

2017

LENOWISCO Regional Agricultural Development Strategic Plan

PREPARED BY: VIRGINIA TECH OFFICE OF ECONOMIC DEVELOPMENT

ACKNOWLEDGEMENTS 2

EXECUTIVE SUMMARY 3

INTRODUCTION 4

SECTION 1: REGIONAL ECONOMIC AND AGRICULTURE OVERVIEW 6

SECTION 2: SWOT ANALYSIS 27

SECTION 3: STRATEGY RECOMMENDATIONS 41

SECTION 4: AGRICULTURE INCUBATOR EXAMPLES 47

SECTION 5: CONCLUSION AND IMPLEMENTATION CONSIDERATIONS 55

APPENDIX : FUNDING AND TECHNICAL ASSISTANCE RESOURCE LINKS 56

Acknowledgements



This report was prepared by the Virginia Tech Office of Economic Development (OED), www.econdev.vt.edu. OED connects VT faculty, companies, and communities in ways that help create, retain, and enhance the quality of jobs and opportunities around the Commonwealth. OED provides training, applied research, and technical assistance services to increase clients' abilities to prudently manage economic change and improve their quality of life. Examples of such services include completion of feasibility studies, economic impact analysis, industry and occupational analysis, strategic planning, and community visioning. Virginia Tech faculty and staff who contributed to this report include Maeve Gould, Faruk Hesenjan, Luis Camacho, and Scott Tate.



The **LENOWISCO Planning District Commission** engaged Virginia Tech and guided the project. A *Project Steering Committee* provided valuable input and assistance and included:

- Frank Kibler (LENOWISCO PDC)
- Bill Franklin (Farmer, Scott County Cattle Assn & Scott County Telephone Cooperative)
- John Kilgore (Scott County Economic Development Authority)
- Carl Snodgrass (Wise County Industrial Development Authority)
- Scott Jerrell (Virginia Cooperative Extension, Scott County)
- Amy Fannon (Virginia Cooperative Extension, Lee County)
- Kathlyn Terry (Appalachian Sustainable Development)
- Karen Sorber (Micronic Technologies)
- Robbie Robbins (Farmer, Wise County Board of Supervisors)
- C.M. Bond (Farmer, Scott County)
- Leton Harding (Powell Valley National Bank)
- Jason Johnson (Lincoln Memorial University College of Veterinary Medicine)
- Browning Wynn II (Powell Valley National Bank)
- Gil Patterson (Lincoln Memorial University College of Veterinary Medicine)
- Matthew Hill (Scott County Telephone Cooperative)
- Wendel Burke (Farmer)
- Bob Etherton (Retired)
- David Mann (Farmer)
- Pete Odle (Farmer and Virginia Cooperative Extension)
- Dana Poe (Lee County Administrator)
- David Cox (Wise County Finance Administrator)
- Becki Joyce (UVA Wise)
- Kaitlynn Davis (UVA Wise)
- John W. Peace II (Farm Bureau)
- Larry Vicars (LENOWISCO Board Member)

Numerous additional individuals contributed knowledge and expertise to the study as supporters and through interviews and discussion group participation.

Executive Summary

Agriculture remains the largest industry in Virginia, providing 311,000 jobs and an annual economic impact of \$52 billion.¹ Agriculture today encompasses low tech and high tech, farming and forestry, local foods and commodity production. The sector includes farmers, ranchers, scientists, engineers, and other workers in the agriculture, food, natural resource, and environment industries. A 2015 USDA study estimated that nearly 60,000 jobs in the agriculture, food, renewable resources, and environment fields become available every year, while only 35,000 new graduates complete agriculture-related degrees annually.

The most recent Agriculture Census identified 2,411 farms in the LENOWISCO region. The number of 2016 crop and animal production jobs in LENOWISCO was 2,463 when including miscellaneous labor income for persons who do not consider it a primary job. This employment total is 289% above the national average. Agriculture, forestry, and related enterprises remain a significant economic driver for Lee, Scott, Wise, and the city of Norton.

This plan includes a quantitative examination of regional economic and agriculture-related data, and qualitative input from interviews and small group sessions with area stakeholders. The study team analyzed and synthesized this data to inventory local assets, identify existing challenges, and assess emerging opportunities resulting in a set of six overarching strategy recommendation areas:

- 1) Enhance support for existing farmers and agriculture-related enterprises.
- 2) Develop incubation activities for beginning farmers and support farm transition programming.
- 3) Introduce and expose youth to agriculture-related opportunities and promote agriculture as an important regional economic focus.
- 4) Nurture a regional culture of “agri-preneurship”, by providing mentoring, training, funding and related ecosystem supports such as marketing, for those who start new ventures or experiment with new products or specialty or niche crops.
- 5) Promoting and build on agricultural history, natural assets, and rural character of region for tourism, marketing, and new business development.
- 6) Focus support on exploring and encouraging collective production, processing, and marketing activities for one or more products (or groups of products) with identified market demand and available producer supports.

The plan includes a comprehensive overview of regional strengths, weaknesses, and opportunities along with a brief description of these recommendations and a set of possible tactics or policies that could be pursued in support of each recommendation.

¹ Virginia Department of Agriculture and Consumer Services. *Virginia Agricultural Facts and Figures*. Available at <http://www.vdacs.virginia.gov/agfacts/>.

Introduction

The LENOWISCO Planning District Commission engaged the Virginia Tech Office of Economic Development (OED) to lead a strategic planning process to shape and define the district's approach to promote and strengthen the agriculture economy. The project was supported by a planning grant from the Governor's Agriculture and Forestry Industries Development Fund (AFID), administered by the Virginia Department of Agriculture and Consumer Services (VDACS), and was matched by funds from the district localities and the Virginia Tobacco Region Revitalization Commission.

Recognizing the continuing need to diversify the region's economy, the PDC spearheaded the development of this integrated, strategic plan in order to leverage the area's agricultural and forestry assets to advance economic development.

The Region

The LENOWISCO Planning District Commission (PDC) encompasses Lee, Scott, and Wise Counties as well as the City of Norton. Situated in the far southwest corner of the commonwealth of Virginia, the region is bordered by Kentucky to the northwest and Tennessee to the south. In the three counties of Lee, Scott, and Wise, are fifteen incorporated towns.

The region has a number of unique assets, a rich cultural heritage, and a strong tradition of agriculture and natural resources. The area encompasses 1,400 square miles, and is centrally located within the larger Appalachian Highlands region². This land area is geographically diverse and includes two distinct physiographic regions. For instance, the northern third of the area (much of Wise County, and smaller portions of Scott County) is consistent with the characteristics of the Appalachian Plateau: steep mountains, narrow valleys, and ridges. The larger two-thirds of the region has wider valleys and more open and rolling ridges with more land suitable for livestock and a wider range of traditional agriculture.

The renewed focus on the role of agriculture in economic development aligns well with the region's strengths and history and with a number of aspirations and goals related to agriculture set forth in other local and regional planning documents. For instance, the PDC's regional Comprehensive Economic Development Strategy (CEDS) Report cited strategic planning for regional agriculture development as a priority initiative. The report also includes promoting the agriculture sector as one of its action items to "encourage a strong regional economy³."

Methods and Approach

Agriculture and food systems are inherently complex. OED compiled and analyzed data from the Agriculture Census, Bureau of Labor Statistics, Bureau of Economic Analysis and related sources in order to illuminate and identify characteristics and trends of the region's agriculture-related economy. The Virginia Tech team also worked with the PDC, the Project Steering Committee, and

² Source: (2015). *Comprehensive Economic Development Strategy: 2015 Report*. LENOWISCO PDC.

³ Source: *Ibid*, page V-4.

other area stakeholders to inventory local assets, identify existing challenges, and assess emerging opportunities.

The Project Steering Committee provided guidance and direction throughout the planning process, which included:

- Summary and analysis of key characteristics and features of the region and its agriculture and forestry economy including data from the Agriculture Census, Bureau of Economic Affairs, the United States Census, Economic Modeling Specialists and related data sources. (Section 1)
- Analysis of the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of the region and the agricultural/forestry economy to identify areas of interest to pursue in the Strategic Plan. The SWOT analysis incorporated previously collected data and plans, interviews, and other stakeholder input to ensure alignment with community development goals. (Section 2)
- Developing prioritized strategy areas, and possible action steps, informed by stakeholder input and aligned with economic opportunities and regional assets. (Section 3)
- Providing preliminary information and resources and/or best practice details on the key strategic areas (Section 4).

The sections that follow provide an overview of regional economic and agriculture-related characteristics and trends, discuss the results of a SWOT analysis, identify and prioritize strategic directions and possible action steps, and provide more details to inform the pursuit of the strategic directions, such as best practice examples and sources of assistance.

Section 1: Regional Economic and Agriculture Overview

The total population of LENOWISCO was 91,007 in 2015. Between 2005 and 2015, the region's population decreased by 3%, while the population of the state and nation increased during that time period as seen in Table 1 below. The most recent population data release finds the population decline to be continuing as the 2016 population is 89,939⁴. Between 2006 and 2016, the population

Figure 3: Map of LENOWISCO Region



decreased by 3,917 or four percent. In general, all age groups experienced declines except for the over age 60 population which is increasing in the region. Notably, the only age cohort under age 60 to increase in number between 2006 and 2016 was the 25 to 29 year category, which grew by 2%⁵.

Collectively, these trends indicate an aging population, which could have a significant effect on the agriculture and forestry industries in the region. Looking ahead to 2026, the population in LENOWISCO is projected to decrease by another 4%, or by another 3,452 people in the next decade⁶.

Economically, LENOWISCO tends to trail behind the state and the nation as a whole with a lower per capita income (\$20,208), lower median household income (\$35,337), and a significantly higher poverty rate (16.6%). The exception is the City of Norton, with the highest per capita income (\$22,715) and a poverty rate that is on par with that of the nation, at 11.9%. Of the four localities within LENOWISCO, Lee County appears to be struggling the most economically, with a poverty rate of 20.6% and per capita income of \$16,769, which is nearly \$3,500 lower than the per capita income for the region. When broken down by age group, LENOWISCO's overall poverty rate is 19% for 18 years and older, 21% for 18 to 64 year olds, and 13% for those aged 65 years and older.

⁴ Source: QCEW Employees & Non-QCEW Employees - Emsi 2016.4 Class of Worker

⁵ Source: QCEW Employees & Non-QCEW Employees - Emsi 2016.4 Class of Worker

⁶ Source: QCEW Employees & Non-QCEW Employees - Emsi 2016.4 Class of Worker

Table 1: Demographic Information for LENOWISCO Counties, State, and Nation⁷

	Population (2015)	% Population Change (2005- 2015)	Civilian Unemployment Rate (ACS)	Per Capita Income (ACS)	Median Earnings for Workers (ACS)	% of Families Below the Poverty Line (ACS)
Lee County	24,904	-1%	11.7%	\$16,769	\$21,780	20.6%
Scott County	22,269	-4%	8.5%	\$21,376	\$26,643	15.6%
Wise County	39,781	-4%	11.1%	\$19,970	\$23,001	18.1%
City of Norton	4,053	8%	11.3%	\$22,715	\$22,529	11.9%
LENOWISCO	91,007	-3%	10.7%	\$20,208	\$23,488	16.6%
Virginia	8,410,175	13%	6.9%	\$33,958	\$34,987	8.2%
U.S.	321,252,599	9%	9.2%	\$28,555	\$30,815	11.5%

The average earnings for workers in the LENOWISCO region was \$41,100 in 2016, just 64% of the national average⁸. The total number of jobs in the region was 25,701 in 2016, the vast majority of those in three industries: retail trade, government, and health care/social assistance⁹. From 2001 to 2016, the total number of jobs in the region decreased by 1,982, or 7.2%, which stands in contrast to both state and national increases of around 10% over that same period.¹⁰

While most of the region’s decrease in total jobs over the past 15 years is attributed to the decline of the coal industry (a decline of 2,096 jobs from 2001-2016), there were also significant declines in manufacturing (-467); construction (-403); transportation and warehousing (-322); and wholesale trade (-158). The job increases, meanwhile, were in industries with a high number of lower wage occupations such as retail trade and health care/social assistance.¹¹ While health care has higher wage occupations, the region’s job growth in that industry was mostly in positions such as personal

⁷ United States Census Bureau (2015). Selected Economic Characteristics from American Community Survey 2014. Retrieved from factfinder.census.gov (Advanced Search).

⁸ Source: Bureau of Labor Statistics and the Bureau of Economic Analysis. If Covered, this figure only shows wage and salary.

⁹ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

¹⁰ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

¹¹ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

care aides, which increased 174.8% from 2001-2016, a pace 216% above the national average¹². Unfortunately, the median hourly earnings for personal care aides in the region is only \$9.99.

Industries are classified using the government-defined standard North American Industry Classification System (or NAICS). NAICS uses a 2- through 6-digit classification hierarchy, with five levels of detail. Each digit in the code is part of a series of progressively narrower categories, and the more digits in the code signify greater classification detail.

Below are the top 5 industries in each LENOWISCO locality at the 3 digit NAICS level.

Table 2: Industries within Lee County and LENOWISCO Region¹³

NAICS Code	Description	Lee County 2015 Jobs	Percentage of Employment	Regional 2015 Jobs	Percentage of Employment
903	Local Government	1,014	12.9%	3,976	11.6%
111	Crop Production	533	6.8%	1,749	5.1%
901	Federal Government	511	6.5%	987	2.9%
561	Administrative and Support Services	402	5.1%	1,555	4.5%
238	Specialty Trade Contractors	375	4.8%	940	2.7%

Table 3: Industries within Scott County and LENOWISCO Region¹⁴

NAICS Code	Description	Scott County 2015 Jobs	Percentage of Employment	Regional 2015 Jobs	Percentage of Employment
111	Crop Production	1,129	15.3%	1,749	5.1%
903	Local Government	1,047	14.2%	3,976	11.6%
722	Food Services and Drinking Places	433	5.9%	1,937	5.7%
337	Furniture and Related Product Manufacturing	393	5.3%	400	1.2%
445	Food and Beverage Stores	333	4.5%	1,100	3.2%

Table 4: Industries within Wise County and LENOWISCO Region¹⁵

¹² Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

¹³ Source: EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

¹⁴ Source: EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

NAICS Code	Description	Wise County 2015 Jobs	Percentage of Employment	Regional 2015 Jobs	Percentage of Employment
902	State Government	2,254	15.2%	2,550	7.5%
903	Local Government	1,653	11.1%	3,976	11.6%
722	Food Services and Drinking Places	870	5.9%	1,937	5.7%
561	Administrative and Support Services	837	5.6%	1,555	4.5%
621	Ambulatory Health Care Services	738	5.0%	1,714	5.0%

Table 5: Industries within the City of Norton and LENOWISCO Region¹⁶

NAICS Code	Description	City of Norton 2015 Jobs	Percentage of Employment	Regional 2015 Jobs	Percentage of Employment
622	Hospitals	651	16.0%	919	2.7%
452	General Merchandise Stores	384	9.5%	910	2.7%
621	Ambulatory Health Care Services	361	8.9%	1,714	5.0%
722	Food Services and Drinking Places	344	8.5%	1,937	5.7%
903	Local Government	262	6.4%	3,976	11.6%

