



Maryland Food Hubs:

Scaling Food System Impact



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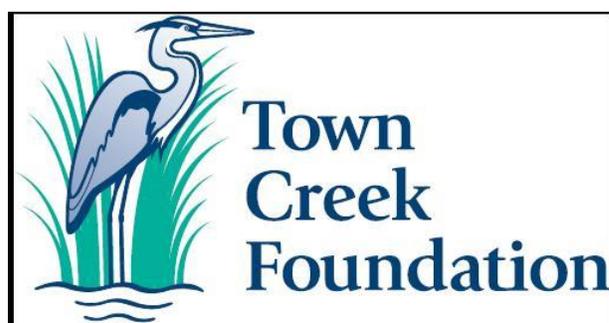
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Introduction

Purpose of the Report

In September 2015, Southern Maryland Agricultural Development Commission (SMADC) published their second *Existing and Emerging Food Hubs in Maryland Report*. The SMADC report was intended to recognize local efforts undertaken within the state to connect consumers with local food, inform elected officials of these efforts, and to identify additional areas of need. The SMADC report recognized four operating and six emerging food hub efforts throughout the state, as well as four auctions and support organizations.

Maryland Food Hubs: Scaling Food System Impact was developed in collaboration with the Wallace Center at Winrock International with support from the Town Creek Foundation to build on and expand SMADC's findings in order to better contextualize the Maryland food hub sector within the larger local food movement nationwide. In particular, this report will explore challenges and best practices for food hubs and local food system support organizations that intentionally aim to create impact in the following three areas:

- Building Stronger, More Resilient Economies
- Improving Community Health and Food Security
- Coordinating Value Chain Development

The intended audiences of this report are local food entrepreneurs and food system stakeholders who are interested in starting food hubs, as well as operators of food hubs who are interested in expanding. This report will also help local, state, and federal government officials, philanthropic foundations, lending institutions, and economic development organizations better understand the nature, function, and intended impact of hubs and support organizations working in Maryland.

Key Terms and Definitions

This report uses the term **regional food hubs** in accordance with the definition created by Wallace Center's National Food Hub Collaboration: businesses or organizations that actively manage the aggregation, distribution, and marketing of source-identified food products primarily from local and regional productions to strengthen their ability to satisfy wholesale, retail, and institutional demand. Organizationally, the food hub sector is diverse and varied, including for-profit and nonprofit operations of all sizes. Operationally, regional food hubs are most often defined by the following characteristics:

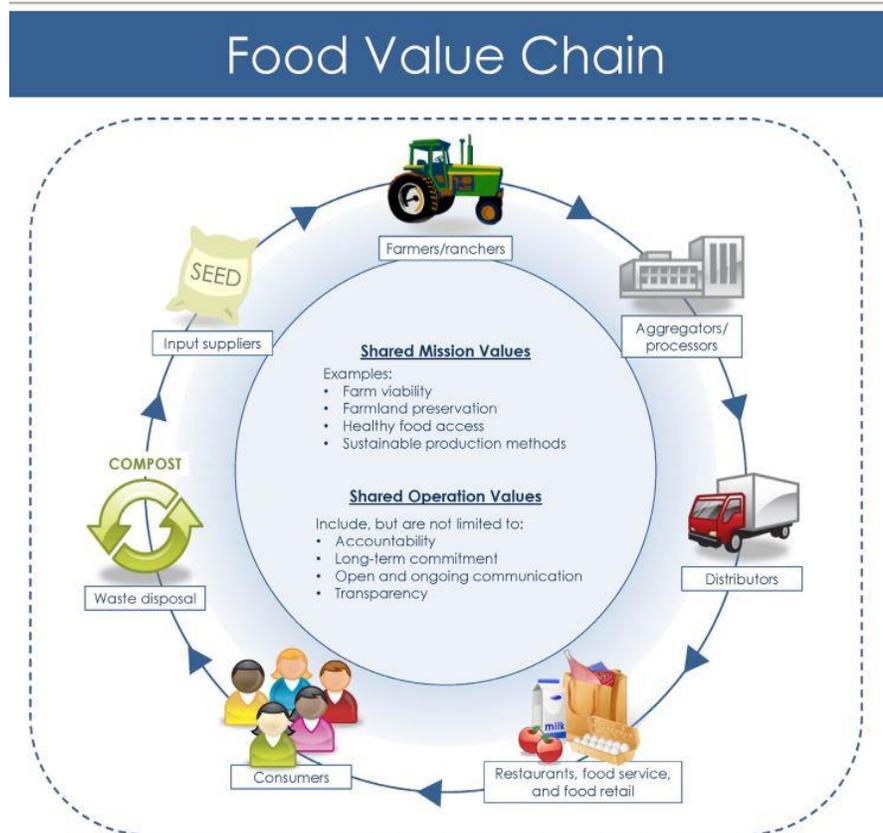
1. Carrying out or coordinating the aggregation, distribution, and marketing of primarily regionally produced foods from multiple producers to multiple markets;
2. Recognizing small to midscale regional producers as business partners to be supported, rather than costs to be minimized;
3. Providing or facilitating access to services for participating producers that build their capacity to grow and increase the viability of their farm and food businesses;

4. Differentiating regional products from national or global alternatives through source identification (connecting products to the farms from which they came), branding, and supply chain transparency;
5. Committed to improving the economy, community, and environment in which they operate.

This report also explores **regional food value chains**.

A food supply chain is the set of trading partner relationships and transactions that delivers a food product from producer to consumer. Food value chains are values-based strategic alliances within food supply chains that embed the mission and motivation of participating agents into market activities through explicit negotiation and partner selection.¹

Value chain development is grounded in the philosophy that “a rising tide lifts all boats,” and their intended outcome is a collaborative market environment that distributes resources strategically and equitably, yielding tangible benefits to all agents in the chain.



Value chains are strategic alliances within food supply chains. Source: Diamond et al.

Regional food value chains are often defined by the following characteristics:

1. Utilization of cooperative strategies between multiple supply chain agents to recognize competitive advantage and economies of scale;
2. Emphasis on product quality, high levels of performance, trust, and responsiveness throughout the supply chain;
3. Emphasis on shared vision, shared information, and shared decision-making and problem-solving among multiple supply chain agents;

