The economic impact of UDC Farmers' Market at

⁶ Daley William, Everett Ehrlich, Steven Landefeld and Betty Barker. 1997. Regional multipliers, A User Handbook for the Regional Input-output Modeling System (RIMS II). BEA.

businesses near the market is \$241,500. Table 4 shows UDC Farmers’ Market’s economic benefit to its nearby businesses.

Table 4. Economic Benefit to Nearby Businesses, 2015 Market Season

Average gross receipts at businesses near the market (per market day)	\$6,830
Projected gross annual receipts at businesses near the market	\$177,574
Projected annual state & municipal sales tax revenue (10% rate)	\$17,757
Economic impact at businesses near the market (using multiplier effect)	\$241,500

Source: CSD SEED survey, 2015

When market shoppers are drawn to a neighborhood that hosts a public market, they frequent nearby retailers, spend additional cash, and contribute to local and state sales tax revenue. It is estimated that annual municipal and state sales tax revenue (at 10% rate) brought by UDC Farmers’ Market customers is \$17,757.

Total Combined Economic Impact

We total the economic benefit to vendors, nearby businesses, and the local community and multiplies the total by a number (called a Regional Input-Output Modeling System II multiplier, or RIMS II multiplier) calculated by the Bureau of Economic Analysis (BEA) or estimated in light of comparable BEA multipliers. This multiplier captures the impact of an initial round of spending plus successive rounds of re-spending the initial dollars within the District of Columbia and the Washington DC Metropolitan Area. The greater the interaction each dollar has with the local economy, the larger the multipliers are (and the “stickier” the economy is).

Table 5. Combined Economic Impacts for District and Metropolitan Area

District of Columbia			Washington Metropolitan Area		
Contribution	Personal income	Jobs	Contribution	Personal income	Jobs
\$432,717	\$44,220	1.5	\$558,672	\$171,224	6.0

Source: CSD SEED survey, 2015 and BEA multipliers

As Table 5 shows, in 2015, UDC Farmers’ Market is estimated to have brought the District a total economic benefit of \$432,717⁷, \$44,220 personal income and one and half full-time equivalent job across all sectors. UDC Farmers’ Market is estimated to have brought the Metropolitan Area a total

⁷ (Projected gross annual receipts at businesses near the market (\$140,600) + Projected gross annual receipts at businesses near the market (\$170,760)) * DC multipliers

economic benefit of \$546,707, \$167,557 personal income and six full-time equivalent job across all sectors.

Other Impacts of UDC Farmers' Market

The benefits that a farmers' market brings to the economy and community goes beyond monetary impacts. Socially, the UDC Farmers' Market provides a new common ground where people easily interact, alive with social activity and increases the sense of community. Nutrition information about food sold at the market and cooking instructions are distributed and cooking demonstrations are provided by UDC land-grant program staff at the UDC Farmers' Market. There was also art demonstration and display, as well as live music played by local artists and musicians. According to our survey, 55 percent of respondents either strongly agreed or agreed that their family's weekly consumption of fruits and vegetables increased due to shopping at farmers markets.

Environmentally, farmers' market promotes local transactions which minimize the food mileages and carbon footprint, and maximize the nutrition contents of the produce. According to our interviews with the vendors, produce sold at UDC Farmers' Market come within 103 miles radius, compared with nearby Giant's produce coming from 1100 miles radius. Serving as the food distribution platform, UDC Farmers' Market is an essential component for the CAUSES Urban Food Hub system and promotes healthy diet and lifestyle. Its social, environmental and educational benefits will be our next steps in the evaluation work.

Discussion and Suggestions for Improvement

In the economic impact analysis, we need to be cautious in calling our impact "net impact", since substitutional effects exist: when residents of the District buy food at the farmers' market, they are spending money that could have been spent at the nearby grocery store. In other words, the money this Farmers' Market brings to the region is new. However, we believe this is a not a dollar-for-dollar substitution because most of the respondents say their weekly consumption of fruit and vegetable has increased because of the farmers' market.

On the other hand, purchase made by non-District residents are new money to the District. In other words, if the UDC Farmers' Market did not exist, these people would not likely spend their money in D.C. Therefore, it is safe to claim that the economic impact that caused by purchase of non-

District residents as “net impact”: since seven percent of our shoppers are from outside D.C., the net impact is worth \$30,290 (seven percent of \$432,717).

Figure 3 shows suggestions for improving UDC Farmers’ Market. 64 percent of respondents call for opening longer season. Other than the categories that were included in the survey, shoppers also called for meat (including dairy, fish, hard-to-get animal parts), live music, and bakery vendors. Changing the market time to a workday (for example, Friday afternoon) to attract more non-DC residents who work in the District is another a major consideration, if the market would like to have a larger net economic impact.

Figure 3. Suggestions for Improving UDC Farmers’ Market