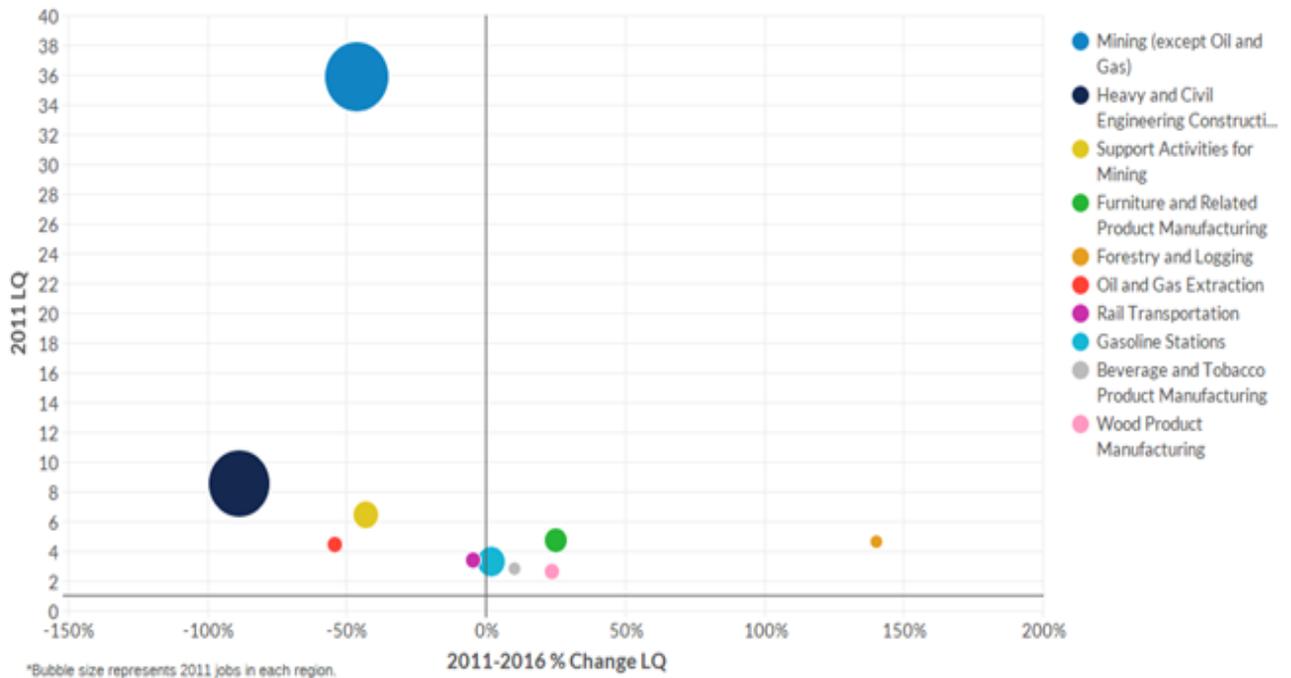
There are a number of ways to explore industry and employment data, and one useful measure is location quotient (LQ). The LQ of an industry is a way of quantifying how “concentrated” an industry is in a region compared to a larger geographic area, such as the state or nation.

Looking at the LENOWISCO region as a whole, the top ten industries (3 digit level) in terms of concentration or LQ can be identified and are depicted visually on the figure below. The ten industries with the highest concentration are represented as differently colored dots or “bubbles”. The bigger the bubble, the more jobs in that industry in 2011. The bubbles to the right of the vertical axis represent industries that experienced an increase in jobs from 2011-2016.

Table 6: Highest Industry Location Quotient for LENOWISCO Region¹⁷

¹⁵ Source: EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

¹⁶ EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors



Agriculture-economy in the LENOWISCO Region

Historically and today, agriculture is the largest industry in Virginia, providing 311,000 jobs and an annual economic impact of \$52 billion.¹⁸ Nearly 46,000 farms occupy 33% of Virginia’s total land area, a total of 8.3 million acres.¹⁹ Since the 1970’s the number of farms and total acres of farmland have declined. Data showing Virginia farm trends from 1975 to 2005 indicates the number of farms has decreased from 52,699 to 46,030. Meanwhile, the average farm size increased from 1975-2000 from 184 acres to 200 acres before experiencing a decline throughout the late 1990’s and 2000’s to an average size of 180 acres in 2012.²⁰

¹⁷ Source: EMSI data based on QCEW (Quarterly Census of Employment and Wages), with supplemental estimates from County Business Patterns and Current Employment Statistics.

¹⁸ Virginia Department of Agriculture and Consumer Services. *Virginia Agricultural Facts and Figures*. Available at <http://www.vdacs.virginia.gov/agfacts/>.

¹⁹ Virginia Department of Agriculture and Consumer Services. *Virginia Agricultural Facts and Figures*. Available at <http://www.vdacs.virginia.gov/agfacts/>.

²⁰ United State Department of Agriculture. (2014). *Census of Agriculture 2012 State and County Data*. Retrieved from <http://www.agcensus.usda.gov/Publications/2012/>; United State Department of Agriculture. (1981). *1978 Census of Agriculture: Volume 1 State and County Data Part 46: Virginia*. Retrieved from <http://agcensus.mannlib.cornell.edu/AgCensus/censusParts.do?year=1978>; United State Department of Agriculture. (1977). *1974 Census of Agriculture Volume 1 Part 46: Virginia State and County Data*. Retrieved from <http://agcensus.mannlib.cornell.edu/AgCensus/censusParts.do?year=1974>

As shown in Table 6, there were 2,411 farms in LENOWISCO in 2012 (most recent Census of Agriculture), the majority of which ranged in size from 50 to 179 acres²¹. The size of farms is consistent with the entire state of Virginia, as well as the Cumberland Plateau Planning District Commission (PDC) district and counties that are adjacent to LENOWISCO. The Cumberland Plateau PDC is made up of Buchanan, Dickenson, Russell and Tazewell counties in Virginia. Adjacent counties to LENOWISCO include Dickenson, Russell and Washington counties in Virginia, Hawkins, Hancock and Sullivan counties in Tennessee, and Bell, Harlan and Letcher counties in Kentucky.

In 1997, there were 2,643 farms in LENOWISCO and this number experienced a slight uptick in 2002 (2,733 farms). In 2007 the number of farms in LENOWISCO decreased to 2,620 and has been steadily but moderately decreasing since then. The amount of land in farms has fluctuated in recent years; in 2002 there were 304,764 acres of farmland in LENOWISCO. That number dipped to 293,828 acres in 2007 and then rose again in 2012 to 301,459 acres. The average size of farms also followed this pattern, with an average of 119 acres in 2002, dipping to an average of 116 acres in 2007, and rising again in 2012 to an average of 132 acres²².

Table 7: Number of Farms by Size and Percentage, 2012²³

Farms Size (in acres)	LENOWISCO Number	LENOWISCO %	Cumberland Plateau PDC	Cumberland PDC %	Adjacent Counties	Adjacent Counties %	Virginia Number	Virginia %
1 to 9 acres	118	5%	123	7%	394	7%	3,343	7%
10 to 49 acres	788	33%	528	29%	2,262	38%	14,425	31%
50 to 179 acres	1,057	44%	717	39%	2,290	39%	16,850	37%
180 to 499 acres	363	15%	289	16%	725	12%	7,884	17%
500 to 999 acres	67	3%	103	6%	135	2%	2,173	5%
1,000 acres or more	18	1%	69	4%	75	1%	1,375	3%
Total	2,411	100%	1,829	100%	5,881	100%	46,050	100%

²¹ United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

²² United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

²³ United States Department of Agriculture. *Census of Agriculture 2012 State and County Data*. Retrieved from www.agcensus.usda.gov/Publications/2012.

The value of farm sales is another useful indicator of regional agriculture, as displayed in Table 7 below. As the table shows, 56% of farms in LENOWISCO fall under \$4,999 in sales. Most of those, and 42% of all farms, bring in less than \$2,500 in annual sales²⁴. This is consistent with the Cumberland Plateau PDC, adjacent counties, and Virginia as a whole.

Looking at the nation as a whole, the majority of farms are smaller while the value of agricultural production is concentrated on a relatively few large farms. In 2012, 75 percent of all farms in the United States had sales of less than \$50,000 but together these farms produced only 3 percent of the total value of agricultural products sold²⁵.

There were 421 farms with sales ranging from \$5,000 to \$9,999. Of the roughly 2,400 farms in the region, 51 had sales of more than \$100,000. The USDA defines small family farms as having less than \$250,000 in gross annual sales and large family farms as having between \$250,000 and \$500,000 in gross annual sales. Any farm grossing more than \$500,000 in annual sales is categorized as very large to the USDA. The majority of farms in LENOWISCO, as well as the state and the surrounding region, are small family farms.

Table 8: Farms by Value of Sales and Percentage, 2012²⁶

Value of Sales	LENOWISCO Number	LENOWISCO %	Cumberland Plateau PDC	Cumberland PDC %	Adjacent Counties	Adjacent Counties %	Virginia Number	Virginia %
Less than \$2,500	1,025	42%	754	41%	2,606	44%	17,103	37%
\$2,500 to \$4,999	351	14%	183	10%	806	14%	5,063	11%
\$5,000 to \$9,999	421	17%	251	14%	843	14%	6,436	14%
\$10,000 to \$24,999	400	16%	279	15%	855	15%	6,940	15%
\$25,000 to \$49,000	166	7%	128	7%	362	6%	3,837	8%
\$50,000 to \$99,999	55	2%	99	5%	159	3%	2,220	5%
\$100,000 or more	51	2%	135	7%	250	4%	4,431	10%

In LENOWISCO, the 2012 average net cash farm income per farm was negative in each of the counties: -(\$1,253) in Lee County; -(1,344) in Scott County and -(\$3,507) in Wise County. This total for net cash farm income is derived by subtracting total farm expenses from total sales, government payments, and other farm-related income, while depreciation is not considered.

²⁴ United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

²⁵ United State Department of Agriculture. 2012 Census Highlights. Accessed at https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Economics/

²⁶ United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

In 2012, average farm expenses were \$20,951 in Lee County; \$13,849 in Scott County; and \$14,591 in Wise County. Between 2007 and 2012, agricultural production costs increased nationally by 36 percent²⁷. The largest expense categories were feed, livestock and poultry purchases, fertilizer, hired labor, and cash rent.

Agriculture employment is difficult to definitively quantify, as many farmers produce agriculture products as a secondary source of income. For instance, using data derived from the Quarterly Census of Employment and Wages, just 134 full-time jobs in crop and animal production were present in LENOWISCO in 2016.²⁸ While this is 45% below the national average, the number also represents an increase of 49 jobs since 2011, a 57.6% bump. The average annual earnings for those full-time jobs is \$35,187, slightly below the national average.²⁹

Interestingly, the number of 2016 crop and animal production jobs in LENOWISCO jumps to 2,463 when extended proprietors are included. The jobs in that category represent miscellaneous labor income for persons who do not consider it a primary job. When viewed this way, the 2,463 crop and animal production jobs in LENOWISCO represents a total 289% above the national average. However, the average earnings for those LENOWISCO jobs is just \$17,333, much less than the national average of \$31,134.³⁰

Using the larger set of workers that includes extended proprietors, the employment can be divided into industry sub-sectors as displayed in the table below. Looking at these classifications, by far the greatest number of workers are in crop production itself, with animal production second. However, logging is third with timber tract operations and support activities for forestry also in the top ten 6 digit industries³¹.

²⁷ United State Department of Agriculture. 2012 Census Highlights. Accessed at

https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Economics/

²⁸ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

²⁹ Source: Emsi's proprietary employment data.

³⁰ Source: Emsi's proprietary employment data.

³¹ Source: EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

Table 9: Crop and Animal Production Jobs by Sub-Sector (6 digit NAICS)

Industry	2011 Jobs	2016 Jobs	Change in Jobs (2011-2016)	% Change	2016 Earnings Per Worker
Crop Production	1,831	1,748	-83	-5%	\$14,853
Animal Production and Aquaculture	405	461	56	14%	\$20,670
Logging	121	188	68	56%	\$32,407
Farm Labor Contractors and Crew Leaders	24	24	0	1%	\$11,284
Support Activities for Animal Production	14	11	-4	-25%	\$9,422
Soil Preparation, Planting, and Cultivating	13	5	-8	-61%	\$9,186
Timber Tract Operations	10	14	5	49%	\$39,164
Support Activities for Forestry	9	7	-2	-26%	\$10,103
Postharvest Crop Activities (except Cotton Ginning)	4	0	-4	-98%	\$2,996
Farm Management Services	4	3	-1	-23%	\$6,530

Logging is also among the highest paying of the agriculture-related industry sectors, with 2016 earnings per worker of \$32,407. By comparison, the average 2016 earnings for workers in the crop production sub-sector is only \$14,853.³² Logging is also the fastest growing agriculture-related sector in the region from 2011-2016, with an increase of 68 jobs, a 56% upturn.

Analysts can also approximate the competitiveness of an industry sector by measuring the actual change in jobs over a period against the expected change in jobs given national performance and trends. The measure for this is termed the “competitive effect” and analysts consider a number over zero positive. By this measure, the two agriculture-related sectors in LENOWISCO that stand out are animal production and logging with “competitive effects” of 58 and 34 respectively³³. No other agriculture-related sectors had an effect greater than zero.

³² Source: EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

³³ Source: EMSI 2016.2 data informed by NIOEM and long-term industry projections published by individual states.

Another way to look at the agriculture industry is through occupations, or staffing patterns. The table below includes the top five occupations employed in crop and animal production in LENOWISCO. The numbers include the total of all people with those job titles employed in the 2-digit NAICS category for agriculture. The percent of jobs within the industry reveals what portion of all workers with those occupation titles in the region are actually employed in the 2-digit NAICS category for agriculture (for instance, there are 29 heavy and tractor-trailer drivers employed in the region in agriculture but that number is only 1.2% of all heavy and tractor-trailer drivers in the region).

Table 10: Top Five Occupations Employed in Agriculture and Training Required in LENOWISCO³⁴

Description	Employed in Industry (2016)	% of Total Jobs in Industry (2016)	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
Farmers, Ranchers, and Other Agricultural Managers	2,016	81.8%	High school diploma or equivalent	5 years or more	None
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	92	3.7%	No formal educational credential	None	Short-term on-the-job training
Logging Equipment Operators	78	3.2%	High school diploma or equivalent	None	Moderate-term on-the-job training
Fallers	35	1.4%	High school diploma or equivalent	None	Moderate-term on-the-job training
Heavy and Tractor-trailer Truck Drivers	29	1.2%	Postsecondary nondegree award	None	Short-term on-the-job training

To understand the nature of agriculture production in LENOWISCO, the value and amounts of crops produced in the area are important features. Tables 10 through 12 include the average value of product per acre for three of the five top agricultural products in the region. Table 10 illustrates the average value of corn per acre in both 2007 and 2012. The value went up significantly over the 5-year period in all localities, and it went up the most in Scott County. The value per acre of corn went up more in LENOWISCO than in the adjacent counties and in the Cumberland PDC. The average value of hay per acre also increased significantly over the 5-year period, as seen in Table 11.

³⁴ EMSI 2016.2; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors
Prepared by: VIRGINIA TECH OFFICE OF ECONOMIC DEVELOPMENT

Of the three localities in the region, Lee County experienced the most growth in average value of hay per acre, with an increase of \$168.64. Lee County also has the highest value of hay per acre at \$404.97, compared with the rest of LENOWISCO as well as adjacent counties and the Cumberland PDC. Table 12 shows the average value of tobacco per acre from 2007 to 2012, with Lee County performing the best compared to the other counties in LENOWISCO. Both Scott County and the region as a whole lost value in tobacco over the five-year period, whereas Lee County’s value grew by \$261 per acre. The value per acre of tobacco in the adjacent counties grew at the highest rate compared to the other localities, at 28% growth in value.

