Feasibility Study for Regional Marketplace, Food Hub and Cooperative Marketing Opportunities for Eastern Shore of Virginia Grown and Made Products

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EXECUTIVE SUMMARY

The Accomack-Northampton Planning District Commission (A-NPDC) engaged the Virginia Tech Office of Economic Development (OED) to explore the feasibility of a Regional Food Hub/Marketplace facility as a means to increase business opportunities for agriculture, aquaculture and artisan enterprises on Virginia's Eastern Shore. The study investigated the potential for a regional food hub, a destination market center, aggregated marketing program, and potential collaborative marketing ventures.

The project included the establishment of a regional stakeholder advisory group, data collection and analysis of the region's economy, producer and artisan surveys, interviews with key informants, site visits of notable regional spaces, and analysis of best-practice and promising models in other regions of Virginia and elsewhere. OED worked with representatives from the A-NPDC, Eastern Shore of Virginia Chamber of Commerce, Virginia Department of Agriculture and Consumer Services, Delmarva Farmers Union, Eastern Shore of Virginia Artisans Guild, ESVA Creative, Virginia Cooperative Extension and Agricultural Research Experiment Center, local agriculture and aquaculture producers, and community residents and civic leaders.

The Eastern Shore of Virginia faces a number of demographic challenges, yet trends suggest that the local customer base and market will remain relatively small and stable. Over the past five years, the overall population declined by 2% and the region's median age is 10 years older than the national average. The region has fewer millennials and more citizens over 55 than the national average. Median household incomes are about $15,500 below the national average, the lowest in the state of Virginia.

Despite these challenges, quantitative and qualitative analysis indicates that there is significant potential on the Eastern Shore based on its history, cultural traditions, coastal climate, fertile soil, unique sense of place, and the steady rise in tourism and tourism-related enterprises.

The region has seen an increase in a number of positive trends indicating the potential for the success of appropriately scaled initiatives. Chesapeake Bay Bridge Tunnel traffic increased 5% between 2015 and 2017. Between 2013-2017, 50 new tourism-related businesses opened, and visitor spending has increased 5% annually since 2015. Since 2015, regional tourism-related taxes on the Eastern Shore grew faster than any other region in Virginia. However, the majority of visitors (70%) had an annual household median income below $100,000, and there are some challenges with keeping visitors in the region for multi-night stays.

Large-scale agricultural production and growing commodity crops remain key to the region's economy. Despite its relatively small geography and population, Accomack ranks third, and Northampton ranks seventh among all Virginia localities in terms of the market value of products sold. However, most producers are either large-scale and sell to larger buyers or are quite small and relatively diversified. Of the agricultural respondents to our survey, 50% said they need to expand their business to remain viable and 21% want more income/benefits for themselves and/or their employees.

Agricultural producers on the Eastern Shore have considered growing their sales through education on food safety, creating more value-added products, participating in and/or hosting more events, selling to more retailers and/or wholesalers, expanding their online presence, and experimenting with new products, according to survey respondents.

For artisans in the region, over 80% have another source of primary income. Forty percent of artisans responding to the survey earned less than $10,000 annually from their art and only 4% make above $50,000

from their art or craft. Thirty-five percent said they need to expand their business to remain viable and many would like to expand.

This report includes two sets of recommendations organized into short-term (12-18 months) and medium-term (18-36 months). Key to implementing these recommendations is the establishment of a regional Working Group that consists of representatives from the existing artisans' groups, major existing agriculture-support entities and producer/harvester groups, cultural entities such as Barrier Islands Center, Chambers of Commerce, the Tourism Commission, and the Eastern Shore's counties and towns. The group would provide input and guidance toward implementation of these short-term recommendations and help lay the foundations towards implementing medium- and long-term recommendations, including a food hub entity and a destination center.

Short-term Recommendations:

1. Collaborative Marketing & Distribution

Implement strategies that expand distribution of and access to the region's vegetable, fruit, livestock, and specialty products to urban Northeast, Hampton Roads, and markets beyond.

2. Producer Inventory and Network Development

Identify and inventory the existing agriculture producers (including value-added producers) on Virginia's Eastern Shore, and encourage a group of "anchor farmers" to form a regional network.

3. Food-based Business Incubator/Commercial Kitchen Support

Support the development of the two commercial kitchens (Mary N. Smith Cultural Enrichment Center, in Accomack, and the former Rosenwald School, in Cape Charles) currently being explored and established, and implement complementary strategies to help food-product entrepreneurs create or expand their businesses.

4. Support for Farm Startups

Enhance the support (educational, training, resources) for new and beginning farmers and value-added producers and food entrepreneurs through partnerships with Virginia Cooperative Extension, Delmarva Farmers Union, Chesapeake Harvest, and other entities.

5. Regional Brand and Supporting Organization

Establish an "Eastern Shore of Virginia" brand in partnership with the Chamber of Commerce and Tourism Commission for Eastern Shore products, produce, value-added agriculture, and artisan wares; and formalize an Eastern Shore of Virginia (ESVA) Made, Grown and Harvested Working Group to meet quarterly.

6. Mobile Meat Processing

Partner with Virginia State University to arrange for its mobile meat-processing unit to visit the Eastern Shore on a trial basis, timed with the processing needs of area livestock producers.

7. Artisan Support

Support artisan development through enhanced funding, networking, training, education, and cooperative marketing activities.

Medium-term Recommendations:

1. Food Hub Organization

Develop a formal intermediary/support organization for Accomack and Northampton county growers to develop an organizational structure leading to aggregation of services and facilities.

2. Online Marketplace

Following the inventory of local producers and establishment of enhanced support for new farmers/food businesses, pursue an online agriculture market connector similar to the Chesapeake Harvest model, available at https://chesapeakeharvest.com/.

3. Collaborative Aquaculture

Explore opportunities for aquaculture-focused development and collaborative marketing and distribution activities. One future value-added opportunity to explore is flash-freezing of oysters, clams, and other seafood.

4. Artisan Destination Center

Continue to assess viability of a "destination" retail-focused center, potentially on US Route 13 near the Northampton-Accomack county line, to tell story of the Eastern Shore "brand," sell artisan goods, and house activities that support existing artisans and help incubate new artisans, along with value-added, shelf-stable agriculture products.

5. ESVA Made/Grown Staff Position

Establish a full-time staff person/director to chair the ESVA Made, Grown and Harvested Working Group and to lead the shore's creative economy and agriculture development efforts.

One final, long-term recommendation is to reassess the capacity for a regional food hub. After 5 years, stakeholders should revisit and assess the infrastructure, equipment, facility, and staffing for a food hub facility. While at present a regional food hub facility does not appear viable due to a small potential customer base and supply-side limitations, the growth of the region's small- to mid-size producers, enhanced support for collaborative agriculture activities, and the emergence of an intermediary organization may support a central food hub facility or dispersed aggregation in future years.

INTRODUCTION AND BACKGROUND

The Accomack-Northampton Planning District Commission (A-NPDC) engaged the Virginia Tech Office of Economic Development (VTOED) to conduct a feasibility study exploring the potential for increased business opportunities for agricultural and aquaculture producers and artisans in Accomack and Northampton counties on Virginia's Eastern Shore.

This study investigates the potential for a regional food hub, a market center, an aggregated marketplace, and/or one or more marketing ventures among agricultural producers or artisans. The A-NPDC contracted this study as part of a United States Department of Agricultural Rural Business Development Grant (USDA RBDG).

This exploratory and preliminary analysis explored existing market conditions, regional capacity, and stakeholder readiness for development of food hub infrastructure and activities, cooperative marketing, and artisan development projects.

VTOED worked with the A-NPDC to assemble a project advisory group of local agriculture producers, artisans, and members affiliated with key stakeholder organizations such as Virginia Cooperative Extension and the Delmarva Farmer's Union. The project advisory group first met in December 2018 and provided input into study design and shapedthe project's key questions.

The overall project was divided into two stages. The first stage, from December 2018-June 2019, involved:

- data collection through secondary data on the region's economy, including the agriculture and tourism sector;
- advisory group meetings (three – December 2018, February 2019, and May 2019);
- a producer and artisans survey;
- interviews, site visits, and small-group input sessions with area producers and stakeholders; and
- a select number of interviews and site visits related to comparable sites and best practice model programs.

The second stage, from July 2019-September 2019, involved:

- selected follow-up interviews;
- two focus group discussions with key stakeholders: one on agriculture opportunities and one on artisans;
- selected follow-up data collection;
- synthesis of project findings; and
- the development of recommendations.

The report includes a secondary data analysis (Section I); a qualitative data analysis (Section II); comparative analysis of best practices and outside-the-region examples and case studies (Section III); a synthesis and discussion of findings (Section IV); and recommendations (Section V).

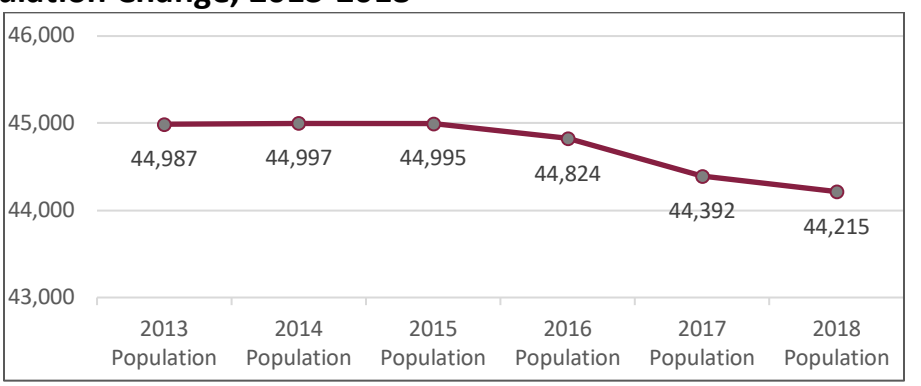
I. Regional Demographic, Economic, Agriculture, and Market Analysis

A. Eastern Shore Demographic Overview

Accomack and Northampton counties make up the Eastern Shore of Virginia, a peninsula located on the eastern seaboard between the Chesapeake Bay and Atlantic Ocean. As shown in Figure 1, the population of these counties has declined by 2% over the past five years from about 45,000 to 44,200 people. Table 1 summarizes regional demographic trends for 2013 and 2018. There are approximately 32,400 people living in Accomack County with a median age of 46, and 11,800 living in Northampton County with a median age of 48. The region's median age is 10 years older than the national average. Compared to other regions of a similar size, the Eastern Shore has fewer millennials and more citizens over 55 years old. The region has around 6,800 millennials while the national average for an area this size is 9,200. The region has roughly 17,800 people who are 55 or older, while the national average for this size area is 12,600.[1]

There are approximately 36,700 people of working age (16-64 years old), which made up around 83% of the total population in 2018. This represents a slight decrease of approximately 2 percentage points or 800 workers over the last 5 years. Accomack and Northampton have median household incomes of $42,300 and $41,500 respectively, about $15,500 below the national median household income. The racial make-up of the population has remained relatively unchanged over the 5-year period with a majority of the population identifying as White (58% in 2013 and 59% in 2019), 30% identifying as Black and 8% as Hispanic. African American's comprise a larger proportion of the population compared to the state average of 19%.[2]

Figure 1 Population Change, 2013-2018



Source: EMSI

[1] Emsi 2018.4; Demographics Reports. Retrieved from economicmodeling.com
[2] Ibid.

Table 1 Demographic Trends, 2018

	2013 Population	2018 Population
Total	**44,987**	**44,215**
Under 20	22%	22%
20- 64 years old	56%	54%
Over 65	22%	24%
Males	49%	49%
Females	51%	51%
White	59%	58%
Black	30%	31%
Hispanic	8%	8%
Other	3%	3%

Source: EMSI

B. Commuting, Traffic and Tourism Overview

The Eastern Shore is in a unique geographic location encompassing the immediate Hampton Roads-Virginia Beach-Norfolk area; and the Richmond, Virginia; Washington, D.C.; and coastal Maryland regions. U.S. Highway 13 begins in Fayetteville, North Carolina and extends 500 miles north to Trenton, New Jersey. As many as 7.8 million travelers and commuters *may* drive in and out of Accomack and Northampton Counties to and from surrounding metro areas using U.S. 13 annually. This assumes that 70% of the 12 million vehicles passing northbound and southbound through the Eastern Shore Virginia annually are daily work commuters.[3]

Figure 2 Inbound Commuter Residence, 2015

[3] Virginia Department of Transportation. (2018). Average Daily Traffic Volumes with Vehicle Classification Data on Interstate, Arterial, and Primary Routes. Retrieved from virginiadot.org

According to the Virginia Department of Transportation, the north end of U.S. 13, which connects the Eastern Shore of Virginia to Maryland, received roughly 19,000 uses per day and approximately 18,000 per day during weekdays in 2018.[4] The Chesapeake Bay Bridge-Tunnel, which connects the south end of U.S. 13 on the Eastern Shore to Hampton Roads and Virginia Beach, received roughly half that number of users, with around 8,800 uses per day and approximately 8,300 per day during weekdays.[5] Approximately 3.8 million vehicles used the Bay Bridge-Tunnel in 2015 and 4.0 million in 2017, representing a 5% increase.[6] Considering the U.S. 13 north end has almost twice as many daily vehicles, the annual usage could have been as high as 8.0 million in 2017. The data also confirms that there is a greater daily traffic count on weekends relative to the weekdays, which may present tourism opportunities along Virginia's Eastern Shore.

Commuting Patterns

According to the 2015 census, of the 14,823 individuals who worked in Accomack and Northampton counties in 2015, 6,493 or 43.8% commuted to the Eastern Shore. The table below highlights the estimated number of Eastern Shore workers by their location of residence in 2015. Workers from these locations specifically totaled around 4,010 or 62% of the 6,493 estimated workers commuting into the region. The table also includes approximated drive time in hours to the geographic center of the Eastern Shore. The remaining 56.2% or 8,330 workers are residents of Accomack or Northampton counties. An estimated 3,200 workers commuting within the region or into the region are reaching the central part of the peninsula spanning from the Chesapeake Bay's easternmost shoreline to the Atlantic coastline.[7]

Table 2 Inbound Commuter Origins by Metro Area, 2015[8]

Home Location	Eastern Shore Workers	Driving Time to Eastern Shore
Salisbury, MD MSA	1,400	<1 hour
VA Beach-Norfolk MSA	1,240	<1 hour
Richmond MSA	660	<3 hours
Washington DC MSA	390	<3 hours
Philadelphia MSA	100	<4 hours
Baltimore MSA	70	<3 hours
New York City MSA	60	<5 hours
Charlottesville-VA	50	<3 hours
Lynchburg-VA	40	<4 hours
Roanoke-VA	10	<5 hours

Meanwhile, approximately, 9,673 residents commute out of Virginia's Eastern Shore for work, resulting in a total 16,166 commuters using U.S. Route 13 every weekday.[9] The 2017 Financial Statement and Governors Report for the Chesapeake Bay Bridge-Tunnel shows that the number of vehicles crossing the bridge-tunnel

[4] Ibid.
[5] Ibid.
[6] Chesapeake Bay Bridge Tunnel District. (2016-2017). Annual Financial Statement and Report. Retrieved from cbbt.com
[7] U.S. Census Bureau. (2016-2017). Longitudinal-Employer Household Dynamics Origin-Destination Employment Statistics (2002-2015). Retrieved from lehd.ces.census.gov/
[8] U.S. Census Bureau. (2016-2017). Longitudinal-Employer Household Dynamics Origin-Destination Employment Statistics (2002-2015). Retrieved from lehd.ces.census.gov/
[9] Ibid.

into and out of the region has increased by 5% since 2015.[10] If 70% of that increase is attributed to commuters, the number of outbound and inbound commuters could be as high as 10,012 and 6,720, respectively.

Tourism Market

The Eastern Shore has a great opportunity to leverage the travelers on U.S. Route 13 and the abundance of recreation assets on the peninsula.[11] TNS-TravelTrakAmerica conducted a survey on behalf of the Virginia Tourism Corporation (VATC) that included only those visitors traveling at least 50 miles beyond their homes. For comparison, the peninsula is only approximately 60 miles from the southern tip to northern end. VATC received 334 surveys responses from visitors to Virginia's Eastern Shore in 2017. The survey asked questions related to duration of stay, point of origin, spending activities, referrals, time of year, and other data related to the demographics of the visitors. The survey showed that the Eastern Shore had more than 50 new tourism-related businesses open between 2013 and 2017, including a water park and two microbreweries. The study also indicated an annual 5% increase in visitor spending trend since 2015. The report estimated that visitors spent nearly $273 million on travel-related purchases in 2016. Tourism-related taxes in 2016 brought in $7.5 million, which marks a 31% increase since 2010 and a 7% increase since 2015, a faster growth rate than any of the other ten tourism regions in Virginia.[12]

Table 3 Visitor Spending in the Eastern Shore[13]

	Per Trip Spending
Average Visitor Spending	**$800**
One-Third of Visitors (~34%)	**More than $800**
Half of Visitors (~50%)	**$100-$750**
One-Fifth (~20%)	**Less than $100**

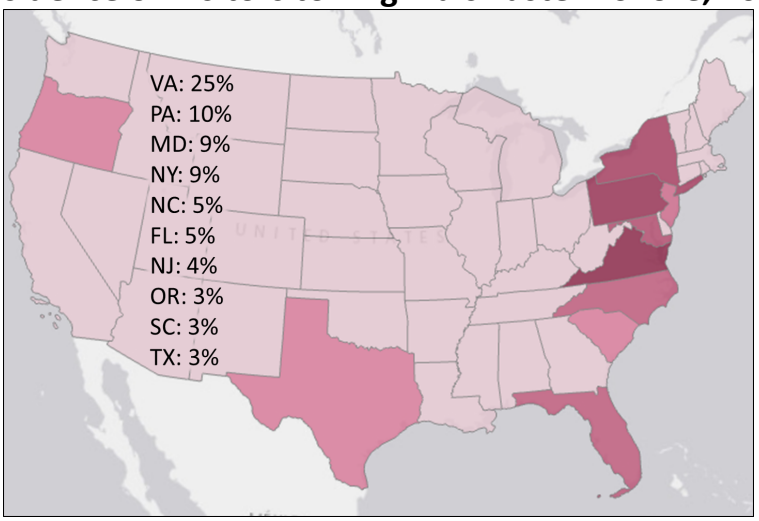
Visitors typically stayed for 3.5 days with approximately 40% of visitors coming during the summer months of June through September. Approximately four out of five visitors (83%) reached the Eastern Shore by vehicle while only one out of ten chose to fly. Two out of three respondents used information provided via the internet and social media to plan their trip, while one of every three respondents used information provided by friends and relatives.[11] According to the study, visitors to the Eastern Shore's webpage on the VATC website increased tenfold and requests for travel guides increased six fold between 2011 and 2016.[14]

[10] Chesapeake Bay Bridge Tunnel District. (2016-2017).
[11] Virginia Tourism Corporation. (2016-2018). TNS-TravelTrakAmerica: Regional Annual Year Report. Retrieved from vatc.org
[12] Ibid.
[13] Ibid
[14] Virginia Tourism Corporation. (2016-2018).

One-third of survey respondents said they came to the Eastern Shore for friends and family. The remaining two-thirds of respondents primarily came for the sightseeing and the beaches, parks, and historical and artisanal resources found throughout the region. Respondents also noted the fine dining experience offered in the region based on the vast presence of fresh seafood.[15]

The study also reported top states and metro areas where tourists reside. It found that approximately 13% traveled south into the region from Washington, D.C., and another 20% traveled from New York City, Baltimore or Philadelphia. Meanwhile, 25% of those visiting the Eastern came from other parts of Virginia. Of those 84 respondents who visited from Virginia, approximately 40% came from the Hampton Roads-Virginia Beach area and 13% from Richmond. Demographics of these visitors suggested that the average age of tourists to the Eastern Shore was 42 years old, with more than one-half of the visitors being between ages 25 and 44 years old. Approximately two-thirds (63%) were married and 42% had children, with an average traveler group size of approximately three people. A majority of visitors (70%) had an annual household median income below $100,000.[16]

Figure 3 Home Residence of Visitors to Virginia's Eastern Shore, 2018 [17]



Cultural, Natural, Recreational, and Tourism Assets

Virginia's Eastern Shore has a number of natural and cultural resources. These include access to the culturally unique, vehicle-free community on Tangier Island and access to the 48,000-acre Assateague Island National Seashore. Birding, kayaking, fishing, hunting, and water-sports and activities of all types are world-class. The 13,682-acre Chincoteague National Wildlife Refuge is a great draw for birders and nature lovers, and is known known worldwide for its free-grazing Chincoteague Ponies. Bound on the west by the Chesapeake Bay and on the east by the Atlantic Ocean, the Eastern Shore is a critical hotspot for bird migration in the hemisphere, with 439 bird species possible to spot there.

[15] Ibid.
[16] Ibid.
[17] Ibid

The Barrier Islands Center, in Machipongo ,is a cultural history facility with robust programming and a mission to tell the story of the area's former communities on the barrier islands. Numerous other small, but significant museums, arts centers, and cultural sites are sprinkled across the communities of the Eastern Shore. Chincoteague, Cape Charles, Kiptopeke State Park, and other locales attract vacationers as well as shorter-term visitors. In 2017, visitors to Kiptopeke State Park alone spent an estimated $9.3 million, of which $4.2 million was non-local spending. In 2010, Chincoteague National Wildlife Refuge attracted over 1.3 million visitors, a high percentage of those between June and September.

C. Industries and Occupations

From 2013 to 2018, jobs increased by 1.7% on the Eastern Shore, from 20,690 to 21,050 jobs.[18] This growth rate is slower than the 7.4% national rate. Of the 36,700 working-age individuals, around 61% participated in the labor force in 2018. The labor force participation rate between 2013 and 2018 increased by 5 percentage points. The area has also experienced a steady decline in unemployment, from 7.8% in 2013 to 4.3% as of December 2018. Most of the region's businesses employ fewer than 20 employees, but these small businesses represent approximately 85% of the 2,100 regional establishments. As seen in Table 4 and 5, agriculture, aquaculture, and fishing-related occupations comprise a significant proportion of regional jobs compared to the nation. The agriculture, aquaculture and fish location quotient (LQ)*, 9.7, illustrate this high employment concentration and regional strength in this industry when compared to the national average.[19]

Table 4 Industry Trends, 2018[20]

2-Digit NAICS** Industry	2018 Jobs	2013 - 2018 % Change	Wages, Salaries, Earnings per Employee (Average)	2018 LQ	2017 GRP	Number of Businesses
Agriculture/Aquaculture/Fishing	2,760	-1%	$28,196	9.71	$142,736,965	43
Government	4,200	2%	$42,970	1.32	$325,182,523	---
Manufacturing	3,660	9%	$35,723	2.22	$234,935,200	40
Health Care/Social Assistance	2,080	-8%	$37,703	0.78	$111,960,176	250
Accommodation/Food Services	1,900	14%	$16,434	1.06	$64,758,028	182
Retail	1,840	-6%	$21,961	0.86	$94,696,395	370
Professional/Technical Services	1,100	10%	$64,719	0.81	$104,037,319	163
Educational Services	230	79%	$46,830	0.43	$10,888,914	38
Utilities	100	4%	$90,707	1.30	$42,720,651	12

[18] Emsi 2018.4; QCEW, Self-Employed, Extend. Proprietors. Industry/Occupation Report. Retrieved from economicmodeling.com
[19] Ibid.
[20] Emsi 2018.4; QCEW, Self-Employed, Extend. Proprietors. Industry/Occupation Report. Retrieved from economicmodeling.com

Table 5 Industry Trends, 2018[21]

4-Digit Industry	2018 Jobs	2013 - 2018 % Change	Wages, Salaries, Earnings per Employee (Average)	2018 LQ	2017 GRP
Animal Slaughter/Processing	2,800	6%	$33,640	44.9	$156,871,000
Crop Production	1,400	-1%	$26,780	12.6	$64,238,500
Animal Production	600	8%	$32,420	10.8	$41,322,000
Fishing	325	-30%	$36,500	36.3	$22,705,000

Occupation	2018 Jobs	Jobs Change	Annual Openings	Med. Hourly Earnings
Cashiers/Retail Workers	1,000	-6%	180	$9.23
Cutters (Meat, Poultry, Fish)	950	3%	140	$12.64
Farm/Ranch Managers	880	1%	90	$10.15
Laborers (Farm, Nursery, Greenhouse)	735	8%	130	$12.24
Food Preppers/Servers	720	31%	150	$8.65
Personal Care Aides	435	41%	90	$9.27
General Office Clerks	355	4%	50	$12.37
Laborers (Freight, Stock, Movers)	330	6%	50	$11.09
Meat Packers/Slaughterers	320	-6%	50	$11.01

Table 6 Top In-Demand Occupations Requiring High School Diploma or Less, 2018[22]

Table 5 breaks down the agriculture, aquaculture, and fishing 2-digit NAICS industry, shown in Table 4, into 4-digit NAICS industries: animal production, crop production, fishing, and animal slaughtering and processing (note: animal slaughtering and processing falls into the manufacturing industry from the table above). Again, the data illustrate an industry strength in the Eastern Shore. Animal slaughtering and processing employment is particularly concentrated in the region, with a location quotient of 44.9, and employment has grown by 6% from 2013 to 2018 (Table 4). [23] Occupations in this industry have a median

[21] Emsi 2018.4; QCEW, Self-Employed, Extend. Proprietors. Industry/Occupation Report. Retrieved from economicmodeling.com

[22] Emsi 2018.4; QCEW, Self-Employed, Extend. Proprietors. Industry/Occupation Report. Retrieved from economicmodeling.com

[23] Ibid.

*Location quotient (LQ) quantifies the concentration of a particular industry cluster in a region compared to the US.

wage*** of about $13 an hour. The strength of the animal production and slaughtering industry is partly due to the large broiler chicken companies in the region, specifically Tyson and Perdue farms. One of every five Tyson poultry facilities in Virginia is on the Eastern Shore. It employed around 1,300 workers and sold about $1.27 billion in product in 2017. Perdue also has one out of every four of its Virginia operations on the Eastern Shore, which reported $2.95 million in sales in 2017.[24]

D. Overview of Agriculture Economy and Trends

As seen above, agriculture has a huge presence on the Eastern Shore. The region contributes 6.5% of Virginia' agriculture sales[25]. Accomack ranks 3rd and Northampton ranks 7th in the state total market value of products sold. Approximately 26.68% of the total land in the region is land in farms.[26, 27]

Despite the leading sales rank of the Eastern Shore, the 2017 Census of Agriculture shows a downturn in the area's agricultural economy. The total market value of products sold in the region decreased by 2% since 2012. While the total number of farms slightly increased by 2%, total farmland acres decreased by 6% and the average size of farm decreased by 9%. The most salient decrease was in total income from farm-related sources, which declined by 38% since 2012. It is serious diminution considering that state farm-related income increased by 37% during the same period.

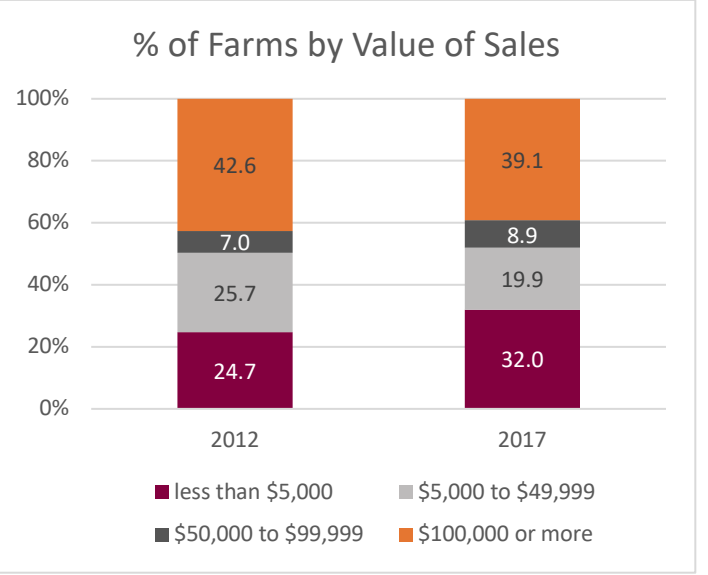
Table 7 Overview of Agriculture Economy in Eastern Shore of VA[28]

	2017 Eastern Shore	2012 Eastern Shore	% change since 2012		
			Eastern Shore	Accomack	Northampton
Number of Farms	381	373	+2	+6	-3
Land in Farms (acres)	125,040	133,439	-6	-1	-14
Average Size of Farm (acres)	661	723	-9	-6	-11
Total Market Value of Products Sold ($)	259,260,000	265,256,000	-2	-5	+3
Total Government Payments ($)	3,579,000	3,912,000	-9	+19	-38
Total Farm-related Income ($)	4,574,000	7,345,000	-38	-62	-19
Total Fam Production Expenses ($)	194,427,000	202,824,000	-4	-8	+3
Total Net Cash Farm Income ($)	72,986,000	73,688,000	-1	+1	-3

The overall decrease in agricultural sales value is also shown in Figure 4[29]. The percentage of farms with sales less than $5,000 increased from 25% to 32% while farms with sales over $100,000 shrank from 43% to 39%.