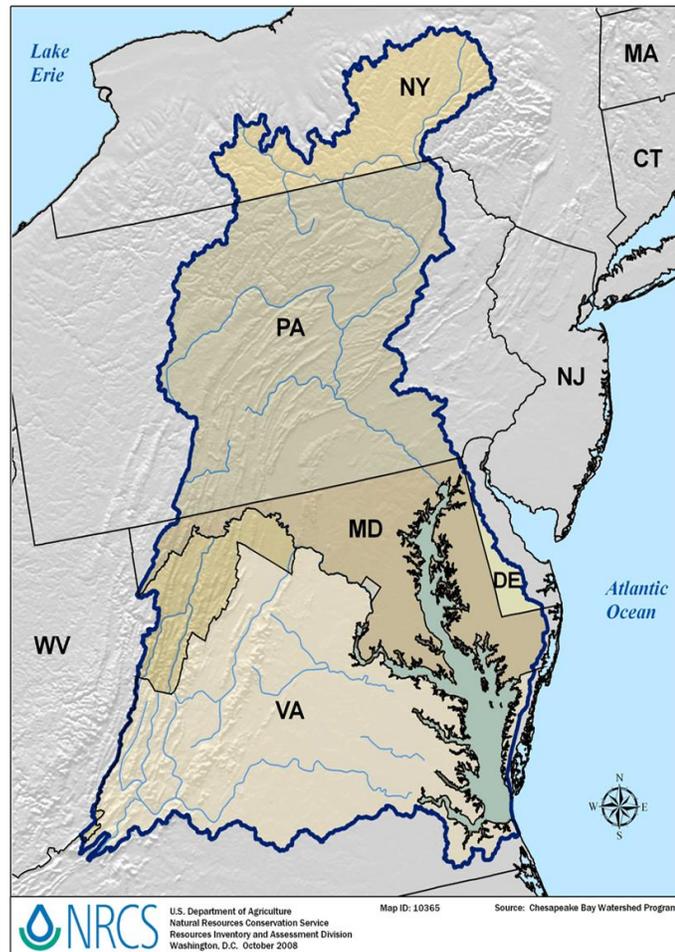
¹ Diamond, Adam, Debra Tropp, James Barham, Michelle Frain Muldoon, Stacia Kiraly, and Patty Cantrell. Food Value Chains: Creating Shared Value to Enhance Marketing Success. U.S. Department of Agriculture, Agricultural Marketing Service, May 2014.

4. Core commitment to the welfare of all agents, including equitable distribution of profit margins, fair wages, and business agreements appropriate to the size and nature of the participating organizations.

It is also necessary to clarify what we mean by **local/regional food systems**. In 2008, Congress passed H.R. 2419, an amendment to the “Consolidated Farm and Rural Development Act.” In it, the terms “locally” and “regionally” produced are grouped together and defined such that “the total distance that the product is transported is less than 400 miles [640 km] from the origin of the product.”² This concept of “food miles” – the distance food travels between production and consumption – is one valuable metric for assessing a local food system, and a number of the studies and interviews referenced within this report interpret “locally-grown” as “grown within 400 miles of the final consumer.” When no other explanation is given, this report will use this definition and will use “local” and “regional” interchangeably.

An alternative framework for understanding a local region is to assess it in ecological terms: as a foodshed. The Chesapeake Bay Watershed Region stretches over 500 miles from Virginia to New York and contains three distinct geologic regions: the Atlantic coastal plain, the Piedmont plateau, and the Appalachian province. Some of the organizations and stakeholders contributing to this report are utilizing this ecological framework, and references made to the geographic scope of work will use the term “watershed” or “foodshed” to describe the Chesapeake Bay Watershed Region.

Finally, many Maryland food system stakeholders define local politically, meaning “produced within the political boundaries of the state of Maryland” or within another set of political boundaries defined by the organization (for example, “the Washington, DC metro area”). Maryland’s relatively small geographic area makes this one of the most restrictive definitions of the term. This report will use the term “Maryland-grown” or equivalent to indicate that this definition of the regional food system is being used.



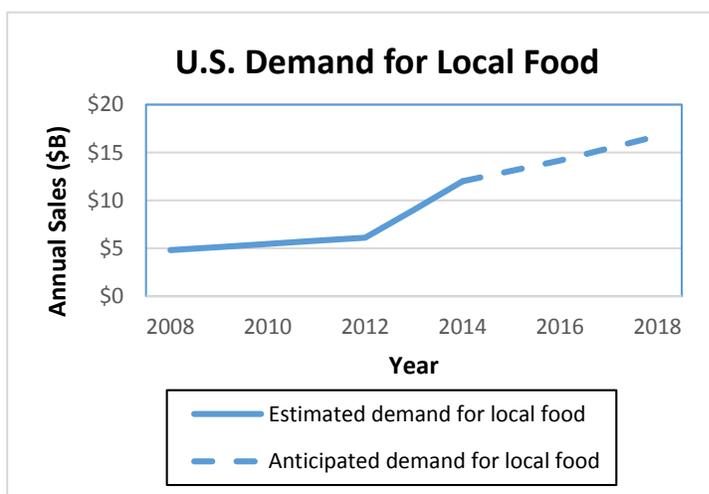
A map of the Chesapeake Bay Watershed Region as defined by USDA.

² United States. Cong. House of Representatives. *Food, Conservation, and Energy Act of 2008*. 110th Cong. H.R. 2419. Washington: GPO, 2008. Library of Congress.

Food Hubs and the Local Food Marketplace

National Trends in the Local Food Sector

Increasing consumer demand for local food is a well-documented and recognized trend in small towns and big cities across America. In a 2011 report by the USDA Economic Research Service (ERS), it was estimated that the marketing of local foods grossed \$4.8 billion in 2008.³ In a 2015 report to Congress on the development of the sector, ERS developed a synthetic estimate of local food sales using 2012 Census data and four years of Agriculture Resource Management Surveys (ARMS) to estimate 2012 local sales at \$6.1 billion,⁴ suggesting almost 30% growth in four years. Both of these estimates are understood to be conservative, as neither ARMS nor the 2012 Census of Agriculture collect complete information on the value of intermediated sales (defined as transactions that occur between producers and other supply chain agents rather than direct to the end consumer).



More recent research by the management consulting firm AT Kearney suggests that the market for local continues to grow. In a 2014 publication based on surveys collected from over 1,000 U.S. shoppers, the firm estimated that in 2013, sales of local food exceeded \$9 billion.⁵ In 2015, AT Kearney conducted a follow-up study, surveying over 1,500 U.S. shoppers and determining that the market exceeded \$12 billion in 2014 with predicted continued growth at 9% annually through 2018.⁶

Amid all this research, one observation is clear: **the value of local food sales is increasing.** However, despite increasing demand and participation, local food systems continue to account for only a small segment of total U.S. agricultural production and sales. One of the major challenges facing farmers, ranchers, and food business operators - especially smaller and limited-resource producers - as they enter the local food marketplace is limited access to distribution, processing, and other supply chain infrastructure necessary to connect with retail, institutional, and commercial foodservice markets.⁷ Even with the growth of direct-to-consumer markets such as farmers markets and community-supported

³ Low, Sarah A., and Stephen Vogel. 2011. Direct and Intermediated marketing of Local Foods in the United States. *Economic Research Report 128*. U.S. Department of Agriculture, Economic Research Service.

⁴ Low, Sarah A., Aaron Adalja, Elizabeth Beaulieu, Nigel Key, Steve Martinez, Alex Melton, Agnes Perez, Katherine Ralston, Hayden Stewart, Shellye Suttles, Stephen Vogel, and Becca B.R. Jablonski. 2015. Administrative Report 68: Trends in U.S. Local and Regional Food Systems. U.S. Department of Agriculture, Economic Research Service.

⁵ Rushing, James, and Mike Goldblatt. 2014. Ripe for Grocers: The Local Food Movement. A.T. Kearney.

⁶ Burt, Randy, Shayna Silverman, and Mike Goldblatt. 2015. Firmly Rooted, the Local Food Market Expands. A.T. Kearney.

⁷ Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. 2012. Regional Food Hub Resource Guide. U.S. Department of Agriculture Agricultural Marketing Service and the Wallace Center at Winrock International.