Table 11: Average Value of Corn Per Acre, 2007-2012³⁵

Counties	Number of Farms		Total Acreage		Total Yields (bushels)		Unit Price (\$/bushel)		Average Value of Product Per Acre	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012
Lee	85	98	963	828	74,595	86,234	\$4.05	\$7.45	\$314	\$776
Scott	41	44	272	225	13,661	24,696	\$4.05	\$7.45	\$203	\$818
Wise	5	7	18	35	1,050	3,605	\$4.05	\$7.45	\$236	\$767
LENOWISCO	131	149	1,253	1,088	89,306	114,535	\$4.05	\$7.45	\$251	\$787
Adjacent Counties	203	172	2,612	2,063	205,746	235,368	-	-	\$363*	\$714*
Cumberland PDC	31	37	639	400	58,778	49,811	\$4.05	\$7.45	\$326**	\$635**

* The data for Bell, Harlan and Letcher (2007 and 2012) counties in Kentucky, as well as Buchanan (2007 and 2012), Dickenson and Tazewell (2012) counties in Virginia are not available. These localities were therefore not included in this calculation.

** Buchanan (2007 and 2012), Dickenson (2007) and Tazewell (2012) counties are not included in this calculation due to the unavailability of data.

Table 12: Average Value of Hay Per Acre, 2007-2012³⁶

³⁵ United States Department of Agriculture. *Crop Values Summary, 2007 and 2012*. Retrieved from <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1050>.

Counties	Number of Farms		Total Acreage		Total Yields (bushels)		Unit Price (\$/bushel)		Average Value of Product Per Acre	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012
Lee	716	663	22,841	20,957	37,228	53,377	\$145	\$159	\$236.33	\$404.97
Scott	932	941	22,993	24,599	46,480	53,613	\$145	\$159	\$293.12	\$346.54
Wise	98	100	2,599	2,587	3,581	4,423	\$145	\$159	\$199.79	\$271.84
LENOWISCO	1,746	1,704	48,433	48,143	87,289	111,413	\$145	\$159	\$243.08	\$341.12
Adjacent Counties	4,301	3,993	137,198	138,269	244,730	331,490	-	-	\$169.81*	\$269.25*
Cumberland PDC	1,139	1,210	42,394	50,349	78,479	126,987	\$145	\$159	\$203.85	\$341.34

* Harlan County, Kentucky (2012) is not considered in this calculation due to the unavailability of data.

Table 13: Average Value of Tobacco Per Acre, 2007-2012³⁷

Counties	Number of Farms		Total Acreage		Total Yields (bushels)		Unit Price (\$/bushel)		Average Value of Product Per Acre	
	2007	2012	2007	2012	2007	2012	2007	2012	2007	2012
Lee	84	42	682	315	1,369,216	520,205	\$1.54	\$2.03	\$3,090	\$3,351
Scott	90	33	375	258	705,442	322,724	\$1.54	\$2.03	\$2,895	\$2,538
Wise	2	0	-	0	-	0	\$1.54	\$2.03	-	\$0
LENOWISCO	176	75	1,057	573	2,074,658	842,929	\$1.54	\$2.03	\$2,993	\$2,945
Adjacent Counties	313	120	1,793	1,296	2,730,939	2,472,926	-	-	\$2,742*	\$3,804*
Cumberland PDC	75	30	330	121	579,193	199,811	\$1.54	\$2.03	\$2,657**	\$3,351**

*The data for Bell, Harlan and Letcher (2007 and 2012) counties in Kentucky, as well as Buchanan (2012), Dickenson (2012), and Tazewell (2007 and 2012) counties in Virginia are not available and therefore not included in this calculation.

** Buchanan (2012), Dickenson (2012) and Tazewell (2007 and 2012) counties are not included in this calculation due to the unavailability of data.

Table 14 illustrates the top five agriculture products by market value for LENOWISCO PDC, Cumberland PDC, counties that are adjacent to LENOWISCO, and Virginia as a whole. The top

³⁶ United States Department of Agriculture. *Crop Values Summary, 2007 and 2012*. Retrieved from <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1050>.

³⁷ United States Department of Agriculture. *Crop Values Summary, 2007 and 2012*. Retrieved from <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1050>.

agricultural product in LENOWISCO in terms of market value is likely cattle and calves. Although data is not available for Wise County, the market value for Lee and Scott Counties combined make it the highest of any other product, at \$21.6 million. The category “Other crops like grass seed, greenchop and hay” comes in as the second most significant product in terms of market value in LENOWISCO with a value of \$5.1 million.

Tobacco, corn, and vegetables have lower market values in LENOWISCO, each at \$1.6 million or below. In LENOWISCO, tobacco has a higher market value than the Cumberland Plateau PDC, but not adjacent counties. With the exception of corn, the market value of these five products in LENOWISCO generally follows the same trend for market value in the state as a whole; the higher the market value in LENOWISCO, the higher the market value in Virginia.

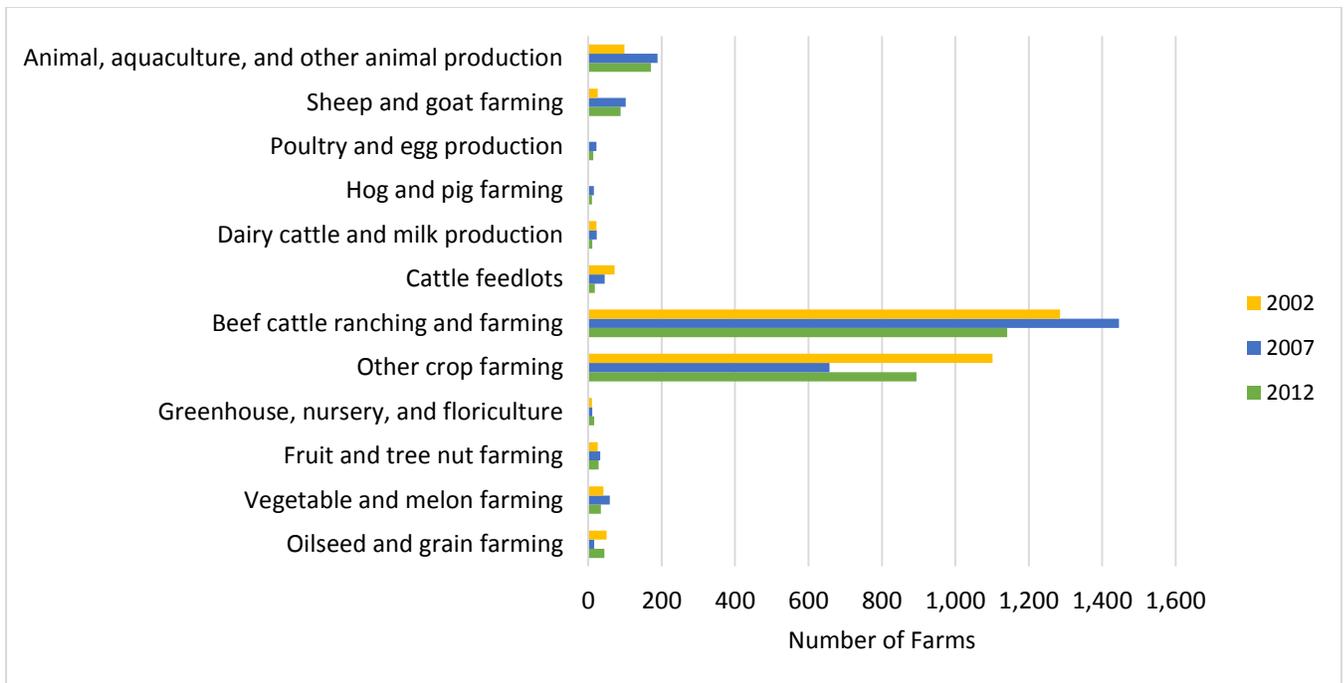
Table 14: Market Value of Top Agriculture Products, 2012³⁸

Agriculture Product	Lee County	Scott County	Wise County	LENOWISCO PDC	Cumberland PDC	Adjacent Counties	Virginia
Cattle and calves	\$13.1 million	\$8.5 million	unknown	unknown	\$94 million	\$99.6 million	\$708 million
Other crops like grass seed, greenchop and hay	\$2.3 million	\$2.8 million	\$225,000	\$5.1 million	\$3.6 million	unknown	\$139.8 million
Tobacco	\$981,000	\$603,000	\$0	\$1.6 million	\$375,000	\$5.5 million	\$100.9 million
Corn	\$621,000	\$259,000	\$57,000	\$880,000	unknown	unknown	\$239.7 million
Vegetables	\$234,000	\$466,000	\$23,000	\$723,000	\$137,000	unknown	\$92.3 million

We can also look at the number of farms in the region using the USDA Agriculture Census industry categories:

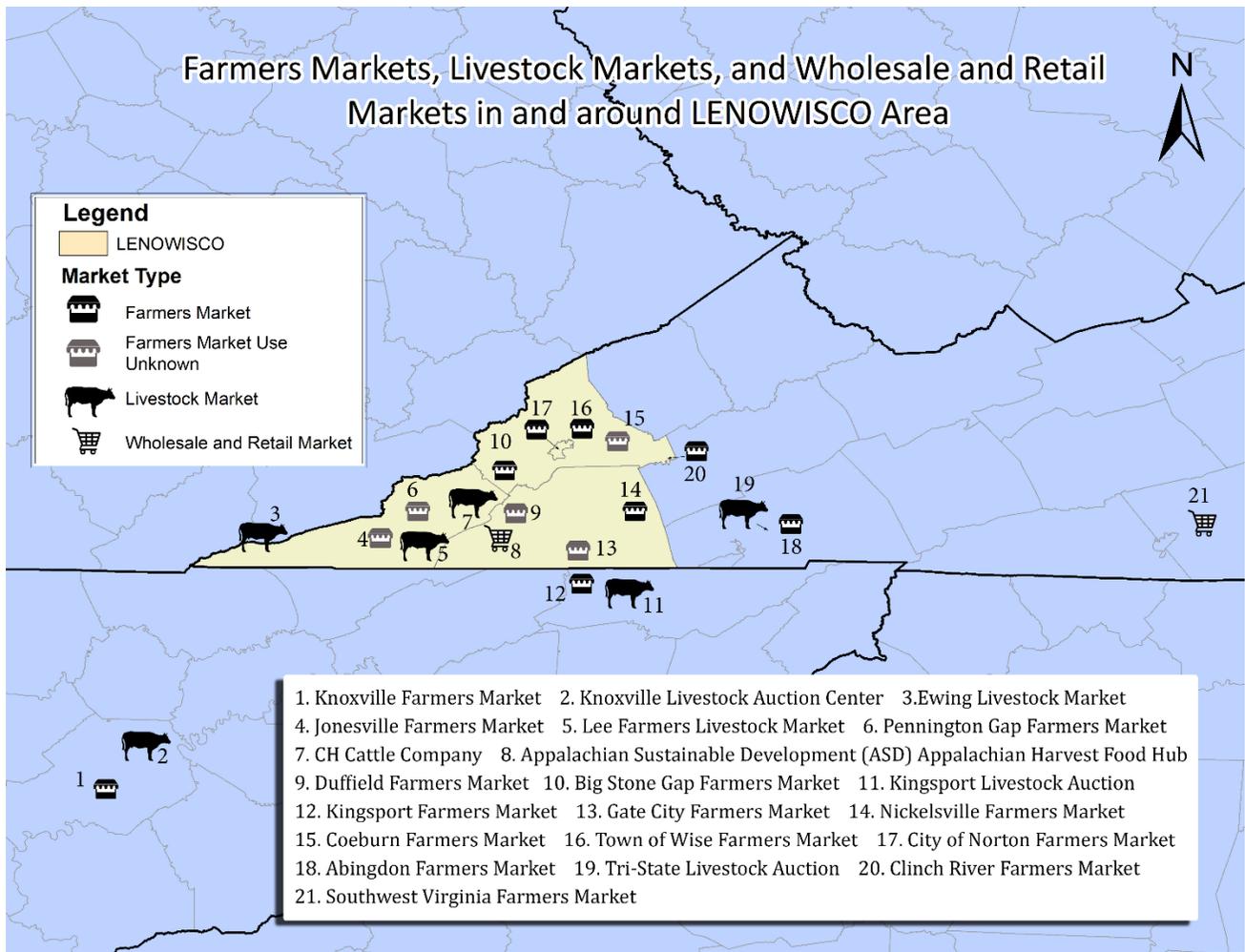
Number of LENOWISCO Farms by Industry Category (2002-2012)³⁹

³⁸ United States Department of Agriculture. *Census of Agriculture 2012 State and County Data*. Retrieved from www.agcensus.usda.gov/Publications/2012.



The largest number of farms are in beef cattle ranching, with nearly 1,200 farms. Looking at changes over time, the number of farms in many areas increased from 2002 to 2007 (including areas such as beef cattle, sheep and goat farming, vegetable and melon farming, and poultry and egg production). Many of these same areas also experienced a decline from 2007 to 2012. Other farming industry types differed from this pattern – such as cattle feedlots which decreased in number from 2002 to 2007 and again through 2012.

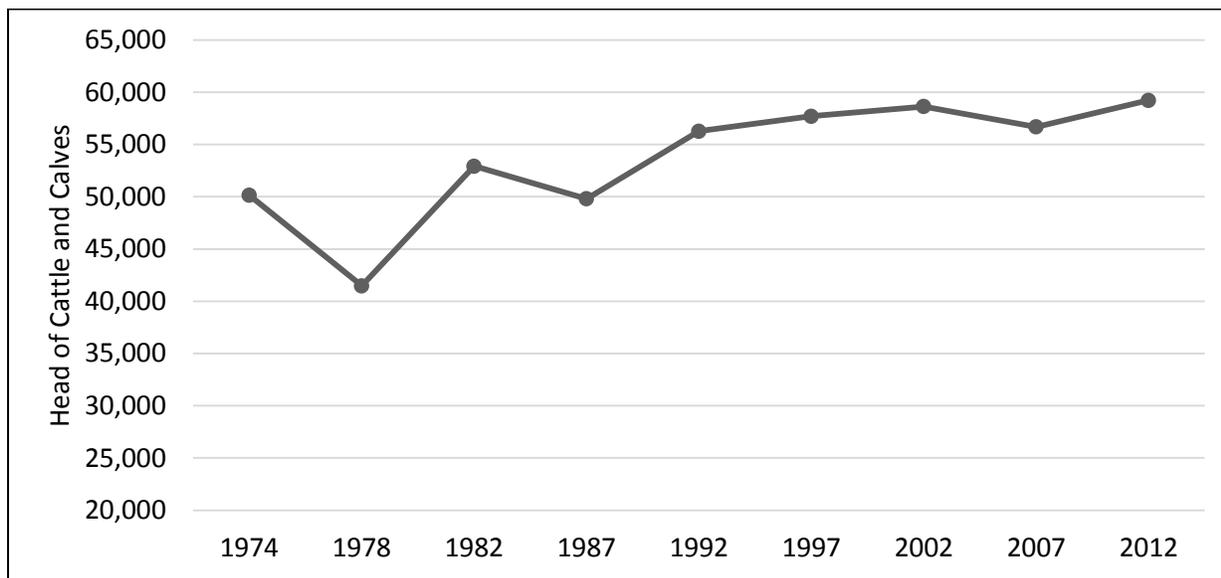
Markets are a critical consideration for agricultural producers. How and where do producers sell their products? Home gardens and other small-scale production continues to be important in the region, the products are often for family use and not for sale products. For most area producers, commodity production is more typical and involves product sales to intermediaries or wholesalers who then sell products to consumers or processors. The costs and logistics of transporting products to markets for sale to either consumers or wholesalers is an important business consideration. The image below includes some of the markets where LENOWISCO farmers transport or sell products:



Livestock and cattle in the LENOWISCO Region

From the data, a substantial part of the region’s agriculture industry (past and present) relates to cattle and other livestock production. While the number of farms has decreased moderately in the region, the number of cattle and calves in the LENOWISCO region have appeared to increase steadily, but modestly, in the twenty-five year period from 1987-2012, as visualized in the graph below.