**NAICS: Stands for the "North American Industry Classification System." All industry data is categorized by this system.
***Median wage was calculated by taking the median of each occupation and creating a weighted average of those numbers.
[24] Emsi 2018.4
[25] United States Department of Agriculture, National Ag. Statistics Service (2017 Census). Retrieved quickstats.nass.usda.gov
[26] Ibid.
[27] United States Census Bureau, 2010 Census. Retrieved factfinder.census.gov
[28] United States Department of Agriculture, National Ag. Statistics Service (2012-2017 Census). Retrieved quickstats.nass.usda.gov
[29] Ibid.

Figure 4 The Percentage of Total Farms in Eastern Shore by Value of Sales[30]



Crop Production

Based on the 2017 soil survey data provided by the USDA Natural Resources Conservation Service, approximately one-third of the surface land in Accomack and Northampton counties is classified as prime farmland. Prime farmland has the best combination of characteristics for producing food or feed and is also available for use. Agricultural data pertaining to crop and animal production in the Virginia Eastern Shore region is provided by the 2012 and 2017 USDA National Agriculture Statistics Service Census as shown in Table 6 below. This data provides land area in acreage (ac), total farms, production in bushels (bu), and total sales (in dollars) of the large-scale commodity crops in 2012 and 2017. This includes top crops grown in the region: soybeans, wheat, and corn.[31] Total crops sales in Eastern Shore decreased by 5.3% from 2012 to 2017. Grains, oilseeds, dry beans, dry peas sales in Eastern Shore decreased by 26.5% since 2012. However, Accomack County still ranked #1 in the state for the market value of grains, oilseeds, dry beans, and dry peas sold in 2017.

Table 8 Crop Production in the Eastern Shore of Virginia, 2012-2017

Commodity	2012 Acres	2012 Farms	2012 Sales (millions)	2012 Production (bu)	2017 Acres	2017 Farms	2017 Sales (millions)	2017 Production (bu)
Soybeans	62,675	141	$26.0	2,357,875	46,523	112	$18.9	2,054,913

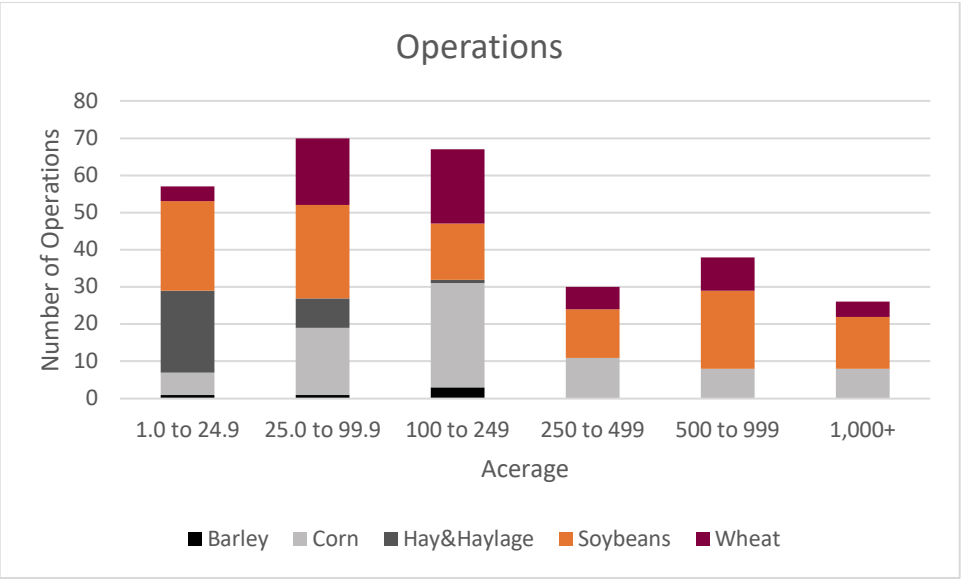
[30] Ibid
[31] Ibid.

Wheat	30,294	102	$10.9	1,766,240	16,914	61	$4.6	1,169,430
Corn	27,254	86	$18.3	2,985,120	26,511	79	$16.9	4,323,417
Potatoes	4,459	18	---	---	3,837	23	---	---
Barley	3,337	17	---	306,651	---	5	---	---
Hay/Haylage	454	25	---	---	---	31	---	---

(**Note:** Some date is unavailable if too few growers exist or data could be traced to an individual operation. As an example, barley and hay above is for Accomack only, as Northampton data is not available. In some instances, this clouds the picture significantly, as there a few very large growers of single crops or vegetables and, due to lack of data availability, it may seem as though there is low production, when in fact the overall production may be high for some crops. Green beans are one example of this. One of the largest green bean producers on East Coast is located on Eastern Shore of Virginia.)

The crops listed in the table above are considered to be cash crop operations requiring larger tracts of land. Soybean production was the top crop in terms of acreage planted, production, and overall sales in 2012. As shown in Figure 5 below, soybean farm sizes vary considerably compared to other cash crops[32], most likely because they also serve as a good rotation crop to make soils nitrogen-rich for other crop production. While only 56.3% of farms producing soybeans used over 100 acres, 69.9% of corn and 63.9% of wheatfarms use greater than 100 acres.[33] Farms also produce a typically smaller acreage of hay as it is often rotated with other crops and used for animal feed, not as a commodity crop. As the table suggests, soybeans were the most produced crop with the greatest amount of land in acreage in 2012. However, production decreased by 12.8% over that time period. In addition to soybeans, wheat production also decreased by 33.8%. However, corn production increased by 44.8%.

Figure 5 Operations by Acre, 2017



China is the primary export destination for Virginia agricultural exports with about 26% ($691 mil) of all Virginia exports sold there. Other top export destinations included Canada at about 11% ($296 mil) and

[32] Ibid.
[33] Ibid.

Switzerland at about 7% ($191 mil). In 2017, total cash receipts from Virginia's agricultural exports were $2.64 billion with soybeans accounting for 23% ($595 mil) of the exports. A majority of soybeans were exported to China along with tobacco, poultry, soy meal, and soybean oil.

Small-scale farms on the Eastern Shore typically produce vegetables such as tomatoes, pumpkins, sweet corn, asparagus, and broccoli, and fruits such as grapes, melons, apples, and berries. The 2012 and 2017 agricultural census did not provide county-level data for fruits and vegetables production, but statewide data shows that Virginia produces $92.3 million in vegetables and $65.8 million in fruits (excluding grapes for wine), ranking 25th and 18th in the US respectively in terms of small-scale crop value. During 2012, Virginia apples were sold at roughly $0.32 cents per pound (approximately three to four apples) and earned a total of $48.5 million. Grapes were sold at roughly $1.08 per pound (approximately one standard grape cluster) and earned a total of $19.1 million. Peaches were sold at roughly $0.74 cents per pound (approximately two to three peaches) and earned a total of $9.2 million. Tomatoes were sold at roughly $0.62 cents per pound (approximately three to four tomatoes) and earned a total of $41.7 million. Pumpkins were sold at roughly $14 per hundredweight (CWT) (approximately five to eight pumpkins) and earned a total of $7.8 million. The census did provide data regarding the number of farm operations and size in acres. Table 7 shows a majority of the small-scale farms in the Eastern Shore produed tomatoes, watermelons, and cantaloupe. On average, these farms produced on less than 2 or 3 acres of land. Other common vegetables and fruits grown on small farms include grapes, pumpkins, sweet corn, apples, and berries. While the latest 2017 agriculture data has been released, many of the small-scale fruit and vegetable operations' acreage was not collected.[34] While the total number of tomato and grape operations decreased significantly, the number of broccoli operations tripled between 2012 and 2017.[35]

Table 9. Small Scale Fruit and Vegetable Operations, 2012-2017

Crop	2012 Farms	2017 Farms	2012 Total Acreage	Standard Size
Tomatoes	14	4	---	---
Grapes	9	2	---	4
Pumpkins	3	4	23	8
Watermelon	12	2	10	1
Sweet Corn	5	6	11	2
Cantaloup	12	5	---	1
Asparagus	5	1	---	1
Apples	4	3	---	1
Broccoli	3	10	3	1
All Berries	6	---	---	2

Animal Production

Table 10 below shows animal and aquaculture production data for the Eastern Shore. The region's animal production is led by two main commodities: chicken (broilers) and shellfish (clam and oysters). The next section will go in further depth regarding aquaculture. Broiler chickens--those used for meat--accounted for 90% of all animal production sales not related to aquaculture. More than 85% of poultry operations in the region were broiler operations that generated an estimated $80 million in sales, and 80% had an inventory of 200,000 heads or more.

[34] United States Department of Agriculture, National Ag. Statistics Service (2012-2017 Census). Retrieved quickstats.nass.usda.gov
[35] Ibid.

Approximately 95% of those operations were located in Accomack County. In contrast, the smaller number of egg laying operations generated $108 million in sales and typically had less than 20 chickens per operation.[36] The region also has a small cattle industry, with a little over $100,000 in sales in 2012. There were 48 cattle operations that sold about 360 heads of cattle. Approximately one-fourth of finishing cattle sold weighed more than 500 pounds, meaning they were sold for slaughter, while a majority of the cattle operations produced feeder cattle that they sold mostly to Midwestern operations for finishing. Of the 360 heads of cattle sold in 2012, approximately 150 (42%) came from smaller operations with about 20 heads or less. Lastly, 90% of the hog operations had less than 25 heads each, and roughly 75% of sheep operations had 50 heads or less.[37]

Table 10 Animal and Aquaculture Production, 2012-2017

Commodity	2012 Operation Count	2012 Items Sold	2012 Sales ($)	2017 Operations	2017 Items Sold	2017 Sales ($)
Chicken (all)	50	35 million	$80 million	75	59 million	$112 million
Shellfish	50	375 million	$34 million	85	---	$32 million
Cattle/Calves	48	360	$103,000	29	281	$174,000
Goats	8	80	$7,000	16	23	$5,000
Sheep/Lamb	6	60	$9,000	11	90	$17,000
Chicken (layers)	6	---	$28 million	17	---	$51 million

[36] United States Department of Agriculture, National Ag. Statistics Service (2012-2017 Census). Retrieved quickstats.nass.usda.gov
[37] Ibid.

Aquaculture

Aquaculture on the Eastern Shore is comprised mostly of clams and oysters, which account for 95% of regional aquaculture sales. Virginia's shellfish aquaculture industry generated more than $37 million in shellfish sales in 2012, of which the Eastern Shore's shellfish aquaculture industry generated about $34 million.[38] This makes the Eastern Shore the largest contributor to the 2012 shellfish industry in Virginia.

According to the Virginia Shellfish Aquaculture Situation and Outlook Report (VSASOR), an annual survey of Virginia aquaculture producers conducted by the Virginia Institute of Marine Science, Virginia's aquaculture market remained strong from 2005 to 2017. While this study does not disaggregate by county, it provides some common industry trends on the Eastern Shore. Overall, the value of shellfish aquaculture in Virginia reached $54 million in 2017, an increase from $34 million in 2012. Oyster production, in particular, is considered the most rapidly developing sector in Virginia's aquaculture industry, based on the increasing production and sales the industry has seen over the last decade.[39]

Of the $54 million in 2017 sales, $38 million were from the sale of hard clam and $16 million were from oyster sales.[40] Indeed, clams are the biggest economic contributor in Virginia aquaculture production. This makes Virginia the top shellfish producing state overall on the East Coast. Virginia also ranks #1 in producing and harvesting oysters on the East Coast.[41] The 2012 USDA agricultural census supports the findings of this report, placing Virginia as the top state on the East Coast for shellfish sales. Virginia had more sales than the next two leading East Coast states, Connecticut and Massachusetts, combined.[42]

Large, vertically integrated companies produce most of the shellfish in Virginia. These companies contract small-scale, self-employed growers to produce clams and oysters for them. This makes it difficult to estimate total employment, since a portion of employment takes places on these small aquaculture farms. However, VSASOR does provide general trends for employment totals by shellfish operation. Oyster operations in Virginia have a fairly even split of part-time and full-time employees as shown in Figure 5. Employment increased from just over 100 jobs in 2009 to 230 or more jobs in 2014 and 2015, and then declined to about 180 jobs in 2017. As shown in Figure 6, clam operations in Virginia typically employ full-time positions that reached a peak of over 370 jobs in 2015. Since 2015 there has been a 32% decrease in employment to around 250 jobs in 2016 and 2017.[43]

Figure 6. Virginia Oyster Employment[42]

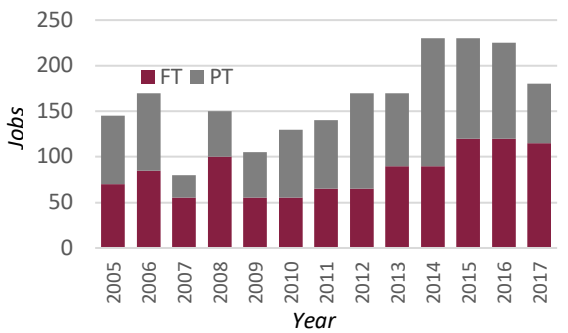
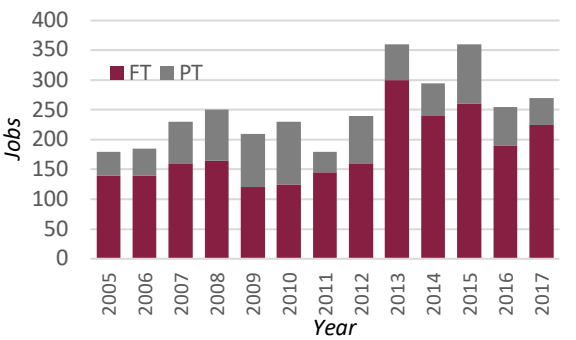


Figure 7. Virginia Clam Employment[42]



[38] Ibid.
[39] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research
[40] Ibid.
[41] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research
[42] United States Department of Agriculture, National Ag. Statistics Service (2012-2017 Census). Retrieved quickstats.nass.usda.gov
[43] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research

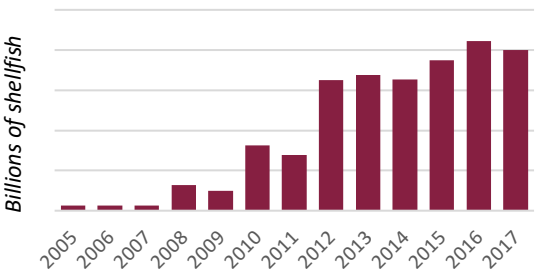
Overall, the shellfish industry on the Eastern Shore had an estimated 145 workers (including single proprietors) in 2017, representing a decline of 12% since 2012.[44] Quinby, in Accomack County, was the primary location of employment on the Shore. Despite the recent reduction in employment, the regional shellfish industry has a higher employment concentration by land area than the national average. ull-time workers in the shellfish industry can expect to earn an average of $35,000 annually.[45]

According to the VSASO study, oyster production occurs on both shores of the Chesapeake Bay. Clam production, however, is exclusive to the eastern shore of the Chesapeake Bay, where the water has higher salinity due to its distance from the multiple estuaries on Virginia's mainland coast. This gives the Eastern Shore a competitive advantage, geographically-speaking. Oyster larvae and clam seeds are either planted by hatchery owners in their respective aquaculture operations or are sold to other Virginia growers.[46]

Clam and Oyster Hatcheries

Hatchery production including seed clams, oyster seed, and oyster eyed-larvae have remained consistent over the last several years, fluctuating between 3.8 billion and 4.2 billion seeds or larvae as seen in Figure 7 below.[47] The quantity of seed and larvae in hatcheries far exceeds the number of clams and oysters planted because the products are either planted by the hatchery owners themselves in their aquaculture operations or sold to other Virginia growers to be planted in vertically integrated systems upon maturation (see Clam section for description). In 2017, oyster hatcheries reported sales of 255 million single seeds and 2.7 billion eyed larvae. These numbers represent a 3% and 7% decrease from 2016 sales, respectively. The average price of eyed larvae has increased by 9% over the past four years to $356 per million in 2017.[48]

Figure 8. Virginia Shellfish Hatchery Production[44]



[44] Emsi 2018.4
[45] Ibid.
[46] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research
[47] Ibid.
[48] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research

Clams

Hard shell clams are one of the most profitable seafood species for Virginia, ranking with sea scallops, oysters, blue crabs, and menhaden. Clams are harvested and shipped daily from Virginia to buyers across the nation. Today, clam production leads the aquaculture industry in Virginia. While wild clam harvesting was the traditional method, the vast majority of Virginia's production now comes from vertically integrated systems.[49] This is a management model in which a company controls its own supply chain, including the services related to the growing, processing, and shipping of clams. This lowers costs for growers and the company's reliance on other companies. However, it requires a great deal of investment to integrate. Trends regarding clam plantings and sales can be found in Figures 8 and 9 below. Based on the Virginia Institute of Marine Science survey, Virginia clam growers reported a 35% decline in seed plantings during 2017, which resulted in 307 million clams produced and only a 10% decline in the number of clams sold at market ($175 million). The VSASO report projects that clam planting will increase in the coming years. The survey findings regarding prices received for market clams showed that the average price reported per market clam at the farm gate was $0.20 during 2017, the same as the previous year. With lower sales and similar price per clam, hard clam aquaculturists in Virginia earned an estimated $37.5 million in 2017, only slightly lower than the previous year.[50]

Figure 9. Number of Clams Planted in Virginia[47]

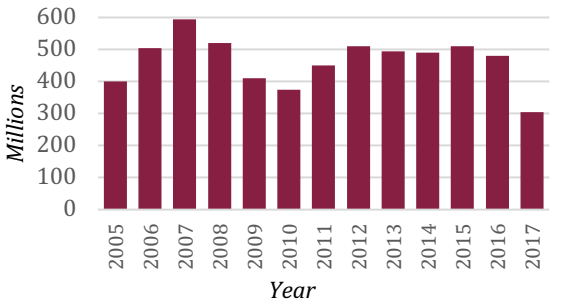
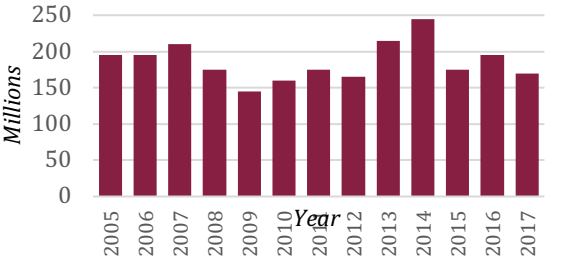


Figure 10. Number of Clams Sold in Virginia[47]



Oysters

Trends regarding oyster plantings and sales can be found in Figures 10 and 11 below. In recent years, Virginia oyster production has doubled in sales from $15 million in 2010 to $30 million in 2013 with an additional $10 million in 2014, after which the sales stabilized at around $35-40 million annually through 2017. The average price per oyster was $0.41 in 2017, which did not change from the previous two years. Approximately 90% of oysters were sold at wholesale markets over the last decade, with 56-86% being sold out-of-state, depending on the year.[51]

Figure 11. Number of Oysters Planted in Virginia[48]

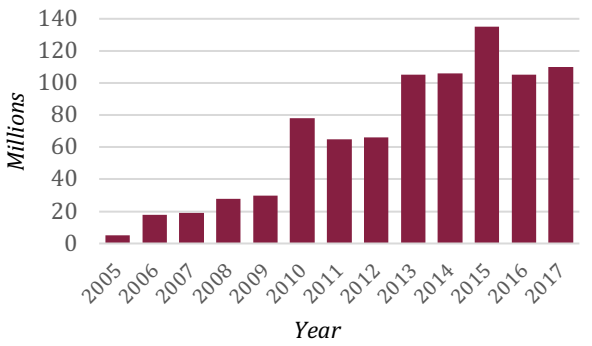
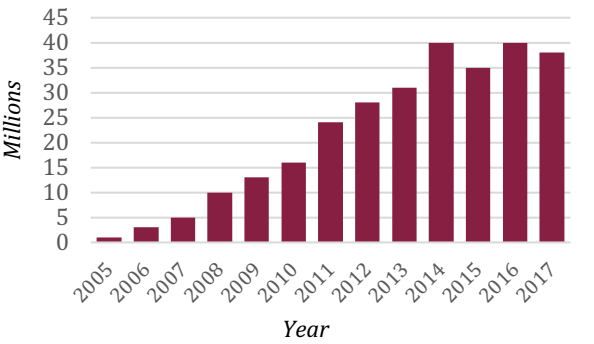


Figure 12. Number of Oysters Sold in Virginia[48]



Containerized and remote oyster production are the two preferred methods for growing oysters in Virginia. Today, containerized production, using cages or racks, is more common. Containerized growers sold 38.9 million market oysters in 2017, a slight decrease of 3% from 2016. Meanwhile, containerized growers planted 111 million oysters in 2017, a 5% increase from 2016. Combining the overall sales of single, market oysters with the weighted average price of $0.37 per oyster, it is estimated that the total sales in 2017 for containerized oyster aquaculturists (not including spat-on-shell) was $14.5 million, a 12% decrease from 2016. Triploids made up 87% of containerized plantings in 2017. Triploid oysters grow much faster, resulting in greater meat production and disease resistance than diploid oysters.[52]

Remote culture, also known as spat-on-shell, requires less labor and materials while still producing an economically feasible yield. Oyster eyed larvae purchased from hatcheries are transported to remote, protected growing sites and planted directly on the bottom of the bay or sea floor. Spat-on-shell cultivation produces oysters grown in clusters (similar to wild-caught oysters), producing oysters predominantly used for shucking. In 2017, the average price per bushel for remote culture oysters was approximately $52, making the total estimated value for spat-on shell oysters $1.4 million 2017. In 2017, remote culture growers planted 39,000 bushels of spat-on-shell oysters, a 31% decrease from 2016. Additionally, in 2017, remote culture growers harvested 27,000 bushels, a 37% decrease from 2016. However, the exact number of dollars earned from remote, spat-on-shell oysters was not reported.[53]

Water quality varies drastically for remote culture production, which has impeded its ability to thrive as a competitive method. One reason for the decrease in production is that fewer larvae resilient to varying water conditions have been produced in recent years. However, researchers and survey respondents are hopeful that the 30% decrease seen since 2016 may soon change if larvae production is able to adapt to water conditions.[54]

[49] Ibid.
[50] Ibid.
[51] Virginia Institute of Marine Science, VA Shellfish Aquaculture Outlook Report (2018). Retrieved from vims.edu/research
[52] Ibid.
[53] Ibid.
[54] Ibid.

Agriculture Product Shippers

Another source of information are the VDACS rosters related to which producers ship and sell commodity products from the Eastern Shore to commercial buyers. The list encompasses most larger producers (48 total) and below is a summary table. An accompanying inventory of products and contacts is available in Appendix A.

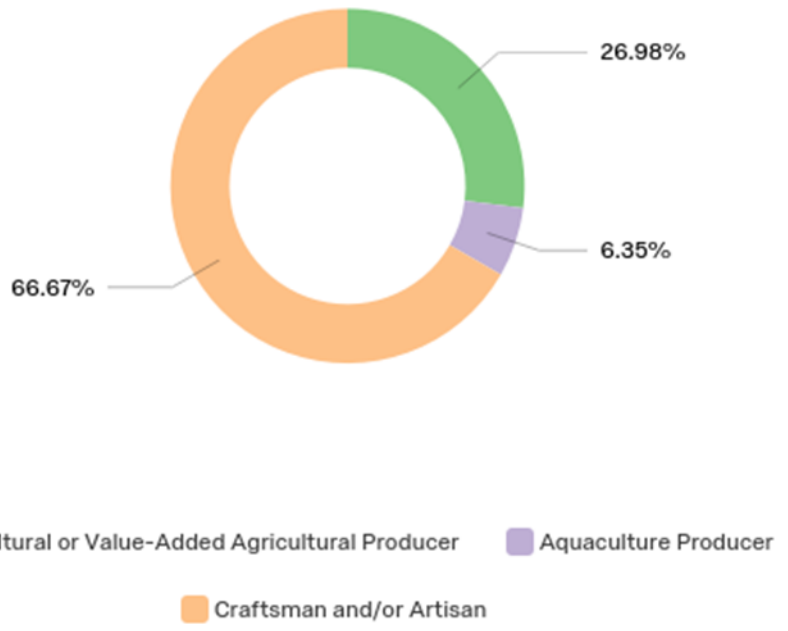
Eastern Shore Vegetable Shippers															
Shipper	**Commodities**														
	Beans	**Cabbage**	**Cantaloupes**	**Cucumbers**	**Eggplant**	**Greens and Spinach**	**Peppers**	**Potatoes**	**Pumpkins**	**Squash**	**Sweet Corn**	**Sweet Potatoes**	**Tomatoes**	**Watermelons**	**Misc.**
C & E FARMS, INC.	X														
HEARNE, WILLIAM P. PRODUCE COMPANY, INC.	X	X		X	X		X			X			X		
CHESSER, FRED S. AND COMPANY, INC.	X	X		X			X	X		X					
PRETTYMAN, C. J. JR., INC.	X	X		X	X			X		X				X	
NORTHAMPTON GROWERS PRODUCE SALES	X	X		X		X	X			X	X		X		
CUSTIS FARMS, INC.			X						X					X	
PICKPENNY PRODUCE				X		X	X			X					1
CAMBRIDGE FARMS, INC.	X							X			X				
DUBLIN FARMS, INC.								X							
BENNY F. HALL & SONS								X							
MAINE FARMERS EXCHANGE								X							
MOORE, THOMAS E., INC.		X						X			X				
WAYNE HEATH FARMS				X				X							
YAROS FARMS, INC.								X							
W.S. FLOYD FARMS								X							
QUAIL COVE FARMS, INC.												X			
EAST COAST BROKERS AND PACKERS, INC.													X		
PACIFIC TOMATO COMPANY													X		
SIX L'S PACKING COMPANY, INC.													X		
1 - Arugula, Beets, Cilantro, Herbs, Parsley, Radishes, Spring Mix, Turnips															

SECTION II: QUALITATIVE ANALYSIS

Virginia Tech's Office of Economic Development (OED) designed and distributed an electronic survey for those involved in agriculture or value-added agricultural production, aquaculture production, and craftsmanship or artisanry. In addition, OED engaged advisory team members in facilitated project conversations, facilitated two small-group focused input sessions, and conducted interviews with a wide range of key informants in the region and beyond.

A. The Survey

In order to gain a better understanding of the needs and situations of Eastern Shore producers, OED created and distributed a survey to those involved in agriculture or value-added agricultural production, aquaculture production, and craftsmanship or artisanry. Of the 63 respondents, 17% participate in agriculture, 4% in aquaculture, and 67% in artisan crafts.



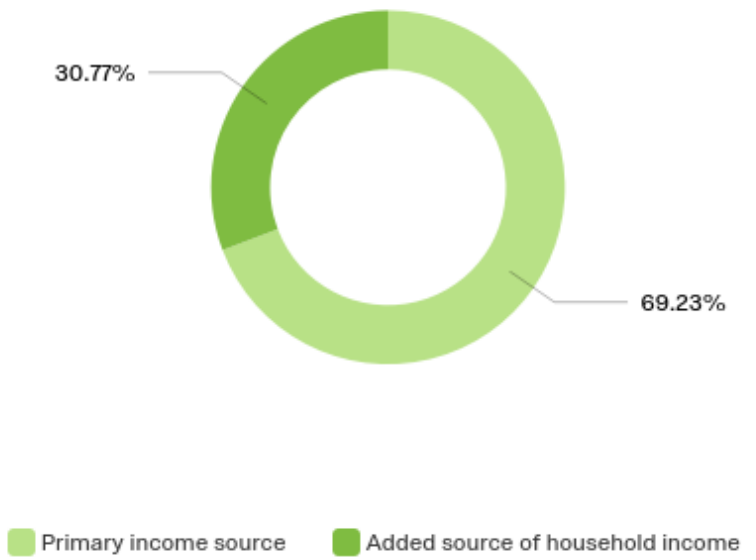
Breakdown by Business Type

Agriculture/Value-Added

Overview: Location, Years, Employees

Approximately 27% of survey respondents identified as participants in the Eastern Shore Agricultural sector, many located in Painter or Eastville. Of that number, a majority of businesses have operated for over 35

years, with a small amount of newer businesses that were under 20 years old. Most are family owned or have under 10 employees that are primarily full time.



Current Market Status

Primary markets for Eastern Shore growers include:

- Farmers markets/stands (specifically Onancock)
- Local events
- Grocery stores
- CSAs
- Wholesale
- Collaborative events such as Bourbon & Blooms
- Local elevators

***Note: Only two respondents reported using online markets.*

71% of agriculture respondents deliver to buyers or markets with their own vehicles, and 29% have consumers pick up their products from the farm. Of these markets, 53% are local to Virginia's Eastern Shore, 24% are located in the Hampton Roads-Virginia Beach-Newport News area, 12% are located in the Northeast region, and 11% are in the D.C. metropolitan area.

Barriers and Opportunities

Survey respondents were asked to identify specific barriers and opportunities impacting the success and growth of their agricultural businesses. Of them:

- ***50% said they need to expand their business to remain viable***
- ***21% want more income and/or benefits for themselves and/or their employees***

- ***14% are satisfied with their current sales***
- ***14% are interested in experimenting with new products***

Agricultural producers on the Eastern Shore have considered growing their sales through education on food safety, creating more value-added products, participating in or hosting more events in the Eastern Shore community and beyond, selling to more retailers and wholesalers, expanding their online presence, and experimenting with new products.

The primary barriers agricultural participants face in reaching these goals include availability of labor (27%), labor costs (18%), and lack of time, skills, and access to processing facilities (9%). A small percentage of respondents stated that they are concerned with access to suitable land, delivery costs, zoning regulations, and meeting quality standards.

