BOTETOURT COUNTY AGRICULTURE DEVELOPMENT STRATEGIC PLAN

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Center for Economic and Policy Studies

and

James Ellis and Deborah Rexrode
Center for Survey Research

November 2015

Weldon Cooper
Center for Public Service
University of Virginia

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WELDON COOPER
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Without the comments of numerous agricultural stakeholders and members of the community, the study would not have been possible. We would particularly like to thank the 41 focus group participants who braved unusually frigid, near zero temperatures and snowfall to attend the February 19th focus group meetings. We also received comments from 48 members of the community through an online survey and several emails from members in response to announcements about the study published in the *Roanoke Times*.

Lastly, we would also like to thank Weldon Cooper Center staff for their assistance. Brandon Croakin, a student intern and research assistant, assisted with compiling information on federal and state agriculture-related grant programs. Steve Kulp and Dave Borszich of the Weldon Cooper Center for Public service helped with document design and formatting. Any errors or omissions are the responsibility of the authors.

INTRODUCTION

Botetourt County has traditionally been a rural county heavily reliant on agriculture. However, in recent decades, population has grown in periodic spurts as the southern portion of the county has evolved into a bedroom community for the nearby cities of Roanoke and Salem. The economy has also become much more diversified with the growth of service and retail trade industries catering to this growing population as well as increased traffic volume in the I-81 and I-64 highway corridors. The county has seen a huge growth in manufacturing, transportation and warehousing activity with new and expanding operations taking advantage of a low cost of business and excellent transportation access.

Botetourt County's farming sector has declined over time in both absolute and relative size, and the composition of its agricultural products has shifted. The county was once widely known for its poultry, orchards, and tomatoes to be replaced later by a large number of dairy operations. In recent decades, beef cattle and forage crops account for the bulk of agricultural activity. Dairy continues to be important, although the number of dairy farms has dwindled as the scale of operations for remaining farms has increased. The county also hosts several orchards and numerous farms that produce specialty products, including agritourism and value-added products. Residents and local leaders continue to place a high value on preserving the farm economy in order to safeguard the environment, quality of life and sustain the agricultural sector as a part of the economic base.

This study examines characteristics and trends for the Botetourt County economy with special attention to the farm sector. It describes national and regional food and agricultural industry developments that could affect consumer demand and farm production practices. Lastly, it identifies various steps that the community might take to preserve and revitalize agricultural activity in support of local economic development.

To develop a roadmap for local agriculture, the study synthesizes comments and suggestions provided by focus groups made up of agricultural industry stakeholders and responses received from members of the public through an online questionnaire. The discussions and questionnaires were used to solicit community ideas for revitalizing agriculture. Using information gleaned from the local sector analysis, national agricultural and food industry trend summary, and focus group discussions and survey results, the study identifies goals, objectives, and specific activities to improve agricultural viability and growth.

The study is divided into five sections. The first section describes the Botetourt County economy and highlights key economic and demographic characteristics and changes. The second section explores the history, size, and changing composition of the area's agricultural sector. The third section describes emerging national consumer and production trends in the agriculture and food industries. The fourth section organizes the results of focus group discussions and survey responses to provide guidance for developing the strategic plan. The fifth section describes strategic goals, objectives, and initiatives to promote and expand area agriculture.

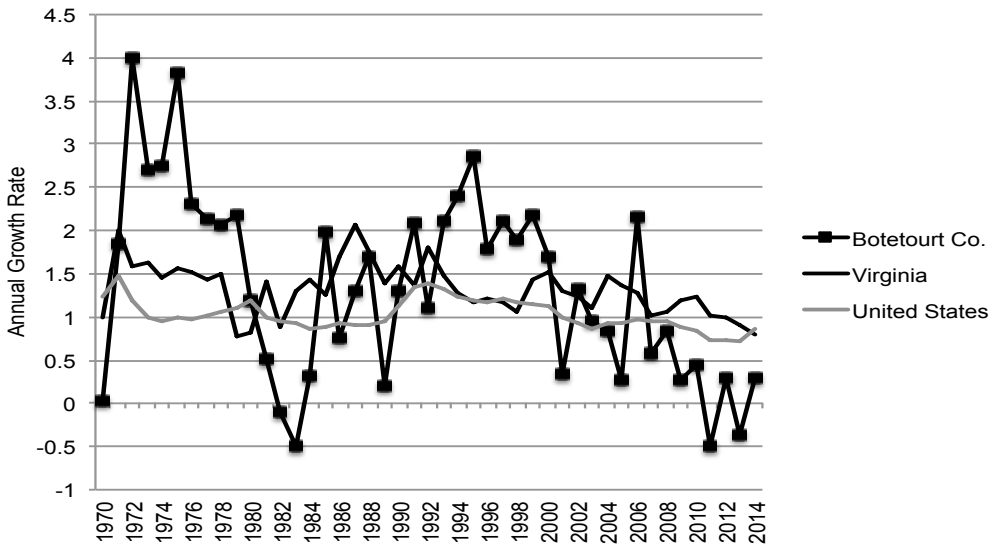
SECTION ONE
THE BOTETOURT COUNTY ECONOMY