LENOWISCO Cattle and Calf Inventory (1974-2012)⁴⁰



Most cattle farms in LENOWISCO are commercial cow/calf operations, which maintain and breed females and bulls and oversee birth of an annual “crop” of feeder calves. Farmers have options concerning the point at which they market and sell these calves. Many are sold after weaning (7 to 9 months, or a weight of 400-650 pounds is typical)⁴¹. Ranchers may also retain calves for sale at heavier calf weights (referred to as stockers/backgrounding) or, more rarely, as finished cattle.

Forage and feed is essential to these operations and grass hay is often the largest single cash expense category. In Virginia, cow/calf herds often operate at 2 to 2 1/2 acres of pasture per cow/calf unit with an additional 1/2 to 3/4 of an acre for hay production. Cow/calf operators experience cyclical and variable economic returns, and the enterprise requires significant medium to long-term capital investment⁴².

There is an established system of graded, commingled feeder sales operated by local, regional and state cattle associations. These allow smaller livestock producers to benefit from the price advantage of selling feeder cattle in larger and more standard lots. However, with only a small portion of Virginia’s feeder cattle being finished locally, most area producers are dependent upon out of state cattle feeders for a market outlet.

Processing and support facilities for value-added production in the LENOWISCO Region

Appalachian Sustainable Development (ASD) operates a food hub/copacking facility in Duffield, Virginia in Scott County. The facility, and ASD, appears to play a valuable role for participating producers, who are able to sell vegetables to ASD at a fair price, and take advantage of ASD’s extensive distribution and marketing channels. Producers do not have to incur those costs and

⁴⁰ Source: USDA National Agricultural Statistics Service, Quick Stats <http://quickstats.nass.usda.gov>

⁴¹ Source: Mckinnon, B. & Snodgrass, H. *Getting Started in the Cattle Business in Virginia*. Virginia Cooperative Extension. Publication 400-790.

⁴² Ibid.

devote resources in those areas, as ASD handles those functions for the producers in their network provided the supply and quality of produce meets buyer standards.

Beyond the ASD facility, there appear to be no other major crop-related processing facilities in LENOWISCO. There is at least one animal-related processing facility, called Hammonds Custom Slaughtering located in the town of Pennington Gap in Lee County. It appears that this facility slaughters and processes beef, pork deer, elk and bear. There are also a few livestock processing facilities in the surrounding LENOWISCO region and just outside the surrounding region.

Russell Meat Packaging is located in the surrounding region in the town of Castlewood in Russell County. This company is a family-owned and operated facility that has been in business for over 22 years. Russell Meat Packaging does USDA certified beef, pork, and lamb slaughter, processing and inspection. Washington County Meat Packing is located in the surrounding region in Bristol, and does slaughter and processing of USDA certified, Organic and Halal beef, pork, sheep, and goat. Joines Meat Processing is located just outside the surrounding region in the town of Chilhowie in Smyth County. Joines Meat Processing is a USDA certified facility that slaughters and processes beef and pork.

In the past, community canneries were more widespread in the Appalachian region, but today, many are no longer operational. Often the cannery buildings remain standing and intact in communities, but the funding and demand no longer exist to keep them up and running. Castlewood Community Cannery and Gate City High School Cannery in the LENOWISCO region were operating canneries at some point, but are no longer in use today. The Honaker Cannery is located just outside the LENOWISCO region in Russell County, but also may no longer be in use today.

Forestry and Forest Products in the LENOWISCO Region

In considering the region's agriculture-related assets and products, forest-related products are a key component and the amount of available forested land is an important indicator. Table 15 displays the acreage of forestland in individual counties within LENOWISCO, the LENOWISCO region aggregated, and the state as a whole. In 2011, timberland in LENOWISCO was 86% privately owned and 14% publically owned, about the same as the state as a whole. Out of roughly 886,000 total acres of land in the entire LENOWISCO PDC, there are 574,973 acres of forested land.⁴³

⁴³ United States Forest Service Timber Product Output Report, 2011. Retrieved from www.srs.fs.usda.gov/pubs/rb/rb_srs197.pdf.

Table 15: Area of Timberland by County and Major Ownership Group, 2011⁴⁴

Major Ownership Group	Lee County	Scott County	Wise County	LENOWISCO Number	LENOWISCO Percentage	Virginia Number	Virginia Percentage
Public ownership	18,334	39,310	20,086	77,730	14%	2,370,921	15%
Private ownership	153,354	207,318	136,571	497,243	86%	13,013,921	85%
Total	171,688	246,628	156,657	574,973	100%	15,384,842	100%

The amount and types of tree species also reflect possible forestry-related activities in a region. In general, there are two major categories of tree species: softwoods (pine, cedar, fir, hemlock, etc.) and hardwoods (maple, poplar, hickory, sweetgum, black gum, etc.). In 2011, hardwoods made up a larger portion of the trees in LENOWISCO (95%) and softwoods made up 5% of the volume of live trees on timberland in the PDC. The ratio in Virginia was slightly different, with a larger portion of trees being softwoods (23%) and hardwoods making up 77% of trees on timberland in the state. In total, there are 1,355.5 million cubic feet of live trees on timberland in LENOWISCO and 33,919 million cubic feet of live trees on timberland in the whole state of Virginia.

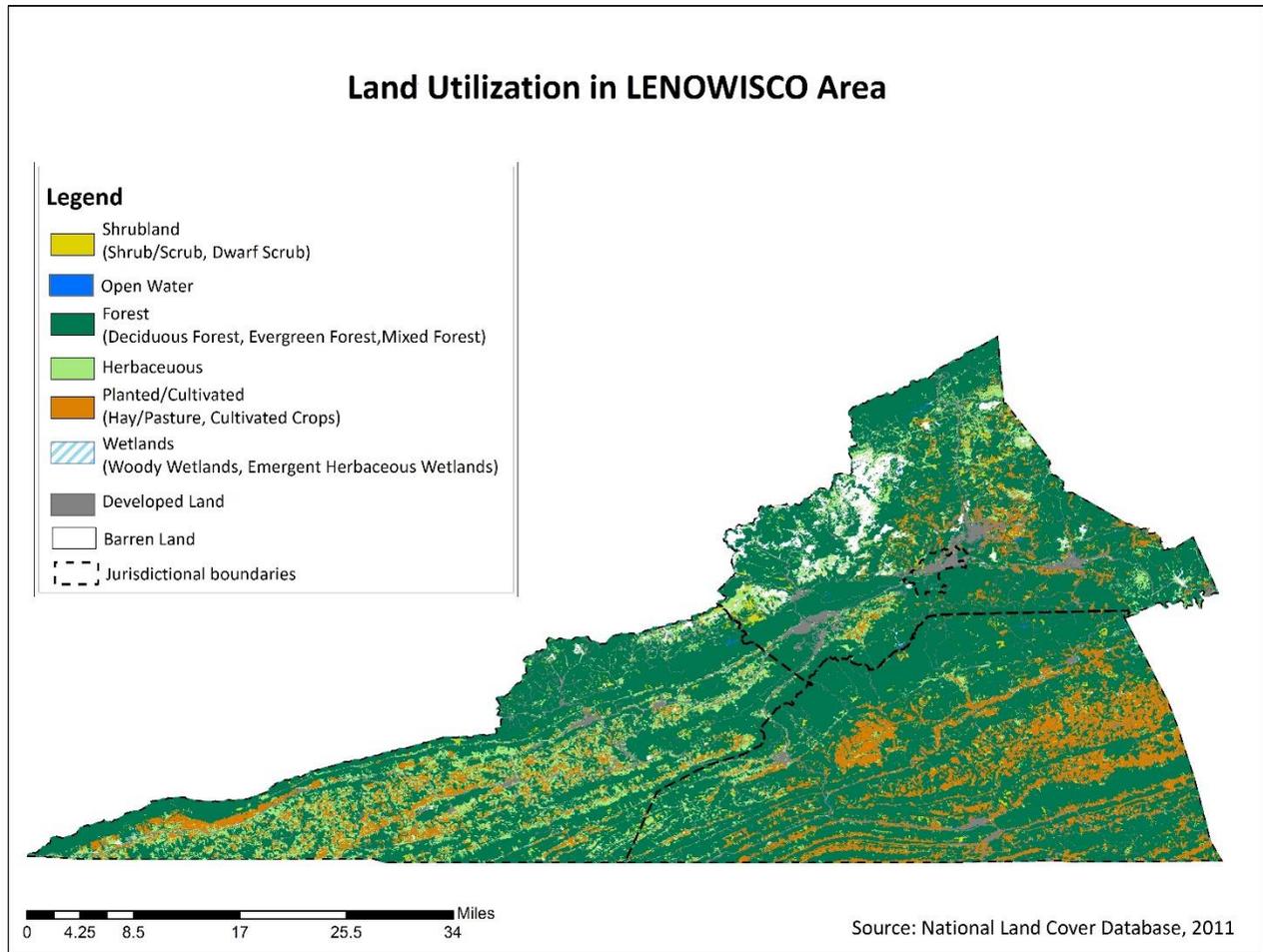
Table 16: Volume of Live Trees on Timberland by Major Species Group (Million Cubic Feet), 2011⁴⁵

Major Species Group	Lee County	Scott County	Wise County	LENOWISCO Number	LENOWISCO Percentage	Virginia	Virginia Percentage
Softwoods	13.9	34.8	17.3	66	5%	7,965.9	23%
Hardwoods	390.6	621	277.9	1,289.5	95%	25,953.1	77%
Total	404.5	655.8	295.2	1,355.5	100%	33,919	100%

⁴⁴ United States Forest Service Timber Product Output Report, 2011. Retrieved from www.srs.fs.usda.gov/pubs/rb/rb_srs197.pdf.

⁴⁵ United States Forest Service Timber Product Output Report, 2011. Retrieved from www.srs.fs.usda.gov/pubs/rb/rb_srs197.pdf.

The Geographic Information System (GIS) image below depicts the presence of different types of land cover in the region. The dark green areas are forested, and represent the vast majority of the region's land.



Excluding extended proprietors, there are currently 363 people categorized as primarily employed in forestry-related industries (Forestry and Logging and Wood Product Manufacturing) in LENOWISCO. With primary employees and extended proprietors combined, there are 456 workers in the forestry industry as seen in Table 15 below. Including both primary employees and extended proprietors, the concentration of forestry related jobs is much higher in LENOWISCO compared to Virginia. The percent of employment in forestry related jobs in LENOWISCO is much higher than state and national levels. The average annual earnings for all people employed in forestry-related jobs in LENOWISCO was \$29,767 in 2015, more than \$16,000 less than the national average and more than \$12,000 less than the state average.

Table 17: Forestry Related Jobs, 2015⁴⁶

	Lee County	Scott County	Wise County	City of Norton	LENOWISCO	Virginia
Forestry Primary Employment	75	98	190	0	363	17,029
Forestry Extended Proprietors	65	21	7	0	93	19,831
Location Quotient	9.2	6.9	4.3	0	5.5	1.2
Average Earnings Per Job	\$27,641	\$30,715	\$30,706	\$0	\$29,767	\$42,607

*LQ and Average Earnings Per Job include primary employees and extended proprietors combined

Vineyards, Wineries, Craft Beer, and Related Crops in the LENOWISCO Region

The Virginia wine industry is growing, ranking fifth nationally in number of wineries and sixth in grape production. Virginia wine production relies heavily on the ability to grow in-state wine grapes.⁴⁷ Consequently, any expansion in wine production depends on the ability of regional producers to deliver sufficient quantities of high quality grapes. A higher quantity of quality grapes can contribute to building a reputation for quality wines and help Virginia wineries capitalize on “buy local” and winery tourism market trends.

Total grape production in Virginia has increased from 5,600 tons in 2007 to 8,039 tons in 2014, representing a 44% increase. Likewise, the total number of bearing acres used for grape production experienced an approximate 31% increase over the same period. Virginia had 3,145 bearing acres in 2014 compared to 2,400 in 2007.⁴⁸ Finally, grape yield has averaged 2.47 tons per acre and has remained largely constant over time.⁴⁹ The LENOWISCO region does not have a measurable wine industry (Vineyards and Wineries - NAICS 31213) at the time of this study.

Growing hops and brewing craft beer in Virginia is still a very nascent industry with limited up-to-date data. Farmers have cultivated hops in Virginia since the 1700s, but modern production has been insignificant until the last five to ten years. According to the Hop Growers of America’s 2014 Statistical Report, there were 25 acres of hops harvested in Virginia. A fall 2014 study showed approximately 50 growers in the state, although Virginia Cooperative Extension estimates that number has rapidly increased. The Old Dominion Hops Co-Op, for instance, cited having 105 hops farmers as members in 2014. The total Virginia hop plants reported in 2014 were 13,317 and the

⁴⁶ EMSI 2016.3; QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors

⁴⁷ Virginia Wine Board (2012)

⁴⁸ Virginia Wine Board (2015). 2007 and 2014 Commercial Grape Reports. Retrieved from <https://www.virginiawine.org/grape-reports>

⁴⁹ USDA Non-citrus Fruits and Nuts 2001-2012 Summaries.

total yield of wet hops in the state was 8,109 pounds⁵⁰. The Brewers Association estimated 78 breweries in Virginia brewed as many as 195,957 craft beer barrels in 2014.⁵¹

Craft brewery growth has been extremely rapid; as of October 2015, Virginia was home to 121 craft breweries. Craft breweries are a large contributor to Virginia's economy as they had a \$622.6 million economic impact to the state within 2012. In 2011, there were 1,284 worker in the brewery industry (NAICS 31212), and that number has increased significantly in the past five years to 2,146 in 2016 with an average earnings per job at \$80, 096⁵². In the LENOWISCO region, there is no measurable full-time employment although there are emerging small-scale brewing operations, such as Busted Still Brewing in Gate City in Scott County, and Sugar Hill Brewing Company in St. Paul, Virginia. Interest in hops production also seems to be increasing, though there do not appear to be current examples of farmers profiting from hops in the region, or growing any significant amount.

⁵⁰ Siegle, L. (2015, April 30). *Growing Hops in Virginia and Industry Status*. Virginia Cooperative Extension Presentation. Available at <http://www.ext.vt.edu/topics/agriculture/commercial-horticulture/hops/index.html>

⁵¹ Brewers Association. (2015). *Virginia Craft Beer Sales Statistics*. Retrieved from <https://www.brewersassociation.org/statistics/by-state/?state=VA>

⁵² Source: Emsi's proprietary employment data.