Summary of Barriers:

1. **Availability of labor**
2. **Cost of labor**
3. **Lack of time/skills/access to processing facilities**

The top three opportunities identified to overcome these barriers were to increase marketing efforts and promote the Eastern Shore of Virginia's agricultural products (19%), invest in local agritourism and culinary activities (14%), and identify new and growing markets outside of the Shore (11%). Other popular responses included fostering value-added agricultural businesses and developing the space to do so.

Summary of Opportunities:

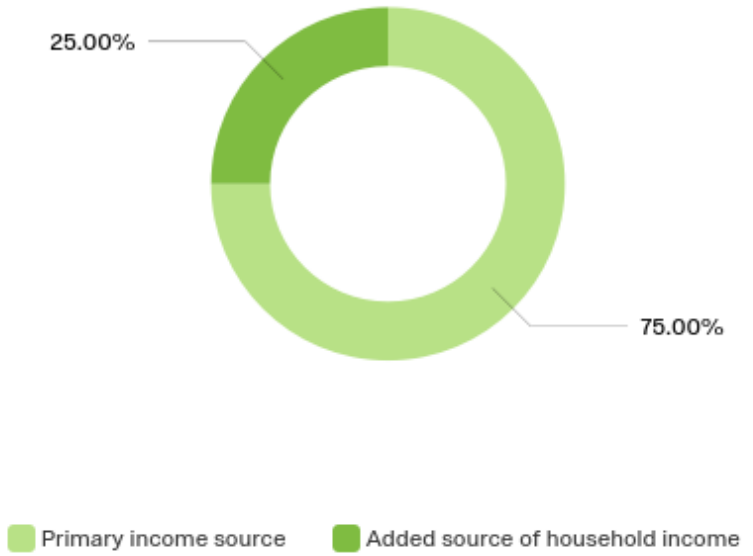
1. **Market and promote Eastern Shore agricultural products.**
2. **Invest in agritourism and culinary activities.**
3. **Identify new and growing markets outside of the Eastern Shore.**

When asked to consider opportunities for strategies to increase the value of agricultural products, 31% supported a marketing campaign, 19% encouraged an online marketplace, and 12% requested a marketplace with an aggregator. Other opportunities included creating several small marketplaces, opening a location for food processing and storage, and exporting goods more frequently. Many also recommended focusing on the unification of the Eastern Shore, rather than focusing individually on the two counties, in order to promote consumer education through local marketing.

Aquaculture

Overview: Location, Years, Employees

The aquaculture respondents are equally distributed amongst Cape Charles, Cheriton, Parksley, and Quinby. Of the 6% aquaculture respondents, 75% have been operating between 4-10 years, while 25% have been open for less than a year. 50% of respondents say their business is run between them and their family, 25% have between 1-4 employees, and 25% have between 5-9. Most of the work is seasonal and/or part time.



Current Market Status

Primary markets for Eastern Shore aquaculture producers include:

- Wholesalers (top response)
- Local grain elevator
- Direct-to-public retail
- Farmers market
- Online

50% of respondents deliver their own products to customers, 25% have their customers pick up their products, and 25% utilize a third party such as the U.S. Postal Service. Of the primary markets listed, 33% are local to the Eastern Shore, 17% are located in the Hampton-Virginia Beach-Newport News and D.C. metro areas, and 8% are located in the Northeast or Southeast regions.

Barriers and Opportunities

Survey respondents were asked to identify barriers to and opportunities for growth of their aquaculture businesses. Of them:

- ***25% said they need to expand their business to remain viable***
- ***25% said they want to increase income and/or benefits for themselves and/or their employees***
- ***25% are interested in experimenting with new products***
- ***17% want to increase their number of employees***
- ***8% want to transition their income from added to primary***

Aquaculture respondents have considered increasing their sales through processing seafood locally (shucking oysters, picking crabs, and cleaning fish), selling to larger retailers, and expanding their products.

The primary barriers to reaching these expansion goals have been the cost to expand hatcheries (17%), availability of suitable growing areas, processing facilities, and time (11%), and the availability and cost of labor (11%). Other concerns included fair pricing, risk of not selling what is produced, difficulty finding buyers, meeting quality standards, delivery costs and limitations, and a lack of access to distributors. One respondent stated that small-time processors are held to the same standards as massive operations, making it "nearly impossible" to operate on a small level.

Summary of Barriers

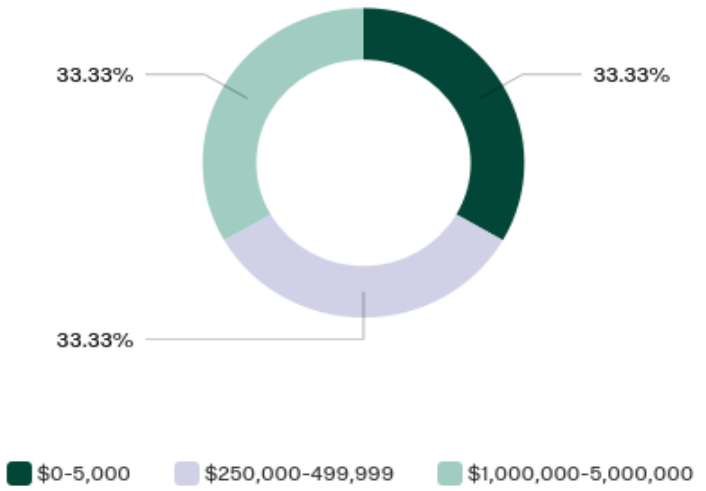
1. **Cost of expanding hatcheries**
2. **Availability of growing areas, processing facilities, and time**
3. **Availability and cost of labor**

Among the opportunities listed, 25% expressed interest in a marketing campaign to promote aquaculture products, 17% in developing a local food movement, and 17% in promoting water management practices to sustain and increase production over time. Other interests included identifying new aquaculture products, investing in local shellfish culinary or agritourism activities, instituting more aquaculture friendly zoning, tax incentives, and protection policies, and improving local markets as well as identifying markets outside of the Shore.

Summary of Opportunities

1. **Better marketing of aquaculture products**
2. **Developing a local food movement**
3. **Promoting sustainable water management**

As shown by the graph below, the range of annual revenue is distributed broadly amongst the aquaculture respondents.

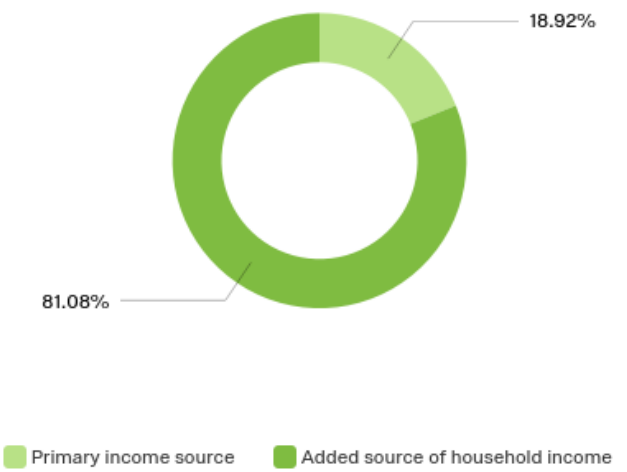


When considering strategies for increasing the value of aquaculture products, 25% of respondents would be in favor of an online marketplace, 25% of one large, stand-alone marketplace, and 25% of a community kitchen and/or storage location.

Craftsmen and Artisans

Overview: Location, Years, Employees

The primary location for artisans and craftsmen survey respondents is Onancock, Cape Charles, and Machipongo. Many noted the value of the Onancock farmers market for selling products, and one respondent moved their studio to the Historic Onancock School for better consumer traffic. 66% stated that they operate solo, 21% with family, and 9% had one or more employees. A majority of employees were not considered seasonal or part time.



Market Status

Popular markets identified by artisans and craftsmen included:

- Onancock Farmers Market (most common response)
- Friends, acquaintances, and word of mouth
- Lemon Tree Gallery (Cape Charles)
- Artisans Guild Annual Holiday Tour
- Personal websites
- Etsy

In order to deliver products to retailers and customers, 28% deliver and sell products using their own vehicle, 30% deliver to buyers and markets with their own vehicle, 19% sell online, and 12% have their items picked up by gallery owners.

39% of these markets are local to the Eastern Shore, 15% are located in the Northeast region (Delaware, New York, and Pennsylvania), 17% are in the Hampton Roads-Virginia Beach-Newport News area, and 12% are located in the Washington, D.C. metro area, midwest, or southwest sections of the United States. Only 10% of these markets were located in Southeast, and just 5% were located in the Northwest regions or were international.

Barriers and Opportunities

Respondents identified barriers to and opportunities for growth of their artisan and crafts trade. Of them:

- ***35% reported they need to expand their business to remain viable.***
- ***19% want their business to become their primary income.***
- ***16% are interested in experimenting with new products.***
- ***10% want to increase their personal and/or employee salary and benefits.***
-

The top three barriers present in the Eastern Shore artisan economy is difficulty identifying buyers (19%), risk of not selling what is made (16%), and difficulty finding markets (13%). Other challenges identified were intense local competition due to a small pool of consumers and the unpredictable nature of craft markets, as well as the high time investment required to prepare for market events.

Summary of barriers:

1. **Finding buyers and markets**
2. **Anxiety surrounding risk-taking**
3. **Intense local competition**
4.

When considering the primary opportunities to overcome these barriers, 24% of survey respondents supported development of an online marketplace, 21% encouraged the establishment of a regional “brand,” and 20% reported a need for additional retail space. 17% see assistance in connecting to retailers outside of the region as helpful. Only 7% and 4% of respondents thought more studio space or business, financial, and legal education would be beneficial, respectively. With 40% of respondents making between $1,000-$9,999

in revenue annually and only 4% making above $50,000, an online marketplace would fill a need for increasing the customer base for Eastern Shore crafts.

Summary of opportunities:

1. **Marketing/branding campaign**
2. **Creation of an online marketplace**
3. **Curating several small markets**

B. Interviews, Site Visits, and Small-Group Discussions

The OED team conducted interviews, site visits, and small group discussions with over 50 regional stakeholders, as well as key informants outside the region. The findings are detailed below.

We asked many respondents how they would ***describe the Eastern Shore of Virginia***. Some of the replies included:

- Enigmatic
- Remoteness
- Community
- Agricultural
- Connectedness
- Independence
- Nature's Gift
- Shellfish
- Warmth
- Potential
- Unique
- Creativity
- Integrated
- Adaptability
- Initiative
- Dispersed/disconnected
- Friendly
- History
- Resourceful
- Natural beauty
- Up-and-coming
- On-the-rise
- Poverty, low income
- A hidden gem
- A breadbasket
- Segregated
- Isolation
- Welcoming
- Changing
- Diamond in the rough
- A "national treasure"
- Simplicity and Beauty
- A "jewel"
- Reminiscent of a place like Martha's Vineyard
- An "island mentality," people help each other

We asked many respondents to describe the ***agricultural assets and strengths*** on the Eastern Shore of Virginia. Some of the replies included:

- Commodity agriculture (crops and some vegetables)
- Small number of very large growers – green beans, potatoes, fresh market tomatoes, etc
- Poultry processing
- Agritourism as an area of opportunity

- Aquaculture – clams and oysters
- No. one clam producer in the U.S.
- Some larger producers
- New farmers markets
- Quail Cove (Machipongo)
- Agriculture is still an economic driver
- Access to Hampton Roads
- Eastern-market proximity
- Rise of organic and sustainable farming
- Many smaller growers are diversified (more than one product), which mitigates risk and adds revenue streams.
- Quite a few bee farms and apiaries in the area.
- Horticulture (flowers, herbs) is strong, too – many contract sales to larger nurseries or distributors off the Shore
- Some of the mid-sized, direct-sales operations have been successful in attracting customers and buyers so their demand is actually more than they can supply (Mattawoman, Quail Cove, etc.)
- Delmarva Farmers Union, Chesapeake Harvest, Virginia Cooperative Extension as support resources
- Soils and climate are able to grow a variety of crops across three growing "seasons"
- Rise of breweries and wineries
- Beginning to see a more young farmers
- Quality of soils high

We asked many respondents to describe the ***challenges and needs related to the agricultural economy*** on the Eastern Shore of Virginia. Some of the replies included:

- Producers need GAP certification
- Processing space is needed
- Lack of commercial kitchen
- Need help with distribution and marketing
- Region has a few big producers and a number of very small producers, but low number of mid-size farm operations.
- Producers could use help using social media and online marketing.
- May be too many farmers markets – They take business from each other and there are not enough farmers or products to sustain all.
- Small number of value-added producers (horseradish, honey, a few jams and jellies)
- Most growers are very small-scale
- Lack of workers is an issue for some farms that want to grow.
- Need more support and incentives for specialty crop producers
- Relatively low number of non-commodity producers and volume of product for direct sales – Difficulty aggregating
- Difficult to connect with producers due to few networks
- No existing intermediary entity to help connect producers and support cooperative ventures in a non-commodity space
- History of some failures related to cooperative ventures and facility development (eg. Nature Conservancy-led effort; Melfa market under-utilization)
- Need small scale processing or mobile unit for livestock

- Fewer consumers and buyers of local, specialty crops on the Shore – There is a need to reach external markets and customers.
- Low brand and value recognition of Eastern Shore of Virginia agriculture
- Need for better food access to fresh food and vegetables for low- to moderate-income children, families, and individuals
- Some people don't go to local farmers markets due to a perception they are costly, even though some take SNAP and food vouchers.
- Local consumers are less willing to pay higher prices for value-added, speciality, and local products.
- Smaller producers can't sell locally for the price points they need to be profitable.
- Transportation and distances across the Eastern shore are a challenge.
- Farmer's markets are not flourishing and new markets further divide existing supply.
- Many "hobbyist" smaller farmers don't produce very much.
- There may be a need to educate producers and consumers about higher-value products.
- Mid-size and smaller producers need someone to "facilitate collaboration."

We asked many respondents to describe the ***artisan-related assets and strengths*** on the Eastern Shore of Virginia. Some of the replies included:

- Small, but strong, existing core of high quality, "professional" artisans
- Some strong organizations exist that connect artisans (ESVA Creatives, Artisans Guild of the Eastern Shore).
- A very supportive arts community exists.
- Art helps capture and tell story of the region's beauty.
- The Shore is "an amazing place for collaboration."
- There is a limit to what some artisans can sell locally. Some work on commission to galleries in urban markets in New York and other areas.
- There is growth of arts-related events such as the Studio Tour, Art on Farm, and Meet at the Table.
- Younger people are starting to move back to Shore.
- Quality of life on the Shore is a draw.
- There is a presence of avariety of arts and crafts types and traditions, suchas carvers, metalworkers, etc.
- Some very well-known artisans of excellence are on the Shore.
- Many artisans now use social media to connect to customers.

We asked many respondents to describe the ***artisan-related challenges and weaknesses*** on the Eastern Shore of Virginia. Replies included:

- Most artisans have to sell off the Shore to be economically viable.
- You "can only make so much pottery without selling some of the stuff."
- Artisans could use more sales outlets.
- There is a need for a prominent space where artisans can be promoted and showcased.
- Some world-class artisans and craftspersons are on the Shore, but many people do not know of them (woodcarvers, painters, etc.).

- New and emerging artists may need help with sales and gallery/buyer connections.
- There is not much affordable studio space available.
- Selling opportunities are limited for artisans on Shore.

The above is simply a sampling of high-level feedback. OED recieved very detailed and important feedback from a number of informants. Some is included in the subsequent sections and contributed to the shaping of recommendations, or to the case study write-ups in Appendices.

SECTION III: COMPARATIVE ANALYSIS

This study included a sampling of comparative or selected information-rich case examples as well as a review of best practices. This section provides a brief summary of that work, with most of the detail and case description located in the Appendices. This section includes a brief review of examples and literature related to food hubs, commercial kitchens and kitchen incubators, beginning farmer programs, mobile meat processing, and small-scale artisan-focused centers. Again, there is additional detail and case descriptions in the Appendices.

Food Hubs

Many stakeholders referrenced food hubs, but not all shared a common definition of what a food hub is. The term "food hub" captures a wide range of activities, including the aggregation, distribution, marketing of food along with related services that may include value-added activities such as canning and processing. While food hubs vary in the types of activities offered they, tend to have two primary goals: marketing food using a shared brand or affiliation among producers and production activities in shared facilities. Food hubs can serve as aggregation and distribution entities with a social mission to localize food distribution systems, addressing the need for infrastructure capable of linking the small and midscale growers that characterize local food systems to larger, mainstream markets such as grocery stores, restaurants, and institutional food service.

Across the country numerous local food hubs have failed because they did not understand the competitive marketplace in which they operate and did not have the necessary business skills to be successful. Too often, food hubs are established to achieve a public purpose, but there is not the long-term community or public support to make them sustainable. Most food hubs require some type of subsidy at least in their early stages to make them viable businesses operations.

The project team prepared an overview of food hub economics, including cost and revenue projection scenarios. The scenarios and projects are based on discussions with a number of food hub entities as well as a review of national literature on food hub feasibility and operations. For the full overview report, see ***Appendix A: The Economics of Food Hubs***. To summarize lessons learned from that analysis:

- Food hubs are not viable economic models in most cases.
- Food hubs that do succeed have unique characteristics and meet market niches.
- Usually, food hubs operate as for-profit businesses.
- To succeed, a food hub requires a strong organization with the capable leaders and management.
- To succeed, a food hub needs to have a committed and dedicated core of anchor farmers and

anchor customers.

- A food hub usually requires and receives some level of community support in the form of grants.
- For a food hub to be sustainable, it must grow into a large organization.

A 2017 national survey of food hubs found that the typical hub sourced from an average of 78 different producers and suppliers[55]. 89% of hubs source mostly or exclusively from small to mid-sized farms and ranches. The national survey also found that hubs were slightly less optimistic about future growth in demand for their products and for the first time since the survey began in 2013, a small proportion of hubs expected to see demand shrink.

The research team prepared a select number of nearby Virginia food hub and community market "case studies" to search for lessons learned. **See *Appendix B: Virginia Food Hub Case Studies***.

Commercial Kitchens

A shared-use commercial kitchen is a "facility where local entrepreneurs, caterers, and instructors can prepare and process their food products for the consumer market or hold cooking classes and demonstrations. These facilities are generally rented [on an hourly basis]. Instead of taking on the considerable financial commitment of opening a private commercial kitchen, new or expanding small food businesses can take advantage of shared-use commercial kitchens to help grow their enterprise."[56]

The shared kitchen model has many variations. As of 2015, 25% of kitchen incubators were losing money, only 37% were breaking even, and 38% were making a profit. The largest costs are rent and salaries. The largest revenue source is from leasing the space. While kitchen incubators tend to fare better in urban areas, rural kitchens (21% of all shared-use kitchens) are also promising. Rural areas tend to employ a community kitchen approach. These are community-based kitchens which serve a wide variety of uses, including event rentals, cooking and nutrition classes, meal services for insecure populations, and more. The primary role of the community kitchen is to serve the needs of a non-profit organization or to serve the overall community. The secondary role of the community kitchen can be to serve small, value-added food producers.

While there is a wide spectrum of shared-use kitchens, successful operations tend to be incubator facilities, providing not just the shared kitchen, but also additional resources for emerging entrepreneurs to expand their businesses. A growing number of these facilities are multi-faceted and include retail, food distributors, public markets, and job training. Most incubators are involved in at least one partnership such as workforce training programs, non-food related shared spaces, college or technical schools, food aggregators or distributors, public markets, food banks, or pantries. These partnerships help attract clients and provide funding and donations.

Appendix C provides more information on shared-use kitchens and incubators and includes two case studies, one from Kentucky and one from Tennessee. Even closer to home, the project team travelled to Denton, Maryland, and visited the **Chesapeake Culinary Center**. The operation started in 2005 as a non-profit to work with the school system to provide local foods in schools and culinary arts training.

The Center was established in the historic Caroline County High School building built in 1904. It had been vacant for over 30 years before redeveloped to house the Chesapeake Culinary Center and its affiliated

[55] See http://ngfn.org/resources/ngfn-database/knowledge/2017%20National%20Food%20Hub%20Survey%20Findings.pdf

[56] Topaloff, A. (2014). The Shared-use Kitchen Planning Toolkit. Leopold Center Pubs and Papers, 1-33, p.5.

programs. State and federal funds (including education and historic rehabilitation grants) and donations contributed to the $2.3 million renovation. There were at least 10 separate grant sources used for the redevelopment project. The 5,200-square-foot building is owned by the town, with a long-term lease to the non-profit which includes at least five distinct entities.

The facility includes a café called Shore Gourmet Denton Market, two kitchens, a classroom in the basement where the old cafeteria had been, and three event rooms on the third floor. The Shore Gourmet Market is a public retail store that sells items produced at the Caroline Schoolhouse and other regional products. The store allows students to gain the practicum experience of customer service and quick food production. The program also offers support to prospective entrepreneurs by providing assistance in the preparation, marketing, and distribution of products.

The Center has been creative, collaborative, and entrepreneurial from the outset. Founders have also sought to address multiple issues or provide multiple benefits and impacts with their programming and initiatives. Early on, the Center and secured a USDA Farm-to-School Grant to help county schools use more local, fresh foods in their cafeterias. The Center established a summer project, using (and providing paying work) for part-time school food service workers who would normally be off and unpaid in the summer, to process fresh vegetables (potatoes, sweet potatoes, broccoli, etc.) for use during the school year. The work includes sorting, cleaning, chopping, flash freezing, and packaging. The Center worked with an initial smaller group of area farmers and were able to pay them for vegetables that might not secure the same price for buyers due to blemishes or being left in the field after harvest, but that were ideal for processing. That projectprovided jobs and employment to mostly lower income individuals, helped farmers increase revenues, and provided access to local, higher-quality, nutritious food for students. The effort is ongoing and in the summer of 2018, the Center worked with school workers to process over 8,000 pounds of local produce.

The Center houses the high school culinary arts instructional program, too. In addition to curricular offerings, students gain work experience by cooking or working in the café and helping work in the catering operation catering special events for the community including weddings, birthdays, and other occasions. The Center also offers and houses both community college and adult programming.

An incubator program is an option for those who needed to rent a commercial kitchen, including farmers looking to take a home-grown food product to a larger market. The Shore Gourmet Market in the building also serves as a test market for local products, serving both the local community and as a stepping stone to broader distribution.

Image Credit: Edible Delmarva

The Center tries to be a one-stop shop for farmers and food-based entrepreneurs to help them with licensing, labeling, packaging, creating a business plan and all the other components of operating a food-based business.

The Center's operators also reach out to farmers directly, visiting farms and having intentional conversations about opportunities. For example, the Center is partnering with Extension and others to explore the market for growing, processing, marketing, and selling herbal and botanical products. Operators looked at the market for herbs and worked with producers to identify what can be grown in the regionThis included work with the University of Maryland Extension office and a Talbot County producer to pilot a small hyacinth plot. The hyacinth was then processed for dehydration at the Center, to be sold as a nutritious powder.

The Center may be unique in some ways, and very difficult to replicate. The building and the relationship with the school system and local community is tight and symbiotic. Staff brings culinary and food business first-hand knowledge, experience, and expertise. The Center, county, and schools have been extremely active and successful at seeking and securing both grant funds and private contributions.

Still, the model is one OED deems important to highlight, as the geography is similar to Virginia's Eastern Shore and the important role of a commercial kitchen that also functions as an incubator, initiator, and one-stop shop could be emulated on a smaller scale.

Mobile Meat Processing

This was mentioned as a possible need for some producers on the Eastern Shore. The economics of mobile slaughter units are very difficult, particularly in regions with low-volume or sporadic demand, which appears to be the case in the region. Mobile slaughter units have the potential to travel from farm to farm, but often provide services to regional producers at conveniently located "collection sites." Capacities vary depending on size of unit and species being slaughtered. Mobile slaughter units are typically less expensive to build than stationary facilities, though because they only handle slaughter, still require access to a cut-and-wrap facility. By traveling from farm to farm, they allow on-farm slaughter, which many consider more humane than trucking animals to a slaughter facility.

For this project, the region lacks existing demand to support its own mobile unit. For more detail regarding costs, revenues, and volume associated with sustaining a mobile unit, see the Cost Calculator tool developed by the University of Idaho available at https://www.nichemeatprocessing.org/cost-calculator-for-a-mobile-slaughter-unit.

The project team prepared several small case studies of mobile processing units in ***Appendix D.***

Beginning Farmer/Farmer Incubator or Accelerator Program

One issue identified in the study is the need to increase the number of farmers that could supply a food hub or collaborative marketing and distribution activities, as well as to help very small-scale farmers scale up. USDA defines "beginning farmers" as those who have been operating a farm or ranch for less than 10 years. This includes people who are merely considering farming as a career, those in the early years of farming, and growers who are fine-tuning a well-established farm business. The Eastern Shore could consider increasing collaboration with a program to provide structured assistance for beginning farmers. Future Harvest Chesapeake Alliance for Sustainable Agriculture has a Beginner Farmer Training Program (BFTP) for residents of the Delmarva peninsula. Virginia Cooperative Extension offers the Virginia Beginning Farmer and Rancher Coalition, which could provide additional opportunities. Similar to the BFTP, the Coalition supports the development and enhancement of whole-farm planning curriculum and training, online resources, social networking, and farmer mentoring.

A regionally located incubator program is also an option. A farm incubator could be a multi-grower project that provides beginner farmers with some combination of land, equipment, facilities, technical assistance, funding, and resources needed to establish their own successful farm business. Incubators can help reduce some of the barriers to entry associated with the high start-up costs of farming or new farming enterprises.

Appendix E provides a number of case examples of programs across the country.

Artisan Centers

Artisans and others with which OED spoke suggested that an artisan-focused "destination" attraction could be a tourism draw and an important asset and local market for area artisans, as well as food entrepreneurs. The team discusses this more in the subsequent sections. There are a wide range of types of centers across the region and the nation***.*** ***Appendix F*** provides case examples of a few artisan centers.

One model the team did not include, but that has been cited by several, was the Tamarack Cultural Center, in West Virginia. In 1996, the West Virginia Parkways, Economic Development and Tourism Authority opened Tamarack and the Caperton Retail Center. Tamarack was conceived as a way to both market and recognize West Virginia history, culture, craft, and art. Supporters viewed it as a possible economic development engine for West Virginia. The Center has a visitor and information center to share the region's cultural and recreational offerings. This unique retail center was the first of its kind in the country. It now includes a theater, fine art gallery, food court, and conference center. Tamarack has a statewide draw in terms of supply and it showcases the work of over 3,000 juried artisans from every West Virginia county.

Many view the overall economic impact of Tamarack as mostly positive when considering tax revenue, jobs, and other factors. Other states and regions have viewed Tamarack as an economic development success and have tried to emulate it. A 2008 economic impact analysis indicated that in one year, Tamarack generates $18.6 million in economic benefit, creates $5.9 million in income, and supports 236 jobs. There is no large-scale existing debt associated with the facility. However, the facility operates at a deficit every yea. At one point this was a $1.2-million dollar deficit each year, though recent numbers are not available. The deficit is subsidized by income generated from the Turnpike Authority concessions.

Tamarack does not seem a direct comparison, as it drew products and supply from across the state and its geographic proximity as a primary stop along a major travel corridor affords a much greater potential customer market of visitors and tourists.

We include some information about the Southwest Virginia Cultural Center and Marketplace in Abingdon, Virginia, in the appendix, which may be more of a comparable model. It also draws from a larger (19-plus-county, 8,600-mile) region and has a prominent visible location adjacent to a major interstate corridor. Formerly named "Heartwood," the facility opened in 2011 as the gateway for the creative economy in Southwest Virginia. The center was conceived to showcase and sell the work of regional artisans and musicians and to interpret Southwest Virginia's history, heritage, outdoor recreation, and scenic beauty via stories and first-person narratives to inspire travel to other parts of the region. The facility was constructed and has been operated by three joint entities: Friends of Southwest Virginia, a 501c3 community development non-profit; the Southwest Virginia Cultural Heritage Foundation; and 'Round the Mountain, Southwest Virginia's 501c3 non-profit artisan network. It should be noted that the state played a major role in funding the Center and has an ongoing investment stake in its operations through the Department of Housing and Community Development. The Commonwealth provided 44% of the Center's operating income in 2017-2018, with 25% coming from grants, and 29% from revenues from sales, programs, etc.)

The current model of operation is four-part: Artisan Marketplace, Restaurant, The Crooked Road Major Venue, and Visitor Center. The marketplace includes work from over 300 juried artisans across the region. It also serves as a music venue for the Crooked Road.

Visitation has experienced a steady decline since its 2011 opening.[57] The inability of this Center to experience more fiscal success without substantive public subsidy is a warning for any similar type of

[57] See https://rga.lis.virginia.gov/Published/2019/RD98/PDF

initiative on the Eastern Shore or elsewhere.