Botetourt County is located in west central Virginia and is one of six localities (Roanoke City, Salem City, Craig County, Franklin County, and Roanoke County being the others) that form the Roanoke-VA metropolitan area (population estimated to be 313,388 in 2014). Botetourt County covers approximately 546 square miles and includes both the Great Appalachian Valley in the west and Blue Ridge Mountains in the east with topography varying from rolling hills and valleys to steep ridges. Botetourt County was estimated to have a population of 33,100 in 2014, up 8.5 percent from 30,496 in 2000. Over the period 1970-2014, Botetourt County's population has grown at times rapidly (see **Figure 1.1**), reflecting, in large part, suburbanization from Roanoke and Salem cities. However, growth slowed substantially at the onset of the recent recession. Buchanan (2013 estimated population 1,167), Fincastle (population 341), and Troutville (population 427) are the only incorporated towns in the county.

Botetourt County has, until the last few decades, been largely rural and heavily reliant on agriculture. With the completion of interstate highways 64 and 81, it has become much more attractive for residential, commercial, and industrial development, and its economy has become much more industrially diversified. The county is bisected in a north/south direction by I-81 while I-64 crosses at the northern tip in an east/west direction. It is also crisscrossed by railroads owned by CSX and Norfolk Southern. Manufacturing employment increased by over 1,000 jobs between 1990 and 2013 and pays above average wages (see **Figure 1.2**). Warehouse and transportation firms have also sprouted along the interstate corridors to take advantage of accessibility and logistical advantages. New shopping venues include the Town Center shopping center that caters to a growing residential population and numerous fast food and casual restaurants that serve residents, commuters, and travellers. Recently announced industrial recruits and expansions include Virginia Transformer (a new plant that will create 150 jobs), Capco Machinery Systems (an expansion creating 30 jobs), Virginia Forge (an expansion creating 38 jobs), and Altec Industries, Inc. (an expansion creating 96 jobs).[1]

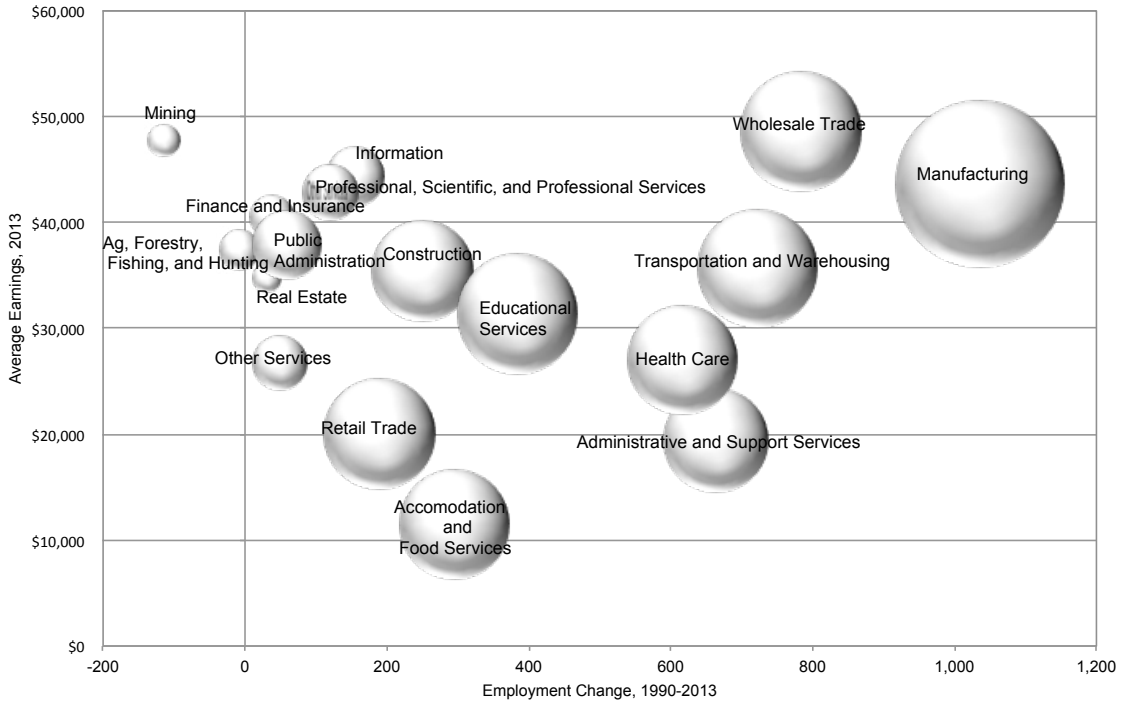
1 *Virginia Business Magazine*, February, 2015 and June, 2015.