Food hubs are growing along with demand for local food. The Wallace Center’s National Good Food Network (NGFN) started tracking the growth of food hubs as a sector in 1995 and recognized 42 hubs nationwide in that year. Ten years later, NGFN recognized 81 hubs, and today, there exists a network of approximately 350 hubs in 45 states.¹¹ These hubs produce an estimated \$500 million in annual revenue, and 98% anticipate increasing demand for local food products in the next two years.¹²

While these organizations cannot solve the challenges of local food systems on their own, they are driving the strategic partnerships and cross-sector collaborations that can lead us towards a new, 21st century American food system – healthier for people, the environment, and the economy.

Creating Intentional Impact in the Maryland Food System

In 2012, Maryland farms produced nearly \$889 million in agricultural commodities. **Fresh fruits and vegetables accounted for just over \$40 million – less than 5% of total production.** Maryland is ranked 7th in the nation for the production of broilers and other chickens raised for their meat, and the vast majority of agricultural production and sales are of corn, soybeans, hay, and other livestock feed.¹³ A 2010 food system study found that of the \$16.8 billion spent annually on fruits and vegetables in the tri-state region of Maryland, Delaware, Virginia, and Washington DC, less than 7% of that expenditure is currently produced within the region.¹⁴ In the recent past, a number of local food stakeholder organizations, planning organizations, government agencies, and private companies have performed studies and assessments of the Maryland food system in order to better understand how to support the development of the local food sector.

In December 2012, the Metropolitan Washington Council of Governments (COG) collaborated with a Regional Agricultural Workgroup (RAW) on an assessment of agricultural production and demand in the 8,629 square mile “Washington agricultural region.” That region includes 10 Maryland counties, and the RAW membership included cross-sector representation from Frederick County, Montgomery County, and Prince George’s County. The findings of that assessment led to their recommendation that the region “support the development of **local food aggregation/distribution infrastructure that encourages local food consumption by institutions (such as schools and hospitals), restaurants, and the general public.**”¹⁵

In November 2015, the Prince George’s (PG) County Planning Department and the Maryland National Capital Park and Planning Commission published a PG County Food System Study providing recommendations for creating a healthy, equitable, and sustainable food system that ensures PG County residents access to nutritious, affordable, and sustainably grown food. The study recommended that PG County partner with SMADC to **establish a food hub in order to “create jobs, promote entrepreneurship, and create relationships with regional businesses,”** as well as “expand economic

¹¹ National Good Food Network. 2016. US Food Hubs - Full List.

¹² Hardy et al.

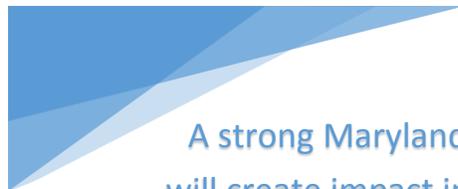
¹³ U.S. Department of Agriculture. 2014. Maryland Census of Agriculture.

¹⁴ Slama, Jim, Kathy Nyquist, and Megan Bucknum. 2010. Local Food System Assessment for Northern Virginia. Prepared by FamilyFarmed.org in collaboration with the Wallace Center at Winrock International.

¹⁵ The Metropolitan Washington council of Governments and the Regional Agricultural Workgroup. 2012. A look at Agricultural Production and Demand in the Washington Area Foodshed.

opportunity for local and regional sustainable growers and value-added producers as well as increase consumer access to locally grown healthy food.”

Additionally, in February 2016, Arabella Advisors completed their assessment of food system efforts in the Chesapeake Foodshed. They completed interviews with 29 local food stakeholders and incorporated input from another 100 participants at a summit hosted by the Chesapeake Foodshed Network in January 2016. The assessment recognized investment and development in supply chain infrastructure as a key strategy for scaling the regional food economy and recommended “**expanding the region’s supply-chain infrastructure so that local producers can achieve the economies of scale they need to better compete in institutional markets.**” The assessment also noted the importance of a coordinated approach to food system development, noting that “initiatives that help smaller producers coordinate and build economies of scale in aggregation, processing, and transportation are critical for enabling them to access and compete in a broader set of markets.”¹⁶



A strong Maryland food system
will create impact in three areas:

1. Economic development
2. Community development
3. Value chain coordination

These three studies are illustrative of a larger body of work recommending food hubs and expanded infrastructure to create intentional impact in the Maryland local food system. In the sections that follow, we will explore three impacts in particular, and how existing and emerging Maryland food hubs and value chain coordination organizations can develop their business models around these triple bottom line benefits. First, we will look at food hubs as drivers of **economic development**, building stronger, more resilient economies by connecting farmers

with new markets. Next, we will look at food hubs as drivers of **community development** and their engagement with public health and food security. Finally, we will look beyond food hubs and brick-and-mortar infrastructure to the role of **value chain coordinators**, organizations working outside of traditional market channels to facilitate the development of the Maryland regional food system by building relationships, connecting key stakeholders, and providing technical assistance.

After presenting this triple-impact framework, this report will provide an overview of key challenges facing Maryland food system development, along with best practices for food system success. These challenges and best practices were distilled from research and assessment on the Maryland food system, interviews with Maryland food business operators and stakeholder groups, and from Wallace Center’s national research and experience.

¹⁶ Arabella Advisors. 2016. Good Food for All: An Assessment of Food System Efforts in the Chesapeake Foodshed.

Building Stronger, More Resilient Economies

Food Hub Functions and Economic Impact

Food hubs share an organizational commitment to increasing local and regional access to fresh local food and to promoting the success of agricultural producers in their area. The 2015 National Food Hub Survey found that 92% of food hubs indicated that all or most of their producers were either small or midsized, and that 72% of hubs indicated that the number of producers from which they were purchasing product had increased.¹⁷

In Maryland, as in many parts of the country, wide gaps exist in food system infrastructure, making it difficult for small and midsized growers to gain access to markets where there is unmet demand for their products.¹⁸ **The current food distribution system is failing to rise to the challenge of aggregating and distributing these products into local market channels, and regional food hubs are emerging to fill that niche.**

At the core of any food hub is a business management team that actively coordinates supply chain logistics. Food hubs work with producers in areas such as sustainable production practices, production planning, season extension, packaging, branding, certification, and food safety – all of which enable producers to access new wholesale customers. At the same time, hubs work in the buying community, coordinating efforts with other distributors, processors, wholesale buyers, and even individual consumers to connect them with regional supply.



Producers working in the local food system receive a share of the retail price up to seven times greater than those in traditional supply chains.

Food hubs also provide services to growers, buyers, and the community that builds local agricultural capacity. Many work with their producers and buyers in advance of the season to coordinate production planning and pricing with anticipated demand. This helps farmers plan what they should grow for the upcoming season with confidence that their product will find a ready market at an acceptable price point. Ultimately, this kind of production planning is critical to mitigating the risk of growth for local farmers, and provides a necessary step towards economic security.

While marketing and pricing strategies vary depending on a hub's mission and customer base, all hubs support their growers by returning a higher percentage of each sales dollar to participating farms. A 2010 USDA ERS report that studied five local food supply chains found that producers working in the local food system received a greater share of the retail price than they did from a traditional, non-differentiated supply chain – up to seven times the net revenue per unit.¹⁹ Many hubs may also

¹⁷ Hardy et al.

¹⁸ Barham et al.