SECTION IV: SELECTED SUMMARY OF FINDINGS

During September 2019, OED conducted two working group input sessions–one focused on agriculture and the other on artisans—to help refine possible findings and identify recommendations. Several findings stand out:

- The potential on the Eastern Shore of Virginia is great based on history, tradition, climate, soil, uniqueness, and the rise in tourism and tourism-related enterprise.
- Population demographics and trends suggest that, at least in the near future of around 5 years, the on-the-Shore customer market for value-added products, specialty agriculture, and artisan goods will remain relatively small and stable.
- There has been some increase in trends related to tourism, visitation, and tourism-focused enterprise start-ups.
- The area's larger producers and commodity crops remain very important to the region's economy.
- The existing supply of small to medium producers in Accomack and Northampton counties is relatively low.
- Many smaller producers are very small and diversified.
- The retail distribution of locally grown produce is already quite robust. There are "pick your own' operations, Community Supported Agriculture (CSA) boxes, community farmers markets, one year-round farmers market, and a variety of roadside stands and "popup" markets present on the Shore.
- However, farmers markets may be competing for supply, as there are not enough producers to support every market.
- The existing supply of shelf-stable, value-added products and food entrepreneurs is very low.
- There are few intermediary organizations focused on increasing this supply and helping new producers or existing smaller producers grow.
- The intermediary entities that do exist (Delmarva Farmers Union, Future Harvest CASA, Chesapeake Harvest) serve the larger Delmarva footprint.
- Some of the successful mid-size producers have all the customers they can service, but may benefit from assistance with coordination, production, cooperative arrangements, or scale-up.
- The number and types of artisans is robust.
- Many, however, may be more "hobby" artisans.
- Likewise, the intermediary organizations and networks for artisans on the Shore is surprisingly robust.

SECTION V: RECOMMENDATIONS

Key Recommendations

This includes two sections: short-term recommendations (12-18 months); and medium to longer-term recommendations (3 years plus).

Section 1: Short-term Recommendations (12-18 months)

Recommendation 1A: Collaborative Marketing & Distribution

In the near term, implement strategies that expand distribution of and access to the region's vegetable, fruit, livestock, and specialty products to urban northeast, Hampton Roads, and other markets. The strategies might include partnerships with one or more existing food hub or co-packer entities located outside the region and helping producers coordinate outreach to buyers, aggregate distribution, and small-scale investment in equipment purchases or rentals, such as trucks.

Rationale: Most of the region's existing smaller and mid-scale vegetable, livestock, or specialty crop producers sell directly to customers, restaurants, institutions, or retail, meaning they handle their own transport, customer outreach, marketing, and more. Some of the existing producers transport to customers in urban northeast markets, Hampton Roads, and beyond. There is the potential to share some of the costs of transportation and distribution, development of new customer relationships, and other functions to these urban markets off the Shore. Some of the existing producers could benefit from a larger array of products for their existing customer base and from sharing the costs of serving these off Shore markets. OED suggests starting with less complex, less risky "low-hanging fruit" support activities that might help with costs savings or new business for these producers. In addition to cooperative transport and distribution among producers, one easy way to add value with a minimum amount of coordination and investment is a partnership with existing co-packers. These companies already have the customer relationships and could relieve some of the sales and marketing functions of area producers.

Half of the agricultural producers responding to our survey said they need to grow their business to remain viable. According to the USDA Agriculture Census, between 2012 and 2017, the percentage of farms with sales less than $5,000 increased from 24.7% to 32.0%. During that same period, farms with sales over $100,000 decreased from 42.6% to 39.1%.

The region can help address this need through development of support activities for cooperative marketing and distribution, without initial investment in larger capital construction and associated ongoing operating costs of a major facility.

"Delivery and transport is the key element to bridging to the outside markets."

"If producers know demand is there, they will grow it."

"We need to help growers connect their products to market outlets— provide access."

"Farmers want immediate benefit, not long-term."

"For smaller and mid-size producers, we need someone to facilitate collaboration."

"Someone needs to reach out to farmers, visit them, connect in a very grassroots way."

"Producers need a more coordinated pursuit of niche opportunities."

"Producers can't just sell locally to get price points they need".

Recommendation 1B: Producer Inventory and Network Development

Identify and inventory the existing agriculture producers (including value-added producers) on the Eastern Shore and encourage a group of "anchor farmers" to form a regional network. The region should identify and help connect and support a small network of vegetable, livestock, or specialty-crop producers willing to work together for direct or direct-to-buyer sales to customers, restaurants, institutions, or retail.

Rationale: While the Delmarva Farmers Union, Chesapeake Harvest and other entities exist, there is no present organization focused on Eastern Shore of Virginia agriculture producers specifically. A relatively easy step for the region is to create an inventory of local food (including value-added) producers in the region. This could be updated and published annually in print form and as an on-line document.

The inventory helps reveal the existing producers and types of goods in region, creates a robust contacts database, helps promote and share information on the producers and goods in the region, and also as updated over time can help track the regional growth of producers and goods. The Delmarva Farmer's Union is already pursuing some promotional efforts by seeking to incorporate Eastern Shore of Virginia farms onto the Buy Fresh, Buy Local phone application, and these efforts should be tracked for future success.

The Accomack-Northampton Planning District Commission has begun such an inventory and should work

with partners such as Virginia Cooperative Extension, Chesapeake Harvest, and Delmarva Farmers Union to complete and update the inventory.

"We need to start with a few that are willing and grow from there."

"Someone needs to reach out to farmers, visit them, connect in a very grass-roots way."

Recommendation 1C: Food-based Business Incubation/Commercial Kitchen Support

Implement strategies to help increase the supply of value-added (shelf-stable) agriculture and aquaculture products and the development and growth of food-based entrepreneurs. The region should support the development of the two commercial kitchens in the development stage in the region. The region should also implement complementary strategies to help food-product entrepreneurs create or expand their businesses. The planned commercial kitchens provide an opportunity to provide a "one-stop" incubator function for food business opportunities. OED recommends that management assistance, technical expertise, marketing assistance, and financial resources be available through the commercial kitchen operations. The equipment plans for the commercial kitchens should be evaluated to allow for the addition of specialized equipment such as flash freezing, cold storage, etc.

The supply of value-added products in the region is relatively low, and may be a barrier to success of a retail marketplace. Moreover, it may be worthwhile to assess. Lend to the efforts if one or both seem not only like potentially viable operations, but also to possess some of the potential to serve a more proactive, producer-engaged.

Rationale: There are two kitchens, one in use and one in the planning stage. The first, Mary N. Smith Cultural Enrichment Center in Accomack County, has large spaces available for programming currently – classrooms, offices, cafeteria, commercial kitchen, etc. Other sections of the school are under renovation. Currently, a local business (home healthcare) leases small office space in the building, an afterschool program leases classroom space, and the Salvation Army uses a classroom as its ESVA office and meeting space. The Cafeteria has a central HVAC, a sizable commercial kitchen currently in-use, a mini-kitchen for catering, and a walk-in freezer. There is a delivery entrance at the back of the kitchen. This facility appears to be underutilized (many we spoke with were unaware of it) and also does not play an active food-producer incubator. This facility with the correct modifications, programing and staffing has the potential to serve as a multi-use commercial kitchen and food business incubator.

The second commercial kitchen is in the planning/building stages and is located in Cape Charles at the old Rosenwald School. According to one of the project leaders, the school is bought and paid for with no debt and architects are in the design phase now. The specific details of the kitchen equipment and facilities that will be incorporated in the facility are not known at this time but they expect full service kitchen with cooler and freezer space as well as class rooms for educational and community space. The project has started a capital campaign and received a $1 million endowment for operations. Their goal is to raise $1.5 M for renovations.

The leaders each of these projects should benefit from access to case examples in this report (See Appendix)

as well as connections to the leaders of the Chesapeake Culinary Center in Denton, MD (see comparative analysis discussion earlier in this report).

"We need more non-perishable food products which can minimize risk and be offered for sale year-round."

"There is really not much value added here on the shore – this is a big gap."

Recommendation 1D: "Beginning Farmers" Support

Enhance the support (education, training, resources) for new and beginning farmers and value-added producers/food entrepreneurs through partnerships with Virginia Cooperative Extension, Delmarva Farmers Union, Chesapeake Harvest, and other entities.

Rationale: The start-up costs and barriers to entry for agriculture and food business are significant. The existing programs and resources that exist to support beginning and aspiring farmers and food entrepreneurs need to be better coordinated and augmented to address these barriers. An expanded farmer and food entrepreneurship program could include; 1) establishing a formal program for new farmers, 2) a farm "incubation" type effort, 3) a farmer mentors network, 4) special financing programs for agriculture and food related entrepreneurs, 5) workshops on food-based business or technical skills, 6) business or financial planning assistance, and 6) training or enhancing lower costs access to GAAP certification. Increasing the supply of agricultural products in the region represents a significant economic opportunity for increased jobs and income to local residents.

"We have lots of 'hobbyist' farmers that don't produce very much."

"We need to cultivate new producers to grow/make agriculture products, but that takes time and effort."

"There is relatively low volume of niche/specialty crop production at present [on Eastern Shore of VA]."

"One challenge is helping farmers transition [and diversify] from Cash-Crop Grains to [more] Specialty Crops; it's tricky to incentivize the switch."

"Transitioning farms to specialty crops has to come before promoting a regional brand."

"Most smaller farmers do not have GAAP certifications, which would be a first step in building capacity across the farms in the region to serve a bigger market."

Recommendation 1E: Regional Brand

Establish an "Eastern Shore" brand in partnership with the Chamber of Commerce/Tourism Commission for Eastern Shore products, produce, value added agriculture, artisan wares, and seafood. The brand should be an "open source" brand to encourage maximum use and to create brand recognition in a short period of time. Sub brands like Eastern Shore Finest or Eastern Shore Select can be used and copywrited to distinguish juried or third party verified products. Delmarva Farmers Union could be used to offer farmers third-party verification.

Rationale: Eastern Shore products are not well recognized in markets off the Shore. The Eastern Shore has a significant brand story to tell with the rich history, culture and way-of-life that goes into the production of unique quality products. It is essential for brand recognition/acceptance that there be a single brand that is identified with the Shore and that all groups and organizations work together to establish and market the brand. Since agriculture, aquaculture/fisheries, and artisan wares are such a central part of the regional brand and story, these industries should be key partners in brand development.

"Eastern Shore quality is not well understood in the nearby metro markets - Hampton Roads, Richmond, DC and Baltimore."

"We need to reinforce and share our unique identify and history."

"The quality of life is a draw here."

"Bear in mind regarding product branding that it can be intensive to set up third-party verification or can be harder to monitor/validate if that is not included."

Recommendation 1F: Mobile Meat Processing

Arrange for one of the existing mobile meat processing units at Virginia State University (VSU) or Delaware State to visit the Shore on a trial basis aligned with the processing needs of area livestock producers. The Delmarva Farmers Union may be able to coordinate the visit.

Rationale: Upkeep, operations, and maintenance costs of a mobile meat processing unit are significant. It is uncertain that the demand exists to justify the acquisition of a mobile unit processing unit exclusively for Eastern Shore farmers. Local organizations, partners, and producers could jointly coordinate and fund an existing mobile meat processing unit visit to the region during a period of high need. This could also serve as a pilot experiment to test the local demand and operational considerations for such a unit.

The VSU Mobile Slaughter Unit is a 40-foot trailer (40'x8') that can run on a generator or battery; it can be plugged into an electrical line and needs a water source (has hot/cold functions). It is pulled by a heavy-duty Ford pickup. It can be delivered to any site in Virginia. Equipment includes: slaughtering table, meat saw, meat grinder, walk-in freezer with racks (ex. 12 goats at once), shelves, etc. The unit can handle different meats, and it is similar to units used by larger/wealthier farmers cooperatives and agribusinesses.

Recommendation 1G: Artisan Support

Support artisan development through enhanced funding, networking, training, education, and marketing activities. In the absence of a regional artisan center, partner with existing visitor centers, retail outlets and community events to better showcase artists and their goods, perhaps having a rotating group of artisans who available for demonstrations. One of the existing intermediary organizations could undertake the establishment of an on-line marketplace for artisan products. Continue to grow and market existing arts-related events (studio tour, arts on farm, etc.) while adding new and specialized events.

Rationale: The opportunities here are extensive, and important for product development in the context of a future regional artisans market. Some of the examples of training and technical assistance for artisans include: on-line sales, how to build a web-site, photography and digital design, social media, pricing, and etc.

"We need better ways to support/promote new and emerging artists."

"Some artists need help with the business side."

"Many artists use social media to tell their own story, but some need help with using those tools and even how to craft their message."

Recommendation IH: ESVA Made/Grown Organization

Establish and formalize an Eastern Shore of Virginia (ESVA) Made, Grown, Harvested Working Group to meet quarterly. The Working Group should consist of representatives from the existing artisan's groups, major existing agriculture support entities and producers/harvesters groups, cultural entities (such as Barrier Islands Center), Chambers of Commerce, Tourism Commission, the Shore's counties and towns.

Rationale: The group would provide input and guidance toward implementation of these ahort-term recommendations and help lay the foundations towards implementing medium- and long-term recommendations (food hub entity, and a destination center). Moreover, the group could be a sounding board and voice for growers and makers helping advance the regional brand and support educational, marketing, and networking activities. One primary function/focus of this group could be the planning of an annual meeting of the area's producers/growers and artisans.

Section 2: Medium Term (3-5 years) and Longer-term Recommendations (5+)

Recommendation 2A: Food Hub Organization

Develop a formal intermediary/support organization (a food hub ENTITY) for Accomack/Northampton growers. Agriculture producers in the region need the support of a formal organizational structure that would lead to future aggregation and food hub services and facilities.

Rationale: While the Delmarva Farmers Union and Chesapeake Harvest and other entities exist, there is no present organization focused on connecting farmers and providing aggregation and collaborative marketing opportunities for Eastern Shore of Virginia small agriculture producers. Half of the agricultural producers surveyed said they need to grow their business to remain viable. An intermediary organization can help address this need by providing food-hub functions, without the extensive initial investment in capital construction and associated operating costs od food hub facility. In addition, an intermediary organization can; 1) identify niche/specialty products that are in demand by buyers, 2) help increase local supply, 3) promote quality control and production methods that meet buyer needs, 4) encourage and enhance access to GAAP certification, 5) handle contracting and purchasing, and 6)aggregate and deliver product as needed. An initial focus of the organization might be identifying anchor farmers for Eastern Shore producer network/ growers association.

"We need someone to organize the coordination [among farmers]."

"The region needs a [intermediary] business/enterprise to focus on as the anchor for collaboration and intervention."

Recommendation 2B: On-line Marketplace

Once the inventory local producers is complete and the enhanced support for new farmers/food businesses established, an on-line agriculture market connector, similar to the Chesapeake Harvest model should be persued.

Rationale: An on-line agriculture "marketplace" can help producers enhance revenues and sales. Our interviews have suggested several models and considerations for further study. A Talbot County, MD platform initiated by Chesapeake Harvest now sells about $35K in local food and is working with 35 farms. The platform connects producers to both wholesale and retail customers. For wholesale, farmers deliver directly to customer. For retail, farmers deliver their products to one place. Experience indicates that the retail sales have been more profitable and consistent. Jordan Lloyd (Chesapeake Harvest) is available and interested in consulting with the region on this project.

"An online platform can be added revenue that doesn't take business from the farmers markets."

"Gaining and maintaining trust and faith from buyers and suppliers is biggest challenge."

Recommendation 2C: Collaborative Aquaculture

Explore opportunities for aquaculture-focused development and collaborative marketing/distribution activities.

Rationale: Responses from the interviews conducted indicate that the existing growers of oysters/clams are able to sell their products through existing buyer relationships and there is not a strong need for collaborative efforts to increase markets. Historically, there have been few examples of watermen and fishery businesses joining together to open up new markets or increase existing markets. The extent of interest in adding product for new markets or customers is still not clear. One future value-added opportunity to explore might be flash-freezing oysters, clams and etc. for sale to consumers. Producers could get a higher-price point through freeze-packed oyster or clam products. Also, there may be some other under-explored opportunities for aquaculture.

Recommendation 2D: Artisan Destination Center

Continue the assessment for a "destination" retail-focused center to help tell story of Shore/its "brand" and sell artisan goods. This "Artisan Center" could house a variety of activities that support artisans and help incubate new artisans along with value-added agriculture products (shelf-stable)

Rationale: The concept of an Artisan's Center is well recognized by stakeholders as a potential for the region.

Numerous individuals interviewed that an Artisan's Center offers a significant economic opportunity for the region. The volume of traffic and tourism visitation numbers to the Shore, and the success of other smaller outlets along Route 13 speak to the potential market/visitor base for such a facility. However, these are competition for visitor "stops". It is unclear that the projected volume of sales at the Artisan's Center would be sufficient to cover operating costs without a without a public subsidy. The potential supply of artisan goods for sale at such a facility is robust and diverse. The presence of strong artist intermediary organizations provides a supportive environment for the future operation of the Artisan Center but, there is a limited supply of value-added agriculture products (shelf-stable). At present there is not a group in place with the organizational capacity to advocate for and devote time to establish such a facility. The feasibility of such a center should be re-examined after some of the short and medium-term recommendations are pursued. The short-term activities to support both artisans, food entrepreneurs, and regional branding should help generate stronger regional support for investment in an Artisan Center. The most feasible location for a single Artisan Center would be a site on the northbound side of Route 13 somewhere in the middle of the region close to the Northampton-Accomack county line. Another alternative for consideration and analysis would be two smaller Artisan Centers collocated at the visitor centers at the north and south ends of the Shore. This alternative would have take advantage of travelers that make a stop to get travel information and use the facilities. There may be an opportunity to display and sell artisan wares at these facilities on a trial or interim basis to gage traveler interest and market potential. The continued exploration of the Artisan Center should be a primary activity of the ESVA Made/Grown Organization outlined in recommendation 1H.

"People will stop at a DESTINATION"

"Not just a retail market, but a BRAND EXPERIENCE – authenticity of place, tapping into nature, culture, history, art, and food."

"A destination could not just help with sales, but be a space where you can promote different artists, including new and emerging artists."

"We need a showcase for the arts and products and quality of life here."

"A round the year location would help spur/excite artisans."

"[a center] needs to be a vibrant place, with demonstrations and food and recreation"

"We have a good small [and growing] core of high quality professional artisans AND a lot of 'hobbyists'"

"Artists would love more opportunities to sell their work here on the Shore."

"Curation is important as is designing a space with the right kind of feel – you can attract a first-class group of artisans into a first-class venue"

"Organizations like ESVA Creatives and the Artists Guild and others are helping artisans collaborate and market and could help with jurying and other functions."

"We have a very supportive arts community here."

"The Shore is an amazing place for collaboration, but artists have a limited number of places where they can sell."

"We need to educate locals and visitors on the history of the region, role of shellfish in the economy, creative culture on ESVA, etc."

Recommendation 2E: ESVA Made/Grown Staff Position

Develop a shared position for a full-time staff person/director to chair the ESVA Made, Grown and Harvested Working Group and to lead the shore's creative economy and agriculture development efforts. The staff person would be responsible facilitating the implementation of the recommendations of this report. The staff person could also pursue a host of other economic growth opportunities related to arts, culture, agriculture, and aquaculture on Virginia's Eastern Shore.

Rationale: A dedicated staff position represents an appropriate level of commitment to this segment of the region's economy. The position could be a shared public-private type of position, if a destination artisan's center or food hub entity is able to establish itself as a formal organization. The position then could provide leadership to that organization.

Recommendation 2F: Reassess Food Hub Infrastructure (facility, staff, and equipment) Needs

After 5 years, revisit and assess infrastructure, equipment, facility, and staffing needs related to a food hub. While at present, a regional food hub FACILITY does not appear viable at this time, the growth of the region's small to mid-size producer base, the enhanced support for collaborative agriculture activities, and the emergence of an intermediary organization may well support a food hub facility or dispersed agregation equipment and facilities in future years.

Rationale: There is not an existing strong intermediary organization supporting small and medium size growers. Upon conducting interviews with a variety of successful and failed food hubs as well as analyzing case studies and research, it was found that though food hubs have many benefits, they are often high risk and not economically viable. Food hubs have many essential needs that are difficult to meet including:

- Strong organization with capable management
- Committed and dedicated core of anchor farmers and anchor customers,
- Require and receive some level of community support in the form of grants
- Must grow into a large organization over time, "go big or go home"

The volume, or supply, of smaller scale agricultural farmers in the region is also relatively low, suggesting the need to nurture a wider base of producers. In 2017, there was a total of 78 farming operations with sales (across all crops) in Northampton County and 107 in Accomack County. Most of these were field crops for commodity or feed sale. In 2017, there were only 24 total vegetable farm operations (including seeds & transplants) with measurable sales in Northampton County and 23 in Accomack County.

A study of the financials for four food hubs in North Carolina found that the average losses, excluding monetary donations, sustained in 2014 by the hubs were $86,2041 on average produce sales of $162,668. Assuming a 20% average mark-up fee and based on the model budget of annual operating costs, a food hub operation requires total annual sales of approximately $800,000 to cover its operating costs.

Using the food hub "sizer" tool offered by New Venture Advisors, it was found that in order to break even financially, an envisioned food hub for Northampton and Accomack would need to move at least $3,000,000 in annual revenue and would require a warehouse of at least 7,500 square feet. To generate this level of revenue, the food hub would need access to approximately 170 acres of fruit and vegetable production, in order to sell 110,000 cases of produce annually.

At present, the organizational infrastructure and supply is not in place to be able to make a strong enough case that a food hub facility would be viable. Intermediary organizations play key roles: growing a producer network, identifying high value product opportunities, connecting producer networks with buyers (including institutions, wholesalers, restaurants and others), providing processing, co-packing, distribution, marketing, and other assistance.

> "It is extremely difficult to have a food hub that makes enough money to cover its costs."

VI. APPENDIX

This section reviews some the issues around the economics of operating a "food hub". Across the country numerous local food hubs have failed because they did not understand the competitive marketplace they operate in and did not have the necessary business skills to be successful. Too often food hubs are established to achieve a public purpose but there is not the long-term community or public support to make them sustainable. Most food hubs require some type of subsidy at least in their early stages to make them viable businesses operations.

Food Hub - The term "food hub" captures a wide range of activities, including the aggregation, distribution, marketing of food along with related services that may include value added activities such as canning and processing. While food hubs vary in the types of activities offered they tend to have two primary goals: marketing food using a shared brand or affiliation among producers and production activities in shared facilities.

Food Hubs Operate in a Highly Competitive Marketplace – Here are some common characteristics of the competitive marketplace that a new produce food hub must face in order to compete:

- Produce distribution is a multi-billion dollar industry dominated by large private commercial enterprises,
- Food Hubs compete against well established, highly efficient commercial distributors,
- Stringent quality control assurances are essential to meet FDA and USDA food handling regulations,
- Distribution is a capital-intensive activity requiring significant upfront investment, and
- Profit margins are slim.

Key Costs of Operation – The cost of operating a food hub typically has the following cost items:

- **Physical Infrastructure**
    - Location
    - Cold Storage
    - Wash Lines
    - Packaging Equipment
    - Truck(s)
- **Personnel**
    - General Manager
    - Warehouse Manager
    - Sales Agents
    - Truck Drivers

    - Administrative Support
    - Payroll and Accounting
- **Utilities**
    - Electricity
    - Water
    - Natural Gas or Propane
    - Communications
    - Security services
- **Costs of Goods Sold (COGS)**
    - Produce from Growers
        - Goods distributed and sold
        - Produce shrinkage
- **Supplies**

What is the True Cost of Development?

The establishment of a food hub will incur initial capital costs to establish the facility and provide for transportation of the products. For illustration purposes Table 1 lists typical costs that should be expected when initially establishing a "cross dock" food hub with limited facilities. A start-up food hub should expect to spend at least $250,000 in initial capital costs to get the facility suitable for operation. The larger the facility and the more functions (refrigeration, washing, commercial kitchen, retail outlet, etc.) that are planned for the food hub the higher the initial costs will be. As an example a commercial kitchen could easily add an additional $200,000 to the cost.

Table 1 – Development Costs

Expense	Estimated Cost
Facility acquisition and renovation	**$150,000 or more**
Equipment	**$40,000 to $60,000**
Project Oversight	**$30,000 to $50,000**
Refrigerated Truck	**$40,000 to $60,000**
Development Costs	**$260,000 to $500,000**

What Are Fixed Costs of Operations?

Table 2 lists typical fixed costs for operating a small food hub that would be expected for an organization with sales of $1M annually. Most of the fixed costs are in staffing. For this illustration the staff of the food hub includes four positions, General Manager, Warehouse Manager, Sales Agent and Truck Driver. The fixed costs for this example are between $150,000 and $220,000 per year depending on the wages that are required to attract qualified staff. This example includes minimum fringe benefits.

Table 2 – Fixed Costs of Operation

Fixed Costs	Annual Cost
Facility lease or debt service	$0 to $24,000 per year
General Manager	$50,000 to $65,000 per year
Warehouse Manager	$35,000 to $50,000 per year
Sales Agent	$20,000 annual base salary
Truck Driver	$15,000 base salary
Utilities	$8,400 per year ($700/month)
Workers Comp	5% of total wages
Unemployment Insurance	3% of total wages
SS and Medicaid	8.5% of total wages
Liability Insurance	$5,000 per year
Estimated Fixed Costs	$153,200 to $212,150

What Are Variable Costs of Operation?

Table 3 lists typical variable operating costs for a small food hub that would be expected for an organization with sales of $1M. Most of the variable costs are for the cost of goods sold, $800,000. This is the payment to the growers for the product supplied to the food hub then resold to costumers. This example assumes that the farmer will receive 80% of the sales price.

Table 3 - Variable Cost of Operation

Item - Based on $1,000,000 in Sales	Cost
Sales commissions (5%)	$50,000
Truck Driver ($.10 per mile, 30,000 miles)	$3,000
Additional personnel overhead	$8,745
Gas and Maintenance (30,000 miles)	$16,500
Cost of Goods Sold (80% paid to Growers)	$800,000
Shrinkage of product	$40,000
Packaging (boxes)	$80,000
Utilities (over and above fixed minimum)	$12,000
Facility supplies (towels, mops, cleaning)	$2,000
Total Variable Costs	$1,012,245

Profit & Loss on $1M in Sales (Based on 80% Paid to Growers)

Table 4 illustrates the net profit or loss for this food hub example. As can be seen from the table the proposed operation of the food hub would have a projected loss of $165,000 even using the lower fixed cost estimates above. If the operating costs were higher the loss would correspondingly increase. This illustrates how difficult it is for a food hub to be a sustainable business venture without a operating subsidy particularly in the early years when sales are low.

Table 4 – Projected Profit/Loss Statement

Item	Cost
Personnel, All	$173,000
Personnel Overhead	$ 28,545
Utilities	$ 20,400
Product Liability Insurance	$ 5,000
Cost of Goods Sold (80% paid to Growers)	$800,000
Packaging (Boxes)	$ 80,000
Gas and Maintenance	$ 16,500
Product Shrinkage	$ 40,000
Facility Supplies	$ 2,000
Gross Expense	$1,165,445
Gross Sales	$1,000,000
Sales Minus Expenses (loss)	($165,445)

How Can the Financials Work?

Given this example there are several approaches that can be implemented that will produce a balanced budget:

- Reduce costs of operation and/or increase margins,
- Return less of the sales to growers,
- Vary the prices according to markets/class of customer, and
- Pass along some of the expenses (boxes, shrinkage) growers.

Reducing the costs of operation options include reducing wages paid or reducing the operation of the facility during the winter months. Each of these options has risks, loss of valued personnel or loss of costumers. Increasing margins may make the organization less competitive in the marketplace. The organization would need to provide a higher value product that can demand a higher market price or change the distribution methods to be more oriented to the end consumer – eliminate the middleman.

The next option is to reduce the amount that is paid to the farmer for the product. This option also has negative affects since it will discourage farmers form selling to the food hub and encourage them to sell directly to customers. The success of the food hub relies on the support and loyalty of anchor farmers and anchor customers anything that threatens these relationships threatens the sustainability of the food hub.

Certain classes of customers are able/willing to pay a higher price for locally grown products. Walmart will not pay the same price for produce as a member of a CSA, as an example. The food hub will likely have to vary its pricing structure to the type or class of customer base being served. A customer that is willing to guarantee a bulk order every week over the growing season may demand a lower price than a customer that is orders product occasionally.

Variations in quality resulting in all or a portion of an order being rejected by the customer will cause inherent loss of revenue if that product cannot be sold to another customer. In addition, some product may be discarded at the dock because of poor quality. These losses (shrinkage) may need to be shared or by the grower. There are repackaging expenses when the product is sorted to meet the individual orders of the customers. The cost of the boxes with the food hub brand is not an insignificant expense. If the grower is able to absorb these expenses by using the branded boxes in the initial delivery of the product this will help save costs.

New Revised Profit & Loss

The original example of the food hub operation had a loss of $165,000 per year. Let's modify the expense assumptions in the example to include the following:

- Operate Warehouse 9 months instead of 12 months during the year,
- Pay growers at 70% of estimated wholesale value of produce,
- Develop varied sales channels with different price points (supermarkets, restaurants, etc.),
- Charge back to growers half of the shrinkage and reject produce that does not meet wholesale quality requirements, and
- Charge growers for boxes/packaging.

Table 5 illustrates the changes to the cost of operating the food hub based upon the above changes in policies. As you can see, the operating loss is now a slight profit of $9,117. This is a very small profit for a business with a $1M of sales. A slight change in market conditions over the year could easily turn this profit into a loss. This example illustrates how risky a food hub business is particularly in the initial years of operation when the important relationships with farmers and customers are being established.