Figure 1.1. Annual Population Growth Rate, Botetourt County, Virginia, and United States, 1970-2014



Source: Bureau of Economic Analysis, Local Area Personal Income and U.S. Census Bureau

Figure 1.2. Size of Sector, Change in Employment 1990-2013, and Average Annual Wages 2013, Botetourt County



Source: Virginia Employment Commission, Quarterly Census of Employment and Wages; Note: Size of sphere is proportional to 2013 employment

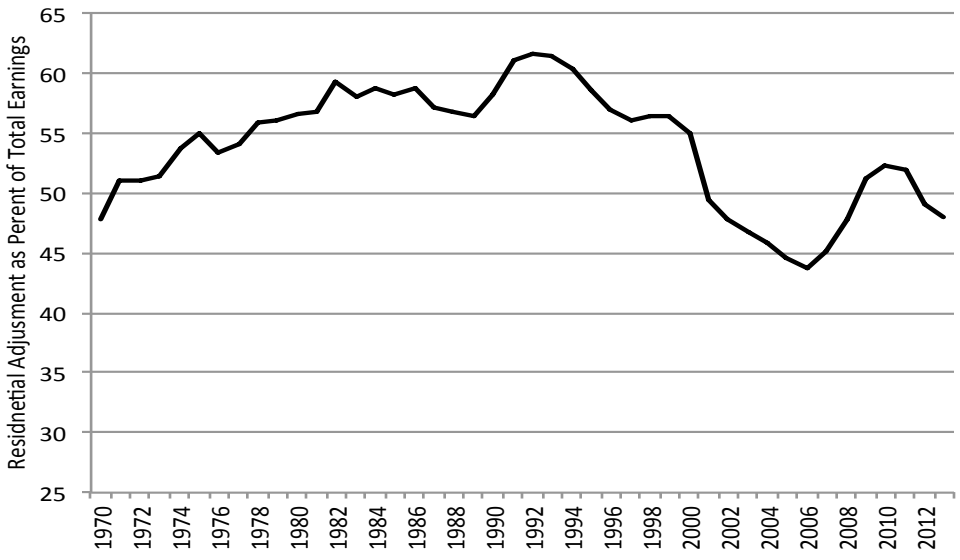
Befitting a bedroom community, Botetourt County has a net outflow of approximately 5,500 workers each day (see **Figure 1.3**). Out-commuters primarily work in Roanoke City, Roanoke County, and Salem City. The most common origin of in-commuters is Roanoke County, Roanoke City, and Bedford County. Although Botetourt County has the classic profile of a suburban bedroom community, its economy has become relatively less reliant on commuter earnings inflows as it develops a larger economic base. **Figure 1.4** indicates that the percentage of local earnings derived from net commuter earnings inflows (residential adjustment) has fallen significantly since the early 1990s.