Section 2: SWOT Analysis

This study includes multiple sources of qualitative and quantitative data, collected through an iterative process. In other words, data was gathered and shared with Project Steering Team at various stages of the project. The recurring communications informed and enriched the data analysis process, helping OED faculty to focus their data gathering and analysis. Data collection was multi-faceted and included:

- Three site visits/study tours,
- Three Project Steering Team working sessions,
- Regional analysis based on national, state and proprietary data sources,
- 23 key informant interviews,
- Three small-group, discussion sessions focused on agriculture with regional stakeholders
- Review of past reports and data on regional strengths, weaknesses, opportunities, and threats including: Virginia Cooperative Extension Situation Analysis reports, LENOWISCO CEDS committee SWOT Analysis, Southwest Virginia Economic Forum Agriculture Discussion group SWOT data, and other similar sources.
- Review of Secondary Data on Best Practices/etc.

Many of these sessions, including interviews and group discussions, generated data related to area strengths, weaknesses, opportunities and threats specific to agriculture and the agriculture-related economy. Throughout our analysis and the interviews and discussions, there were hundreds of responses related to strengths, weaknesses, threats and opportunities.

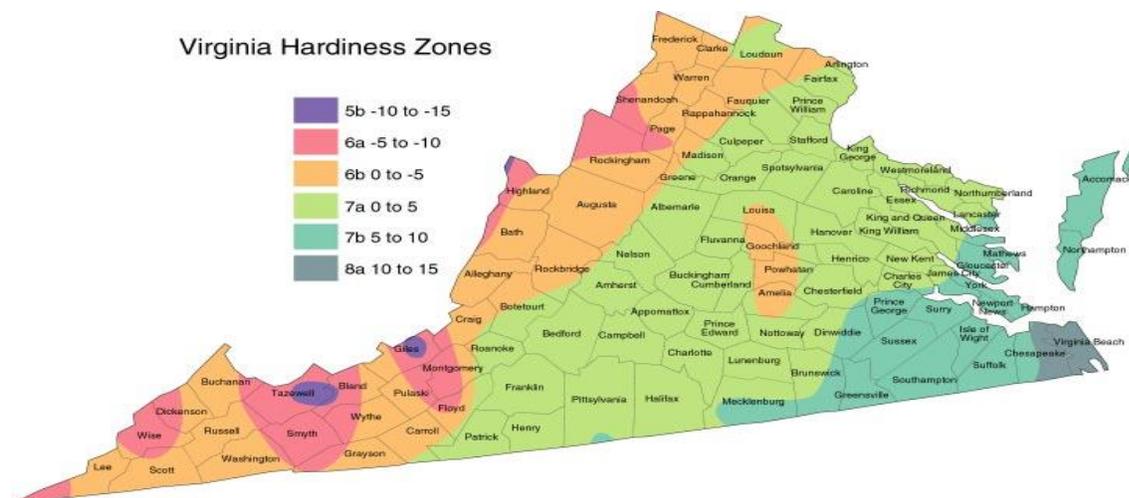
This report section combines these responses into the most central thematic items corroborated by data and representing crucial elements of greatest relevance for agricultural development. Not every response is provided. Recognizing that neither strengths nor weaknesses are total, the list below also attempts to identify some considerations and questions in terms of the region's features. Within each section, the listed items are not intended to reflect prioritization or prevalence. In some instances, quotes from interview and focus group respondents are included as well.

Regional Agriculture-related STRENGTHS

- Natural Resources
 - In particular, interview and discussion respondents repeatedly emphasized the **water, land, and forests** of the area. These are **among the region’s most significant strengths** to support small to mid-scale agriculture operations. Indeed, much of the region’s land area is forested or in agriculture use, or holds potential for agricultural uses. However, the quality, quantity, and infrastructure surrounding water in the region may need to be more fully assessed for alignment with specific agribusiness attraction opportunities. For instance, in Virginia the greenhouse and nursery industry is the fifth largest agricultural sector in the Commonwealth and generates \$272 million in farm sales, representing nearly 8% of the state’s distribution of cash receipts for agricultural commodities. A typical greenhouse operation requires 800 cubic meters of water per 100 square meters of growing space per year. Likewise, aquaculture and hydroponics offer both small-scale and large scale agribusiness opportunities. Are there sites in the region that can accommodate the water, land and related infrastructure needs to pursue and attract agribusiness?
 - The “great growing climate” was also repeatedly cited, and this does appear to hold true for many current and possible existing crops in the region. Many fruit and vegetable crops that are not currently produced in great abundance in LENOWISCO are quite suitable, at least based on the climate and “hardiness”. A version of this quote from a stakeholder was very common:
 - “We have a great climate, we have great summers and winters.”
 - Using GIS, the USDA categorizes regions into hardiness zones, indicating which plants are most likely to thrive in a particular location. Hardiness zones are based on the average annual extreme minimum temperature during a 30-year period. LENOWISCO encompasses part of two zones (6a and 6b) and the list of possible crops is long and range from grapes to gourds, squash to sweet corn. In the region’s Appalachian Plateau area, the climate and conditions even make possible opportunities more associated with northeastern climates such as small-scale maple syrup operations.

USDA Map of Virginia Hardiness Zones⁵³

⁵³ Source: USDA Agriculture Research Service Plant Hardiness Zone Map. Accessible at <http://planthardiness.ars.usda.gov/PHZMWeb/Default.aspx>



- Scenic Beauty/Landscape/Rural Character

- Repeatedly, the rural nature of the region and the beauty of its landscape were cited as strengths and as essential elements of the region’s character and identity. This represents an important quality of life asset for residents as well as for prospective visitors and newcomers. Research indicates that this may translate to economic importance as “People may be willing to sacrifice economic well-being for residence in an area with beautiful landscapes and a comfortable climate. Economists suggest that the willingness to trade income for quality of life rises with earnings, suggesting that quality of life is likely to play an increasing role in residential location as countries become wealthier.”⁵⁴



Photo Source: Lee County Tourism at ilovelee.org

- Relatedly, this strength is also an asset for tourism, and eco-tourism and agri-tourism opportunities are becoming ever more appealing for visitors⁵⁵. From 2007 to 2012,

⁵⁴ Source: (2007). *The Wye Group Handbook: Rural Households’ Livelihood and Well-Being*. Food and Agriculture Organization of the United Nations, Rome.

⁵⁵ See for instance, Harris, R. (2014). “Agri-tourism is a growing industry in Virginia”. WVTF Public Radio. Available at <http://www.via.vt.edu/winter98/tourism.html>

the number of U.S. farms engaging in some form of agritourism increased by 42 percent, with income of over \$700 million⁵⁶.

- Continuing Strong Presence of Farming, and Historic Importance of Agriculture
 - The region contained just over 2,400 farms in 2012 and the number of full-time agriculture production jobs in 2016 was 2,463, which is 289% above the national average⁵⁷.
 - Several agriculture and forestry related industry sub-sectors have a stronger presence in the region compared to their concentration nationally. This includes companies/establishments in timber tract operations, crop production, logging, animal production, and support activities for forestry.
 - Respondents commented on the region’s history of agriculture and the knowledge and “know-how” of many farmers. Farming has been a part of the region’s economy for generations, at least since colonial-era settlement. While the nature of farming has changed and is continuing to evolve, the LENOWISCO region retains artifacts and knowledge of recent farming generations. For instance, tobacco production was a strength and leading engine of the agriculture-related economy until recent decades. The knowledge of this type of labor-intensive production is still present, and some of the region’s current and former agricultural workers continue a number of older agriculture practices. Translating this into workforce development terms, many workers possess knowledge, skill and ability competencies that fit with the requirements of traditional agriculture while also translating well into work in new and emerging agricultural opportunity areas. Moreover, the presence of farms are themselves potential assets as physical representations of agriculture present and agriculture past. Heritage is also a valuable tourism commodity.
- Livestock/Beef cattle production
 - Historically, livestock production has been a trademark of the region, particularly in much of Lee and Scott counties. This segment continues to be a regional strength with nearly 1,500 cattle farms (634 in Lee, 753 in Scott, and 67 in Wise) in 2012.⁵⁸ Lee and Scott county farms alone had nearly 60,000 cows and calves in 2012.

⁵⁶ Source: United States Department of Agriculture. *Census of Agriculture 2012 State and County Data*. Retrieved from www.agcensus.usda.gov/Publications/2012.

⁵⁷ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

⁵⁸ Source: United States Department of Agriculture. *Census of Agriculture 2012 State and County Data*. Retrieved from www.agcensus.usda.gov/Publications/2012.

- According to available industry data, regional jobs in animal production in LENOWISCO numbered 461 in 2016, which is 127% above the national average⁵⁹.
- Wood Products/Forestry
 - A number of commenters mentioned the presence of saw mills, wood products manufacturing, and small scale forestry operations in the region. In 2016, 203 people were employed in forestry and logging in 2016, which is 684% above the national average of employment in that industry⁶⁰. The average earnings per job was relatively high as well, at \$32,888. Most of the jobs counted were logging equipment operators. A number of people interviewed commented on trees and timber:
 - “We have a lot of timber and trees, should use them to our benefit.”
 - In addition to the jobs in forestry and logging, there were 252 jobs in wood product manufacturing, 216% above the national average⁶¹. The average earnings per job for these workers was \$30,247, which is decent for the region but significantly less than the industry-wide national average of \$48,757.⁶² Most of the industry jobs in the region are sawing and/or woodworking machine setters, operators, and tenders. Team assemblers and material movers are also among the top five occupations in the industry.
- Presence of Assets and Resources to Support Agriculture and Forestry
 - Many respondents commented on resources that existed and had been helpful to them or to others in the region. These included Virginia Cooperative Extension, area farmer’s markets, Appalachian Sustainable Development, Cattle or Livestock associations, Farm Credit, Farm Bureau, and other associations and groups advancing agriculture. Below is a sampling of some of the most frequently cited resources:
 - Virginia Cooperative Extension (VCE) has county unit offices in Lee, Scott, and Wise Counties, each with a full-time agent focused on agriculture and natural resources (ANR). VCE local offices also provide access to state and national resources including a wide range of agriculture-related extension “specialists” on campus, who provide research-based information, resources, and programming. VCE ANR agents in LENOWISO appear particularly engaged and frequently utilized by the agriculture community and the public. The region

⁵⁹ United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

⁶⁰ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

⁶¹ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA)

⁶² Source: Emsi’s proprietary employment data.

also has a regional extension agent focused on forestry, based in Russell County.

- In addition, there remains some agriculture-related learning at the K-12 level. For instance, the Lee County Career Center offers horticulture, agriculture and natural resource classes and some high schools have livestock clubs that conduct stockman contests and raise awareness for students about livestock farming.
- Appalachian Sustainable Development is a regional non-profit that operates a number of initiatives related to sustainable agriculture and forestry, food access, farm planning, farmer's markets, and other areas supporting the food economy in central Appalachia. A signature program is Appalachian Harvest, a food hub with a 15,000 square foot facility in Duffield, Virginia, in Scott County. The facility aggregates products before being sold and distributed to large regional grocery store chains and brokers.
- Mountain Empire Community College offers coursework in natural resources including an associate degree in Forest Science.
- The Lincoln Memorial University (LMU) College of Veterinary Medicine is also a resource that was frequently cited, not only in terms of veterinary science, but also in light of their larger mission to not only help serve the health and wellness needs of animals, but also of people and environment in LENOWISCO, as well as the central Appalachian region.
- Respondents also cited UVA-WISE as a regional asset, and the college offers programming in environmental science and some students and faculty engaged or interested in local foods/sustainable agriculture.
- A number of local, regional and state entities support tourism in the region, ranging from Virginia Tourism Corporation, the Heart of Appalachia, Appalachian Spring, and county-based tourism officials and groups.

Regional Agriculture-related WEAKNESSES and THREATS

- Profitability and wages – keeping farming viable
 - Many respondents commented on this challenge, in terms of helping existing farmers continue to profit and increase income while also helping prospective farmers see agriculture as a profitable path. This sentiment from a farmer in the region was not uncommon:
 - “Our business will be closed in the next few years. It is no longer affordable.”

- This is a challenge in the region. The large majority of farming activity is secondary to other full time employment. There are roughly 134 full-time jobs in agriculture and forestry in the region (45% below national average⁶³). However, nearly 2,500 workers are present when counting extended proprietors or jobs that represent miscellaneous labor income for persons who do not consider it a primary job⁶⁴. Moreover, the average earnings per job are quite low at \$17,333, which is much less than the national average of \$31,134. The region's farmers have a relatively low average market value of land and buildings per acre (\$2,345), while state average is \$4,306. The average net farm income in each of the localities is negative and the costs of agriculture production (which considers feed and other inputs) is increasing nationally. An existing small farmer voiced the concern with costs:
 - "We need more assistance for current farmers for barns, tractors, etc. If something breaks down on my farm and I can't support that I could go out of business."
- Most farm enterprises in region are relatively small-scale.
 - 82% of farms are 179 acres or less; 89% of farms have less than \$25,000 in sales, and the average farm size is 132 acres⁶⁵.
- Demographic Trends/Farm Transition
 - Numerous discussions turned to farm transition and the presence of a high number of older, more established farmers in region, with relatively few plans for farm succession.
 - "The farmers are getting older, retiring, and there are no younger farmers coming in. It is becoming a lost trade."
 - "We need to get new people involved. Our farmers are getting older and not producing as much."
 - For the full time workers in agriculture in the region, over 72% are over age 45. When including extended proprietors and the larger subset of workers who farm, including as secondary income, 17% are over age 65. Over 37% are over age 55. 67% are over age 45.
 - Less than 20% of farmers (including the larger group of extended proprietors) are 34 or younger. These quotes relate to the barriers for new farmers:

⁶³ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

⁶⁴ Source: Emsi data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

⁶⁵ Source: United States Department of Agriculture. Census of Agriculture 2012 State and County Data. Retrieved from www.agcensus.usda.gov/Publications/2012.