Table 5 – Revised Profit and Loss Projections

Item	Cost
Personnel	$160,500
Personnel Overhead	$ 26,483
Utilities	$ 20,400
COGS	$700,000
Boxes/Packaging (1/2 Charged to Growers)	$ 40,000
Gas and Maintenance	$ 16,500
Product Shrinkage (1/2 charged to growers)	$ 20,000
Insurance	$ 5,000
Facility Supplies	$ 2,000
Gross Expense	$ 990,883
Gross Sales	$1,000,000
Sales Minus Expenses	$9,117

Conclusions – The general conclusion from this exercise is that operating a food hub is a challenging business in the best of circumstances with a lot of competition from commercial wholesalers. Here are some additional conclusions from this example and the track record of other food hubs across the country:

- Typically food hubs are not viable economic models in most cases,

- Food hubs that do succeed have unique characteristics and meet market niches,
- Usually food hubs operate as for-profit businesses,
- To succeed a food hub requires a strong organization with the capable leaders and management,
- To succeed a food hub needs to have a committed and dedicated core of anchor farmers and anchor customers,
- A food hub usually require and receive some level of community support in the form of grants, and
- For a food hub to be sustainable it must grow into a large organization, "go big or go home".

Appendix B: Virginia Food Hub/Community Market Case Studies

CASE STUDY - FIVE POINTS COMMUNITY FARM MARKET (FPCFM)

Background

The Five Points Community Farm Market was a 501(c) 3 community non profit initially established as a part of the Five Points Partnership Community revitalization in 2000. The Five Points Community Farm Market became its own entity in 2002 and was dedicated to contributing to the health and well being of the community through good, locally produced food, fellowship and fairness.

Five Points Community Farm Market was committed to; 1) providing healthy food choices to Norfolk's lower-income neighborhoods and lower-income citizens and 2) providing a location/incubator for healthy food related start-up businesses get established.

Between 2002 and 2017 the Market provided fresh food and learning opportunities to Norfolk's low-income communities. Five Points Community Farm Market moved into a permanent 6500 sq. ft. building at 2500 Church Street in May 2008. This location was in one of Norfolk's "food Deserts". This facility had a "Get Fresh Café", lease spaces for emerging fresh food value added entrepreneurs, the makings of a community kitchen and community space. The Market was open four days a week, Thursday through Sunday. The typical customer at the Church Street location was upper income, Caucasian family that did not live in the immediate neighborhood.

The Market offered two-season in-house and corporate Community Supported Agriculture (C.S.A.) seasonal subscriptions. Each week subscribers got a certain dollar amount of fruits and vegetables along with recipes and storing information. This program was designed to help families discover new seasonal fruits and vegetables that they may not have experienced before. The CSA include institutional partners, Old Dominion University, Anthem Health Care and Crossfit. At its peak the CSA had approximately 200 subscribers.

The Farm Market was open all year and served as small business incubator for food related businesses including Pinch Spicery, Sabrosa Foods Salsas and Cold Press (juices and smoothies). The Farm Market purchased produce and other goods from over 30 local and regional farmers, Produce Source and Quail Cove among other suppliers. In 2012, the Market was awarded a USDA Grant to purchase a Mobile Market van to supply low-income neighborhoods identified as "food deserts" with access to healthy, affordable, fresh food. The Farm Market's Mobile Market provided service to public housing projects and low-income communities for approximately 4 years.

In June of 2015, the Market was approached by the Partnership for Healthy America through the FNV (Fruits & Veggies) campaign to promote healthy foods to Teens in low-income areas. Through the donation of a vehicle and support to purchase a trailer, a second mobile market was created - the FNV Mobile Market - which is taken out several times a week (depending on weather) to sell fruits & vegetables at a reduced price, 20% discount, to Teens. The FNV mobile market visited parks, the YMCA and other sites where teens gather.

The Five Points Community Farm Market closed in the summer of 2017.

Five Points Community Farm Market – Mission and Goals

Mission Statement: Five Points Community Farm Market (FPCFM) supports a culture of healthy eating in an urban setting by; providing healthier food options, offering local farm products and locally produced food, and conducting a variety of educational programs supporting a healthy life style.

Goals:

I. **Farm Market** – To provide a vibrant community space where area residents can purchase exclusive/specialized/gourmet, locally grown healthy produce and food products. The Market supports the local farmers and healthy food producers by providing an outlet for their products. The Market serves as a hub and control center for the healthy food entrepreneurship, education and outreach activities.

II. **Café** – To provide a healthy dining experience in a casual setting featuring locally grown and produced foods offered at the Market. The Café serves as a "test market" for locally produced items that can be featured in FPCFM programs. The Café serves as a "profit center" supporting other functions of FPCFM.

III. **Small Business Incubation** – To provide a vibrant location for start-up businesses that fosters their growth by providing consultation and a certified location to produce and source healthy food products all the way to being certified as a "Virginia's Finest" product.

IV. **Community Kitchen** – To provide a Virginia Department of Health certified kitchen for the use of the community. This facility within the Farm Market allows individuals the opportunity to rent the facility for the production of their food products and also facilitates the conduct of education classes on the preparation of healthy food.

V. **Food Hub** – To provide a central distribution location for healthy, locally grown, food to the urban markets of Hampton Roads. This facility will provide healthy produce and food products to a variety of commercial customers including, small groceries and convenience stores, restaurants, institutions and satellite markets.

VI. **Satellite Markets (Mobile Markets)** - Provide fresh fruit and produce to the many "food deserts" that exist Norfolk. Through the continued and expanded support of our federal, state and local partners FPCFM's goal is to create semi-permanent locations that are positioned in the City's "food deserts" manned by local residents with the logistical support and fresh fruits and vegetables provided by FPCFM.

VII. **Support Local Farmers** – Increase the supply of fresh, healthy and organic vegetables and fruits to urban markets of Hampton Roads. Every farmer needs to know what to grow, how much to grow, how it will be sold and at a fair market price. FPCFM answers all of those questions by providing our local farm partners with a list of approved seeds, how much we think we will sell and a agreed upon price before each season. FPCFM also supports local farmers through advertising and awareness of products and practices.

VIII. **Education** - Most people don't know that the food that we eat directly affects every aspect of our daily lives. FPCFM is passionate about empowering our community on the benefits of eating healthy by providing relevant healthy eating information and education programs. Cooking classes, product identification and how to shop at a market are just a couple of examples of education programs offered by FPCFM.

IX. **Sustainability/Operational** – FPCFM will be profitable by the end of 2016 and will have the necessary organizational structure to remain profitable in the years ahead.

Business Model

Five Points Community Farm Market's business model was to use the Church Street market as a "profit center" that would support the educational, outreach and satellite functions of the organization. This "Robinhood" model was to be supplemented by foundation and governmental grants. The Café and CSA were profitable cost centers initially but were not sufficiently profitable to offset the losses in the other areas of the business.

Organization Structure

FPCFM was the brainchild of Bev Sell its Executive Director. Bev was an extremely passionate and dedicated individual that was totally committed to the mission of the organization. Bev's background was in community organization in the Hampton Roads area. FPCFM had a very small Board made up of community leaders that were closely associated with Bev. FPBFM had a small staff that was also highly committed to the mission of the organization but lacked business operational skills. The organization was almost totally centered on the capabilities and drive of Bev Sell.

Lessons Learned

The Five Points Community Farm Market provided a valuable community service but the business model could not support the organization. Here are a few of the characteristics of the organization that resulted in its going out of business in 2017:

- FPCFM provided a valuable community service during its existence but serving lower-income communities as a business enterprise was not sustainable without a continuous revenue subsidy source.
- The "Robinhood" model of operations was not sustainable for FPCFM.

- The organization was too reliant on the charisma of the Executive Director and founder.
- The organization was unable to supplement the Executive Director's expertise with staff that had business management skills.
- The Board did not have the responsibility, representation or competencies to provide the needed direction and support to the organization.
- The decision to move into the Church Street building limited the flexibility of FPCFM and saddled FPCFM with high operating costs – it was the wrong facility in a poor location to serve its customer

CASE STUDY – Northern Neck Farmers Market

Background

The Northern Neck Farmers Market was a wholesale market similar to the Eastern Shore Farmers Market at Melpha VA. The Northern Neck Farmers Market resulted from the strong support of Neck Vegetable Growers Association organized some 23 years ago.

The Northern Neck Vegetable Growers Association (NNVGA) was established in the late 1980's to foster cooperative marketing among the small to medium sized vegetable growers in the Northern Neck. The NNVGA incorporated as a non-profit organization with 12 growers in 1996 about the same time that the Virginia Department of Agriculture and Consumer Services (VDACS) was pursuing establishment of regional wholesale farmers markets across the Commonwealth. Each of the 12 growers contributed $5,000 each to purchase the land for the Northern Neck Farmers Market at Oak Grove in Westmoreland County. VDACS started construction on the packing and grading facility in 1996 and construction was completed in 1998.

The VDACS contracted with NNGA for the operation of the facility. NNGA then hired a manager for the facility through a RFP process. After contracting with several unsuccessful managers of the Market, Rod Parker with Parker Farms was hired to manage the facility. NNGA contracted with regional growers for production of a certain number of varieties of vegetables and a certain quantity of each variety. The NNGA also contracted with retail and institutional buyers for about a half to two thirds of the anticipated production of the growers.

Kelly Liddington, Extension Agent for Richmond County, served as the advocate and organizer for the NNGA. He served as staff to the NNGA and assisted the growers in their operations.

In 1997 Rod Parker (co-founder of Parker Farms) and his son Rafe, purchased 300 acres on the Rappahannock River. They have now expanded this operation to 1,200 acres. Their center pivot irrigation systems have allowed them to consistently produce quality product at their Eagle Tree Farm. This farm is Parker Farms' main producer in the Mid-Atlantic region.

The Northern Neck Farmers Market continued in operation until 2015 when VDACS decided to sell the facility. The facility lacked from capital investment and did not meet modern USDA Good Agriculture Practices (GAP) and Good Handling Practices (GHP). VDACS did not have the investment capital to modernize the facility so it was sold to Parker Farms and has been operated as corporate headquarters for Parker Farms ever since. Over the years Parker Farms has grown and operates in several states along the east coast from Florida to New York and internationally to Mexico, Peru and Honduras. Rod Parker has turned the operation of the enterprise to Jim Carter, Rafe Parker, Joe Parker and Barry Parker. Parker Farms still contracts with a limited number of growers in the region even though the bulk of their production comes from their farms. Parker Farms has matured from a "pick your own" operation in Maryland to one of the major wholesale suppliers on the east coast.

Lessons Learned

- The Northern Neck Farmers Market (NNFM) has grown, changed and evolved over time with changing market conditions. While the NNFM is no longer in existence it is the headquarters operation of Parker Farms that operate an international produce supply company serving retail customers along the east coast of the US. Here are a few of lessons to be garnered from the NNFM experience that may be instructive to the exploration of an Eastern Shore food hub:
- There needs to be a local growers organization with a strong advocate,
- The local growers organization requires staff support,
- A competent facility manger that is able to respond to changing market conditions is critical,
- Inspection services are necessary at the grading and packing facility,
- The facility needs to have periodic capital investment to make sure that it is maintained in accordance with the most current regulatory requirements and market demands,
- A "pooled" pricing structure for the growers is important to ensure that the growers believe they are getting a fair price for their produce and time.
- Continuing education experiences for the growers, like annual tours of benchmark facilities, is important to maintain grower interest and cohesion.

CASE STUDY – Southern Virginia Food Hub

Background:

The Southern Virginia Food Hub opened to the public on June 3, 2019 following a soft-opening on May 4 with local farmers and the VA Secretary of Agriculture. The Southern Virginia Makers Market is the building; the Food Hub is the network of farmers, food artisans and advocates. The Hub is centrally located in downtown South Hill (a Main Street Community) adjacent to the local theatre/arts center and across the street from Town Hall, the Farmers Market, the Community College Tech Center

The founder is Ann Taylor-Wright, a multi-generation farmer from Lunenburg County, VA. She started working toward this effort in 2014 when she was farming with her husband (meat: beef, pork, poultry, rabbits, goats, etc.) and sold goods at the St. Stephens Farmers Market in Richmond over an hour away.

They learned that four hours on a Saturday isn't enough for a farmer to make money. She needed a commercial kitchen so she started organizing people and was told that this was a "community development" project, not a business opportunity, so she started exploring how to write grants.

VA Tobacco Commission offered a grant because of their interest in food, the Southside PDC assisted with grant-writing, the Town of South Hill agreed to serve as fiscal agent and treated it as an economic development project, the South Hill Community Development Authority is the owner of the building, and DHCD offered an IRF grant.

The Hub will provide training for the region because of its low-moderate income demographics. They are looking at adding SNAP programming and payments. They will offer a "How we did it" workshop once the Hub/Market are running – groups from Danville, Tappahannock, and Warren County, NC have reached out to learn about the Hub.

They started with 40 small farmers and food artisans in their network and grew to 120. They got VDACS and VDH on-board upfront. They serve an 8 county region and the county governments are supportive. 90% of producers are from the footprint.

They received a grant for a Refrigerated Truck to pickup produce from farmers onsite. They first did consumer surveys to show demand as part of a feasibility study. They are connected to the region's Local Foods groups and are trying to respond to the need for prepared meals due to the lack of in-home cooking being done. They plan to price prepared meals at $7 per unit to be comparable to fast-food.

Educational programming is done via "Lunch & Learn" sessions with local VCU Health Center Dieticians and VCE Agents on diabetes prevention and management. They also plan to partner with the adjacent Colonial Performming Arts Center to do food for shows and events plus themed dinners and local beer/wine tastings.

They use Lulus Food Inventory software via VA FAIRS and they plan to truck food into Richmond via the Hatch Food Incubator to supply urban restaurants and food trucks. They also plan to have "sub-hubs" around the region for certain products.

They would like access to a Mobile Slaughterhouse for local meats and have talked to VSU's faculty about this. A farmer in Halifax is also exploring buy his own mobile unit and allowing farmers to contract with him.

Because their initial grants were on-hold pending IRS approval (of non-profit/organizational status), they hired an attorney ($15K) to handle everything at the outset. They are tied into the regional Tourism commission and local Historical societies for fundraisers. The next big project is designing and developing their website.

Lessons Learned

- Too early to glean lessons about success/failure or sustainability.

- Because of the importance of grant funds, they recommend structuring Hubs as nonprofit 501c3 organizations or as a government agency project, not a for-profit entity.
- A dispersed rurally focused network of farmers and food entrepreneurs was able to come together for coordinated activities in a Food Hub model – this represents an opportunity for possible replicability on Eastern Shore.
- There are key differences: 40 initial producers and now 120 producers in their network – Eastern Shore may lack this existing density of willing existing producers. Also very adjacent to Richmond/Petersburg urban markets and in areas that have a higher total population that in some places is growing.

Appendix C: Community Kitchen Overview of Practices and Considerations

A shared-use commercial kitchen is a "facility where local entrepreneurs, caterers and instructors can prepare and process their food products for the consumer market or hold cooking classes and demonstrations. These facilities are generally rented [on an hourly basis]. Instead of taking on the considerable financial commitment of opening a private commercial kitchen, new or expanding small food businesses can take advantage of shared-use commercial kitchens to help grow their enterprise […]".[58]

The shared kitchen model has emerged and evolved across the country. A 2016 survey found that two out of three kitchen incubators were established after 2010. The spread of shared kitchens is being propelled by America's changing tastes and an expanding market for healthy, fresh, local, and sustainable specialty foods, which is supporting a revival of food entrepreneurship.

As of 2015, 25% of incubators were losing money, only 37% were breaking even, and 38% were making a profit. The largest costs are rent and salaries. The largest revenue source is from leasing the space. While kitchen incubators tend to fare better in urban areas, rural kitchens (21% of all shared-use kitchens) are also promising. Rural areas tend to employ a community kitchen approach. These are community-based kitchens which serve a wide variety of uses, including event rentals, cooking and nutrition classes, meal services for insecure populations, and more. The primary role of the community kitchen is to serve the needs of a non-profit organization or to serve the overall community. The secondary role of the community kitchen can be to serve small value added food producers.

Different types and definitions of shared-use kitchens

While there is a wide spectrum of shared-use kitchens, successful operations tend to be incubator facilities, providing more than just the shared kitchen, but also additional resources for emerging entrepreneurs to expand their business. A growing number of these facilities are multi-faceted and include retail, food distributors, public markets, and job training. Most incubators are involved in at least one partnership such as workforce training programs, non-food related shared spaces, college or technical schools (for culinary sources and providing clients to the kitchen), food aggregator or distributors, public markets, food bank or pantries. These partnerships help to attract clients and provide funding and donations.

[58] Topaloff, A. (2014). The Shared-use Kitchen Planning Toolkit. Leopold Center Pubs and Papers, 1-33, p.5.

A *shared-use kitchen or commissary kitchen* helps remove restrictive barriers of high-cost capital investment associated with leasing or purchasing a kitchen and equipment. It allows specialty food businesses like processors, farmers, caterers, food cart vendors and mobile food trucks the opportunity to start from nothing and grow at their own pace.

Shared kitchens range from 1,000 square foot community kitchens to 3,000 square foot springboards, to production powerhouses that exceed 50,000 square feet. Their business structures are also diverse, encompassing owner-operated, corporate, nonprofit, government, and university-sponsored facilities

1. A *kitchen incubator or incubator kitchen* offers resources related to distribution, branding, marketing, accounting, insurance, and financing new products. It reduces the risk of failure by removing additional start-up barriers associated with limited skills in managing and maintaining a commercial kitchen.
2. *A community kitchen* is a shared-use kitchen with minimal infrastructure, equipment, and business support, a processing center, or co-packer, manufactures and packages foods for other businesses to sell. Kitchens in schools, churches and etc. are available for rent when businesses are not in use. Community kitchens support food systems within a community. Rentals are secondary to other uses of the facility so storage and equipment on site may be limited. It is best suited for small batch production as a result.

The difference between a community kitchen and a kitchen incubator is that the former is not exclusively for private organizations and typically has some entrepreneurial or business services. However, renting space to anchor tenants can also be a financial strategy employed by community kitchens.

Shared-used kitchens' Goals

The goals of community kitchen facilities are multi-faceted and occur at the intersection of local economies and food systems. Clarifying overarching community goals is especially important for seeking grant funding. Examples of goals for these facilities are as follows:

Local food systems: Provide cost-effective access to commercial equipment for producers to make value-added products and cost storage for rural growers to prep and distribute products. Outcomes include:

- Increase the availability of foods made with local ingredients in the community
    - Preserve farmland (by encouraging and supporting local farm business)
    - Improve food access and to food insecure households
    - Reduce program costs and improve efficiencies for food access programs

Community economic development: Reduce hurdles and create opportunities for starting new food businesses, expand food industry employment, encourage the growth of local food businesses, and improve inclusion and equity in the rural food economic. Outcomes include:

- Grow culinary-related jobs in the area (E.g., partnering with restaurants or Primland)

- Improve economic opportunities for entrepreneurs with limited resources (E.g., Providing rental space in the certified kitchen)
- Improve workforce training opportunities for underserved communities (E.g., partnering with community college or K-12 system)
- Expand food tourism and support tourism and hospitality economy (E.g., using kitchen to showcase local dishes or partnering with distillery)

Community building and well-being: Provide space for community members to learn, share, and experience food together. Outcomes include:

- Improve community health by educating the community on cooking and nutrition (E.g., in collaboration with farmer's market)
- Share food as a means of building community and cultural understanding (E.g., culturally themed meals like Stecoah's Appalachian dinner)
- Support culinary appreciation, exploration, and innovation (E.g., international food courses, chef contests, gala dinners and etc.)
- E.g., Stecoah Valley Food Ventures started out as a kitchen incubator with these goals in mind but because of community needs have expanded their purpose to include facility and banquet rentals.

Kitchen facilities tend to serve specific groups and will thrive when demand is high. Therefore, it is important to assess the community need prior to determining what type of kitchen facility to build.

For instance, Stecoah Valley Food Ventures was modeled after Blue Ridge Food Ventures of Asheville, NC, but because of their location and community needs their kitchen changed from a kitchen incubator to a shared-use community kitchen and serves as a food truck commissary, as a home kitchen for 3 full-time value-added producers, and services as the primary catering kitchen for facility rentals.

Users, Equipment and Spaces in Shared-use Kitchens

Commercial kitchens have different types of customers. The breakdown of tenant types at commercial kitchens defines the demand for certain equipment. Typical kitchen users are consumer packaged goods (CPG), bakers, food trucks, caterers, prepared meal service, farmers, individuals (home canning, etc.), cooking classes/workshops, specialty/gourmet food producers. According to American Communities Trust (ACT) and Econsult Solutions Inc. (ESI) report about the U.S. Kitchen Incubators[59] in 2016, most common provided equipment and facilities in community kitchens are as follows:

Table 1- Basic equipment and facilities in shared-use kitchens

[59] https://econsultsolutions.com/wp-content/uploads/2016/03/U-S-Kitchen-Incubators-An-Industry-Update_Final.compressed.pdf

Equipment	Facilities
Convection Oven (95%) Prep tables (93%) Mixers (88%) Range stove (87%) Food processor (72%) Under- range ovens (65%) Ware washer (53%) Steam Kettle (48%) Rack oven (43%)	Shared Cold Storage (87%) Shared Dry Storage (85%) Shared Freezer Storage (83%) Packaging area (63%) Food Truck Commissary (60%) Shared Prep Space (53%) Event Space (52%) Classroom Space (47%) Permanent Food Production Space (47%) Shared Bakery (45%) Office Space For Tenants (45%) Food Retail on Premises (30%)

According to a review of a select number of commercial kitchen feasibility studies[60] and interviews with a couple of community kitchen managers, there are a number of optional equipment which are useful to certain clients. Hard Vegetable wash line—a small line with automated washing, a size sorter and an aggregation table, fryer, steam kettle (15 Gal.) to make sauces and etc., Doyon floor mixer and Doyon table mixer (help bakers), canning equipment/pressure canner and labeling equipment are client-based equipment.

For incorporating culinary courses/cooking classes in the kitchen space there are some basic requirements such as: shelves, tables, refrigerator, range/oven, microwave, domestic dishwasher, cabinetry found in a common home, a range and exhaust for a demonstration island.

If a community kitchen aims for catering purposes, there are a number of general facility equipment such as 500lb per day ice machine, about 30' linear feet of pallet racking, pallet stacker, washer and dryer for linens and towels, keypad entry control system, full set of tools and spare parts for ongoing maintenance of equipment, and less expensive items like folding chairs and tables, furniture for the break room, mops, brooms, buckets, and carts.

During the design process one should note that the kitchen must be large enough to give enough working space to all of the primary users, but not too large as expenses can quickly mount. If the kitchen is too large, it can be difficult to find tenants or users to make that kitchen financially viable. Most facilities are less than 3,000 square feet.

In calculating costs of necessary equipment for a shared used kitchen, other than the equipment price, it is important to consider sales tax, shipping and installation. Sales tax expenses may be reimbursed if the purchasing entity is a recognized 501-c-3 nonprofit.

Hourly Rental Fee Calculations

[60] McDowell County Community Food & Health Hub Feasibility Study https://emergentopportunities.com/wp-content/uploads/2018/04/McDowell-County-Community-Food-Health-Hub-Feasibility-Study.pdf
Boscawen Shared Use Commercial Kitchen Feasibility Study:
https://www.nhfoodalliance.com/sites/default/files/BAC%20Commercial%20Kitchen%20Feasibility%20Study-2.pdf

Historically, kitchen incubators have operated on an hourly fee structure, ranging from $8 to $50 per hour (averaging about $20-25 per hour). Most kitchen incubators will charge separately for storage on a "per cage" basis or include a certain amount of storage as part of a set monthly fee[61].

Cost elements for a break-even analysis might include the following components: start-up costs [including capital expenditures, wages/salaries, infrastructure development or improvements, advertising and promotion, legal fees, municipal and state development taxes], annual operating expenses [including current rent and utilities at base square footage, commercial refrigerator electricity, commercial range propane, kitchen appliance water usage, commercial freezer electricity, management and administration, and general building overhead], kitchen usage hours per year, stove usage per year (1/4 of kitchen use includes the stove), propane pricing for the stove (e.g., $1.62/gallon, 1.33 gallons/hr used), each user is responsible for their own business licensing and regulation costs.

Licensing costs

A number of licensing costs (some recurring) for commercial kitchens could include: (data is from 2015[62]), Business Registration ($102), liability Insurance ($600), ServSafe Certification ($140), commercial Kitchen Licence ($350). For value added meat production licensing, the commercial kitchen would need to have FRP (fiberglass washable walls), floor drains, and knee or foot activated sinks.

The kitchen would also have to have a HACCP plan and an office space with lockable cabinet for the USDA inspector to use for onsite inspections. An onsite inspector is not required during production nor does the kitchen need to pay for the inspector.

Funding sources for Shared-use kitchens

Possible grant funding sources grants include: Community Food Projects Planning Projects (USDA; planning), AFID Planning Grant (planning Rural Business Development Technical Grant (USDA; construction), Rural Business Development Opportunity Grant (USDA; planning), Community Facilities Technical Assistance Training Grant (USDA; planning), and others including community foundations.

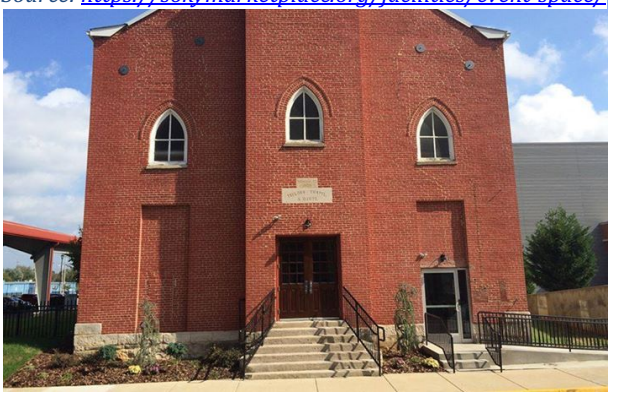
Case Example # 1: SoKY Marketplace

[61] Kitchen Incubators: is there a recipe for success? https://www.newventureadvisors.net/kitchen-incubators-is-there-a-recipe-for-success/

[62] Refer to AFDO guidelines for owner and operator responsibilities: http://www.afdo.org/resources/Documents/pubs/Guidelines-for-Incubator-Kitchens.pdf

The SoKY Marketplace is a nonprofit corporation in Bowling Green, KY. *The Historic Venue on 7th*, formerly known as the Historic Taylor's Chapel, is a newly-renovated event center and home to the SoKY Marketplace Community Kitchen, Winter Farmer's Market, and Crop Shop. The goal of this organization is to help local farmers and artisans grow their business and thrive in the community. SoKY is located in a historic building (both properties have significant ties with African-American history). Providing the opportunity to develop business plans and helping community kitchen users to sell their products either at SoKY Crop Shop or through connecting them to local restaurants make SoKY an interesting case for the Eastern Shore.

Figure 1- SoKY Market Place, The Historic Venue on the 7th. Source: https://sokymarketplace.org/facilities/event-space/



The marketplace consists of five major components:

- **Bowling Green's Downtown Farmer's Market**

This year-round farmer's market gives farmers and artisans an opportunity to sell directly to the consumer every Saturday from 8am to 1pm. The Farmer's Market is located under SoKY's outdoor pavilion, April through October. From November through March, it is in The Historic Venue on 7th.

- **Crop Shop** (since February 2018)

Located on the first floor of The Historic Venue on 7th, Crop Shop is an extension of the Farmer's Market and is open three days a week from 3:00pm-6:00pm. SoKY members are able to place their value added/fresh products (for example if the vendors could not sell their produce on Saturday) in the Crop Shop as an additional stream of revenue for their business. The Marketplace takes a 15% commission, comparable to the traditional booth fee ($10) on a typical Saturday, to help fund the staff for the shop. Unsold products will be donated.

- **Event Space** (November 2015)

The two-story event center can accommodate up to 180 guests. The commercial kitchen allows for hot meals to be provided in events. As guests head downstairs, the original exposed brick walls and hanging globe lights provide a rustic ambiance. The Historic Venue on 7th is rented for wedding ceremonies and receptions, rehearsal dinners, birthday parties, or holiday gatherings. The rates are as follows (There is a two-hour minimum for all rentals):

Level	Seats	Includes	Rate for Mon-Thu	Rate for Fri-Sun
Lower	100 ppl	tables & chairs	$75 per hour	$125 per hour
Main	80 ppl	tables, chairs & linens	$100 per hour	$150 per hour
Entire	180 ppl	tables, chairs & linens	$175 per hour	$275 per hour

*Events in historic building can use the commercial kitchen at an added cost.

- **Community Commercial Kitchen** (Since Sep 2017)

[63]The SoKY Marketplace Community Kitchen is located on the main floor of The Historic Venue on 7th and is available to culinary entrepreneurs, farmers creating value-added products, caterers, and other food businesses.

The rental fee for the kitchen is $20/hour. There is a $75 cleaning fee, if patrons leave the kitchen dirty and a refundable deposit of $100. If kitchen users want to sell their products in the farmer's market membership for vendors is $150 a year with a $10 booth fee each time they go to the farmer's market. Membership includes consulting, marketing and selling at crop shop. SoKY helps businesses to develop their business plan by breaking down the expenses, assisting with menu pricing or developing new labels. It also guide vendors on how to get the food to restaurants.Currently, 80% of the kitchen clients are commercial users and 20% are individuals non-commercial patrons.

- **The Green Amphitheater**

"The Green" Amphitheater offers a relaxed place for families to watch an outdoor movie projected onto a 30' x 20' screen on the side of the neighbouring performing art center with surround sound. Guests can bring lawn chairs or blankets and hang out on the grass while watching fun, family-friendly films from May through September. These events are free to the public. SoKy offers concessions on site for purchase. The amphitheater is available for private parties such as birthdays, rehearsal dinners, cocktail hours, business family nights, and more.