Botetourt County compares very favorably to the nation and Virginia on many metrics of wellbeing, including the unemployment rate and per capita income. While the unemployment rate increased markedly during the recent recession as it did elsewhere, it has remained consistently below the state and national averages over the last 25 years (see **Figure 1.5**). Because of the influx of higher income residents, the county has also made dramatic progress in per capita income, moving from approximately 75 percent of the national average in 1970 to nearly 105 percent today (see **Figure 1.6**).

Figure 1.3. Botetourt County Primary Job Inflow-Outflow Patterns, 2011

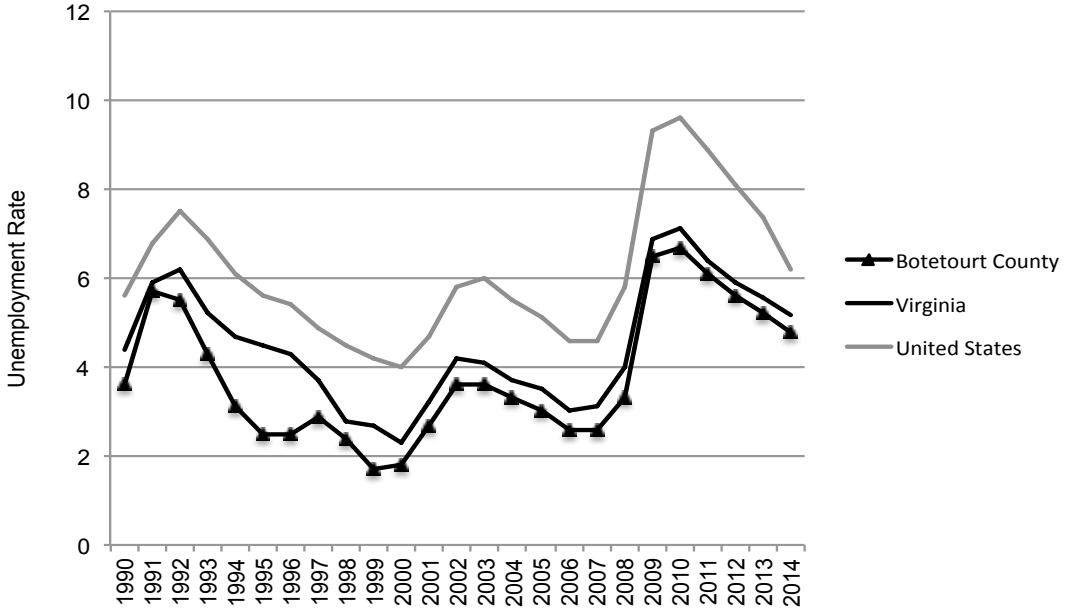
Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics

Figure 1.4 Botetourt County Net Commuter Earnings as a Percentage of Total Earnings, 1969-2014



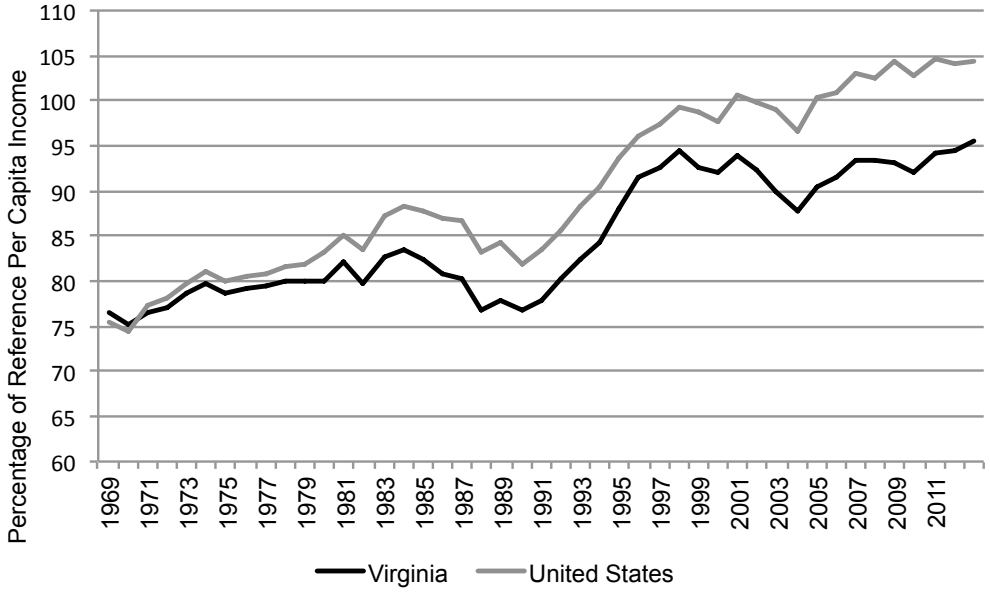
Source: Bureau of Economic Analysis, Local Area Personal Income