- “We need to help new farmers with capital since it is very expensive to get started.”
- “If you weren’t born in the business, it is hard to break into it; there is a lot of up-front investment.”
- Perceptions/Awareness
 - Almost all of our respondents and discussions touched upon the importance of agriculture to the region’s economy, and the relatively lack of general awareness and understanding about agriculture and its important role among the non-farming public as well as key regional stakeholders. Some version of this sentiment from a former farmer and agriculture stakeholder was very common:
 - “The county should recognize agriculture is one of the largest industries and cater to farms more. The county should be more farm friendly.”
- Access to land/land availability and affordability
 - Many respondents suggested that the land available for agriculture is limited, due to not only topography and development but the amounts of land held by public sector, as well as by private industry. For newer farmers, land costs are a major and often prohibitive expenses:
 - “It is hard to get farm land, unless you have assets.”
- Reaching/accessing markets
 - Several of those we interviewed highlighted the concern that farmers (such as cattle and livestock producers) in the region experienced transportation barriers and excessive costs, due to the region’s location and distance from urban centers. Hard data on this is scarce, and appears to be mixed as there are sales outlets and transportation options. Moreover, some larger farmers in the region seem to have worked out supplier-purchaser relationships that could be a model for others, including distribution. A regional food hub entity, Appalachian Sustainable Development (ASD), provides assistance accessing markets for vegetable producers who participate in its network. Many livestock producers in region sell at the livestock market in Washington County and as one farmer put it:
 - “It is very far to the market in Abingdon.”
- Resistance to innovation/entrepreneurial approaches
 - A number of informants commented on this resistance. The typical rationale provided was that there are such a high number of established, older farmers who have well-defined ways of operating, and a relatively low number of newer farmers who might be advancing different products, production methods, and market-

methods. In addition, there do appear to be fewer agriculture-related entrepreneur efforts and intermediary type organizations (with the notable exception of ASD). As some individuals commented:

- “We do not think outside of the box.”
- “There is a culture that is afraid of education and of the unknown.”
- Costs/barriers to farmers for start-up, new enterprises, inputs, certifications
 - This was cited repeatedly. For instance, by adopting Good Agricultural Practices (GAP) certification, growers, and their buyers, receive an assurance that production and handling practices are in accordance with recommended safety guidelines. To become GAP-certified, a farm must prepare for and pass a GAP audit. This process is overseen by the USDA and in Virginia, there are a limited number of GAP auditors and farmers must pay for the assessment and auditor time and travel. In addition to cost barriers, growers that elect to pursue GAP certification face a daunting process that may be complex and time-consuming. Other certifications, such as Organic, or even quality assurance certifications for beef cattle can also be barriers or hoops that some producers do not want to face.
 - Greenhouse production, and other measures to extend the growing season, and grow crops longer or grow more variety of products are not extensively used in region and this could be done more if costs were less of a barrier, as one respondent commented:
 - “Farmers could use hoop houses/green houses to get an earlier start, I think that these would be helpful to our local farmers. Some farmers have them, but they are costly.”
 - New products, or farm-related enterprises, represent significant investment as well as risk. There is often a lag time between investment and yields/returns, and profitability is not ensured. For new farmers, the costs are often untenable and the learning curve is steep:
 - “We need some people with expertise to lead new and beginning farmers through the process of starting a farm, including how to market their goods, how to write a business plan, etc.”
 - “There is no funding available for starting agritourism.”
- Decline of a substantial agriculture focus in K-12, community college, and higher education.
 - People that we spoke with often expressed a desire for agriculture to be more of a focus in the area’s schools, from K-12 into community college. This was a repeated point of emphasis with a range of informants and this comment is representative:

- “We need more education and training in schools and for younger kids so that they will stay in the area, continue family farms and start their own farms.”
- Schools in the region do provide some programming, but as one high-level K-12 school administrator described:
 - “We would love to get kids interested in agriculture and forestry but without the markets for jobs, our schools cannot invest in an agriculture science education program.”

Regional Agriculture-related OPPORTUNITIES

- Engage youth and introduce them to agriculture-related careers.
 - “I would like to see training for younger kids. So that they will stay in the area, continue family farms, or starting their own farms.”
 - “Training young farmers. We need to create a new generation of farmers. We need to bring schools into this and have them educate the children.”
 - “We need to teach agriculture in schools.”
 - “We need to do a better job letting kids know what the opportunities are in agriculture, and how they can take advantage.”
- Increase support for new and beginning farmers.
 - “I think that if we have individuals that are interested in going into forestry and agriculture that we should help educate them by being supportive & helping coming up with business plans for people who are just starting. We also need incentives for people who want to take classes to start their business.”
 - “What could work well in the area is informal agreements between older farmers and young/new/beginning farmers...lots of older farmers are willing to give advice”
 - “We have people who want to grow things and they don’t have the training. When older farmers have died the training has gone with them. I think we have the workforce that would be interested in going into farming, especially the miners.”
- Lessen start-up costs and risks for new farmers, or for existing farmers trying a new product.
 - Consider equipment sharing or funding support for equipment and materials.
 - Explore cooperative ventures – support for cohorts or groups of farmers interested in same or similar product. Organizations such as ASD, VCE or others could provide

training, technical support and marketing assistance for a product or group of products (such as squash, heirloom vegetables, or food products such as jellies).

- Help farmers enhance income, reduce costs, and stay viable.
 - “There is ground to be covered in teaching farmers about marketing (setting up a nice table at the farmers market, etc.), how to start a CSA, etc.”
 - “Sometimes farmers undervalue their produce/undercut themselves”
 - “Assistance for current farmers for barns, tractors, etc. If something breaks down on my farm and I can’t support that I could go out of business.
 - “Farmers need funding for season start-up assistance – inputs, materials., equipment, and certifications are all costly.”
 - Improved methods and processes could yield better productivity and returns (One example provided was rotational grazing methods for livestock).
 - Provide funding to help more farmers get certifications or participate in product improvement/verification programs. Certifications such as GAP and organic can be cost-prohibitive.
- Support farm-to-school or farm-to-institution sales and partnerships.
 - “The opportunity is there, particularly if one or more schools are willing to pilot a program, but local supply (of produce and etc.) is a concern so we also need more gardening in schools and connections to career and technical education.”
- Enhance collaboration and networks to help market products, support groups of farmers, establish and grow cooperative ventures, etc.
 - “We need to create partnerships to help sell products.”
 - “For another crop to come in to the region, would need to focus on one or two crops only; this is how you get growers on board and farmers can then learn from each other.”
- Enhance agriculture infrastructure/processing/facilities
 - “More infrastructure is needed for markets (not just farmers markets but other types of markets); need a place to bring products and sell them.”
 - “There is a need for an infrastructure to share knowledge and for partnerships between farmers/producers in the region”
 - “We need a cannery in our area.”
 - “We should invest in labor-saving equipment for food processing.”

- Expand agriculture-related tourism and include agriculture in related heritage and outdoor tourism initiative.
 - “... there is a great opportunity for agritourism- winery, corn mazes, distilleries, branding craft beer where the ingredients grow here. It is not all about growing, it is about branding.”
 - “I think it would be good to do more farm tours, and farm to table dinners. It is all about advertising these days.”
 - “Our history and culture are a strength that could be utilized more in marketing/branding.”
- Help farmers find /access land
 - Suggestions included helping interested farmers find land and exploring models for farm incubation.
 - “Repurpose old mine land for agriculture.”
 - “Some farms could grow if they had more land.”
- Help with farm transition/succession
 - “We have many older farmers that want to see their land continue in agriculture, but it is tough for investors or purchasers to be a good investment. We need a structured farm transition program that matches younger farmers to existing farmers and provides transition support and trial partnerships.”
- Promote agriculture as a regional economic focus.
 - “We need a marketing campaign that says that agriculture is alive in the region and that there are jobs in farming.”
 - “The county should recognize agriculture is one of the largest industries and cater to farms more. The county should be more farm friendly.”
 - “People are beginning to recognize there is a need to diversify the economy and people are becoming more and more open to agriculture”
- Better utilize, support, and promote existing resource organizations and intermediaries.
 - Appalachian Sustainable Development is a regional food hub, that can help producers access larger markets, and can work with a range of producers (not just organic). Producers, and regional stakeholders, can be made more aware of all the ways ASD can help producers.
 - Virginia Cooperative Extension helps farmers in a range of ways, and supports youth livestock and other clubs and programs that introduce youth to agriculture and

provide pathways into farming careers. VCE programs can be better promoted and shared within the region, and programs and assistance could be offered in new or varied ways. “There are many educational opportunities that Extension offers but it is hard to always get people to show up.” Producers and others can also better partner with VCE to access non-local Extension and Virginia Tech resources and expertise.

- Explore opportunities for technology and science related to agriculture.
 - “Technology and science-based approaches can attract young people to agriculture and help farmers be more profitable and efficient.”
- Aquaculture
 - “There is a lot of potential for aquaculture which is pretty untapped at the moment”
- Encourage new products such as niche and specialty crops
 - “There are probably some crops that could be money makers that we haven’t tried, like hemp and others that would do well in our climate, but these are foreign to people and it is about changing people’s mindset.”
 - “Value-added products are where the money is.”
- Support development of food product businesses.
 - “A commercial food processing facility/kitchen would let entrepreneurs do jams, jellies, sauces, and other products.”
 - “Encourage local restaurants and stores to buy local agricultural products.”
- Help grow and strengthen the cattle/livestock industry in region since this a strength.
 - “We can help reduce costs to get products to market.”
 - “More producers can benefit from beef improvement programs that will result in better prices for calfs (such as VQA program). We just need to communicate the value better and help some of them with upfront costs.”
 - “We need a location that you could preserve your meat and package it.”
 - Note: While there are a number of meat processing/slaughter facilities within an hour drive of region, feedback suggested that the facilities are less able to work with producers on smaller-scale for specialty cuts and etc., which helps drive more return for finished or natural beef or other livestock in region. Facilities are volume-driven and charge higher prices or do not work as readily with smaller specialty producers.
 - Goats and sheep are a continued possibility for the region, and cooperative efforts among sheep producers met with past success for a time. Respondents suggested

learning lessons from that effort including the need for effective leadership, organizational development assistance and the capacity, commitment, and know-how to reliably produce sufficient, quality-assured product on timely schedules when working with larger buyers.

- Expand vegetable production.
 - “Regular vegetable production could grow.” The demand for locally grown vegetables seems to exceed local supply. Farmers markets have reported this and ASD and others have suggested that more vegetables could be marketed and sold. The few larger farms in the region that include vegetables also point to the possibilities for growth here.
 - “Lots of opportunities exist for people to grow vegetables to sell at area markets.”
- Build capacity to cultivate forest botanicals.
 - “Cultivation of ginseng, goldenseal, mushrooms, and etc. is an opportunity – there is a culture of harvesting these here but could change to a culture of cultivating these valuable products.”
 - “There is also an opportunity here for small-scale processing (such as drying equipment) for forest botanicals.”
 - “Source verification for forest botanicals can help increase value of those crops.”
- Explore opportunities to develop craft beer industry, grow hops and other inputs, and support regional value chain.
 - “Craft beer is huge, and there’s interest here for agriculture and tourism. How do we support it?”
- Identify ways to strengthen forestry industry in region.
 - Region has some wood-products manufacturing, small-scale sawmills, and wood craft artisan production. There may be some opportunities in the supply chain to develop more wood products manufacturing and locally sourced wood or develop more crafts artisans who work with wood.
 - “Help factories use local timber...we have a lot of timber and trees, should use them to our benefit.”

Section 3: Strategy Recommendations

This section synthesizes our results from the earlier sections, including the quantitative and qualitative information, as well as supplemental research and advisory team input. The result is a set of six overarching strategy recommendation areas:

- 1) Enhance support for existing farmers and agriculture-related enterprises.
- 2) Develop incubation activities for beginning farmers and support farm transition programming.
- 3) Introduce and expose youth to agriculture-related opportunities and promote agriculture as an important regional economic focus.
- 4) Nurture a regional culture of “agri-preneurship”, by providing mentoring, training, funding and related ecosystem supports such as marketing, for those who start new ventures or experiment with new products or specialty or niche crops.
- 5) Promoting and build on agricultural history, natural assets, and rural character of region for tourism, marketing, and new business development.
- 6) Focus support on exploring and encouraging collective production, processing, and marketing activities for one or more products (or groups of products) with identified market demand and available producer supports.

This section provides a brief description of these recommendations, along with a set of possible tactics or policies that could be pursued in support of each recommendation. Some tactics are repeated if they relate to more than one strategic area. Section 4 provides information on agriculture incubation models from other regions.

- 1) *Enhance support for existing farmers and agriculture-related enterprises.*

Retention and expansion of existing industry is an important focus for traditional economic development. Existing farms and agriculture-related enterprises contribute significantly to the local economy. This strategy area responds to the identified challenges faced by regional farmers – how to stay viable, reduce costs, and improve productivity and profitability.

Some possible tactics include:

Possible Tactics	Description
<i>Develop a regional inventory (and update it annually) of existing programs and available support resources, including funding and technical assistance.</i>	Programs exist to help producers, ranging from Extension trainings and workshops, to funds for beef improvement efforts and quality assurance, to the ASD producer network. Many farmers benefit from these programs, but many others could benefit if they were more aware of the opportunities and their value. Stakeholders, elected officials and others are less aware of the support resources in many cases, as well.

<p><i>Establish a farm business retention and expansion program, an on-going business development and management assistance program to farmers and agriculture enterprises</i></p>	<p>Partner with organizations such as VCE, SBDC, ASD, Farm Bureau, or other resource providers to offer an identifiable Southwest Virginia Farm Business Retention and Expansion Initiative for existing farms. The program could include resources and services from separate entities but would encourage entities to better align services, work in a more concerted way to support existing farms, and identify and leverage additional resources.</p> <p>A central component might be proactive outreach and visitation to area farmers, offering an initial business consultation session. One challenge might be finding trusted, qualified, knowledgeable, credible people to work with farmers and provide consultation, in a structured approach of value for farmers. A Program, such as the one suggested, might identify and train a cadre of such advisors, or seek funding for a shared farm business management advisor or agent or an agriculture-focused SBDC counselor.</p> <p>If a multi-entity collaborative program becomes less feasible, an experienced individual could be hired and charged with farm business retention and expansion activities, although the individual would need to work closely with VCE, SBDC, ASD and other entities. By tracking the work with existing farms and documenting the costs and benefits of acted-on interventions (such as a farmer establishing rotational grazing and/or beef quality assurance, or adopting a new marketing approach), the value of this position to the region would be able to be approximated, although some of the benefits from business operations or product changes in farming may take multiple growing seasons to become fully evident.</p> <p>Program offerings would involve individual, customized, assistance on business planning, financial management, marketing and related topics to regional producers. Producers are hard to attract to workshops and classes, and are sometimes reluctant to take advantage of available resources, so a more intensive, individual approach may be worthwhile.</p>
<p><i>Establish small-scale fund for existing producers to support costs associated with certifications, product improvements, and season-extension.</i></p>	<p>Small-scale funding may be hard to access for producers who need to pay for an assessment or inspector related to a certification, or install a hoop house, or other measure to extend the growing season. Virginia Cooperative Extension funding to support producers with beef quality assurance and improvement are a great example of success with small-scale</p>

	funding. A small pool of funding in the form of one-time micro-grants could make a significant impact.
<i>Offer education, training and resources related to producer certifications, product verifications, and food safety.</i>	Securing and maintaining required certifications is a challenge for producers in both the start-up and growth phases, as is navigating food safety concerns. This tactic involves an enhanced focus on helping reduce these barriers through producer training, mentoring, and materials, in conjunction with VCE, ASD, and other partners.

2) *Develop incubation activities for beginning farmers and support farm transition programming.*

Incubator programs, mostly for new or less experienced farmers, have increased in number across the United States over the past 5 years. Moreover, there is an increased emphasis on the opportunities associated with farm transition and succession planning, to help those exiting out of farming transition their farm enterprise to other operators.

Some possible tactics include:

Possible Tactics	Description
<i>Explore models for incubation services and assistance for beginning farmers and establish a pilot program.</i>	Incubator farms and programming provide support for new farmers while minimizing risk, enhancing learning and knowledge-sharing, and reducing initial costs and resource barriers. Programs are on the rise nationally, and many varied models exist. There is some debate as to the returns for these programs and the most effective models. In section 4 of this report, we provide case examples from other incubators and this tactic suggests further study and work to establish a pilot farm incubation program in the region.
<i>Better market and utilize farm succession and farmland location programs and resources already in existence.</i>	Virginia Cooperative Extension and other organizations offer resources for farm transition, and for connecting farmers to existing farmland. Many farmers seem less aware of the existing resources and in some cases the resources seem underutilized in region. A resources inventory, recommended earlier, would help with this awareness, as would a focus on farm retention and expansion.