¹⁹ King, Robert P., Michael S. Hand, Gigi DiGiacomo, Kate Clancy, Miguel I. Gomez, Shermain D. Hardesty, Larry Lev, Eedward W. McLaughlin. 2010. Comparing the Structure, Size, and Performance of Local and Mainstream Food Supply Chains. U.S. Department of Agriculture, Economic Research Service.

hybridize their markets by targeting both wholesale accounts – particularly restaurants and independent grocery stores – and direct-to-consumer retail accounts through multi-farm CSA programs. Economic impact assessments of the food hub sector have also determined that successful hub operations support the local economies in which they operate. Cornell University’s 2013 economic assessment of Regional Access, an upstate New York-based food hub, calculated a net multiplier of 1.63, estimating that every dollar of demand for the food hub’s products generated an additional \$0.63 of economic activity in related regional industries.²⁰

In addition to supporting the development of farm businesses, **hubs drive stronger, more resilient economies by creating jobs, generating tax revenue, and increasing earnings along with local production.** A study conducted in 2010 in northeast Ohio found that if the 16-county region met 25% of its need for food with local production, it would result in 27,664 new jobs, provide jobs for 1 in 8 unemployed residents, increase annual regional output by \$4.2 billion, and increase state and local tax collections by \$126 million.²¹

As part of their ongoing research into the food system, Johns Hopkins Center for a Livable Future (CLF) surveyed hospitals, universities, and K-12 schools throughout the state in order to identify opportunities in institutional markets and forecast the economic impact of buying local products. They estimate that if all Maryland institutions spent only 10% of their annual food budget on local products, over \$28 million would be put back into the local economy each year.²²



If Maryland institutions spent 10% of their food budget on local products, over \$28 million would be put back into the state economy each year.

²⁰ Schmit, T.M., B.B.R. Jablonski, and D. Kay. 2013. “Assessing the Economic Impacts of Regional Food Hubs: the Case of Regional Access.” Cornell University. September.

²¹ Masi, Brad, Leslie Shaller, and Michael H. Shuman. 2010. The 25% Shift: The Benefits of Food Localization for Northeast Ohio and How to Realize Them. Northeast Ohio Local Food System Assessment and Plan.

²² Johns Hopkins Center for a Livable Future. 2014. How Maryland Institutions Purchase Local Food. *Farm to Institution Profiles*.

Local Spotlight: Garrett Growers Cooperative

Garrett Growers Cooperative (GGC) is a farmer-owned cooperative food hub in Garrett County, MD, the westernmost county of the state. It is a rural and mountainous county with very limited flat, tillable land. The cooperative began as a way for small-scale diversified fruit and vegetable producers to access additional markets beyond the area's farmers market. They incorporated in 2012 and began selling to restaurants, grocery stores, food service companies, and schools.

GGC exemplifies the **hybrid sales model** in its food hub operations. Hub coordinator and farmer-owner Cheryl DeBerry describes the groups as having grown out of a tightly knit farmers market community. "The cooperative was predicated on the idea that participating farmers have additional sales outlets beyond the cooperative. The purpose of the cooperative was to mitigate risk as farmers developed new marketing opportunities."

To do so, GGC developed both wholesale and retail sales channels in their region. Wholesale relationships with restaurants, grocery stores, and schools created a market for larger volume, lower-priced fruits and vegetables. Retail and CSA programs targeting both the tourist industry helps to alleviate cash flow requirements and maximizes returns to participating growers. A central responsibility of the hub is coordination and distribution, and so DeBerry says that trust, transparency, and communication is key – especially in an area as small and rural as Garrett County. "If you don't work with your neighbors up here, you'd perish."

As they transitioned from direct-to-consumer sales to hybrid sales, **they recognized the need to learn more about pricing**. They found that local restaurants were open to sharing exactly the information they needed – how much to a case, price per pound, and weekly usage. For the first year, participating farmers set their own prices, and GGC simply relayed that information to the buying community. However, this created internal competition as farmers jockeyed for the accounts that could support the



Source: Garrett Growers Cooperative

highest pricing. After a year of operation, GGC decided to standardize prices across the cooperative for their most common products, though they allow individual growers to set their own pricing on specialty products like culinary herbs. This control has helped them improve consistency across all of their accounts, which in turn has increased demand from buyers and enabled more effective production planning.

Improving Community Health and Food Security

Community Development and Social Impact

Along with their considerable impact on the local economy, hubs are tied fundamentally into the needs of their communities and provide a number of services that drive social and environmental impacts.

Many hubs view themselves as community development organizations first, and food distribution businesses second. The 2015 National Food Hub Survey found that 83% of hubs worked actively with food banks and food pantries to direct locally-grown produce to food-insecure families; 79% hosted educational activities to engage the community on food systems issues; and 51% provided cooking and nutrition education in their community.²³

Many hubs are seeking ways to increase access to healthy and affordable local foods in “food deserts,” areas where lack of availability and resources make fresh fruits and vegetables difficult to attain. Hubs work to address this problem from both ends of the local food system. They work to build the capacity of producers and help them meet the requirements and regulations of wholesale buyers operating in those areas. **61% of hubs assist producers and suppliers in developing or reviewing farm food safety plans, and 43% assist with or directly provide Good Agricultural Practices (GAP) training and certification.**²⁴ Managing the cost and administration of food safety certification can be difficult and impractical for small growers, so the need for technical assistance, coaching, and administrative support from food hubs is critical.

Hubs also work directly with consumers themselves. Many food hubs – about half, according to the 2013 National Food Hub Survey²⁵ – accept USDA’s Supplemental Nutrition Assistance Program (SNAP) benefits and other local food promotional programs, and work with food banks and other community outreach and hunger relief organizations in their region by supplying them with “seconds,” wholesome fruits and vegetables that do not conform to standard retail or foodservice cosmetic requirements. Some food hubs are *themselves* food banks, and leverage their hunger relief infrastructure to drive economic development impacts for local farmers. In 2014, Washington, DC’s DC Central Kitchen (DCK) recovered 807,534 pounds of regionally-grown seconds and purchased 200,100 pounds more from additional local farmers. They processed those fruits and vegetables into 1.7 million meals for partner agencies and hunger relief initiatives, along



DCKK sources locally-grown vegetables to serve over 875,000 student meals in low-income neighborhoods. Source: DC Central Kitchen.

²³ Hardy et al.

²⁴ Hardy et al.

²⁵ Fischer, Micaela, Dr. Michael Hamm, Rich Pirog, Dr. John Fisk, Jeff Farbman, and Stacia Kiraly. 2013. Findings of the 2013 National Food Hub Survey. Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International.

with 876,000 meals for DC school children in low-income neighborhoods. Shenandoah Valley potato farmer Winston Horst sold over 10,500 pounds of potatoes to DCCK, but says that it's more than a new market for him. "We're happy to sell the seconds because we have a lot of them. It seems wasteful to just feed them to the cows when someone can use them."²⁶

Farm to school engagement is another way food hubs create social impact in their community. Farm to school initiatives enrich the connection communities have with fresh food and local producers by changing food purchasing and education practices at schools and in other early care and education settings. **As of the 2014 USDA Farm to School Census, 42% of U.S. schools are now engaged in some level of farm to school activity, driving \$789 million in local food spending and reaching 23.6 million students nationwide.**²⁷

Food hubs are a key player in successful farm to school relationships. By building the capacity of local growers navigating the requirements of regulated markets for the first time, hubs increase the supply of nutrient-dense fresh fruits and vegetables available for school procurement. Farm to school programs have been shown to improve early childhood and K-12 eating behaviors, including choosing healthier options in the cafeteria; consuming more fruits and vegetables in school and at home; consuming less unhealthy foods and sodas; reducing screen time; and increasing physical activity. Students benefitting from farm to school programming also show an increase in knowledge and awareness about agriculture, healthy eating, and local foods; demonstrate more willingness to try new foods and healthier options; and demonstrate improved overall academic performance in K-12 settings.²⁸



Farm to school programs improve eating behaviors, increase awareness, and improve academic performance among early childhood and K-12 students.