Figure 1.5 Unemployment Rate, Botetourt County, Virginia, and United States, 1990-2014



Source: Bureau of Labor Statistics, Local Area Unemployment Series

Figure 1.6. Botetourt County Per Capita Income as Percentage of Virginia and United States, 1969-2013



Source: Bureau of Economic Analysis, Local Area Personal Income.

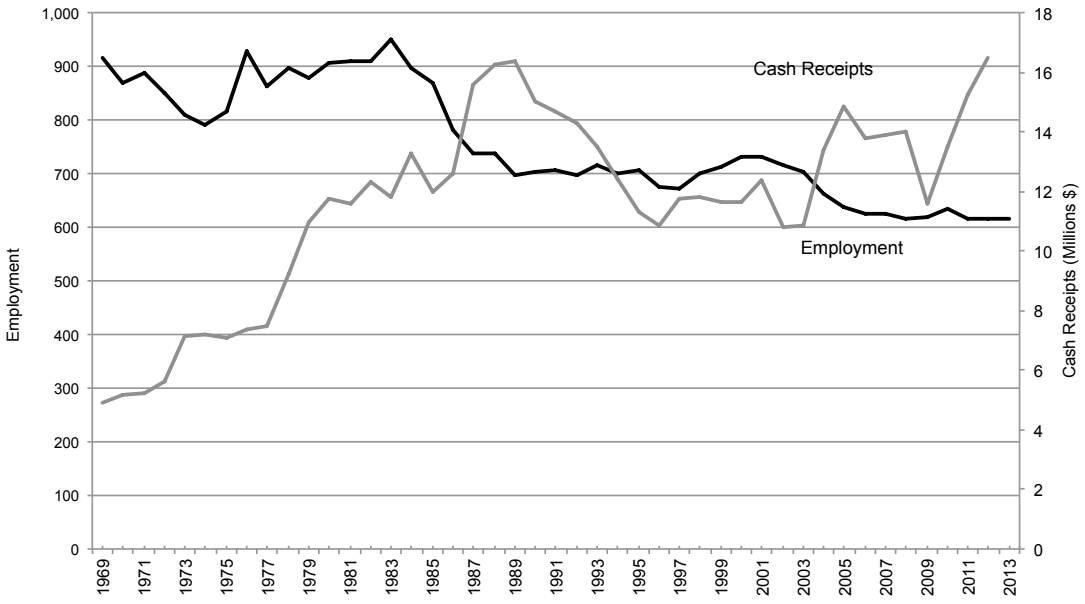
SECTION TWO
BOTETOURT COUNTY AGRICULTURE

Farming is a way of life for many Botetourt County residents but the number of participants continues to dwindle. Approximately 900 people, primarily farm proprietors, were employed in agriculture in 1969 but this number dropped to a low of 616 in 2013 (see **Figure 2.1**). Farm sales, on the other hand, have been relatively constant in real terms. With continued growth in county industrial and commercial activity, farm employment represents a rapidly shrinking percentage of total employment. Whereas it represented nearly one in five jobs in 1969, it makes up less than four percent today (see **Figure 2.2**).

Botetourt County is a leading state producer of beef cattle and related forage crops. Beef farms are primarily cow to calf operations. Most are small, part-time operations with a county average of 66 head per farm. The county is also home to 11 dairy farms. The number of cattle and calves fluctuates with market conditions but the overall production trend has been downward (see **Figure 2.3**). Botetourt County agriculture has only slowly diversified. Livestock and crop products retain roughly the same share of total receipts today as they did thirty years ago (see **Figure 2.4**). However, the number of farms reporting that they are primarily a beef farming operation has decreased while those reporting crop farming and other animal production (primarily equine) has increased (see **Figure 2.5**). Specialty, agritourism, and value-added agricultural enterprises are also gaining a foothold. The county hosts an estimated 2,800 horses, three wineries, several orchards, two USDA National Organic Program certified organic production farms, and one Consumer Supported Agriculture (CSA) operation. Major value-added products offered by area farms include apple butter, apple cider, and processed meats.