- 3) *Introduce and expose youth to agriculture-related opportunities and promote agriculture as an important regional economic focus.*

Throughout this process, we repeatedly heard that a focus on youth was important, to help younger people learn about and get introduced to agriculture-related occupations. Stakeholders also reported that agriculture, and its importance to the regional economy, was less valued and under-emphasized and that more efforts were needed to communicate the value of agriculture, and the economic opportunities that do exist.

Some possible tactics include:

Possible Tactics	Description
<i>Develop an annual report on the state of agriculture in the region, and include information on activities and “success stories” from the year.</i>	This annual report could be provided to key stakeholders and local officials, but also circulated in an accessible, concise, readable format to producers and agriculture-related businesses and supporters across the region. The report could highlight the breadth of agriculture, including emerging activities and areas such as tourism.
<i>Expose all middle-school students in Lee, Scott, Norton, and Wise to an agriculture-related module.</i>	Recognizing that classroom time is at a premium and teachers have many demands, the middle school years are a critical time for career awareness and this tactic would introduce students in each of the region’s school systems to some kind of agriculture-related content module that would include information on careers, food systems, and regional agriculture heritage and current farmers and ag-related activities.
<i>Partner with Mountain Empire Community College, as well as the Southwest Virginia Workforce Development Board, to explore opportunities and funding for classes, programs, and certifications related to agriculture.</i>	Post-secondary coursework or certifications related to agriculture are demand/need-driven and the region should explore opportunities to develop new community college programs to prepare workforce for high-potential agriculture-related career opportunities a to better understand pathways into agriculture. The Southwest Virginia Workforce Development Board may be a resource in terms of identifying funding options to partially support student training costs.

- 4) *Nurture a regional culture of “agri-preneurship”, by providing mentoring, training, funding and related ecosystem supports such as marketing, for those who start new ventures or experiment with new products or specialty or niche crops.*

A risk-averse mindset was frequently cited as a barrier to exploring new agriculture ventures in the region, and the need for greater experimentation was also emphasized by respondents during this planning process.

Some possible tactics to encourage the regional culture of “agri-preneurship” include:

Possible Tactics	Description
<i>Explore models for incubation services and assistance for beginning farmers and establish a pilot program.</i>	Incubator farms and programming provide support for new farmers while minimizing risk, enhancing learning and knowledge-sharing, and reducing initial costs and resource barriers. Programs are on the rise nationally, and many varied models exist. There is some debate as to the returns for these programs and the most effective models. In section 4 of this report, we provide case examples from other incubators and this tactic suggests further study and work to establish a pilot farm incubation program in the region.
<i>Establish an agriculture-focused “pitch” competition.</i>	There is much focus on entrepreneurship in the region, with a lot of the focus being on those who might want to start a restaurant, retail or similar enterprise. Agriculture ventures are often less present, and “apart” from these efforts. One tactic might be the establishment of a “pitch” competition in which those who want to start a new ag-related enterprise or product line might be able to share their idea and receive some seed funding and technical support to help bring their idea to fruition.
<i>Develop a regional “mentors” network so that farmers or ag-entrepreneurs less experienced in some areas might learn from others.</i>	Mentorship and connection to those with experience in an area of interest are a key component of a healthy entrepreneur-ecosystem. Consider establishing a cadre of willing “mentors” and encouraging those mentors to be open to site visits, meetings, and inquiries from those who are interested in starting a new venture or enterprise area in the region.

5) *Promoting and build on agricultural history, natural assets, and rural character of region for tourism, marketing, and new business development.*

The agriculture heritage and natural beauty of the region were nearly universally cited as the area’s top assets. Many suggestions and identified areas of opportunity concerned tourism.

Some possible tactics include:

Possible Tactics	Description
Infuse an agriculture-focus into existing tourism initiatives and businesses.	Work with tourism directors and others to add information on agriculture heritage and area farms into existing marketing and promotional materials. Provide information to tourism-related businesses in area (such as bed and breakfasts and etc.) on ways that visitors can experience some of the region’s agriculture heritage and character- (by providing a list of farmstands, farmer’s markets, farms willing to entertain visitors and pick your own, etc.)

<p>Develop one or more new tourism experience packages/visitor itineraries/group tours with an agriculture focus.</p>	<p>In addition to infusing agriculture into existing efforts, consider developing new tours or itinerary examples with a heavy focus on agriculture, such as a farm visit in conjunction with an outdoor recreation experience and restaurant with local food, or similar.</p>
---	--

6) *Focus support on exploring and encouraging collective production, processing, and marketing activities for one or more products (or groups of products) with identified market demand and available producer supports.*

Possible Tactics	Description
<p>Work with Appalachian Sustainable Development to establish a regional “accelerator”-type program for a cohort of LENOWISCO-region producers.</p>	<p>ASD develops relationships with buyers and works with a network of producers to provide needed product. Despite the presence of the ASD packing and distribution facility in Duffield, many of the producers in the ASD network are non-LENOWISCO based. It would be in the interests of both the region and of ASD to help more farmers in the region be a part of their network. For example, ASD procured recent buyer-relationships for some winter squash varieties. A cohort of existing, or new, farmers in LENOWISCO could be supported in beginning to grow, or expanding existing growing of, squash-varieties. This would entail individual work with producers and support for training, certifications, and technical support as needed throughout the season. A cohort of producers could also learn from each other, and enable such a program to benefit multiple farmers, in many cases serving as an entry point into the ASD producer network as well.</p>
<p>Better support the development and operation of cooperative producer efforts.</p>	<p>The region has seen cooperative efforts among producers, such as beef and sheep farmers. In some cases, the management and operation of these cooperative entities has been challenging, particularly for volunteers or leaders less familiar with the complexity of such initiatives. Tactics here might include providing training or exchange visits to learn about best practices of cooperative development and leadership, and also providing ongoing management assistance to cooperative efforts.</p>

Section 4: Agriculture Incubators Examples

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 finds 130 such programs in operation in 2016, with over 1,500 farmer-participants⁶⁶. 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.

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

⁶⁶ (2016). *Farm Training Initiative Report*. New Entry Sustainable Farming Project. Accessible at nesfp.org.

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 Seed 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.

Section 5: Conclusion and Implementation Considerations

Agriculture plays a critical role in the regional economy, and holds potential for increased job creation, entrepreneurial activity, and business expansion. This plan has identified a number of important strategic goals and specific tactical possibilities. Five additional implementation considerations are highlighted below:

- 1) A challenge for the region is the lack of dedicated organizational infrastructure for pursuit of implementation. The current working group faces several barriers. It has proved difficult to regularly assemble members and stakeholders, and for the group itself to identify priorities and pursue collaborative objectives. One important objective may be to build the collaborative capacity of this group. As one example, Virginia Tech OED, as a follow-up to this project, has the skills and expertise to lead a rapid planning, agile strategy session for the region. That type of session forces participants to quickly identify resources, assess project possibilities, select an initial prototype or test project, and construct an action plan.
- 2) The costs of land repeatedly emerged as an issue for existing producers and for new farmers. This plan only scratched the surface of solutions here. LENOWISCO PDC could lead an examination of local land policies with the aim of identifying possibilities for reducing the tax burden for lands in agriculture use, and educating localities on policy options in this regard.
- 3) Mountain Empire Community College has potential to be an even more valuable partner in preparing agriculture-related workers and supporting training and development activities. Currently, MECC has strengths related to natural resources but is not heavily engaged in exploring and providing training and courses for other parts of the agriculture sector. LENOWISCO PDC could work with MECC to explore specific new opportunities.
- 4) Respondents regularly mentioned youth and public schools, and the need to better expose youth to agriculture careers, and prepare youth for agriculture-related career pathways. Moreover, schools utilize food and farm-to-school programs are prevalent nationally. The programs help emphasize the importance of local food, enhance healthy foods consumption, and support regional food producers. LENOWISCO PDC could partner with Appalachian Sustainable Development and at least one school system to pilot a farm-to-school project.
- 5) Lastly, respondents did discuss possible needs for infrastructure and facilities development related to agriculture processing and distribution. The need for processing facilities appears uncertain and to include infrastructure development as a recommendation at this point may be premature. However, this plan recommends continued work to ascertain the possibilities and gauge feasibility.

As a whole, this report has found that agriculture remains a regional economic driver, that there are substantial challenges to continued growth and profitability, and that a number of opportunities for strengthening the sector exist.

Appendix: Funding and Technical Assistance Resource Links

This section provides some funding and other technical assistance resources available to farmers and/or for agriculture development activities in Virginia. This list includes sources for resources for Individuals, for-profit businesses, for agricultural producer organizations, agricultural non-profits organizations, local and state government, and research grants.

AgBiz Masters

<http://www.agbizmasters.com/>

AgBiz Masters provides hands-on business and financial management training to young and beginning farmers.

AgrAbility

<http://www.agrability.ext.vt.edu/>

AgrAbility Virginia assists individuals and their families who farm, and have illnesses, injuries or disabilities that are impeding their ability to work safely, effectively, and productively.

Alternative Farming Systems Information Center

<https://www.nal.usda.gov/afsic>

This system specializes in identifying resources about sustainable food systems and practices in support of USDA's effort to ensure a sustainable future for agriculture and farmers worldwide.

American farmland Trust

<https://www.farmland.org/>

This organization provides technical assistance to farmers through education, advocacy, and networking.

Animal Welfare Institute (AWI)

<https://awionline.org/awi-quarterly/2014-winter/awi-grants-support-better-care-animals-farm>

AWI audits, certifies, and supports farmers raising their animals according to the highest welfare standards, outdoors on pasture. Farm that are part of AWI certification program may be eligible for the Good Husbandry Grant program. This grant program fund farmers to improve animal's welfare through genetics or outdoor access among other criteria.

Appalachian Sustainable Development

<http://asdevelop.org/farmers/>

This non-profit organization provides technical assistance to farmers from land assessment to farm business and marketing plans.

Arcadia's Center for Food and Sustainable Agriculture

<http://arcadiafood.org/>

This program helps military veterans to participate in a hands-on agriculture training program. The program provides support and technical assistance in farm and nutrition education, food access and distribution, sourcing, and sustainable growing practices.

Beehive Grant Fund

<http://www.vdacs.virginia.gov/plant-industry-services-beehive-grant-program.shtml>

The Beehive Grant Fund provides resources to establish new beehives in the Commonwealth.

Beginning Farmers and Ranchers

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/beginning-farmers-and-ranchers-loans/index>

The USDA's Farm Service Agency provides loans provide credit opportunities to eligible family farm and ranch operators and owners who have been in business less than 10 years.

Black Belt Justice Center (BBJC)

<http://blackbeltjustice.org/index.html>

The BBJC provides legal services, research and policy, and community education and engagement activities.

BMP Tax Credit Programs

<http://www.dcr.virginia.gov/soil-and-water/costshar3>

This program helps agricultural producers with a conservation plan to take a credit against state income tax and implement agriculture best management practices.

Brickyard Educational Farm's Incubator Program

<http://brickyardeducationalfarm.org/program-overview>

This program provides technical assistance to farmers in access to land and costly equipment, and marketing. The incubator would supply beginning farmers with land, shared equipment and business strategy advice.

Business & Industry Loan Guarantees

<https://www.rd.usda.gov/programs-services/business-industry-loan-guarantees>

The USDA's rural development programs provide guaranteeing of loans for private existing rural businesses that allow private lenders to extend more credit than they would typically be able to.

Collaborative Regional Alliance for Farmer Training (CRAFT)

<http://chesapeakecraft.wordpress.com/>

Chesapeake CRAFT improve practical new farmer training and networking in the region. It facilitates learning opportunities for farm apprentices, interns, and workers that emphasize successful ecological approaches to agriculture.

Community Food Projects (CFP) Competitive Grants Program

<https://nifa.usda.gov/funding-opportunity/community-food-projects-cfp-competitive-grants-program>

The CFP Competitive Grants Program funds community-based food and agriculture projects in the U.S. These projects are designed to help agricultural producers and low-income consumers in order to enhance neighborhoods' food and agriculture needs. These projects include infrastructure improvement and development, planning or innovative marketing activities.

Conservation Reserve Enhancement Program (CREP)

<http://www.dcr.virginia.gov/soil-and-water/crep>

The program provides financial incentives, cost-share and rental payments to farmers who improve Virginia's water quality and wildlife habitat through agriculture [best management practices](#).

Conservation Stewardship Program (CSP)

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/csp/>

This program provides financial and technical assistance to owners of land in agricultural production in order to increase their business productivity and protect the value of their land while promoting the best conservation practices.

Direct Farm Ownership Loans

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/farm-ownership-loans/index>

The USDA's Farm Service Agency provides direct loan in order to purchase or enlarge a farm or ranch, construct a new or improve existing farm or ranch buildings, and for soil and water conservation and protection purposes.

Direct Operating Loans

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/farm-operating-loans/index>

The USDA's Farm Service Agency provides loans for farmers in order to purchase items such as livestock, farm equipment, farm chemicals, insurance, and family living expenses. In addition, it may be used for small improvements or repairs to buildings and general farm operating expenses.

Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish (ELAP)

<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-assist-for-livestock-honey-bees-fish/index>

Provides Emergency relief to producers of livestock, honey bees, and farm-raised fish. Covers losses from disaster such as adverse weather or other conditions covered by any other disaster program.

Emergency Loans

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/emergency-farm-loans/index>

The USDA's Farm Service Agency provides loans to help farmers and ranchers recover from production and physical losses. The USDA consider emergency loans due to drought, flooding, other natural disasters or quarantine.

Environmental Compliance Assistance Fund (ECAF)

<http://www.deq.virginia.gov/Portals/0/DEQ/Air/SmallBusinessAssistance/AutoBody/Appendix13.pdf>

ECAF provides existing Virginia businesses with financing for to implement voluntary agriculture best management practices.

Environmental Quality Incentives Program (EQIP)

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/eqip/?cid=stelprdb1044009>

This program serves owners of land in agricultural production who are interested in implementing conservation practices in order to improve natural resources on agricultural land.

Farm and Ranch Land Protection Program (FRPP)

<http://dof.virginia.gov/land/easement/dev-rights-purchase.htm>

FRPP provides financial and technical assistance to help conserve agricultural lands helping farmers to purchase agricultural land or wetland reserve easement.

Farm Credit

<http://www.farmcreditofvirginias.com/home.aspx>; <https://www.fcsamerica.com/products/young-beginning>; <http://www.farmcreditnetwork.com/about/overview>

Farm Credit offers a variety of rural loans, leases, financial services, business planning assistance and risk management products to [farmers, ranchers and rural businesses](#).

Farm Credit University

<http://www.fcuniversity.com/home.aspx>

This is a training program for farmers and ranchers combining online and traditional training resources.

Farm Labor Housing Direct Loans & Grants

<https://www.rd.usda.gov/programs-services/farm-labor-housing-direct-loans-grants>

The USDA's rural development programs provide loans and grants for the construction, improvement, repair and purchase of housing or buying and improve land for domestic farm laborers.

Farm Storage Facility Loan Program (FSFL)

<https://www.fsa.usda.gov/programs-and-services/price-support/facility-loans/farm-storage/index>

The USDA's Farm Service Agency provides low-interest financing so producers can build or upgrade facilities to store commodities such as grains, oilseeds, peanuts, pulse crops, hay, honey, fruits and vegetables to mention some.

Farmer Veteran Coalition (FVC)

<http://www.farmvetco.org/>

FVC is a national nonprofit organization that assists military veterans interested on careers in agriculture.