How SoKY started?

The Historic Venue at 7th was originally an African American Church (Taylor Chapel AME 1872). After being vacant for a time, the Southern Kentucky Performing Arts Center (SKyPAC) Foundation bought it in 2013. Warren County purchased the building from SKyPAC in 2014 and funded the renovation process. The renovation kept the original foundation, bricks and windows updated the electrical, plumbing other components.

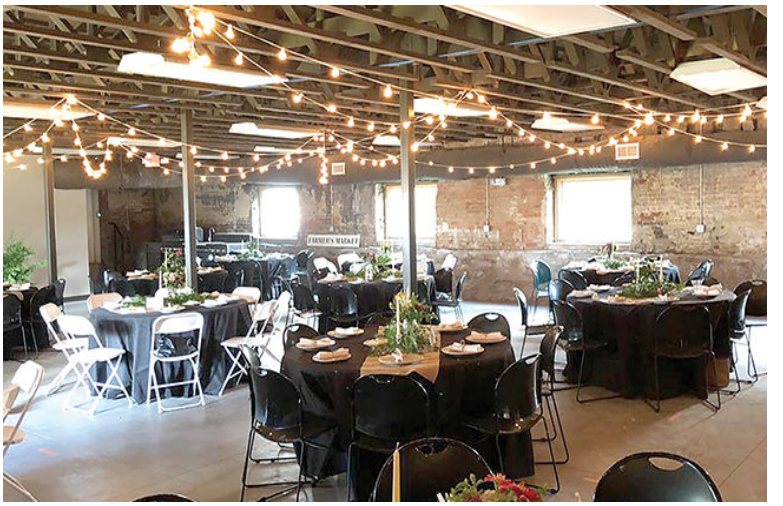


Figure 2-SoKY Event Space and winter Farmer's Market. Source: https://sokymarketplace.org/facilities/event-space/

In 2015, Warren County received a $17,250 grant from the *Local Food Promotion Program (LFPP)*, an extension of the U.S. Department of Agriculture (USDA) that aims to expand local food businesses and increase access to regionally produced food, for the development of the commercial kitchen.

The county agreed to match part of LFPP's grant, bringing the total to $23,000. The grant paid:

- For a market study and business plan for the kitchen,
- For *Toolkit for Culinary Entrepreneurs in Kentucky*, a program offered through the University of Kentucky Cooperative Extension Office in Warren County that would help food entrepreneurs with any step in the process of making and marketing their products.

Bowling Green's Original Farmers Market was founded in 1968. Currently, there are three farmer's market in Bowling Greens, SoKY downtown farmer's market being one. Downtown revitalization projects, the Performing Arts Center next door, and local restaurants have created a synergistic collaboration with SoKY marketplace. The SoKY marketplace began operating in 2015, two years later the commercial kitchen and crop shop opened.

In 2018, SoKY received a three-year, $199,732 grant from the USDA's Local Food Promotion Program. The grant:

- Allowed the SoKY Marketplace to offer free educational opportunities for potential kitchen users, existing culinary entrepreneurs and producers.
- Provided equipment for the Crop Shop to increase storage capacity.

SoKY marketplace currently operates under three grants:

1. A USDA Specialty Crop grant: provides funding for activities at the farmer's market and Crop Shop that highlight local foods and nutrition.
2. SMNLP: provides additional funding for the farmer's market.
3. LMN: supports commercial kitchen operations

Current layout and amenities

There are three major spaces in SoKY Marketplace:

1. The Historic Building on 7th: the lower level is a large event space, a portion of which houses the Crop Shop. In the winter that space is used for the farmer's market. The main level houses the commercial kitchen.
2. The outdoor pavilion: serves as the location for the farmer's market in warm weather.
3. The Green Amphitheater: used for outdoor movies, concerts, and event rentals.

The community kitchen is equipped with:

- 2 prep tables,
- 2 Doyon industrial mixers (one floor mixer, one table mixer)
- 1 refrigerator,
- 1 flash freezer (for bakers, it cuts prep time in half. Producers can also use it to freeze their produce and sell products in the winter, for instance frozen fruit for smoothies..
- 2 convection ovens,
- 1 industrial dishwasher,
- 1 15-gallon steam kettle (for large batch making of soups and sauces),
- Shelving and storage (users pay $20 per month). Clients can rent refrigerators and freezers as well.
- SoKY provides all cleaning materials.

According to Sarah Wilson, SoKY's director of operations, having a fryer would have been a great opportunity, however, cleaning and maintenance would have been difficult, especially given the fact that the kitchen is located on the second floor.

Organizational Structure and Staff

SoKY's governing board has representatives from the local university, county tourism, and local restaurants, all of which serve as good partners for the kitchen. Other board members include those from the community with relevant expertise such as a culinary instructor, artist, farmer, doctor/nutritionist and lawyer. The board meets monthly.

SoKY Marketplace current has one full-time director and one part-time managers of the farmer's market and crop shop. Sarah Wilson, director of operations, bring a lot of expertise from her time in the restaurant industry, which helps her to council commercial kitchen users in pricing their products, working on recipes, and other business development. Sarah was in the restaurant industry for ten years and was a general manager of a restaurant for six of those years. She's maintained those relationships, which has helped in finding sales venues for SoKY's kitchen users.

Programming

The Director of operations uses programming to make SoKY a wellness space and attraction for a lot of different parts of the community. Similar to destination packages, she sets up back to back programming, so people will come for one thing and stay for another (Offering yoga and artisan sale at farmer's market, ice-skating and birthday party package).

To reach certain populations, SoKY works with the library and other community mediators/champions. They start with the kids to get to the parents (e.g. sprout kids club, film series). For instance, SoKY worked with a specialty crop of the month, honey, with the kids. The kids then wanted to bring their parents to the farmer's market to show them the honey.

SoKY has been able to show their commitment to serve the community, therefore, their grant writer (a vital element in SoKY's success) is looking to help refugees with transportation needs. SoKY has requested a bus stop at the marketplace from bus routes, which will increase their foot traffic as well.

To overcome seasonality (winter being slow for Farmer's Market and outdoor events), SoKY provides Supplemental programs such as using the pavilion space for ice skating (The 6,000 square foot ice rink accommodates 175 skaters)

A number of SoKY's programs are as follows:

- Community Kitchen rentals to 12 regular users (BBQ sauces, granola, making food for lower income neighbourhoods, caterings and etc.)
- Interactive rehearsal dinners
- Farmer's market and crop shop (plus supplemental programming such as yoga, shopping and crafting)
- Farmers focus (highlighting one of vendors and their products)
- Chef demonstrations with produce from the market once a month
- SoKY Sprouts Kids Club (program for children aged 5-13 which focuses on healthy eating and lifestyle habits)
- Summer Food Service Program
- Incubator course once a month
- Culinary courses: Extension does hands on, the incubator does demonstrations in which they email the recipes beforehand.
- Free movies, Concerts
- Ice skating in SoKY's ice rink
- A Taste of home: Supporting refugee families with tutoring on Thursday nights (Bosnian Dessert Cooking Demonstration and Coffee Pouring).

Marketing and partnerships

SoKY tries to leverage partnerships to grow its footprint. For instance, SoKY works with the library and cooperative extension to do programming in the kitchen and farmer's market.

- University partnerships: SoKY has a few faculty members on their boards and the university made an app for the farmer's market.
- Library: helps with programming and community outreach.
- Harvest Festival: work with local restaurants, public works and other government offices, ballpark and other organizations.
- Tourism: someone on board
- Warren County
- Grant Writer: SoKY's grant writer has played a vital role in the growth and sustainability of the organization.

Potential clients are recruited through: Social media, TV, Local newspaper and magazine articles. Board members are pillars in the community

Financial sustainability

Currently, SoKY's main revenue sources are 60% grants and 40% earned income. Their ultimate goal is to be self-sustaining through kitchen rentals, event rentals, film programming and other activities.

Case Example #2: Mountain Harvest Kitchen

The Mountain Harvest Kitchen (MHK) Food Business Incubator is a certified commercial culinary production facility dedicated to growing emerging retail and wholesale food businesses in Unicoi, a small town of 4,000 people outside Johnson City (where their client base is). The town-owned, 4,000 sq ft facility partners with emerging food businesses and helps them grow their ideas by providing the infrastructure, expertise, and network needed to be successful.

MHK's membership benefits include consulting sessions where they assist clients in their new ventures, share access to suppliers, and offer resources from pre-concept to business development. Culinary Classroom offers workshops and classes to launch a food company and also improve one's culinary techniques. The facility can also be rented for non-commercial users.

How they started

The initial idea was from the town mayor 12 years ago with an initial tendency towards a shared use, community kitchen. During the years, the kitchen morphed to address regional needs. A feasibility study done in 2013, surveyed several hundreds of people in farmer's markets and other sites. Cottage laws were different at the time, so people wanted a space to produce food that they could sell. Canneries used to be important facilities in the area, but most of them had closed. Today, MHK works with some noncommercial producers to can, but it is not MHK's major focus.

Funding was from USDA, Dept of Agriculture, EDA, ARC (facility, equipment) and ARC POWER grant for equipment.

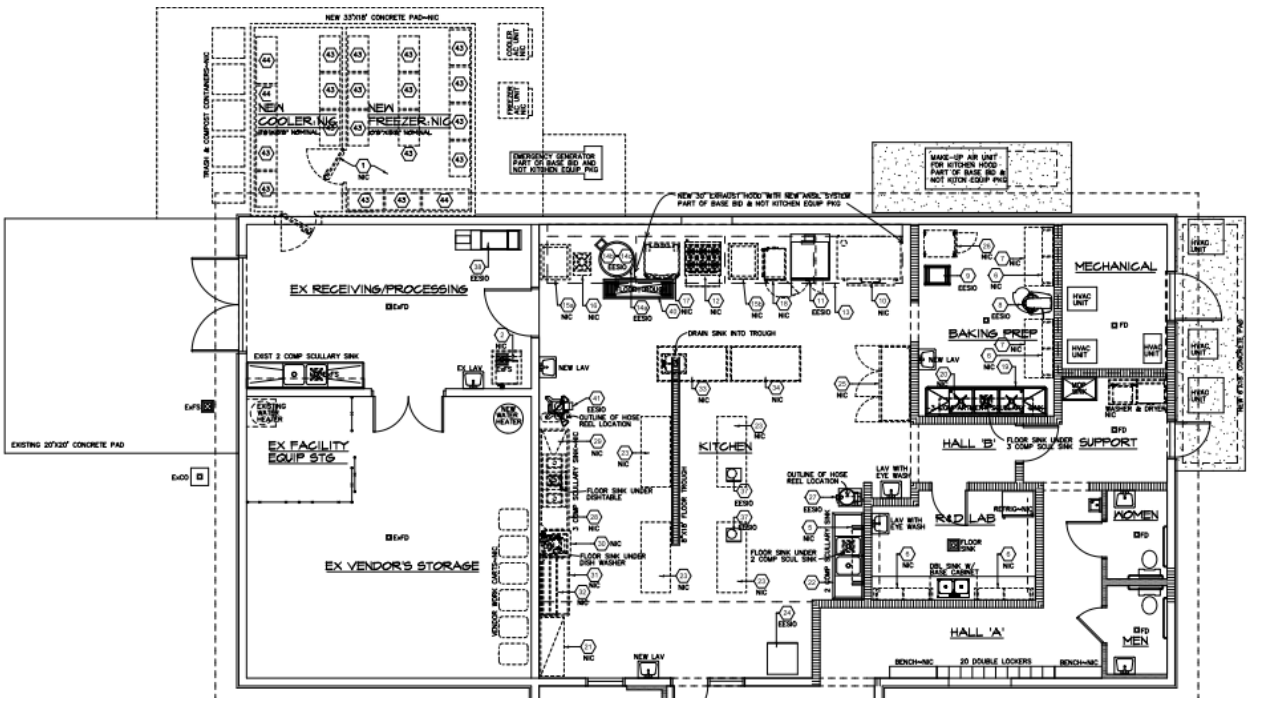
Current layout and amenities

The kitchen is 4000 square ft, ⅔ of which is dedicated to processing and ⅓ to storage. Another building serve for classes, but MHK manager would like to have them in the central building, since they need access to meeting room or presentation room. According to her, other kitchens have four separate prep areas, which is helpful because one can rent out each space separately. She finds floor drains and hose reels useful for easy cleanup (design for efficiency).

When asked what equipment are the most important in the kitchen, MHK director named storage (dry and cold) as a vital component. They offer three different types of ovens: hearth, convention and steam ovens to help people meet their cooking needs. Convection ovens are most useful in her opinion. She suggests according to one's kitchen patrons, they might want to include certain additional items such as steam kettle, bottling line. Currently, MHK see itself as a kitchen well suited for catering clients.

Please refer to the floor plan and the equipment table for more details.

Floor Plan


NEW COOLER NIC
NEW FREEZER NIC
EX RECEIVING/PROCESSING
EX FACILITY EQUIP STG
EX VENDOR'S STORAGE
KITCHEN
MECHANICAL
BAKING PREP
HALL 'B'
SUPPORT
R&D LAB
WOMEN
MEN
HALL 'A'
20 DOUBLE LOCKERS
EXISTING 20'X20' CONCRETE PAD

EQUIPMENT SCHEDULE

No.	Quant	Category	Manufacturer	Model	*Item Status*
1	1	WALK-IN COOLER-FREEZER	KOLPAK		NIC
2	1	ICE MAKER	SCOTSMAN	N0422A-1A WITH ICE BIN B530S	NIC
3	1	WATER FILTRATION SYTEM	AQUA PATROL	PRO SSM PLUS	NIC
4	0	NOT USED	NOT USED	NOT USED	
5	1	SHELVING, WALL-MOUNTED	EAGLE GROUP	SWS1272-16/4	NIC
6	2	SHELVING, WALL-MOUNTED	EAGLE GROUP	SWS1260-16/4	NIC
7	2	WORK TABLE	EAGLE GROUP	T3060GTEB-BS W/ SS CASTERS	NIC
8	1	PLANETARY MIXER/EXISTING	HOBART	D-340/RESET EXISTING EQUIPMENT	EESIO
9	1	PAN RACK, BUN/EXISTING	ADVANCE TABCO	PR30-3W/RESET EXISTING EQUIPMENT	EESIO
10	1	DOUBLE DECK OVEN	BAKERS PRIDE	D-250 W/ 150-550F BAKE T'STAT & AUTO-STARTER OVEN	NIC
11	1	DOUBLE CONVECTION OVEN/EXISTING	AMERICAN RANGE	M-2-CG/RESET EXISTING EQUIPMENT	EESIO
12	1	RANGE, 36", 6 OPEN BURNERS	SOUTHBEND	4361D WITH FRONT LOCATED GAS SUT OFF	NIC
13	1	EXHAUST HOOD, ANSIL SYSTEM, MAKE-UP AIR UNIT	BY MECHANICAL	SEE MECHANICAL	PART OF BASE BID
14A	1	STATIONARY KETTLE/EXISTING	SOUTHBEND	KSLG-60/RESET EXISTING EQUIPMENT	EESIO
14B	1	HAND MIXER/EXISTING	DYNAMIC USA	SMX800E/RESET EXISTING EQUIPMENT	EESIO
14C	1	HAND MIXER/EXISTING	ROBOT COUPE	MP600 TURBO/RESET EXISTING EQUIPMENT	EESIO
15A	1	EQUIPMENT STAND	EAGLE GROUP	MS3036S W/ SS CASTERS	NIC
15B	1	WORK TABLE	EAGLE GROUP	T3036SEB x 36"H W/ SS CASTERS	NIC
16	1	STOCK POT RANGE, GAS	SOUTHBEND	SPR-1J	NIC
17	1	TILTING SKILLET, GAS	SOUTHBEND	BGLTS-30NG W/ TVT-2BPX & 2" FRONT DRAW-OFF WALVE & POUR STRAINER	NIC
18	1	COMBI OVEN	ALTO-SHAAM	CTX4-10EC	NIC
19	1	THREE (3) COMPARTMENT SCULLERY SINK/EXISTING	SELECT STAINLESS	EXISTING EQUIPMENT/INSTALLED & CLEANED BY PLUMBER	PART OF BASE BID
20	1	OVERSHELF/NEW	EAGLE GROUP	WSP1896	NIC
21	1	WIRE SHELVING UNIT	EAGLE GROUP	2460Z74 W/ SS CASTERS	NIC
22	1	TWO (2) COMPARTMENT SINK/NEW	EAGLE GROUP	314-18-2-24 BY PLUMBER	PART OF BASE BID
23	4	WORK TABLE	EAGLE GROUP	T3072SEM W/ SS CASTERS	NIC
24	1	BLAST CHILLER/FREEZER/EXISTING	HENNY PENNY	BCF-65/RESET EXISTING EQUIPMENT	EESIO
25	1	REACH-IN DUAL TEMP CABINET/NEW REFRIGERATOR	TURBO AIR	JRF-65 (MAX. 75" WIDE)	NIC
26	1	PROOFER CABINET	METRO	C539-CFC-4	NIC
27	1	POTATO PEELER/EXISTING	DITO SAMA	DT15/RESET EXISTING EQUIPMENT	EESIO
28	1	DISHTABLE, WITH POTSINKS	JOHN BOOS	DT3B18244-2D24R	NIC
28A	1	PRE-RINSE & FAUCET	JOHN BOOS	PB-PRW-1LF	NIC
29	1	OVERSHELF	EAGLE GROUP	WSP1860	NIC
30	1	DISHWASHER, DOOR TYPE, VENTLESS	HOBART	AM15VLT-2	NIC
31	1	CLEAN DISHTABLE	JOHN BOOS	JDTC-20-60L-X	NIC
32	1	OVERSHELF	EAGLE GROUP	WSP1848	NIC
33	1	WORK TABLE WITH SINK	EAGLE GROUP	T3672SEM W/ CASTERS	NIC
34	1	WORK TABLE	EAGLE GROUP	T3672SEM W/ CASTERS	NIC
35 & 36		NOT USED	NOT USED	NOT USED	
37	2	FOOD PROCESSOR/EXISTING	BERKEL	CP VVN/RESET EXISTING EQUIPMENT	EESIO
38	1	FOOD PULPING MACHINE/EXISTING	LESSON	M6K17FC18/RESET EXISTING EQUIPMENT	EESIO
39		NOT USED	NOT USED	NOT USED	
40	1	FLOOR TROUGH BY PLUMBER	IMC TEDDY	ASFT-1872-PFG BY PLUMBER	PART OF BASE BID
41	1	FOOD PROCESSOR/EXISTING	HOBART	FP400/RESET EXISTING EQUIPMENT	EESIO
42	1	FOOR PACKAGING MACHINE	OMCAN USA	VP-CN-1220	NIC
43	18	3' WIRE SHELVING UNIT W/ 4 SHELVES	METRO	A436K3	NIC
44	3	4' WIRE SHELVING UNIT W/ 4 SHELVES	METRO	A456K3	NIC
45	2	HOSE REEL	T&S BRASS	B-1439 BY PLUMBER	PART OF BASE BID

Organizational Structure and Staff

MHK operates under the Uniqoi town municipality. Lee Manning, the kitchen's director, reports to the mayor. Her background is in food manufacturing. MHK has a part-time maintenance employee. On the organization's board there are: ETSU wetlab, Unicoi community members with culinary backgrounds (retired culinary school teacher), county extension and Vet school director.

Programming

Culinary Classes

MHK offers classes that are open to the public (members use the classes for free and community members are charged a minimal fee of $15). They advertise those mostly on facebook. The classes are usually in collaboration with UT extension agents and chefs in the area to teach cooking skills, food business workshops, food marketing, buyers/distributors with funding from USDA rural development.

Working with someone from Charleston, MHK also offers classes about running a specialty food business. Class attendees range from 10-40.

Commercial Kitchen

Commercial users have to go through a training to get started. The $50 training fee covers training for equipment use and cleaning, guidance on regulatory requirements, packaging, product development, and other needs for users' product. MHK Keeps record of when they first touch base with the potential patron and when they rent the space. They let the client steer the form and rhythm of that service. The Director mentioned some people need a lot of handholding to get through regulatory component. Typically, they go through MHK training, then they go through permitting process. Usually, it is easier for a caterer to get started. MHK tries to be the in-between and provide the context (education and helping them understand what is required) and then put them in touch with potential partners/consumers.

MHK has about 20 patrons who have gone through the process, about 10 of whom have completed their course and have the keys. Since its opening in September 2015, MHK has offered advising services to 150 people.

Three of their clients rent the kitchen for 40 hours a week each (120 hrs/week the space is booked). Two of 3 are bakers who are building brick and mortar businesses in Johnson City. The other one is a caterer; he is more of an anchor tenant.

The kitchen has the capacity to rent out three spaces, so all three regular users use the space simultaneously with shared access to ovens and range. For the most part, they don't overlap because the bakers want sole access when they are working.

Non-Member Hourly Rental	Applies to low use non-member users.	$25/hr
New Business Package	Applies to entrepreneurs during start-up and product development phase. Limited to a period of 3 consecutive months.	$300/mo up to 25 hrs
Basic Membership	Applies to established food processors.	$400/mo up to 25 hrs
Pro Membership	Applies to established food processors.	$750/mo up to 50 hrs
Membership Hourly Extension	Applies to members. Additional processing time beyond 25 hours is billed at this hourly rate.	$15/hr
Exclusive Use Hourly Rental	For exclusive use of the facility and guarantees no others will be working while you are scheduled.	$50/hr

- A $200 facility deposit will be applied to any damage or breakage caused by misuse of equipment, cleaning costs when cleaning requirements are not met and/or if MHK policies are not followed.
- MHK has just installed a bottling line.
- The director found *Food Corridor* software a helpful online tool for tracking of incubation.
- MHK suggested to similar organizations to stay away from small wares since keeping track of them can be really hard. Kitchen users bring in their own knives, measure tools, etc.

Storage

Dry Storage	Applies to overnight long-term storage of ingredients, product, and supplies. Secured cages are 58W x 23D x 59H with 3 shelves per unit.	$25/unit
Refrigerated Storage	Applies to overnight long-term storage of temperature sensitive items. Rentable shelf size is 60W x 24D x 18H.	$25/shelf
Frozen Storage	Applies to overnight long-term storage of temperature sensitive items. Rentable shelf size is 60W x 24D x 18H.	$25/shelf

Marketing and partnerships

MHK works a lot with

- Extension services,
- Small Business Association,
- Farmer training programs,
- ETSU wetlab incubator (There is no culinary program in the region)
- Some classes for schools in the area like agricultural visits.

Due to close vicinity to VA and NC, some of their clients come from those states. Their market radius is about 50 miles, however, they have clients coming from knoxville which is 1.5 hours away.

For marketing and recruiting new customers, MHK stays involved with local food scene. Facebook, social media are other venues. Farmer's markets (they have events for farmer's market managers), tables at festivals, referrals from small business groups and Department of Agriculture other marketing strategies.

Financial sustainability

MHK is not currently self-sufficient. Thier operating expenses is about $130K annually, from which $40K goes to facility maintenance and $90K covers the staff wages. Their major revenue sources are from town funding, donations. kitchen rental, storage rental, programming and training fees.

For developing their pricing scheme, they started at $25/hr (the national average), it turned out to be too high for that area. Early on, they were challenged about bringing in revenue. They ended up lowering the prices about 6-months in, sliding the scale to about $15/hour. They plan to monetize advising services in the near future.

The POWER grant helps MHK up to $400k, but that is mostly for buying equipment which is not included in $130k costs.

Challenges

MHK is looking for developing partnership with an advising service, to have part-time staff person that provides advice to clients. Currently, MHK refers kitchen users to Small Business Administration (SBA) for business plans, but they prefer to do so from their locale. For instance, by having an SBA representative coming once a week to MHK. Funding is available for that education arm through business development or economic development grants.

They are not sure if they will have classes this year because they do not have a $20k grant, they hope partners would help there. Although having the town sponsorship is helpful in many ways, but it has been challenging for MHK in the respect that it puts this facility at the whims of politics. MHK director like to separate the organization into a different 501-c3 with different financial partnerships with multiple towns, counties and economic development organizations.

Appendix D Mobile Processing Unit Case Examples

1. Island Grown Farmer's Cooperative Mobile Processing Unit- San Juan County, Washington

The first USDA-inspected mobile processing unit (MPU) was purchased in 2000 by the Island Grown Farmer's Cooperative (IGFC). The mobile facility received USDA inspection credentials in 2002 and began operations in the same year. The MPU concept was developed to serve farmers in San Juan County, Washington (a collection of 11 islands) who could not transport their livestock to larger facilities in mainland Washington State. The management and administration of the MPU is the primary function of the IGFC. In addition to the MPU, IGFC also operates a small retail space to sell these locally processed meats. It is important to note, however, that most of the farmers who utilize this service brand and sell their meat separately. As of 2011, the IGFC processed livestock for 65 farmers- all of whom use this service at least once a year.

The MPU was funded through grants and private donations from farmers interested in this service. Neither IGFC nor the Lopez Community Land Trust (LCLT) (the initial funder of this endeavor) incurred any debt during the construction of the unit. Table 1.1 outlines the basic costs of this project in 2000 and 2018 dollars. Several USDA grants (CREES, Rural Development, Rural Business Opportunity) were utilized to fund MPU construction. Additionally, a United State Forest Service Community Development Grant was also used. The remainder of funding ($80,000-90,000) was secured through private donations from community members and others.

Table 1.1: Basic MPU Costs for IGFC Construction

Item	Cost in Jan. 2000 Dollars	Cost in Dec. 2018 Dollars
Trailer	$60,000	$89,256
Equipment and Installation	$27,000	$40,165
Truck	$18,000	$26,776
Design/Project Management	$25,000	$37,190
Testing	$15,000	$22,314
Outreach	$5,000	$7,438
Total	**$150,000**	**$223,140**

Upon Completion, the IGFC MPU did not need a second round of funding. Rather, operational expenses were covered through service charges to the cooperative's first 30 members. Service fees and capital charges were calculated to ensure that the MPU operation would at least break-even following its first year of operation. Fees and capital charges were generated by members through forecasting their demand for meat processing. The success and solvency of the MPU is credited to the member driven approach to set fees and charges that were mutually beneficial to both farmers and efforts to sustain MPU operations without incurring debt. Since its first year of operation, fees have been increased to cover increased overhead.

USDA inspection is critical to the success of the MPU. The unit itself was built to comply with USDA HACCP (Hazard Analysis and Critical Control Point) standards, which are imposed on small meat-processing factories to control and reduce the contamination of meats during production. A HACCP plan is required for USDA certification. Additionally, a member of staff must act as an HACCP coordinator to ensure that operations follow the HACCP protocol and individual facility HACCP plan. Due to the mobile nature of the MPU, no other permits beyond USDA certification were required for operation. This is advantageous in that a physical structure would likely be subject to additional federal, state, and local regulations and requirements.

As of 2011, the IGFC MPU employed six full-time positions: two butchers, three meat cutters, and a scheduler/packer/receptionist. Hourly rates range from $11 to $22/hr. Butchers and skilled meat cutters are compensated at the higher end of that range. In that butchering is a highly skilled occupation, the two butchers that both manage the plant and butcher the livestock were found locally. One meat cutter was also found locally, while two others were trained through a state-sponsored program. Full-time MPU employees have healthcare benefits and have the option for paid time off. IGFC estimates that labor accounts for 75% of the MPU's total annual operating costs.

The MPU has seen steady business growth- operations began in 2002 with 30 members and has grown to 65 members in 2011. The majority of IGFC members do not raise and process more than 50 head of livestock annually, although some farmers process 100-200 head a year. Despite the seasonality of the business (business tends to slow during the late winter/early spring), there has been tremendous demand for this service. This has prompted the construction of a physical post-processing space that doubles as a local retail space. Additionally, there is early evidence to support business expansion, however, IGFC is hesitant to invest in more physical space for fear of over-extending the business model. Information regarding the operations and the current capacity of the facility can be found in table 1.2.

Table 1.2: Operational Characteristics- IGFC MPU

MPU Capacity	9-10 head of beef OR 35 lamb OR 15 Pigs. This takes 8 hours of butchering as well as up to 2 hours of drive time.
Hours of Operation	Up to 8 hours under inspection, extra hours needed for set-up and clean-up
Weekly Operation	52 weeks of the year, 3-4 days per week. The physical processing plant is open 5 days a week and can process 2,500 lbs. of meat per day.
Species	Only four-legged livestock (cattle, swine, sheep, etc.
Services	Slaughter and Process; raw sausage, case-ready meats, retail packaging
MPU Size	Trailer is 34 feet long/processing plant is 3,000 sq. ft.
Employees	Six Employees
Annual Sales	$500,000 in services (not counting the sale/value of the meats)
Price of Services	Slaughter: $40 per lamb or goat, $55 per pig, $105 per cow. Purchasers must have a minimum slaughter order of $450.
Operational Costs	Approximately $294,500 per year.
Retail on Site?	Yes, however, the facility is small and only sells co-op member's meat for a percentage. Open 2 days per week and earns approximately $9,000 per month.
Wholesale	No
Inspection	USDA Inspected
Certified Organic	Yes
Allows for Custom Butchering?	Yes, but rarely do the high demand of inspected slaughter work.

2. Kentucky Mobile Poultry Processing Unit

The Kentucky Mobile Poultry Processing was built in 2001 through a partnership between Heifer International (HI), Kentucky State University (KSU), Partners for Family Farms (PFF), and the National Center for Appropriate Technology (NCAT). This facility is state certified, but does not have USDA-inspection credentials. Additionally, the MPU is owned by KSU and rented to farmers needing to process poultry, aquaculture, and rabbit.