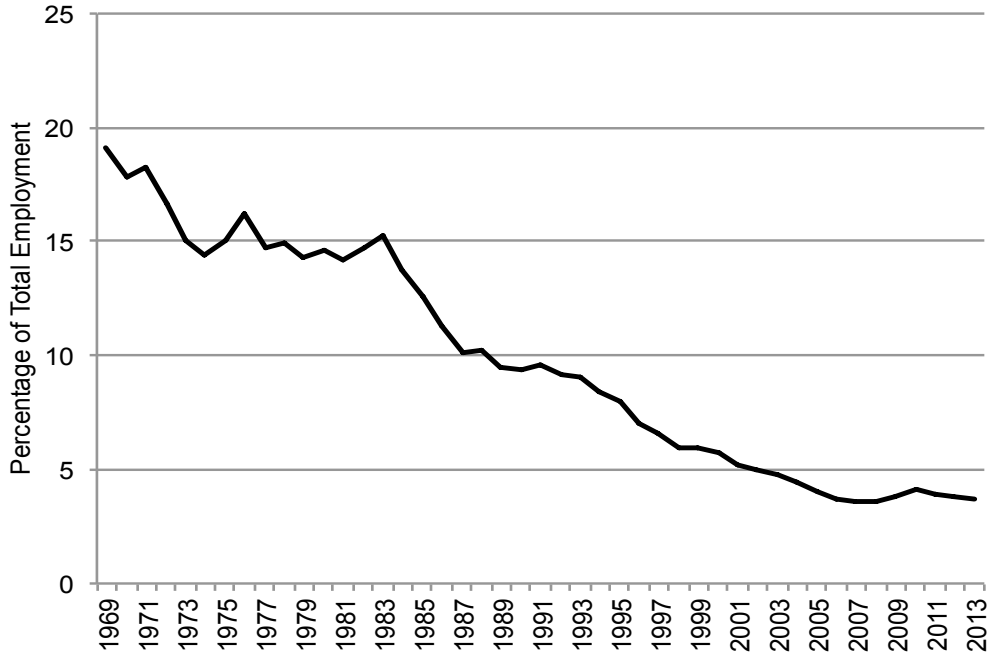
Botetourt farms and farmers resemble those elsewhere in Virginia in many respects. Most Botetourt farms are relatively small operations. A majority of farms (52 percent) have fewer than $5,000 in sales

Figure 2.1 Botetourt County Farm Employment and Agricultural Cash Receipts, 1969-2013



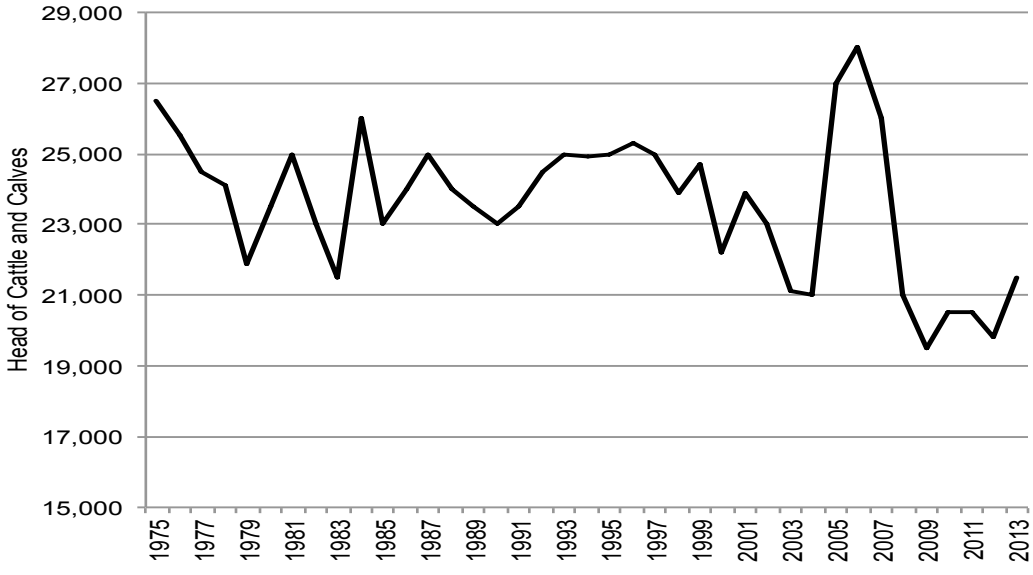
Source: Bureau of Economic Analysis, Local Area Personal Income