Lastly, food hubs often manage community outreach and education programs. These programs include education on farming practices and nutrition, advocacy around relevant food system issues, and farm visits or field days encouraging engagement between local producers and consumers. These outreach and education activities, while not directly generating revenue, are an important part of building a healthy regional food system. Hubs pursuing these activities are creating a third kind of intentional impact: value chain coordination.

²⁶ DC Central Kitchen. 2014. Fiscal Year 2014 Annual Report: Doing Good Better.

²⁷ US Department of Agriculture, Food and Nutrition Service. 2014. The Farm to School Census.

²⁸ National Farm to School Network. 2013. Fact Sheet: The Benefits of Farm to School.

Local Spotlight: Chesapeake Farm to Table

Chesapeake Farm to Table (CFT) is a farmer-owned for-profit food hub in Baltimore County, MD connecting 18 small-scale and sustainable local farmers with restaurants throughout the Chesapeake Region. All participating farms are Certified Organic or grow using organic and sustainable practices, and CFT markets the specific practices and heirloom varieties to restaurants that can afford to pay a premium for the highest quality.

The CFT food hub uses a completely **wholesale sales model**, focusing exclusively on the restaurant market. Hub manager and local farmer Audrey Swanenberg says that the strategy is a response to saturation in both the farmers market and CSA market in their area, which makes it particularly difficult for new and beginning farmers to get their own businesses off the ground. CFT's mission is to help farmers improve their bottom line by providing convenient access to the restaurant market, and convenience is a critical part of the hub's operations.

CFT has limited the physical infrastructure owned by the hub by handling sales online through the Local Orbit software platform. Farmers can upload the products and quantities they have available anytime they like; similarly, chefs can shop the online portal and see what's available for CFT's Tuesday and Thursday deliveries. Farmers receive pick lists and have two days to harvest orders and deliver to CFT's shared-use cooler; then, CFT puts all the orders together and delivers to 30-40 restaurants in the Baltimore area.



Source: Chesapeake Farm to Table



CFT is all about convenience. Farmers like the online sales platform because it allows them to control their own pricing and availability. New and beginning farmers don't need to open their own restaurant accounts – they can jump right in to working with CFT's customers. They don't have worry about invoicing, or managing their accounts payable, because the hub pays them every Tuesday for the prior week's orders, regardless of whether or not the restaurants have paid.

At the same time, chefs enjoy the convenience of being able to shop a single website for all their local products whenever they like. They are also free to experiment with different vendors and different products without disrupting their supply chain. "For both the farmers and the restaurants, the biggest advantage of using CFT is time," says Swanenberg.

Coordinating Value Chain Development

Soft Infrastructure and Relationship Building

Even though the impact of the work of food system actors is fundamentally interconnected, the work itself is often done in isolation. This is no fault of the organizations themselves; with so much work to be done at the grassroots level, a system-wide vantage point is often impossible. As Scott Marlow, Executive Director of Rural Advancement Foundation International (RAFI) quipped at the 2016 National Food Hub Conference, “when you’re up to your knees in alligators, it’s easy to forget that you came to drain the swamp.”²⁹

Providing this vantage point on regional food development are **value chain coordinators (VCCs)**, organizations working within the food system but outside of the market. VCCs provide services and support that ensure that the right people, goods, and resources connect with each other, developing the “soft infrastructure” that builds social capital and fosters relationships among stakeholders. In March 2016, Secretary of Agriculture Tom Vilsack announced a new USDA initiative around local food value chain coordination. The impetus for the new program, called Food LINC, was the recognition “that our investments in local food infrastructure have the most success in communities with strong coordination between producers, food purchasers, and access to shared resources.”³⁰

The need for increased VCC engagement in Maryland was also a key finding of the 2016 regional food system assessment by Arabella Advisors. They identified the need for coordination and data in supply chain initiatives as a key challenge for scaling regional food systems, and a necessity if the state is to “maximize efficiencies and impact and avoid redundancies,” particularly “creating too many food hubs and oversaturating the market for certain products.” The report concluded that to “ensure that market-based, philanthropic and advocacy initiatives maximize their effectiveness, funders and food system leaders should create platforms for ongoing engagement, communication, and coordination across the entire Chesapeake foodshed region.”³¹



“Investments in local food infrastructure have the most success in communities with strong coordination between producers, food purchases, and access to shared resources.”

U.S. Secretary of Agriculture Tom Vilsack

The need to address the challenge of creating platforms for ongoing regional coordination is raising awareness of VCC activity all over the county. Like a food hub, VCCs often play multiple roles in the development of their regional food system, and the particular needs and resources of local food

²⁹ Marlow, Scott. 2016. Maintaining Values While Building Value. NGFN Food Hub 2016 Conference, Atlanta, GA. Plenary.

³⁰ US Department of Agriculture Agricultural Marketing Service. 2016. Press Release: Federal, Philanthropic Partners Join to Strengthen Local Food Supply Chains, "Food LINC" to Boost Farm Sales, Grow Local Foods Sector in Ten Selected Regions.

³¹ Arabella et al.

stakeholders drive those roles. Some of the work being done by value chain coordinators around the country includes:

- **Market matchmaking:** identifying and connecting farmers, hubs, buyers, and other supply chain partners
- **Convening and relationship building:** facilitating awareness of and cooperation between different supply stakeholders, maintaining communication channels, and fostering a transparent, trusting environment
- **Resource prospecting:** identifying and pursuing resources such as grants, loans, investment, and services to support enterprise development within the food system
- **Policy thought leadership:** raising policy issues, organizing at the grassroots level, and partnering with others to elevate discourse and build awareness
- **Providing technical assistance:** working within the regional food system to build capacity through education and training programs in areas such as sustainable production practices, food safety, marketing, and business development
- **Catalyzing innovation:** providing funding and other resources to test new business models and incubate new enterprises, mitigating risk for emerging or expanding food system organizations

One of the VCCs receiving support under the USDA’s Food LINC initiative is the **Metropolitan Washington Council of Governments (MWCOG)**. MWCOG is an independent, nonprofit association bringing together stakeholders from 22 member jurisdictions to address regional issues in DC, Maryland, and Virginia. Lindsay Smith, MWCOG’s Value Chain Coordinator, will be working with farmers, hubs, and

food businesses throughout the metro region on policy-based farmland protection programs and relationship building aimed at expanding the local food system by connecting rural and suburban farming communities with urban markets.



The MWCOG region covers 22 jurisdictions across VA, MD, and DC.

As a value chain participant not directly involved in the marketplace, Smith believes that MWCOG is uniquely placed to serve “a strategic convening role.” The group plans to moderate discussions between regional producers, farmers market groups, food system support organizations, and members of the wholesale buying community. “Direct to consumer markets are hugely important for small to midscale growers in the COG region; but at the same time, many report that market sales seem to be leveling off or even declining.” By convening key supply chain agents and encouraging non-competitive information sharing, Smith hopes to map the markets and sales outlets throughout the region, assess sales and supply data, and create a resource that will better connect local producers with retail and wholesale customers.