This facility was initially intended to serve small niche poultry farmers, such as those who sell free-range/cage free/pastured raised poultry. Many of these niche farmers expressed interest in expanding their operations, but were limited in that there are few processing facilities in the state. This MPU is designed to process birds on-farm, bypassing state regulations so long as no more than the statutory amount of birds are processed (this can range from 1,000 to 20,000 birds, depending on the state). Prior to the completion of the MPU, there was no independent poultry processing plant in the state of Kentucky. After construction, however, the state's first USDA-inspected independent poultry processing plant opened.

The MPU project started as a HI program aimed at helping under-resourced farmers find new revenue streams in several southern states. The pasture-raised poultry model was chosen for this program although there was no legal processing facility in the state. HI partnered with the KSU in 1997 to construct the mobile unit. A $15,000 Sustainable Agriculture Research and Education (SARE) grant was utilized to confer with regulators and design the MPU. PFF, the Kentucky Dept. of Agriculture, and KSU contributed the remaining $55,000 to construct the MPU.

Shortly after construction and initial operation in 2001, the MPU was immobilized by federal and state regulators due to a number of design violations. Additionally, the stature and size of HI made the securing of liability insurance for the facility prohibitively expensive. Heifer International sold the MPU to KSU for $1 to

both circumnavigate and rectify insurance challenges. Additionally, a consultant was hired to make the changes necessary for resuming operation. In addition to the design changes necessary to reopen the MPU, a permanent enclosed docking station was constructed for poultry slaughter to satisfy regulations. While a docking station is a state requirement for poultry processing, the MPU can be used on-site for aquaculture applications.

The largest regulatory hurdle faced by the KSU MPU was USDA inspection. The USDA was contacted for inspection during the design phase of this project, however, they declined to inspect the facility. HI did not pursue inspection and further in that they believed the unit could operate under a federal exemption for slaughter facilities that process less than 20,000 birds. The unit was placed into operation under this assumption, however, the national attention it garnered attracted regulatory pressure and eventually the temporary closing of the facility. The USDA maintained that the 20,000 bird exemption was for stationary facilities with a consistent staff. HI then had to receive yet another exemption from state regulators on the condition that several changes were made to the unit- notably a sturdier enclosed kill area, the creation of physical docks for the unit that met sanitary requirements, and a more comprehensive waste water management system.

As mentioned earlier, aquaculture processing can be done without a docking station so long as the trailer is on level ground and potable water is available. Additionally, wastewater can be diverted into a drainage ditch or simply pumped back into the pond. For poultry applications, however, wastewater must be contained in a septic system. Finding a septic company that would service the docking stations was also a challenge for KSU. State health services must be contacted every time the unit is in use- it is not uncommon for a state representative to be on-site during a processing session. Additionally, the USDA checks the MPU annually and reviews HACCP paperwork. MPU users must also be trained every two years on how to properly and safely use the MPU. Additionally, an MPU coordinator must be present to ensure that HACCP regulations are being followed. It is important to note that adherence to the HACCP guidelines should not overwhelm the operation of mobile processing units. Many smaller processing units have been able to thrive under USDA regulations with the KSU MPU being one of the best examples of HACCP adherence on a small scale, according to the National Center for Appropriate Technology.

It is noted that the key issue the MPU has faced was early noncompliance with USDA regulations. The MPU was originally meant to be used on-site at small farms, however, the docking station requirement greatly changed KSU's initial business plan- limiting their reach to three approved docking stations. An additional struggle was Heifer International's status as a global nonprofit. Insuring the MPU under HI's ownership would have cost upwards of $1 million in liability insurance. This was circumnavigated by transferring ownership to KSU. Now, users are required to sign liability acknowledgment documents, eliminating the need for insurance. Nevertheless, the MPU has been in full operation since 2005 with little to no issues. In 2007, users processed approximately 4,000 with administration hoping to double output for 2008. The KSU MPU has also contributed tremendously to the MPU community especially in that it was an early pioneer of MPU regulations and many MPU projects have learned from this example since. Information regarding the operations and the current capacity of the facility can be found in table 2.2.

MPU Capacity	200-250 chickens per day/Similar of Aquaculture
Hours of Operation	Up to 7.5- user pays overtime for anything over that
Weekly Operation	52 weeks of the year, up to 4 days per week.
Species	Poultry, aquaculture, and rabbits

Services	Slaughter and process
MPU Size	Trailer is 160 sq. ft. Docking station is 960 sq. ft.
Employees	1 Part time Employee: MPU Coordinator (KSU Employee)
Annual Sales	Actual Sales are Unknown, however, the facility has not operated at a loss
Price of Services	$75 for the first 50 chickens, $0.75 for each additional. $75 for first 15 turkeys, $3.50 for each additional. $50 for the first 50 rabbits, $0.50 for each additional
Operational Costs	Unknown in that the facility uses KSU infrastructure
Retail on Site?	No
Wholesale	No
Inspection	State approved/operating under USDA exemption
Certified Organic	No
Allows for Custom Butchering?	All slaughter work is custom (fee for service)

Table 2.2: Operational Characteristics: KSU MPU

3. Coast Grown Mobile Harvest Unit

California's central coast region has strong market for locally grown crops. By 2007, demand for local meats grew to the point where having a local processing facility would be a feasible option for the region. A mobile processing unit was chosen to satisfy this role, considering that the closest stationary processing unit was hours away and had several operational issues. This MPU project started in 2002 as a way for several local farmers to serve and sell meat to local customers. After learning of the Island Grown MPU in Washington, George Work- a local livestock farmer- contacted his congressman. Shortly after $138,750 of unused EDA funds were transferred to Work to begin research and development.

Work hired the designer of the Island Grown MPU and completed the construction of the MPU in 2002. Additionally, Work formed the Central Coast Homegrown Meat Alliance to navigate USDA regulations and oversee the operation of the facility. A flurry of regulatory issues would hamper the MPU's first years of production, especially in the facility did not align itself with a USDA approved cut-and-wrap facility during its early stages. An overall lack of support from the USDA, state, regional water board, and county frustrated local farmers, many of whom invested in finding new markets for their meat during this period. The project was abandoned in 2005 after regulatory challenges became insurmountable.

In 2007, Deb Garrison- a local entrepreneur and coordinator of the Central Coast Agricultural Network (CCAN)-became involved in the project. Garrison and the CCAN are responsible for much of the demand for local foods in this region, thanks to an aggressive marketing and educational campaign run by this group. Garrison partnered local agricultural organizations and secured USDA funding to complete market research, develop a network of suppliers, and research what was needed to get the MPU inspected and operational. Following this, ownership of the MPU was transferred to the CCAN to avoid any complications associated with the ownership of a federally funded project. Next, comprehensive research was undertaken to better understand compliance issues associated with both the MPU and local farmer's ranches.

During this research, Garrison reached out to state and USDA administrators in hopes begin the inspection process. Garrison received little to no help from USDA inspectors, finding the crucial document (USDA FSIS Small/Very Small Plant Guide: Applying for a Federal Grant of Inspection for Meat and Poultry Establishments) on her own. The guide provided her with concrete steps towards HACCP guidelines, wastewater, and animal waste management. Waste water was challenging for a number of reasons-

specifically in that farmers had to slaughter animals on concrete pads on their farms. The pad would have to be rinsed after each slaughter, with some sort of mechanism to capture the rinse water. Additionally, the MPU encountered issues related to the compost of animal waste (entrails, organs, etc.). The Island Grown MPU avoided this issue by composting remains on site- however, this was illegal in California. Instead, entrails would have to be trucked to a rendering plant. It is important to note that these preemptive state measures have greatly limited the number of users. Ranchers must pay approximately $5,000 for a covered cement pad, inspection pens, shaded waiting pens, and a slip proof alley way and metal stun box (figure 3.1). Smaller farmers unable to invest in this state-mandated slaughter infrastructure can bring their livestock to larger farms with this infrastructure.

Figure 3.1: Slip Proof Alley-Way and Stun Box

Currently, the MPU operates two days a week. Carcasses are taken to a USDA cut and wrap facility, where they are hung for 14-21 days. The meat is then cut, packaged and delivered to Coastal Grown distributors. A smaller number of farmers choose to sell their own meat online or at farmers markets and wholesale meat markets. Interestingly, the meat is never owned by the cooperative- rather, farmers are charged 15% of the sales price for marketing and distribution charges. Additionally, ranchers decide how the meat is sold. For instance, some will sell as little as one steak while others have order minimums of 50 to 25 lbs. Furthermore, the cooperative has a $150 minimum for delivered orders, although buyers can drive to facility to collect smaller orders. Sales were limited to a tri-county area in 2009, but national distribution is a stated goal of the organization. As of 2010, website sales were not supporting the operating costs of the MPU. Business was temporarily suspended to mitigate some of these losses. To overcome revenue challenges, the MPU was leased to a local butcher who uses the facility to process 5-7 cows per week at 2 different ranch sites. Information regarding the operations and the current capacity of the facility can be found in table 3.2.

MPU Capacity	5-10 head of beef OR 10 lamb, goat, or hog.
Hours of Operation	Up to 8 hours under inspection, extra hours needed for set-up and clean-up
Weekly Operation	52 weeks of the year, 2-3 days per week.
Species	Only four-legged livestock (cattle, swine, sheep, etc.)
Services	Slaughter only
MPU Size	208 sq. ft.
Employees	3 Employees: Managing Butcher, Assistant Butcher, Truck Driver
Annual Sales	$100,000
Price of Services	$150 per head of beef. Rates vary for other animals

Operational Costs	$800 per day with no overtime- costs are higher for locations over 50 miles
Retail on Site?	No
Wholesale	No
Inspection	USDA Inspected
Certified Organic	No
Allows for Custom Butchering?	All slaughter work is custom (fee for service). Custom exempt slaughter can be done any day with a 3 beef head minimum.

Table 3.2: Operational Characteristics- CG MPU

4. Puget Sound Meat Producers Cooperative MPU

Local livestock farmers in the Southern Puget Sound region of Washington sought an MPU in that every regional USDA-inspected slaughter facility had ceased operations over the past 20 years. As the lack of a local slaughter/processing facility became a barrier to farming in the region, several organizations partnered to form the Puget Sound Meat Producers Cooperative (PSMPC) with the express goal of funding and operating an MPU. Design and production began in 2008 with the MPU being completed in June of 2009. USDA inspection and WSDA organic certification were completed two months later. Funding for the MPU was provided by the Pierce Conservation District (PCD) of Pierce County Washington. Grant funding did not cover the entire cost of the project- PCD had to secure a line of credit to complete the project. The MPU was first used October 2009. Table 4.1 outlines the costs associated with design and early operations of the MPU.

Table 4.1: ***Basic MPU Costs for PSMPC MPU Construction***

Item	Cost in Jan. 2008 Dollars	Cost in Dec. 2018 Dollars
Trailer	$250,000	$297,556
Equipment and Installation	$12,000	$14,282
Employees	$70/hr.	~$83/hr.
Design/Project Management	$35,000	$41,657
Testing	$15,000	$17,853
Outreach	$30,000/yr.	$35,706
Total	**~$342,000**	**~$407,057**

Due to a change in USDA regulations, the PSMPC MPU was inspected and certified much quicker than those MPUs built in the late 1990's and early 2000's. For instance, the PSMPC MPU was inspected and operational two months after the trailer was delivered. In other cases, USDA inspection was either refused or took many

months to years to be completed. Additionally, the MPU space was designed to be flexible and easily modified in the case that regulations change again. Figure 4.2 illustrates the simple and flexible format of the MPU.

Figure 4.2: Initial format of the PSMPC MPU

The business plan for the PSMPC MPU was created with input from agricultural experts, business advisors, and lawyers from the Puget Sound area of the state. Since its inception, the business model- specifically the fee schedule- has been changed to account for increases in operating costs. Additionally, there has been fluctuations in staff to account for changes in demand. Originally, the MPU was staffed by six paid staff members, including a site manager, a site coordinator, a lead butcher, and three assistants. By 2010, the MPU could not sustain any of its staff members, electing to contract a butcher at a per-head rate to keep the unit operational. Currently, there is no PSMPC employees in the MPU, with all personnel hired by the contracted butcher. The butcher is paid a base fee of $300 per day and is paid per slaughter. This system has proved to more sustainable for the PSMPC.

MPU products are typically sold directly by farmers either at farmers markets or bulk meat sales (whole, half, and quarter carcasses). Additionally, several butcher shops utilize the MPU to slaughter outside of their regulatory limits. The PSMPC MPU has seen growth in membership and projected an increase in output for 2010 (second year of production). It is important to note that the PSMPC narrowly avoided bankruptcy during its first year of operation due to a lack of demand for the service and management issues. Only 20% of PSMPC members (82 total) utilized the MPU during its first year of operation. These low number were primarily due to regional farmers not having established markets for the sale of their meat. Additionally, skyrocketing cattle prices have made selling live cows at livestock markets more profitable with for farmers who do not have the connections or willingness to market and sell their own meat. Payroll was another serious threat to the solvency of the MPU. As mentioned above, the PSMPC MPU began operations with six full time employees. Due to the low initial demand for this service, the MPU quickly exhausted its budget. The shift from full-time employees to a contract based system has helped the MPU, although the PSMPC hopes to hire more full-time staff as the MPU becomes more frequently used.

Table 4.3: *Operational Characteristics- CG MPU*

MPU Capacity	8-10 beef head, 16-20 pigs, 24-30 sheep/goats
Hours of Operation	Up to 8 hours under inspection, extra hours needed for set-up and clean-up
Weekly Operation	As needed- estimated 90 processing days for 2012
Species	Only four-legged livestock (cattle, swine, sheep, etc.)
Services	Slaughter and delivery of carcasses to cut and wrap facility
MPU Size	Trailer is 45' long
Employees	PSMPC has no employees- operations are handled by a contracted butcher
Annual Sales	PSMPC had a net income of approximately $11,000 in 2011
Price of Services	Members: $110 per head of beef, $70 per pig, $50 per sheep Non-Members: $140 per head of beef, $90 per pig, $70 per sheep.
Operational Costs	Approximately $57,000 in 2011
Retail on Site?	No
Wholesale	No
Inspection	USDA Inspected, can also do custom exempt butchering
Certified Organic	Yes
Allows for Custom Butchering?	Yes

Appendix E: Agriculture Incubator Example Case Profiles

The number and type of incubator farm projects in the United States has expanded in the last 5 years. Looking only at the reporting, land-based multi-grower projects that provide some level of training and technical support found 130 such programs in operation in 2016, with over 1,500 farmer-participants[64]. For a related project, VTOED sought to better understand how other agriculture incubators operate and reach their goals. VTOED explored a selection of agriculture incubators through their websites, online materials and interview with site representatives. These sites included:

- Intervale Center (Burlington, Vermont)
- Farm Incubator Program, Southern Appalachian Highlands Conservancy (Alexander, North Carolina)
- New Entry Sustainable Farming Project, Tufts University (Dracut, Massachusetts)
- Groundswell Center for Local Food and Farming (Ithaca, New York)
- The Seed Farm (Lehigh County, Pennsylvania)
- Sprouting Farms: Appalachian Croft, Resource and Training Center, Downstream Strategies (Talcott, West Virginia)

Intervale Center (Burlington, VT)

The Intervale Center is a 501(c)(3) nonprofit organization that was founded in 1990 and is one of the oldest farm incubator programs in the United States. This organization comprises of about seven different programs, of which the incubator is one. These programs include: a food hub, a native plant nursery, farm business consulting, events, community education and outreach, and a gleaning program. The incubator, called the Farms Program, is not the largest in terms of staff, but is what the Intervale Center is most well-known for. The Farms Program leases land, equipment, greenhouses, irrigation and storage facilities to small, independent farms. The agriculture incubator site, located in Burlington, Vermont, is comprised of 135 acres of land and contributes about 60 full-time, part-time and seasonal jobs to the local economy (the entire Intervale site is 350 acres). Each year, one to three new farm businesses join the incubator and they receive subsidized rental rates, business planning support and mentorship from experienced farmers. According to their website, over the past 26 years, the Intervale Center has contributed to the success of over 40 farms.

Participating new and beginning farmers incubate on-site for up to five years and subsequently have the option to apply for and purchase conserved farmland in Vermont through a local land trust. The Intervale Center is currently leasing to 10 farm businesses, who get access to greenhouses, coolers, dry storage space, and so on. Of these 10 farm businesses, there are two categories: mentor farms and incubator farms.

[64] (2016). *Farm Training Initiative Report*. New Entry Sustainable Farming Project. Accessible at nesfp.org.

Mentor farms are long-term renters, or tenants, who are not in the incubator program. These mentor farmers started out in the incubator program, but are now operating for the most part independently. No new mentor farms will be added; the mentor farms that are there are the only ones they will have. There are currently three incubator farms at the Intervale Center; no set amount of incubators are accepted per year, it depends on the land available from year to year. Unlike many farm incubator programs, the Intervale Center does not have an agriculture training program; they are not teaching people how to farm, but providing farmers an opportunity to start their agriculture business.

The entire Intervale Center is a nearly $2 million program, with $600,000 in food sales per year (from their on-site food hub), and they provide farm shares for 150 needy families in the community through their gleaning program. The agriculture incubator is not a large part of Intervale's budget, and the main costs of the incubator include: holding the land, depreciation, operating of infrastructure, and taxes. Staff salary is funded through their business planning consulting work, and the income from renting land to farmers does not go toward staff salaries, but rather toward the cost of holding the land.

The Intervale Center has a Land Manager, who reports to the Executive Director, and is in charge of operations, day-to-day activities on-site, and facilities management for the entire center, not just the incubator. This Land Manager also has a seasonal assistant. Also under the Executive Director is a Business Development Specialist, and the center also has an Agriculture Development Services team, which serves not only the farm incubator program but all of their program work. The Beginning Farmer Specialist, who reports to the Business Development Specialist, was interviewed for this report. This position is centered around promotion of the Intervale Center, managing the farm incubator application process, helping farmers, business planning with incubator applicants and incubator participants, as well as people across the state. There is also a board of directors for the entire Intervale Center, which consists of community members, and sometimes farmers in the program.

The Farms Program staff make it clear to incubating farms from the beginning that Intervale is a way for people to start their business, to figure out what works and what does not, and not a permanent farming space. Starting in farmers' third year of their time at Intervale, program coordinators begin talking to farmers about obtaining land beyond the program so that by the time they reach year four and five, they are better able to apply for loans and access the financing they need. Intervale program staff continually talk with participating farms about what kind of land they are looking for, what they need, and help farmers put out feelers for land. The Intervale Center also manages the Vermont Land Link website, where people can look at land that is available to purchase or to rent. Through this and their other programs, the Intervale Center is well equipped to help incubator participants find land and the end of their tenure.

The Beginning Farmer Specialist recommended that groups in the beginning stages of starting agriculture incubators look at partners and what is already being done in their area. Some incubators partner with small business centers and associations to help with the business planning offered to participating farmers, especially if the business center has experience with food or agriculture. This allows the business center to provide business planning and the incubator can focus on other aspects of the farm incubator. The Beginning Farmer Specialist at the Intervale Center also suggested looking at gaps that exist in the area, like technical assistance or class space, and trying to fill those gaps, or figure out how to accommodate those with partnerships with existing organizations in the community. It is also recommended to clarify and firmly spell out the incubator's mission, values, and goals from the beginning. Sticking to this core mission and values is important, as there are many directions incubators can go, but figuring out what unique role your incubator can play is key. It is suggested to reassess this mission every few years, but to think about the needs and gaps that exist when determining the goals of the incubator.

Farm Incubator Program, Alexander, NC (SAHC)

Southern Appalachian Highlands Conservancy (SAHC) is one of the country's oldest land trusts and is based in Asheville, North Carolina. A 103-acre farm, dubbed the "Community Farm" was donated to SAHC in 2010 for use as a stream restoration project, native shortleaf pine restoration, an educational trail and a Farm Incubator Program. The Community Farm is a part of their Farmland Access Service program, serves as an incubator for new farm businesses and is based on successful programs across the country. The aim of the Farmer Incubator Program is to help fill the gap left by aging and retiring farmers in the region. Their farm, located about 10 miles from downtown Asheville in Alexander, North Carolina, offers:

- Land at a reduced rate for up to five years
- Use of tools and equipment for a small fee
- Use of farm buildings, water, fencing, electricity and other infrastructure for a small fee
- Educational resources in business management, agriculture, etc.
- Assistance seeking land after the incubator term has ended
- In some situations, space for personal, portable housing units are offered

SAHC's Farmer Incubator Program serves beginning farmer and ranchers, limited resource farmers and ranchers, and socially disadvantaged farmers and ranchers each as defined by the U.S. Department of Agriculture. Potential farm operations at the Farmer Incubator Program include small-scale, pasture-raised livestock, annual and perennial vegetables, herbs, fruit, nursery plants, cut flowers, bees, mushrooms, forest herbs, and other products may be considered. One farmer currently in the program spent several months looking for land in the Asheville area and says that without the incubator, he would probably still be looking for farmland. Due to her participation in the Farm Incubator Program another farmer currently in the program is able to continue working full-time in Asheville while she grows her small herd of heritage breed cattle and looks for a more permanent land-base for her operation. She hopes to grow to a profitable size before it is time to leave the farm and shoulder the mortgage on her own land. For more on the Farm Incubator Program, please visit www.appalachian.org/communityfarm/incubator.html

New Entry Sustainable Farming Project, Tufts University, MA

Launched in 1998, New Entry is an initiative of the Tufts University Friedman School of Nutrition Science and Policy and works locally, regionally and nationally to strengthen local food systems through supporting new and beginning farmers. It was originally created to develop a cost-effective strategy to integrate recent immigrants and refugees with farming backgrounds into Massachusetts agriculture, but in 2007 the program was expanded to beginning farmers of all backgrounds. Through the Incubator Farm Training Program, new farmers must complete the Farm Business Planning Course and create their own, personalized farm business plan in order to be eligible to lease land on their training farms in Dracut, Massachusetts at affordable rates for up to three years. Beginning farmers who lease land on the training sites have access to regular field-based trainings, one-on-one technical assistance from staff, and basic farm infrastructure resources.

New Entry also has a Farmland Matching Service that helps match incubator participants who are in need of land to landowners who would like to see their land farmed. The Farmland Matching Service helps farm seekers look for land that is compatible with their goals and needs, find resources to get loans and negotiate leases, and transition to their own farm or alternative land lease arrangement. Many of the Incubator Farm Training Program participants have used the Farmland Matching Service to transition their farms off the incubator site and onto new, independent farmland.

New Entry sees itself as addressing the issue of food security in the area, which many people in the community find important. They also have a large audience of people who want non-factory farm produced food. When interviewed for this report, the Director of the New Entry program said another goal of the program is succession planning, or keeping active working landscapes as working landscapes and keeping farming communities thriving. They began as a training and education program but expanded to farm incubation and are the missing link for strong beginning farming programs as well as the missing link to access to capital that many new and beginning farmers grapple with.

The participants in the New Entry program tend to be people changing their career, retirees, and people looking to earn money for their families. They have a history of working with immigrants (middle-aged adults) and not post college graduates (although they have attracted a few young people), therefore they provide evening and weekend programming. The Sustainable Farming Project, however, is open to working with anyone who wants to become a commercial farmer and will help them meet their goals with the resources that the program provides.

New Entry has 9 full time staff, three full-time AmeriCorps members, and has had an advisory committee in the past. Being a program of Tufts University can present challenges because some funders do not fund universities and some USDA grants have large overhead cost rates, which sometimes makes the New Entry program uncompetitive. They occasionally, however, apply for grants through Tufts and work as subcontractor. New Entry is able to rely on professionals from Tufts to help with grant management and they are hesitant to become their own 501(c)(3) because they are unsure whether they could pay competitive salaries to hire their own staff to do this important work. New Entry's fiscal sponsor takes care of all of their operating costs, while the Sustainable Farming Project is able to focus on programming.

Some questions the Director recommends new farm incubators to consider include: Who is being attracted to the incubator – people who already live in the area or people moving to the area to participate in the incubator (if the latter, housing would be an issue)? Are participants going to have to travel very far to reach markets? How does the incubator maximize programming to benefit the community at large? Is land available to participants? Would a farmer training program work? Do participants have a business plan before they start in the program, or do they develop it as part of their training? What resources and infrastructure will you have on-site? How long do you expect people to stay on-site? The Director of New Entry recommends engaging and bringing in as many and all partners possible, so that incubator organizers are not responsible for doing everything themselves. Connecting participants with the broader agriculture community is key and it is recommended that this be built into the programming.

Groundswell Center for Local Food and Farming, Ithaca, NY

The Groundswell Farm Business Incubator Program is the first of its kind in New York State. It creates opportunities for aspiring farmers from disadvantaged communities including refugees and other new Americans, people of color and veterans, to own and operate their own farm or farm business. The Groundswell Incubator Program provides land, equipment, mentoring and training to participants for three years to aid in the launching of their farm with low risk and investment. The Groundswell program also aspires to reduce some of the barriers to starting a farm business, such as the expense of buying land, buildings and equipment. These intensive start-up costs, combined with the risk of an untested farming strategy, can be very burdensome to new and beginning farmers.

The marginalized communities that the Groundswell program aims to support often face disproportionate and systemic barriers to getting started in farming as well. All applicants are considered for the Groundswell program, however, in order to build the most diverse farming community possible, admission for these farmers is prioritized. Over the course of their time at the incubator, farmers can develop the three-year track record needed to secure a low-interest loan from the U.S. Department of Agriculture Farm Service Agency or other lender to grow their operation or business when the time is right. Groundswell Incubator Program benefits include:

- Up to a ½ acre of farmland
- Equipment, tools, irrigation system, deer fencing, storage shed and high tunnel
- Spring tillage and winter cover cropping provided
- Soil amendments and pH applications
- Field training workshops
- Individual on-site mentoring
- One-on-one assistance with business planning, management and marketing

Groundswell Incubator Program costs include:

- Participation fee: $190 for ¼ acre per year
- Equipment fee: $100 per year
- Additional farm services: variable

Applicants are expected to have some prior farming experience such as experience in their country of origin, internships, on-farm employment, or participation in Groundswell or similar training experiences. Applicants are also encouraged to have a clear farm business concept and a commitment to developing an agricultural operation or business, not simply crop or animal production for home use. For more on the Groundswell Farm Business Incubator Program, please visit: http://groundswellcenter.org/incubatorfarm/

The Seed Farm, Lehigh County, PA

The Seed Farm Agriculture Incubator in Emmaus, Pennsylvania was established in 2010 and operates on 42 acres of land. This nine-month farmer training program was created to meet the needs of new farmers that lack access to land, equipment and capital as well as create the next generation of farmers. The Seed Farm Agriculture Incubator is located on farmland that has been preserved through the Pennsylvania Farm Link program. In order to break down the barriers to farm entry, the program provides access to land, infrastructure, equipment, and mentoring and also helps connect participating farmers with service providers, new markets, and promotional opportunities. Applicants are encouraged to have some farming experience, equipment experience and solid marketing and business plans. The See Farm has three levels of agriculture incubator participants: Explorer farmers who have some gardening or farming experience and are ready to start on 1/8 – ½ acre plots, Steward farmers who have farm apprenticeship or internship experience, and Enterprise farmers who have a few years of experience and can be mentors to other farmers. Resources available to incubator farmers include:

- 1/8 to 5 acres of land per farm
- Greenhouse, cooler and dry storage space
- Tractors and implements
- Washing/packing facilities
- A water and irrigation system
- Technical assistance and mentoring
- Training opportunities

The Program Director also conducts monthly “farm update” meetings with all incubator farmers to facilitate information and idea sharing. The Seed Farm staff assist incubator farmers with marketing techniques, pest and weed management and any other issues that may arise. In 2017, The Seed Farm Agriculture Incubator will select up to four new farm businesses to join the incubator and are especially seeking farm plans that include the production of culinary and medicinal herbs, cut flowers, meat birds, eggs, and/or mushrooms. After the first four growing seasons, the program graduated 13 farmers, nine of whom moved on to farming in the Lehigh Valley.

The Seed Farm also offers an 8 month New Farmer Training experiential learning program that includes coursework, production training, equipment training, business and marketing research, farmers market experience, and the option to work at the farm and earn an hourly wage. Participants are given decision-making responsibility for a two-acre market garden, from seed to harvest to market. They learn a variety of skills such as: business planning, risk management, disease and insect management, marketing, harvest and post-harvest handling and so on. For more on The Seed Farm Agriculture Incubator, please visit: www.theseedfarm.org/farm-incubator

Sprouting Farms: Appalachian Croft, Resource and Training Center, Greenbriar Valley and New River Valley, WV

Sprouting Farms: Appalachian Croft, Resource and Training Center is a very new agriculture incubator located in Talcott, West Virginia, that will have farmers on the ground for the first time in the spring of 2017. The program is a partnership between Downstream Strategies, the West Virginia Food and Farm Coalition, the Robert C. Byrd Institute of Advanced Manufacturing, New River Valley Farmland Protection Boards, and the Greenbrier Valley Economic Development Corporation. This agriculture incubator and training center was created due to a reoccurring theme identified by these area partners in their community: farmers have trouble getting started and access to resources for farmers starting out is difficult.