Figure 2.2 Botetourt County Farm Employment as Percentage of Total Employment, 1969-2013



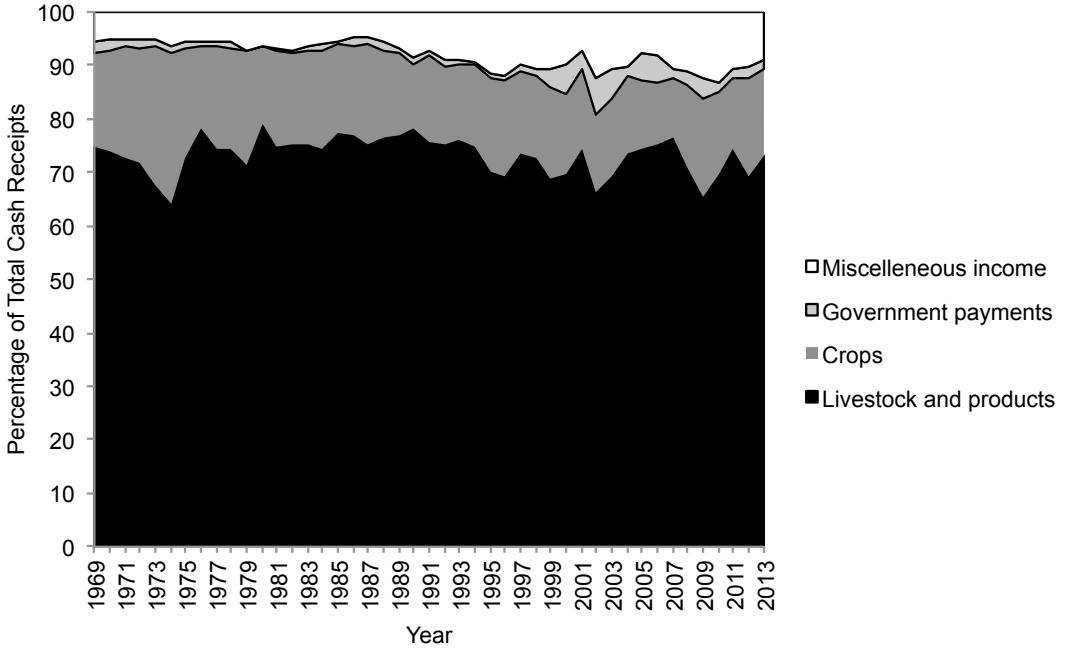
Source: Bureau of Economic Analysis, Local Area Personal Income

Figure 2.3 Botetourt County Cattle and Calf Inventory, 1975-2013



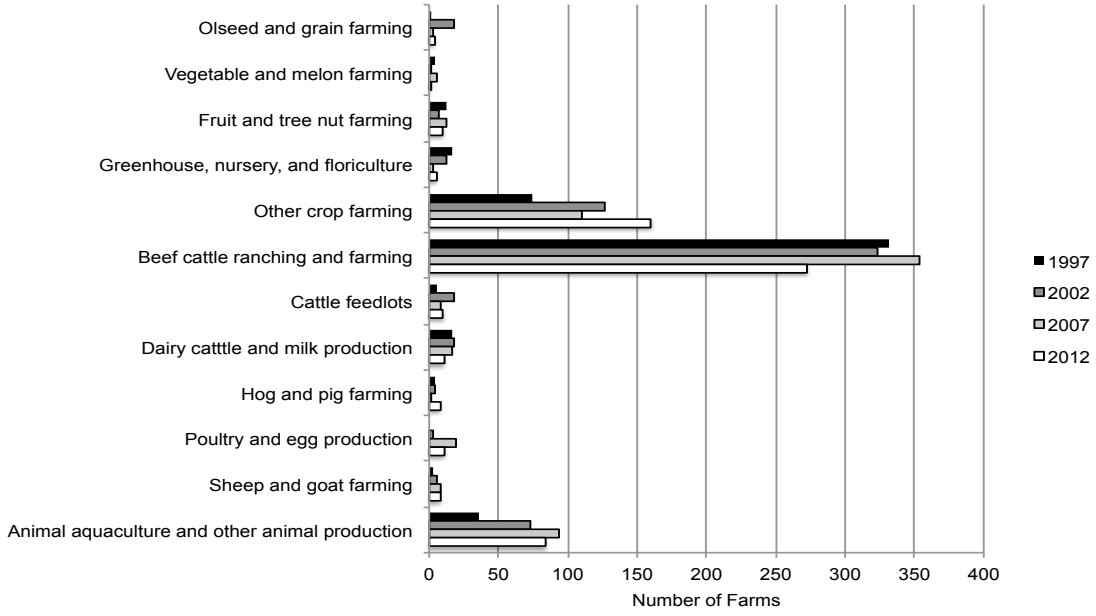
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Quickstats