Southern Maryland Agricultural Development Commission (SMADC) is another value chain coordinator in southern Maryland. SMADC's work on the emerging Agricultural Business Park and Food Innovation Center illustrates how value chain coordination activities can also be performed by local food hubs. SMADC is currently developing programs to provide both brick-and-mortar infrastructure for local food



SMADC's Buy Local Challenge is a marketing campaign encouraging increased local purchasing from local consumers. Source: SMADC.

aggregation, fresh fruit and vegetable processing, and meat processing, as well as value chain development through incubation opportunities and technical assistance. This new initiative builds on the work SMADC has been doing for over a decade to bolster the agricultural community through the Hub and Spoke program, which coordinates the distribution of fresh, locally grown fruits and vegetables (especially seconds and cosmetically imperfect products) from farms to hunger relief organizations, churches, and schools. The program is working to leverage a proposed Maryland tax credit to provide financial incentives to farmers for their participation.

SMADC is also a member organization in the **Chesapeake Foodshed Network (CFN)**, a cross-sector coalition of organizations, agencies, and individuals working throughout the Chesapeake watershed to build a more resilient food system. The CFN serves as a convener, a resource prospector, and a thought policy leader working to facilitate communication and coordination throughout a six-state region, building the case that collective regional action is necessary to accelerate regional food system development. They adopt the traditional VCC vantage point outside day-to-day food business operations, seeking to serve instead as “the connective tissue among the regional food system actors to build needed cohesion, alignment, and collaborative action around the vision from development to launch.”³²

Improved coordination of food system development activity is necessary for the continued expansion of Maryland's local food system. States and regions with robust VCC infrastructure available to coordinate food system development make better, more efficient use of resources, deliver more technical assistance and support to participating businesses and organizations, and ultimately create more resilient local food systems.

³² Chesapeake Foodshed Network. 2016. Creating a Vision for a Regional Food System to Unite & Accelerate The Pace of Change. Prepared by Local Concepts LLC for CFN.

Local Spotlight: Friends & Farms

Columbia, MD-based Friends & Farms (F&F) came about because co-founder Philip Gottwals was a “very disgruntled shopper.” Even though high-end grocery services increased access to locally and sustainably grown food, it was “still the providence of the upper 10% of the income bracket... otherwise, your access to quality food is still limited.”

F&F is a **direct to consumer** food hub aggregating fresh fruits, vegetables, and value-added goods from over 100 individual farms or producers, building weekly meal baskets for around 900 local subscribers, and then meeting customers at pickup sites four days a week. Each basket features fresh proteins (including local beef, pork, lamb, poultry, and plenty of Chesapeake Bay seafood), dairy items, eggs, bread, and 7-9 produce items. The average basket serves three meals to three people for around \$60. “We’re trying to be a food for the masses company,” says Gottwals. “Whole Foods quality at a Food Lion price.”

The company is growing steadily, with sales in excess of \$2M and a customer retention rate of almost 90%. The secret, says Gottwals, is closely coordinated supply and demand. Baskets are planned at least three months in advance, with proteins planned a full year ahead. That lets F&F place large orders with all their participating producers well in advance and enables them to design baskets that make the most out of the season items that producers want to feature. Because F&F’s customers pay up front for a subscription (a week, four weeks, or 13 weeks), the company is able to maintain comfortable cash flow while paying for all of their incoming deliveries on receipt. No invoicing, no net 30 terms. “When a farmer leaves the dock, he or she leaves with a check,” says Gottwals. With an increasing number of subscriptions coming in each year, F&F now has the flexibility to offer purchase agreements with money paid up front, a risk mitigation strategy which is particularly valuable for smaller producers and ranchers.

The hardest part can be getting the first order. Consumer behavior is often founded on things other than quality and price, and customers can be hesitant to change their shopping routine. F&F is working now on redeveloping their website, where customers are often first introduced to the service, to make it more user friendly and intuitive. They also use marketing techniques like a free sample basket for newcomers. “We spent too much time in the early years trying to change the product, when the real problem was reducing the barriers to the first order.”



F&F offers meal baskets from \$45-\$90 per week to local subscribers. Source: Friends & Farms.



Friends & Farms' co-founder, Philip Gottwals. Source: Friends & Farms.

F&F makes sure that all the employees get plenty of face time with their customers. Everyone takes a turn manning the pickup sites, and it’s the company’s commitment to customer service that keeps subscribers coming back week after week. “It’s a community to us, and our producers, customers, and staff are all family.”

Five Challenges Facing Maryland Food Hubs

1. Access to capital

A number of the Maryland food system stakeholders involved in this report identified lack of capital as the primary limiting factor in establishing and growing a food hub. The challenge is not just securing capital for infrastructural investment and startup expenses, but also securing affordable short-term revolving credit to maintain adequate cash flow. Access to capital is not just a problem at the hub level – small and midscale producers can also struggle to find the funding they need to make on farm improvements, establish food safety systems, or purchase equipment and supplies necessary to meet rising demand. A number of factors limit a food hub’s ability to access capital, and all are driven by risk to the lender or investor:

- Lack of collateral necessary to secure debt
- Lack of business plan, marketing plan, or financial acumen
- Lack of commitment from the buying community
- Lack of understanding or familiarity with the food hub model among lending institutions
- High risk and modest returns for venture capital investors

Recognizing these limitations – and one’s ability to address them – will increase success when engaging with lending institutions and potential investors.

2. Access to adequate supply

The biggest barrier to growth identified in the 2015 National Food Hub Survey was inadequate local supply.³³ Hubs that service wholesale or institutional buyers must face this challenge head on, either by coordinating small-scale suppliers to meet large-scale demand, or by working with larger growers in order satisfy institutional purchasing.

Close and continued contact with the growing community is a necessity. Farmer surveys, meetings, and interviews can be helpful tools in understanding what markets farmers are already using, and where additional opportunity can be found. Once a food hub is established, off-season producer meetings, production planning, and purchase agreements can be key tools for ensuring continued supply and for providing a low-risk avenue for farmers looking to grow their businesses.

3. Managing pricing, sales, and growth

Despite strong and growing demand from consumers, many wholesale buyers – and especially large institutions like schools and hospitals – still struggle to pay more for local products than they would for commodities from a traditional distribution entity. Some hubs alleviate price constraints by pairing larger buyers with larger, more experienced wholesale growers. Others use hybrid markets, where higher margins captured by retail or restaurant accounts help offset the slim margins on institutional purchasing. Still others hone in on specific crops or minimally processed items that can be grown, handled and shipped at the required price point.

³³ Hardy et al.

At the same time, food hubs that start small and grow fast are often quickly challenged by inadequate access to infrastructure. Trucks, coolers, and labor hours that were sufficient just a year before can be stretched too thin when hubs grow too quickly. Growing hubs also need to manage their own systems: hiring, training, and retaining staff; implementing standard operating procedures for warehouse operations; and maintaining good legal and accounting practices in the office.

Successful organizations expand strategically, with measured growth and an eye on the next limiting factor. Managing growth proactively – rather than responding reactively to situations as they arise – will help hubs stay connected to the dynamic needs and opportunities in their region.

4. Food safety and regulated markets

With many buyers requiring food safety audit programs and the regulations of FDA's Food Safety Modernization Act (FSMA) now final, farm food safety compliance is the new reality for local food systems. Food hubs' high-trust relationships with both growers and buyers make hubs well-placed agents for food safety coaching, mock auditing, and capacity building.