The first year of the program is an apprenticeship program where incubator participants will do part time paid course work (how to do recordkeeping, marketing, how to run a farm, etc.). Once participants complete this, they get access to the farm incubator. Or if they are already an experienced farmer, they can skip the apprenticeship program and go straight to having access to the incubator. For the apprenticeship, new farmers will be matched with existing, mentor farms that are similar to their interest, or they can work/apprentice on the production farm onsite.

They are thinking of trying to do a step down transition, so in year 3, participants are half on the incubator and half on their own farm. Downstream Strategies, the West Virginia Food and Farm Coalition and the Farmland Protection Boards are working on figuring out how to help participants get access to farmland after they complete the program. In the future, they would like to have shared equipment and regular workshops, but they are starting with the apprenticeship program, the production farm and the incubator farm for now. Sprouting Farms will be a nonprofit organization and have a full-time Farm Production Manager, full-time Education Director, a board of directors, part-time staff and possibly other full-time staff.

Two years ago, the group of partners applied to a USDA Rural Business Development Grant. Securing this grant allowed the group to do a full feasibility study of the project, and the goal of this study was to come up with a business plan, which they did. By the time the feasibility study and business planning was completed and the group was beginning to think about next steps and possible additional partners, POWER funding came out. Next, they did a lot of work pulling people working in local foods together, including reaching out to area farmers and agriculture service providers to see what they could do and how to plug them in. They also talked to people about market outlets and have worked with Appalachian Sustainable Development's Appalachian Harvest Food Hub as a market for the products created. They then applied for a POWER grant, which they recently learned they were awarded.

The Robert C. Byrd Institute is their fiscal sponsor and the POWER grant will provide the funds they need to buy the land they are going to use for the incubator. Their operating funds will come from their production farm that will be onsite, in conjunction with the incubator. Based on their original projections (before they had the property, etc.), they were hoping to break even in 5 years, but this might get refined as they figure out what their financial costs are actually going to be. Currently there are no other agriculture incubators in West Virginia, but a few others are also in the process of being started across the state.

When asked what advice they would give to someone attempting to start an agriculture incubator The Food System Coordinator, who was interviewed for this report, said that figuring out where the product is going to go is an important component to determine up-front for rural incubators. This may include products that can either be shipped, or it is necessary to have access to larger scale buyers like ASD. Also, the Food Systems Coordinator recommended having a champions, or a solid group of people interested and invested in making the incubator happen, willing to apply for grants and seeing the project through. It was also suggested that a group starting out could begin their program in a smaller way, like with simply an apprenticeship program at the beginning and moving to an incubator later. Sprouting farms was able to start bigger because they had access to funding, but if RECLAIM Act funding gets passed, this could help other agriculture incubators in Appalachia as a possible funding source. Other aspects that are important to determine early on in the process of starting an agriculture incubator include: identifying and acquiring the land, support from existing economic development agencies, and initiating constant communication with local farmers so that the incubator is not seen as competition, but rather an asset to the community.

Appendix F: Artisan Center Case Examples

STECOAH VALLEY CULTURAL ARTS CENTER

Stecoah Valley Arts, Crafts & Educational Center, Inc. is a non-profit corporation located in Robbinsville,

NC. In 1997, a group of concerned citizens formed the center in order to restore the historic school, built in 1926, to its original role as the center

of the community.

Today, this 10-acre property offers

over 20 programs to approximately 10,000 people annually. The list below shows a number of center-sponsored programs:

Figure 3- Stecoah Valley Gallery. Source: https://wncmagazine.com/new-life-old-schools-1

- Summer performing arts series "An Appalachian Evening", "Annual Harvest Festival" and "Gospel Singings" are the major music events.
- The Stecoah Artisans Gallery provides sales promotion and support for local and regional artists.
- 21st Century Scholars funded after-school programming that serves over 50 students annually.
- The Appalachian Musicians after-school program.

Graham Revitalization Economic Action Team (GREAT) and the Textile Studio also call the main building home. Currently, Stecoah Valley Center is run by three full-time staff and 4-5 part-time staff, with the support of several volunteers.

The historic background, small and aging population base, distance from major cities as well as the need for financial self-sufficiency as a non-profit makes Stecoah Valley center a comparable case to Reynolds Homestead.

How they started

The Cultural Arts center Stecoah Union School welcomed its first students in October 1926. As a school in a rural area, it also served as a community gathering place outside of school activities to host social activities, meetings, weddings or funeral services. When it was closed in 1994, community members formed a non-profit just to save the school from being torn down. In 1997, the school system sold the property to the county so the non-profit could lease it for a dollar a year and form the Stecoah Center. So far they had two ten-year lease terms and more recently took out a 25-year lease, which incentivizes investors to assist in the gymnasium renovation and other property developments in the future.

Regarding the initials funding sources and partners, according to the center's executive director, Beth Fields, the art's council was one of their early funders:

- The Blue Ridge National Heritage Area, which is a congregational designated area, was among early partners focusing on cultural heritage tourism.
- To fund the Art-based activities such as the Artisans Gallery, the National Endowment for the Arts, North Carolina Arts Council, and community members helped Stecoah Valley Cultural Center.
- Additionally, there is alumni back to 60s that are still alive and supporting the center.

The Commercial Kitchen

The commercial kitchen was developed in 2005/2006 and was initially modeled after the successful Blue Ridge Food Ventures in Asheville, NC. Initially it was meant to be a kitchen incubator solely for long term residents, however now it is multi-faceted serving 2 permanent residents, as a commissary for food trucks, and as a catering kitchen for facility rentals.

Some early funders of the project included the North Carolina Arts Council, Blue Ridge National Heritage Area, the North Carolina Rural Center, and Made In America. Current funders include the National Endowment for the Arts, the North Carolina Arts Council, and current and past community members. Past funding has also included the Appalachian Regional Commission.

When it was first created, the kitchen did offer business services and courses for emerging food entrepreneurs. However, the facility noticed that those taking advantage of those opportunities were local artisans, not culinary entrepreneurs.

There are other organizations which have changed their partnership relationships such as North Carolina Rural Center. According to the executive director, "they mainly do leadership now, but they used to do a lot of innovative projects".

Current layout and amenities

- Main Building (14,000 sq ft)
    - Auditorium (325 seats)
    - Classrooms
    - Gallery
    - Office spaces (400 sq ft each)
    - Cafe
    - Textile studio
    - Meeting & Banquet Room: seats up to 48 and is available to rent for meetings, classes, reunions, receptions or other private parties.

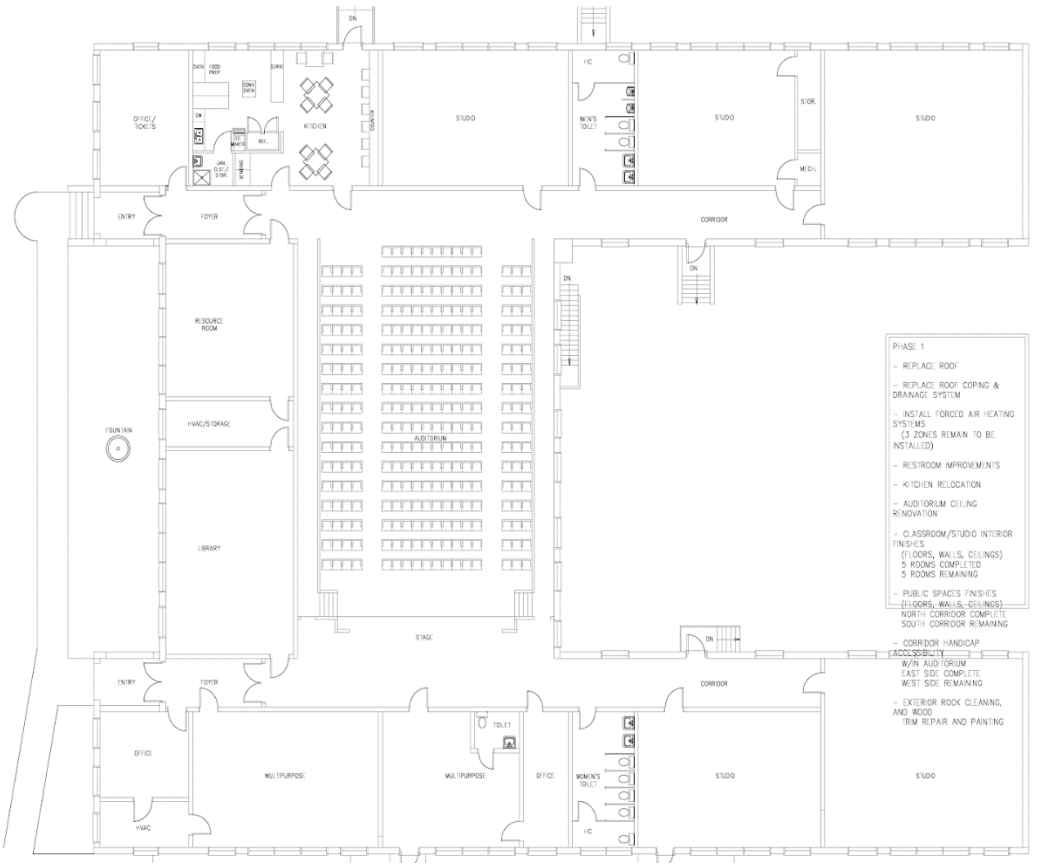


Figure1: Main building floor plan

- Commercial Kitchen

The commercial kitchen is inspected and certified by the state. It is able to be rented out to prepare food for personal use, for retail sale or catering, to make value-added commercial products, to teach of take a class, or to host parties. At full capacity the kitchen can hold between 8-10 full residents. It includes individual stations and refrigerator, freezer, and dry storage. Initially there was funding for a manager, but now a permanent employee handles rentals and scheduling for the kitchen.

In order for groups to use the kitchen they must pay a deposit and other various fees depending on what supplies the will use and how long they will be there. The pricing scheme is demand based and rentals typically occur in intervals of 2, 4 or 8 hours. Additionally, groups must have liability insurance and take a food safety training course.

The center also provides their own catering for rentals. There is no permanent chef, however the employees have created a set list of items that they can prepare. The pricing schemes change based on who is using the kitchen. Additionally, the center also offers a banquet service which provides kitchen facilities, linens, dinnerware, flatware, and glassware.

- Grounds and Garden Trail

The property grounds include an outdoor pavilion, garden, family picnic areas and a children's play area. Also a Native Azalea Garden from the private collection of the late Sally DeGroot.The pavilion and grounds may also be leased for private parties and events.

The 10-acre property is surrounded by a paved and handicap-accessible 1/3-mile-long garden trail with rustic benches and native plants. The walking trail is free and open to the public seven days a week. Restrooms are available during business hours.

Figure 4-site plan. Source: https://vtechworks.lib.vt.edu/bitstream/handle/

According to the executive director, the county government put a new roof on the building. They offer an operating support each year about $10,000.

For the gym renovation they have phases: water, electric and HVAC for restrooms, but those need $450,000. They are thinking about piecemealing it, so County government can find grants to renovate the Gymnasium or a private investor can help that project.

One of the challenges regarding the physical space is that they do not have enough space for dancing for weddings. Auditorium is good for a ceremony but not suitable for a reception. There is not any large space which has air-conditioning and heating for such events therefore the weddings are usually up to 50 guests.

Programming

- *The harvest festival* was their first program in 1998. Every October this event begins with a free Friday evening campfire to roast marshmallows, and storytelling. This two-day festival is held in the third week of October, hosting 2500-3000 visitors “celebrating all things Fall with music, food, art & crafts vendors, country fair, quilt show and artisan demonstrations”.

- *Appalachian concert series*, their most successful program was initiated after the harvest festival. It runs for 10 weeks each summer. Depending on the week it hosts around 200 attendants.
- *The Junior Appalachian Musicians* (JAM) was started in 2000.

They received grant funding for renovations in 2006.

- *The artisan Gallery* was opened in 2007. By merging two classrooms they created an upscale gallery with 180 artisans. They operate the gallery on commission. When it first started they had grant funds, but is self-sustaining now. Each year, it draws 8000 visitors to the property and they learn about other programs.

On saturday nights they have a featured artisan in the gallery. People who are coming for the concert can visit the gallery. The center management does that free of charge. They set up tables and everything for the artists and they are able to sell on their own in that evening.

- Food Venture.
- They do a monthly potluck lunch.
- Monthly food distribution through Mountain Food Bank.

Catering provides the most funding to the kitchen and there are some food-based programs.

- The center used to do a regular "Appalachian Dinner" event. While the event was popular, it took 2-3 years to turn a profit and there were issues with leftovers and not enough foot traffic. It did not make financial sense to continue to have these dinners regularly.
- Additionally, the kitchen offers some other programming including courses and demonstrations (including sushi), a Thanksgiving Dinner, and a Christmas cookie exchange.

The program manager manages the gallery, the concert series, kitchen and after school programs.

Partnerships

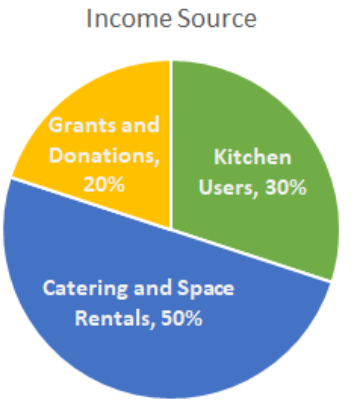
Stecoah Valley Center has received the $100,000 2017 Joy W. Pope Memorial Grant in the Arts from the John William Pope Foundation for the development of their Courtyard of the Cherokee project. The one-time grant funds an outdoor arts-based exhibit that will authentically represent the seven clans of the Eastern Band of Cherokee Indians (EBCI).

The Stecoah Valley Center Conceptual Master Plan and Site Design was made possible through a grant to Graham Revitalization Economic Action Team (GREAT) from the NCFS Urban and Community Forest Program through the Community Design Assistance Center (CDAC)[65] located at Virginia Tech. CDAC worked with a stakeholders committee and the community, through community workshops, to develop an overall master plan for the 10 acre site.

In regards to marketing the kitchen, the Center relies on word of mouth to promote their facility. Most of the people who rent out the facility do so for meetings and reunions. Additionally they rely on the natural resources to attract people within a 50-mile radius to come visit.

Their marketing philosophy is to identify the unique culture of the region or the facility to create an amenity that is unique. In regards to the rural region, the facility capitalizes on that to create a place that seems to "step back in time". A list of their current supporters are available on this webpage: https://www.stecoahvalleycenter.com/grantors.html

Financial sustainability



The executive director consider the center financially sustainable. However, she saw a couple of challenges in that regard. According to her, they need to grow. The concert series is only ten weeks in summer and they have to make the money in the summer so the center can make it through the winter (off season).In January and February the gallery is closed. They are open as a cultural center and have after-school and other programs during those months.

They have experienced years without having grant funding. For example, one year they did not have an after-school program ($60,000 a year), which limited their cultural center revenue to only $1000 per month from stage rentals. The grant that funded the after-school program was vital not only to the centers, but also to regional schools and families since it provided support for the students' transportation from Robinsville.

Leveraging the facility with other assets

- Family style dinner prior to concert series on Saturday nights.
- Catering for the rentals.
- Culinary classes where a chef comes in and teach those who have paid for classes (two times a year).
- Featured artists can display their works free of charge on Saturday nights, so concert attendees can visit and buy those.

Challenges

1. The Stecoah Valley Center was once a school, which often served as a social center of the community. Graduates of the former school remember this history, embrace memories of the space, and are therefore very supportive of the Center. According to the executive director, retirees and those with second homes, support the center financially and through volunteering. But they are older, and there are limitations to their involvement. Meanwhile, there seems to be little social attachment to the space among younger generations. The center is currently asking itself how to get younger people involved in the center and be volunteers.

2. Early in its inception the center realized that many of the people who wanted to create value-added food products already had a certified kitchen to operate within. Additionally, while the kitchen was modeled after the Blue Ridge Food Ventures, there wasn't a large enough demand for space in the kitchen, unlike in Asheville— a foodie town. So the commercial kitchen had to move toward food trucks and provided them the space to store their food in order to keep the kitchen financially stable.
3. Lack of population to support the sustainability of programs and services and also not having enough "foody" people in the area.
4. Kitchens are expensive, their inspection and maintenance make one consider whether they have the market for it or not. Even business incubators are difficult to maintain if they do not have the start-up funding.
5. They had opened a restaurant in the space. But lack of foot traffic made the restaurant not profitable.
6. The more users you have, the more difficult it becomes. In a rural area they are all getting ready for a Farmer's market or a festival, all at the same time.
7. They don't have a place for dancing or theatre, which would require $1.5 million in renovation cost to tailor the existing space for those activities. They just had the main building renovated after 22 years, illustrating a piece-meal approach to building capacity in a more rural, resource-restricted region.

Suggestions for a peer institution

1. The executive director mentioned, "in 2013, CDAC [Community Design Assistance Center] did a site-design and master plan for the center. Part of it had rental cabins. It could be an interesting idea for those who want to have the experience of living in historic sites. People love to camp on the Stecoah property (which we do not allow). People want to pay for that kind of experience."
2. Regarding the commercial kitchen viability, partnering with a local community college could have helped the kitchen's initial success. The Center found that while growing entrepreneurship is important, hospitality or workforce training would have been a better investment in such a rural area. The center director imagined that the kitchen could have been better used as a training center for cooks and chefs and could vet employees for the various restaurants and hotels in the area.

Case Example: Southwest Virginia Cultural Center and Marketplace

Opened in June 2011, the Southwest Virginia Cultural Center & Marketplace (formerly Heartwood) is a visitor center, music venue, artisan marketplace and community space located in Abingdon, Virginia. According to Todd Christensen, previous executive director of the Southwest Virginia Cultural Heritage Commission, their mission "is to develop a creative economy in Southwest Virginia. Heartwood [SWVA Cultural Center] will be the epitome of our creative culture, and it will be the starting place for people to venture out and experience all that our region has to offer."

Serving and supporting different communities within and outside of Southwest Virginia region, similar to Reynolds Homestead, SWVA Cultural Center has a key role in bringing localities together and celebrate the rich Applachian culture through different mediums.

The facility was constructed in 2010-2011. It is operated by three joint entities:

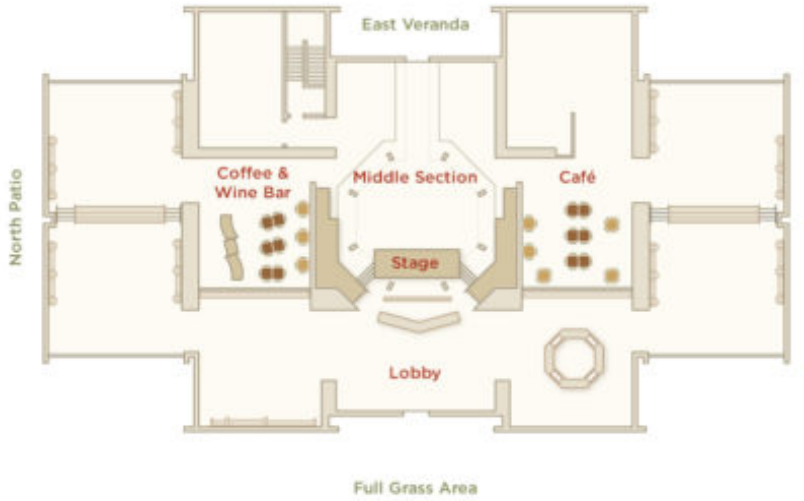
1. Friends of Southwest Virginia, a 501c3 community development non-profit;
2. the Southwest Virginia Cultural Heritage Foundation;
3. and 'Round the Mountain, Southwest Virginia's 501c3 non-profit artisan network.

Current layout and amenities

Elements of agricultural buildings and structures, native to the settlers of the area, served as the inspiration for a distinctive and dynamic building. The LEED Certified 27,000-square-foot building features galleries, a restaurant, coffee bar and performance and special events spaces. The main building features a closed loop geothermal well HVAC system as well as a rainwater harvesting system.

-Southwest Virginia Cultural Center and Marketplace. Source: https://swvaculturalcenter.com/about/

Ground Floor



Bottom Floor

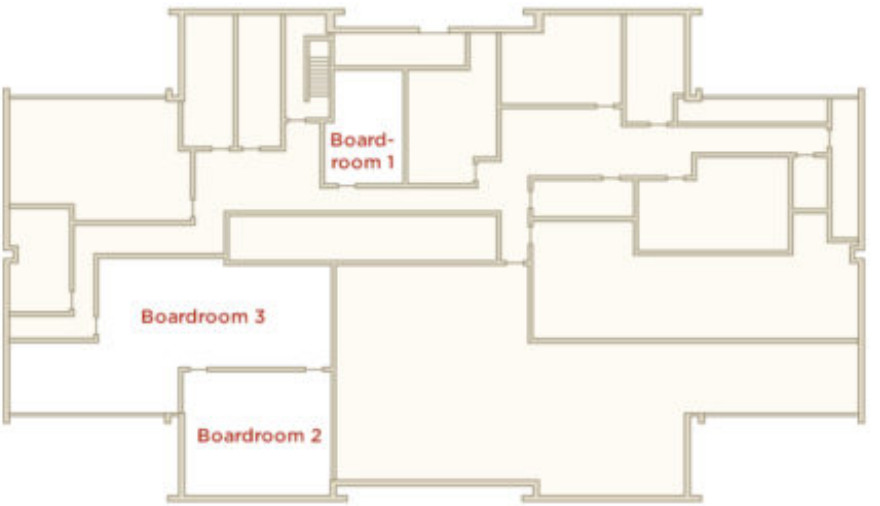


Figure 5- Floor plan. source: https://swvaculturalcenter.com

Space	Rental Fee	Maximum Capacity
Entire Facility and Amphitheatre Performance Area + Cafe Area + Mountain Brew Bar + Board Room I, II, & III + Amphitheater	$2,500 per hour (available only after 3 p.m. – no hour minimum)	300 Persons
Amphitheatre	$100 per hour (2 hour minimum)	300 persons
Cafe area	$75 per hour (2 hour minimum)	45 Persons
Boardroom 1	$25 per hour (2 hour Minimum)	12 Persons
Boardroom2 and 3	$50 per hour (2 hour minimum)	75 persons
Central Space Upper Level, Middle Section with Stage, Coffee and Wine Bar and Café	$2000 (4 hours) $500 per additional hour	250 persons
Outdoor tents 10×10 Outdoor Tent	$10 per hour (2 hours minimum	5 Tents Available

Architecture[66]: Designed by award winning architects, Spectrum Design of Roanoke, the 27,000 square foot building overlooks a sweeping mountain vista. The lobby and artisan galleries include towering exhibit panels and display cases made of local woods, designed by The 1717 Design Group of Richmond.

The 1717 Design Group also planned and designed the restaurant and bar space. Interactive displays and videos throughout the building are the work of Two Rivers in Williamsburg.

Programming

- *Music:*

Live music every Thursday night from The Crooked Road, which includes Open Jam Nights and Showcase night for SWVA youth musicians.

- *Artisans:*

Artisans who sell their work at the center are members of Round the Mountain: Southwest Virginia's Artisan Network. They are masters of their media, carefully selected through a rigorous jurying process.

The gallery and marketplace currently show and sell works of art in clay (11 artists), fiber/quilt (27 artists), metal (10 artists), glass (8 artists), jewelry (8 artists), mixed media (5 artists), natural material (13 artists), two dimensional (25 artists) and wood (31 artists).

source: https://roundthemountain.org/profile/linda-stanton/

- *Movie Screening :*

Friends of SWVA is the organizer of these events. General admission is $7 and VIP (includes drink ticket and early entry) is $15.00 +$1.78 Fee.

- *SWVA Cultural Center Book Club*

Every first Monday of the month, the book club features books by Southwest Virginia authors or books about Southwest Virginia.

Events

Chopped Style Cooking Contest at the Abingdon Farmers Market

Chef Charles from the Southwest Virginia Cultural Center & Marketplace will be given a "mystery basket" filled with local produce and meats from the Abingdon Farmers Market! He will be given 30 minutes to make a dish, utilizing ALL ingredients within the basket. Once Charles has completed his dish, he will be scored by a panel of local judges! This event is hosted by Round the Mountain: SWVA Artisan Network.

Grand Finale: Farm to Table Gala Dinner

SWVA Cultural center is bringing together premier culinary artists of the region to create an exquisite multi-course dinner made from locally-sourced ingredients and complete with wine and cocktail pairings. Retail areas will be open exclusively for Gala Dinner guests during the reception. $75 Per Ticket or $125 Per Ticket + Wine & Cocktail Pairings. This event is hosted by Virginia Highlands Festival.

Square Dancing

Square dancing with Tyler Hughes and old-time strong band, open to the public.

Marketing and partnerships

Partners in developing and coordinating the creative economy in SWVA include:

- The Virginia Department of Housing and Community Development (VA DHCD),
- Virginia Tourism Corporation,
- The Virginia Department of Conservation and Resources, and
- Friends of Southwest Virginia

The Southwest Virginia Cultural Heritage Commission, established in 2008 by the Virginia General Assembly and transitioned to the Southwest Virginia Cultural Heritage Foundation in 2011, is one of the VA DHCD programs that works as the lead in developing and coordinating the creative economy in Southwest Virginia. Through "the Friends of Southwest Virginia", businesses and individuals help artists, craftspeople, localities, nonprofits and entrepreneurs mobilize and succeed.

Funding partners include:

- The Tobacco Indemnification and Community Revitalization Commission
- Appalachian Regional Commission.

Financial sustainability

The Artist as Entrepreneur Federal Funding

Round the Mountain: Southwest Virginia's Artisan Network, Adingdon, VA, 2012: Rural Jobs Accelerator funds supported Appalachian Spring, an initiative that provides technical assistance to small businesses in the arts, outdoor recreation, broadband, and local food industries. Using asset-based and creative economy methods, this project support the diversification of the local economy by revitalizing downtown districts across southwest Virginia.

Funding: $500,000

Up to 250 guests can enjoy music, dancing and food catered by SWVA cultural center restaurant staff.

Leveraging the facility with other assets

- During the music events, the SWVA Cafe is open late with flavor of Southwest Virginia cuisine.
- Round the Mountain publishes a series of Artisan Trails, enabling you to see artisans at work, visit craft venues, shop at galleries, take classes, and more. In their brochure there is not much about Patrick
  County: https://www.myswva.org/sites/default/files/pdf/publication/Artisan_Trails_Brochure.pdf

Hemphill Community Center, KY (Black Sheep Brick Oven Bakery)

Hemphill Community Center was originally formed in 1968, and was then housed in the back of the Old Hemphill Fountain, which was one of the original Elkhorn Coal Corporation buildings. The Community Center is now housed in what was formerly the Hemphill Grade School Building, where three generations of students attended school between 1944 and 1990. The school closed in 1990 and left a community without a gathering space.

Beginning in 1997, the community worked with the Letcher County Fiscal Court and the Letcher County School Board to use the vacant rundown building as a community gathering space.

The initial thought for a brick oven bakery (opened in June 2018) was based on the need of social entrepreneurship in the community, as Gwen Johnson mentioned, “we tried to foster some intergenerational community pride, and we were trying to get the younger folks stope about their heritage and so we had a series of activities that took place on weekends where we could sell over the open fire every time because we found that if you feed them they would come.”

Hemphill center received a grant from ARC to fund a project called “back to our Appalachian roots”. A number of funders donated $15,000 for building the brick oven. Also, The Mountain Association for Community Economic Development, known as MACED, has funded the installation of solar panels at this community center which has led to much lower electricity bills.

Staff and management

Hemphill Community Center has catered food for many years. The brick oven operated only with volunteers for a while, but then when they got a revenue rolling that they could employ somebody part-time, they employed from the Letcher County drug court participants. They presently have three of them working in part-time positions there. In terms of management, since the Brick Oven is the funding stream for the community center, they do not want to have separate management. The way they are used to the IRS and the state is that Hemphill community center doing business as Black Sheep Brick Oven Bakery.

Programming

Hemphill Community hosts reunions, parties, receptions and community events. It is also the home of the Letcher County Coal Miner's Monument and the Hemphill Catering Company.

Weekly music, dance and food takes place every Friday evening at the Friday Nite Pickin’ music event. Other activities include survival skill-training, instruction in shape note singing, quilting, cooking, woodworking, beekeeping, canning and preserving food and traditional music.

Black Sheep Bakery is open Wed-Friday 4:30pm-9pm, serving Pizza and selling fresh-baked artisan bread. They make approximately 13-15 pizzas a day. Johnson said that they can serve groups of 50 people or less.

Marketing and partnerships

They began to work with KPAP [Kentucky Prescription Assistance Program] recipients and SNAP recipients and Letcher County drug court to let them do their community services in Hemphill community center. Once the brick oven started operating, there were a number of the KPAP and SNAP recipient involved in the work and most especially the ones with Letcher County drug court who were "showing themselves to be very good workers and trustworthy community service workers that could handle any task."

Leveraging the facility with other assets

"We filled some food into those activities, where we thought cooking over the fire with music and a crafter and a partisan who came every time [will draw younger people]".

Suggestions for a peer institution

To build the brick oven it can be hard to find someone in close vicinity who is familiar with brick ovens. There are contractors who builds chimneys but not brick ovens, but you need an expert in making brick ovens. "If I ever have to build another one, the chimney will be in the front of the oven instead of low in the back or at the very least in the top middle of the oven! Cause that has caused us some smoke problem. The opening for the Chimney is low in the back corner of the oven and I do not think it is positioned right. As well there need to be more of a geothermal lining beneath the oven as well as around the sides and on the top. It does not hold as much heat as I think it needs to so we need to consume a lot more firewood than we would if it was more efficient."