Farmers Market Promotion Program

<https://www.ams.usda.gov/services/grants/fmpp>

The purpose of the Farmers Market Promotion Program (FMPP) provides technical assistance to farmers and ranchers in the development, improvement, and expansion of domestic farmers markets.

Farmland Information Center (FIC)

<http://www.farmlandinfo.org/>

The FIC is a learning center for people working to save farm and ranch land that provide educational resources to help educate key audiences and answer requests for information.

Farmland Preservation

<http://www.vdacs.virginia.gov/conservation-and-environmental-farmland-preservation-tools.shtml>

Purchase of development rights (PDR) programs are designed to compensate landowners who voluntarily place an agricultural conservation easement on their property.

Farm-to-consumer Legal Defense Fund

<http://www.farmtoconsumer.org/>

The Fund helps farmers and consumers providing technical assistance through legal counseling, lobbying, and litigation.

Future Harvest - CASA (Chesapeake Alliance for Sustainable Agriculture)

www.futureharvestcasa.org

Future Harvest - CASA (Chesapeake Alliance for Sustainable Agriculture), is a non-profit, educational network of farmers, landowners, consumers and agricultural professionals. This group helps farmers find ways to use environmentally sustainable farming methods.

Grants for Non-Profit organizations

<https://www.farmaid.org/our-work/grant-guidelines/>

These grants are awarded to qualifying nonprofit organizations that serve family farmers in growing the good food movement, helping farmers thrive, and/or taking action to change the system.

Guaranteed Loans

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/guaranteed-farm-loans/index>

The USDA's Farm Service Agency provides guarantee loan to family farm operators and owners who do not qualify for standard commercial loans. Financial institutions receive additional loan business and servicing fees in order to give farmers credit at reasonable terms for operating expenses or business expansion.

International Trade Initiative

<http://www.virginiasbdc.org/programs/passport-to-global-markets/>

The Virginia SBDC offers training seminars to help companies mitigate risks, identify and prioritize markets, grow your international sales, and finance your exports.

Livestock Indemnity Program (LIP)

<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/livestock-indemnity/index>

LIP provides benefits to livestock producers for livestock deaths in excess of normal mortality caused by adverse weather.

Local Food Promotion Program

<https://www.ams.usda.gov/services/grants/lfpp>

The Local Food Promotion Program (LFPP) offers planning and implementation grants. These grants support the development and expansion of local and regional food business enterprises to increase domestic consumption.

Lost Adjustment Standards Handbooks (LASH)

<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/loss-adjustment-standards-handbooks/index>

This program assist farmer in case of crop loses when there is a crop insurance provision. Every state specify which crops are covered.

Microloans Program

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/microloans/index>

The USDA's Farm Service Agency provides small operating loans. These loans is designed to serve small and beginning farmers, non-traditional, and specialty crops.

Minority and Women Farmers and Ranchers

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/minority-and-women-farmers-and-ranchers/index>

The USDA's Farm Service Agency provides loans support minority and women farmers to buy and operate a farm or ranch.

Multi-Family Housing Rental Assistance

<https://www.rd.usda.gov/programs-services/multi-family-housing-rental-assistance>

The USDA's rural development programs provides payments to Farm Labor Housing projects on behalf of low-income tenants unable to pay their full rent.

National Young Farmer Collison

<http://www.youngfarmers.org/>

This non-profit organization provides technical assistance to young farmers.

Natural Capital Investment Fund

<http://www.conservationfund.org/what-we-do/natural-capital-investment-fund>

NCIF supports locally owned enterprises in Central Appalachia. NCIF provides financing services for sustainable agriculture needs in order to grow and expand.

Nature Conservancy

<http://www.nature.org>

The Nature Conservancy helps farmers and ranchers access federal and state conservation programs, and advise on how to monitor and manage environmental impacts of various types.

Noninsured Disaster Assistance Program (NAP)

<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/noninsured-crop-disaster-assistance/index>

This program provides financial assistance to producers of non-insurable crops to protect against natural disasters.

Non-Recourse Marketing Assistance Loan Programs

<https://www.fsa.usda.gov/programs-and-services/price-support/commodity-loans/non-recourse-loans/index>

The USDA's Farm Service Agency provides loan that allows producer to market crops when they choose. These loans help farmer and rancher with their cash flow needs while market prices are low.

Rural Business Development Grants

<https://www.rd.usda.gov/programs-services/rural-business-development-grants>

The USDA's rural development programs provides grants to public entities and private nonprofit corporations to facilitate the development of small enterprises in rural areas.

Rural Business Investment Program (RBIP)

<https://www.rd.usda.gov/programs-services/rural-business-investment-program>

The USDA's rural development programs provide licenses to newly formed venture capital organizations to help meet the equity capital investment needs in rural communities.

Rural Cooperative Development Grant Program

<https://www.rd.usda.gov/programs-services/rural-cooperative-development-grant-program>

The USDA's rural development programs provides grants to non-profit organizations for establishing and operating centers for cooperative development. These grants focuses on the development of new cooperatives and improving operations of existing cooperatives.

Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Loans & Grants

<https://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency>

The USDA's rural development programs provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems. This program seek agriculture producers can decrease energy costs and develop energy efficiency improvements in their operation.

Rural Energy Savings Program

<https://www.rd.usda.gov/programs-services/rural-energy-savings-program>

The USDA's rural development programs provides small businesses with loans to implement durable cost-effective energy efficiency measures.

Rural Microentrepreneur Assistance Program

<https://www.rd.usda.gov/programs-services/rural-microentrepreneur-assistance-program>

The USDA's rural development programs provides microloans and technical assistance for microenterprise startups.

SBA Small Business Loans

<https://www.sba.gov/loans-grants/see-what-sba-offers/sba-loan-programs>

These loans helps agricultural businesses in order to starting, acquiring and expanding. There are several types of loans including microloan programs, Disaster Loans, Real Estate & equipment Loan and Small Business loans.

Small Business Innovation Research Program (SBIR)

<https://nifa.usda.gov/program/small-business-innovation-research-program-sbir>

The SBIR are grants awarded to small businesses to support advanced concepts research in agriculture that could lead to significant public benefit.

Small Farmer Outreach, VSU Cooperative Extension

<http://www.vsu.edu/pages/3167.asp>

This project assist producers and ranchers to own, maintain and operate farms and ranches independently. The program provides assistance activities in production management, financial management, marketing and other areas in order to help farmers and ranchers to increase farm profitability.

Socially-Disadvantaged Groups Grant

<https://www.rd.usda.gov/programs-services/socially-disadvantaged-groups-grant>

The USDA's rural development programs provides technical assistance to socially disadvantaged groups through cooperatives. Grant funds must be used for feasibility studies, business plans, strategic planning and leadership training to socially disadvantaged groups in rural areas.

Specialty Crop Block Grant Program

<http://www.vdacs.virginia.gov/sales-specialty-crop-competitive-grant-program.shtml>

[Specialty Crop Block Grant Program](#) is designed to enhance the competitiveness of specialty crops such as fruits and vegetables, tree nuts, dried fruits, and horticulture and nursery crops to mention some. Grants are awarded to agricultural associations, industry and producer groups, community-based organizations and academia.

Start2Farm.gov

<http://www.Start2Farm.gov>

Start2Farm.gov is an online database connecting beginning farmers and ranchers with available programs and resources created by USDA's National Agricultural Library, in partnership with the American Farm Bureau Federation.

Sustainable Agriculture technical assistance for farmer and ranchers

<https://attra.ncat.org/index.php>

This website presents resources such as a list of internships and apprenticeship, educational publication and technical assistance for farmers and rancher.

The Allegheny Mountain Institute

<http://www.alleghenymountaininstitute.org/>

The institute provides training in hands-on experience on a diversified farm and study food system issues.

The Beginning Farmer and Rancher Development Program

<https://nifa.usda.gov/program/beginning-farmer-and-rancher-development-program-bfrdp>

The National Institute of Food and Agriculture (NIFA) provides grants to organizations of the cooperative extension system that help beginning farmers and ranchers. NIFA's grants focuses on education, mentoring and technical assistance services.

The Farm Bureau® Rural Entrepreneurship Challenge

<http://www.strongruralamerica.com/challenge/>

The Farm Bureau® Rural Entrepreneurship Challenge is the first national business competition focused exclusively on rural entrepreneurs working on food and agriculture businesses.

The Governor's Agriculture and Forestry Industries Development (AFID): Facility Grants

<http://www.vdacs.virginia.gov/agriculture-afid-facility-grants.shtml>

An AFID facility grant seeks to support or benefit a specific company. It is expected the grant will help to attract new or expand existing agriculture and forestry companies.

The Governor's Agriculture and Forestry Industries Development (AFID): Planning Grants

<http://www.vdacs.virginia.gov/agriculture-afid-planning-grants.shtml>

An AFID planning grant is designed to help localities to develop a strategy for agriculture and forestry. The grants may be used on develop a strategic plan, feasibility studies, and policies that promotes agritourist and local food systems.

The Small Farm Dream Course

<http://www.pecva.org/small-farm-dream>

This program offer education training on starting an agricultural operation and landowners opportunities to increase farmland accessibility.

The Standard Reinsurance Agreement (SRA) and the Livestock Price Reinsurance Agreement (LPRA)

<http://www.rma.usda.gov/pubs/ra/>

The [Federal Crop Insurance Corporation](#) (FCIC) provides reinsurance and subsidies on eligible crop insurance contracts sold by the insurance company. Crop Insurance Providers in Virginia can be found at <https://www3.rma.usda.gov/tools/agents/companies/2017/virginiaCI.cfm> and Livestock Price Insurance Providers in Virginia can be found at <https://www3.rma.usda.gov/tools/agents/companies/2017/virginiaLPI.cfm>

The Sustainable Agriculture Research and Education (SARE)

<http://www.southernsare.org/Grants>

The SARE grants provide resources for researchers, farmers, educators and communities. There are various different grants categorized in research and education grants, large systems research grants, graduate student grants, professional development grants, On-Farm research grants, producer grants, sustainable community innovation grants, and the [young Scholar Enhancement Grant](#). Also, SARE provides training programs, educational assistance and other professional development programs.

The Virginia Agricultural Best Management Practices Cost-share Program (VACS)

<http://www.dcr.virginia.gov/laws-and-regulations/lr8b>

The Program's goal is to improve water quality in the state's streams, rivers, and the Chesapeake Bay. Financial and technical assistance are offered as incentives to carry out construction or implementation of agriculture best management practices.

The Virginia Farm Business Development (VFBD)

<http://www.vdacs.virginia.gov/agriculture-virginia-farm-business-development-program%20.shtml>

The Virginia Farm Business Development (VFBD) Program is a reimbursement grant designed to help farms and small agribusinesses engage in business planning, market research, succession planning, and other related activities.

Transition Incentives Program (TIP)

<https://www.fsa.usda.gov/programs-and-services/conservation-programs/transition-incentives/index>

The Transition Incentives Program (TIP) provides economic incentives to expiring Conservation Reserve Program (CRP) land owners, on the condition they sell or rent this land to a [beginning farmer or rancher](#). The TIP provides an opportunity for beginning and socially disadvantaged farmers and ranchers to purchase their own land or rent land.

Tree Assistance Program (TAP)

<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/tree-assistance-program/index>

The Tree Assistance Program provides financial assistance to qualifying orchardists and nursery tree growers.

Tricycle Gardens

<http://tricyclegardens.org/>

Tricycle Gardens is a non-profit organization that offer a training program that provide experiential and technical training in the field of urban agriculture.

VA Farm Link

<https://farmlink.va-vdacs.com/>

Virginia Farm Link is a program designed to help farmers and landowners providing individuals seeking farming opportunities with a method to demonstrate their farming commitment and retiring landowner that want their land to continue in agriculture operation.

Value-Added Producer Grants

<https://www.rd.usda.gov/programs-services/value-added-producer-grants>

The USDA's rural development programs provides grants and funds that can be used for planning activities or for working capital expenses. These resources must be related to producing and marketing a value-added agricultural product.

VDACS marketing assistance

<http://www.vdacs.virginia.gov/marketing-sales-and-market-development.shtml>

The Office of Sales and Market Development assists Virginia's agricultural producers and processors market their products throughout the United States and Eastern Canada.

Virginia Association for Biological Farming (VABF)

<http://vabf.org/>

VABF is a nonprofit organization which provides technical assistance and conducts grant-supported research.

Virginia Beginning Farmer & Rancher Coalition Program (VBFRCP)

<http://www.vabeginningfarmer.alce.vt.edu/>

The program helps Beginning farmer and rancher through training, education, and technical assistance in topics such as production and management strategies, marketing strategies, legal strategies and productivity and competitiveness and sustainability of agricultural business.

Virginia Farm to Table Plan

<http://virginiafarmtotable.org/virginia-farm-to-table-plan/>

This initiative informs and integrates assessment, education, development of programs and infrastructure, policy and funding recommendations to address key issues facing farmers, food entrepreneurs, and communities.

Virginia Finest

<http://www.vdacs.virginia.gov/vafinest.com/index.shtml>

This trademark program enhances the economic opportunities and success of Virginia's specialty food and beverage companies. Participants accepted into the program may include the Virginia's Finest logo on their packaging.

Virginia Foundation for Agriculture, Innovation and Rural Sustainability

<https://www.vafairs.com/>

VA FAIRS is a not-for-profit foundation that provides technical assistance to Virginia's based rural agricultural enterprises. Assistance is provided in [strategic planning](#), [grant assistance](#), feasibility studies, [business plan](#) creation, and [cooperative assistance](#).

Virginia Grown

<http://www.vdacs.virginia.gov/vagrown/index.shtml>

Virginia grown is a marketing program promoting fresh, local products to consumers. It offers point-of-sale materials, consumer publications and promotion throughout the year.

Virginia Organic Certification Cost Share Program

<http://www.vdacs.virginia.gov/sales-certified-organic.shtml>

The Virginia Department of Agriculture (VDACS) support farmers interested the organic certification process. The program help producers by reducing the certification cost.

Virginia small business financing authority (VSBFA)

<http://www.vabankers.org/VSBFA>

The VSBFA provides direct loans to business and banks including agribusiness. They provide microloans and finance equipment that will have quantifiably less impact on the environment or the business is seeking to implement voluntary agricultural best management practices.

Virginia Tobacco Region Opportunity Fund (TROF)

<http://www.tic.virginia.gov/tobregionoppfund.shtml>

The TROF grant program provide performance-based monetary grants to localities in Virginia's tobacco producing region. The TROF grant focus on assisting the creation of new business or existing business expansion.

Virginia Tobacco Region Revitalization Commission

<http://www.tic.virginia.gov/overview.shtml>

The commission funds strategic investments in projects that will diversify the long-term Agribusiness economy of Virginia's tobacco region.

Virginia's Agricultural Commodity Boards

<http://www.vdacs.virginia.gov/boards-virginias-agricultural-commodity-boards.shtml>

Virginia's agricultural commodity boards enhance the sale of Virginia's farm commodities by conducting market development, promotional, educational and research programs.

Whole Farm Revenue Protection (WFRP)

<http://www.rma.usda.gov/policies/wfrp.html>

This program provides risk management safety net for all commodities on the farm under one insurance policy. This insurance plan includes farms with crops and livestock organic commodities.

Youth Loans

<https://www.fsa.usda.gov/programs-and-services/farm-loan-programs/youth-loans/index>

The USDA’s Farm Service Agency provides loans for young people who are participants of agricultural youth organization to finance educational, income-producing, and agriculture-related projects.