Hubs tackling the challenges of managing food safety certification or government regulation on behalf of their growers need adequate investment in internal administrative capacity, as well as strong partnerships with regional training personnel like the Department of Agriculture, cooperative extension agents, or food safety consultants. Maryland Department of Agriculture (MDA) has an ongoing collaboration with the University of Maryland offering training and technical assistance in Good Agricultural Practices (GAP), and also administers a state-level certification program that audits basic food safety requirements and may meet the needs of many regulated market buyers. MDA also currently offers a cost-share program to offset the price of USDA farm audits, funded by USDA Specialty Crop Block Grant.

New food safety programs like the USDA GroupGAP Audit Program position hubs to actively manage food safety compliance within the local system. GroupGAP creates a food safety quality management system administered by a food hub or central entity. The program allows hub staff or local personnel to become certified as food safety trainers and auditors to manage the implementation of a food safety program among the growers inside the group. While the program enables hubs to provide valuable food safety services to their growers and customers alike, it also requires staff and financial resources, robust systems, and committed administration to be successful.

Food safety system development is historically a strong target for annual USDA grant programs including MDA's Specialty Crop Block Grants, USDA Agricultural Marketing Service's Local Food Promotion Program, and USDA Rural Development's Rural Business Development Grants. A number of new programs supporting FSMA compliance are currently under development by FDA.

5. Balancing margin and mission

When hubs are dedicated to combating critical issues like social injustice, food insecurity, or child obesity, one of the greatest challenges is the development of a concrete strategy for long-term financial sustainability. While revenue from sales doesn't necessarily need to cover the costs of social impact activities – and often doesn't – successful food hubs have developed a plan and committed the necessary resources to ensure continued support for these activities.

Five Best Practices for Success

1. Know your values, and build strong relationships

While food hubs are typically committed to sourcing locally and regionally produced products, some enterprises also distribute non-local items that still fit the core values of the hub. These items often include products not available locally (like nuts, oils, or coffee), or products with particular designations (like Certified Organic or Fair Trade). Balancing local and non-local sourcing can support the long-term viability of hub operations; however, transparency, source identification, and clear communication are critical to ensuring that customers can make ordering decisions in line with their own values.

2. Mitigate risk for participating growers

Farming is a risky business under the best of circumstances. Many food hubs help mitigate risk for their growers by providing production planning and minimum purchase agreements in advance of the growing season. This moves the onus of customer relationship management and sales from the grower to the hub.

Hubs can also mitigate risk for their growers by helping them diversify their markets. Many hubs encourage their growers to continue selling their crops through their existing channels like farmers markets and CSAs, and offer *additional* market opportunities through new wholesale relationships. Enabling farmers to sell more products, rather than redirecting the products they are already selling, helps farm businesses scale up by providing low-risk markets for additional volume.

3. Know your customer, and price strategically

Understanding the needs of your customers is a necessary first step towards successfully tailoring the hub's products and sales approach. When a farm to table restaurant orders heirloom tomatoes, they are likely expecting different packaging, pricing, and ripeness than when a grocery store or a CSA member receives the same. Selling all products by the pound, rather than by bunches or units, might make it easier for some customers and harder for others.

Food hubs must be able to “deliver” on the promise of local food: that it is fresher and of higher quality than that of non-local competitors. To do so, food hubs must manage not only product quality, but also consistency, ensuring that buyers can depend on packaging, price, and availability. Providing clear policies, training, and the necessary materials to make sure that products are packed and handled in the best way possible improves product quality and increases hub efficiency.

Food hubs committed to building stronger farms must perform a constant balancing act, providing fair and equitable purchase pricing and payment terms for growers while competing with traditional produce distributors for market share among restaurants and grocery stores.

4. Use your resources

No hub is an island. As with any successful business, all successful hubs have a competitive advantage – a particular set of skills, strengths, or resources – that makes them the best-placed agent to do the work they do. Recognizing your advantage, and collaborating and coordinating within and beyond your

community to leverage the advantages of those around you, is a necessary step in enabling small farms to make big impacts.

5. Plan for growth

As demand for local continues to grow, food hubs and other value chain businesses need to grow along with it. While business plans are most commonly associated with start-up companies, a strategic plan for the future is a necessary tool for proactive management. Four rules of thumb to consider are:

- Define priorities, and make sure that they are specific enough to measure progress. Set goals that are S.M.A.R.T.: specific, measurable, achievable, realistic, and timed.
- Use calendar milestones to help gauge progress. It is better to be behind schedule than to have no schedule at all.
- Recognize that growing costs money, always. Expanding purchasing, geographic coverage, or staff size will likely result in negative cash flow initially. Use cash flow projections and financial statements to determine how much growth can be sustained in a given period of time.
- Evaluate progress and make adjustments. Use financial statements to understand how performance changes over time, and use benchmarking data like the 2015 Food Hub Benchmarking Study to contextualize the business within the sector.



Source: Friends & Farms

Additional Resources

For more research, guides, feasibility studies, publications, and other resources on how food hubs and Good Food businesses can build a better, 21st century food system, please visit the Wallace Center's National Good Food Network Food Hub Center:

The screenshot shows the website for the National Good Food Network Food Hub Center. At the top, there is a banner with images of a cow, various vegetables, green apples, a blue truck on a highway, and a basket of produce. Below the banner is the title "NATIONAL GOOD FOOD NETWORK" and a navigation bar with links for "home", "resources", "regional lead teams", "news", "events", and "about". A search bar is also present.

The main content area is titled "Food Hub Center" and includes a "RECENTLY RELEASED" section with a link to the "Regional Food Hub Resource Guide" and a form titled "ARE YOU A FOOD HUB? LET US KNOW!". Below this is a definition of a Food Hub and a "Research & Resources" section with several links to conferences, guides, and reports.

On the left side, there is a sidebar with "Resources from Across the Network" and a "Contents" table of contents on the right side of the page.

<http://foodhub.info>

Works Cited

Throughout this report, Wallace Center has drawn from a diverse body of resources developed internally and by partner organizations. Additionally, we have conducted a review of the published literature available on the development of the Maryland food hub network, and have integrated common themes and best practices into our report.

Wallace Center also conducted interviews with Maryland-based local food businesses and stakeholder organizations. We greatly appreciate the time, transparency, and commitment to a stronger food system of all parties involved in the development of this report.

Interviews	
Philip Gottwal	Friends & Farms
Audrey Swanenberg	Chesapeake Farm to Table
Lindsay Smith	Metro Washington Council of Governments
Cheryl DeBerry	Garrett Growers Cooperative
Andy Andrews	Chesapeake Harvest
Sharon Feuer Gruber	The Food Works Group
Caitlin Fisher	Johns Hopkins Center for a Livable Future
Amanda Buczynski	Johns Hopkins Center for a Livable Future

Additional information and insights provided by a number of Maryland food system stakeholders convened during the 2016 Future Harvest Chesapeake Alliance for Sustainable Agriculture Conference

Arabella Advisors. 2016. Good Food for All: An Assessment of Food System Efforts in the Chesapeake Foodshed.

Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. 2012. Regional Food Hub Resource Guide. U.S. Department of Agriculture Agricultural Marketing Service and the Wallace Center at Winrock International. Retrieved from: <https://www.ams.usda.gov/sites/default/files/media/Regional%20Food%20Hub%20Resource%20Guide.pdf>

Barham, James, Debra Tropp, Kathleen Enterline, Jeff Farbman, John Fisk, and Stacia Kiraly. 2012. Regional Food Hub Resource Guide. U.S. Department of Agriculture Agricultural Marketing Service and the Wallace Center at Winrock International. Retrieved from: <https://www.ams.usda.gov/sites/default/files/media/Regional%20Food%20Hub%20Resource%20Guide.pdf>

Burt, Randy, Shayna Silverman, and Mike Goldblatt. 2015. Firmly Rooted, the Local Food Market Expands. A.T. Kearney. Retrieved from: <https://www.atkearney.com/documents/10192/6773369/Firmly+Rooted+the+Local+Food+Market+Expands.pdf/863737a6-0b44-40d0-b339-da25c4563dc3>

- Chesapeake Foodshed Network. 2016. Creating a Vision for a Regional Food System to Unite & Accelerate The Pace of Change. Prepared by Local Concepts LLC for CFN.
- Diamond, Adam, Debra Tropp, James Barham, Michelle Frain Muldoon, Stacia Kiraly, and Patty Cantrell. 2014. Food Value Chains: Creating Shared Value to Enhance Marketing Success. U.S. Dept. of Agriculture, Agricultural Marketing Service. Retrieved from: <https://www.ams.usda.gov/sites/default/files/media/Food%20Value%20Chains%20Creating%20Shared%20Value%20to%20Enhance%20Marketing%20Success.pdf>
- DC Central Kitchen. 2014. Fiscal Year 2014 Annual Report: Doing Good Better. Retrieved from: <http://www.dccentralkitchen.org/files/FY2014annualreport.pdf>
- Fischer, Micaela, Dr. Michael Hamm, Rich Pirog, Dr. John Fisk, Jeff Farbman, and Stacia Kiraly. 2013. Findings of the 2013 National Food Hub Survey. Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International. Retrieved from: <http://www.ngfn.org/resources/ngfn-database/knowledge/2013%20Food%20Hub%20Survey%20Report.pdf>
- Hardy, J., Hamm, M., Pirog, R., Fisk, J., Farbman, J., & Fischer, M. (2016). Findings of the 2015 National Food Hub Survey. East Lansing, MI: Michigan State University Center for Regional Food Systems & The Wallace Center at Winrock International.
- Johns Hopkins Center for a Livable Future. 2014. How Maryland Institutions Purchase Local Food. *Farm to Institution Profiles*. Retrieved from: <http://mdfoodsystemmap.org/wp-content/uploads/2014/12/F2I-All-institutions.pdf>
- Johns Hopkins Center for a Livable Future. 2015. Maryland Grown: How What We Grow Compares with What We Eat. *Maryland Food System Map*. Retrieved from: <http://mdfoodsystemmap.org/wp-content/uploads/2015/04/Maryland-Grown.pdf>
- King, Robert P., Michael S. Hand, Gigi DiGiacomo, Kate Clancy, Miguel I. Gomez, Shermain D. Hardesty, Larry Lev, Eedward W. McLaughlin. 2010. Comparing the Structure, Size, and Performance of Local and Mainstream Food Supply Chains. U.S. Department of Agriculture, Economic Research Service.
- Low, Sarah A., Aaron Adalja, Elizabeth Beaulieu, Nigel Key, Steve Martinez, Alex Melton, Agnes Perez, Katherine Ralston, Hayden Stewart, Shellye Suttles, Stephen Vogel, and Becca B.R. Jablonski. 2015. Administrative Report 68: Trends in U.S. Local and Regional Food Systems. U.S. Department of Agriculture, Economic Research Service. Retrieved from: <http://www.ers.usda.gov/media/1763057/ap068.pdf>
- Low, Sarah A., and Stephen Vogel. 2011. Direct and Intermediated marketing of Local Foods in the United States. *Economic Research Report 128*. U.S. Department of Agriculture, Economic Research Service. Retrieved from: http://www.ers.usda.gov/media/138324/err128_2_.pdf
- Marlow, Scott. 2016. Maintaining Values While Building Value. NGFN Food Hub 2016 Conference, Atlanta, GA. Plenary.
- Masi, Brad, Leslie Shaller, and Michael H. Shuman. 2010. The 25% Shift: The Benefits of Food Localization for Northeast Ohio and How to Realize Them. Northeast Ohio Local Food System Assessment and Plan.

- Matson, James, Martha Sullins, and Chris Cook. 2013. The Role of Food Hubs in Local Food Marketing. US Department of Agriculture, Rural Development. Retrieved from: <http://www.rd.usda.gov/files/sr73.pdf>
- The Maryland-National Capital Park and Planning Commission. 2015. Healthy Food for All Prince Georgians: An Assessment of Access to Healthy Food in Prince George's County, Maryland. Retrieved from: https://issuu.com/mncppc/docs/food_system_study?e=2864017/31768735
- The Metropolitan Washington Council of Governments and the Regional Agricultural Workgroup. 2012. A look at Agricultural Production and Demand in the Washington Area Foodshed.
- National Farm to School Network. 2013. Fact Sheet: The Benefits of Farm to School. Retrieved from: <http://www.farmtoschool.org/Resources/BenefitsFactSheet.pdf>
- National Good Food Network. 2016. US Food Hubs - Full List. Retrieved from: <http://www.ngfn.org/resources/food-hubs>
- Rushing, James, and Mike Goldblatt. 2014. Ripe for Grocers: The Local Food Movement. A.T. Kearney. Retrieved from: <https://www.atkearney.com/documents/10192/4503223/Ripe+for+Grocers+-+The+Local+Food+Movement.pdf/cf378a17-8e42-4082-a038-0df1806ddca6>
- Schmit, T.M., B.B.R. Jablonski, and D. Kay. 2013. "Assessing the Economic Impacts of Regional Food Hubs: the Case of Regional Access." Cornell University. September. Retrieved from: <http://dx.doi.org/10.9752/MS145.09-2013>
- Slama, Jim, Kathy Nyquist, and Megan Bucknum. 2010. Local Food System Assessment for Northern Virginia. Prepared by FamilyFarmed.org in collaboration with the Wallace Center at Winrock International.
- Southern Maryland Agricultural Development Commission. 2015. Existing and Emerging Food Hubs in Maryland 2015. http://www.smadc.com/food_farms_nutr/Maryland%20Food%20Hub%20Report_September%202015.pdf
- US Department of Agriculture, Agricultural Marketing Service. 2016. Press Release: Federal, Philanthropic Partners Join to Strengthen Local Food Supply Chains, "Food LINC" to Boost Farm Sales, Grow Local Foods Sector in Ten Selected Regions. Retrieved from: <https://www.ams.usda.gov/press-release/federal-philanthropic-partners-join-strengthen-local-food-supply-chains-food-linc>
- US Department of Agriculture, Food and Nutrition Service. 2014. The Farm to School Census. <https://farmtoschoolcensus.fns.usda.gov/>
- U.S. Department of Agriculture. 2014. Maryland Census of Agriculture. Retrieved from: https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_State_Level/Maryland/mdv1.pdf
- Wallace Center at Winrock International, Morse Marketing Connections, and Farm Credit East. 2014. Counting Values: Food Hub Financial Benchmarking Study. <http://www.ngfn.org/resources/ngfn-database/knowledge/Food%20Hub%20Benchmarking%20Study.pdf>