Figure 2.4 Botetourt County Cash Receipts and Income by Source, Percentage of Total, 1969-2013



Source: Bureau of Economic Analysis, Local Area Personal Income

Figure 2.5 Number of Botetourt County Farms by Industry Category, 1997-2012



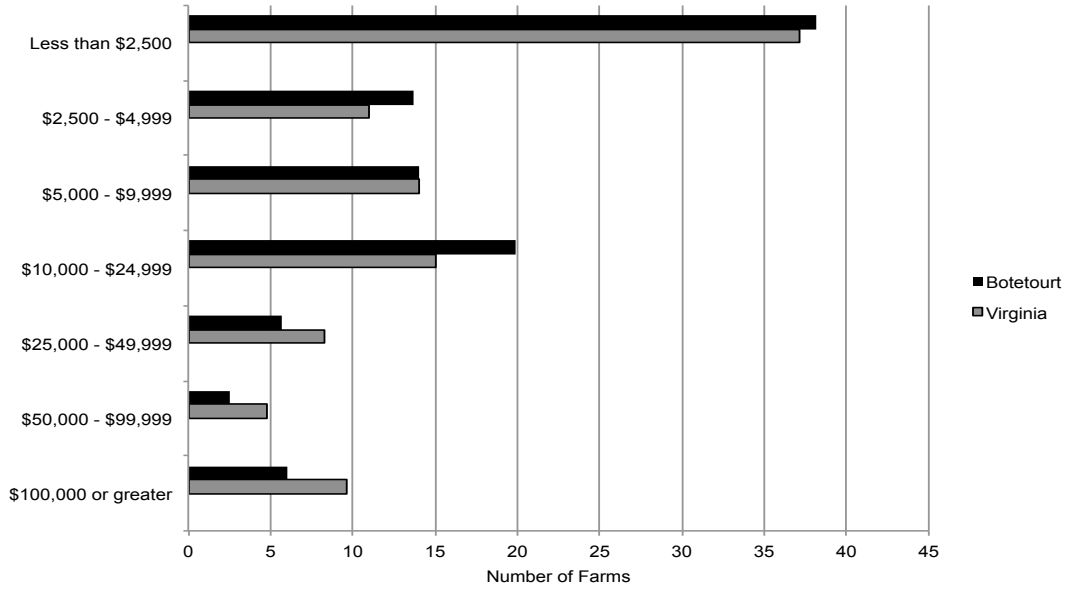
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Census of Agriculture, Various Years

compared to 48 percent for Virginia (see **Figure 2.6**). Only 35 farms reported more than $100,000 in sales according to the 2012 Census of Agriculture, a scale of operation generally needed to support a profitable full-time operation. In fact, more county farms realize net operating losses than net operating gains (see **Figure 2.7**). Most farm operators (338 or 58 percent) report working off-farm for income compared to 67 percent for Virginia; fewer than half listed farming as their primary occupation (274 or 47 percent) compared to 45 percent for Virginia. In addition, Botetourt farmers are aging as the number of new entrants remains relatively low. The average age of principal operators increased from 57.7 to 62.3 years between 1997 and 2012, a larger leap than the average increase of 56.4 to 59.5 years for Virginia. This compares to an average estimated age of 44 years for all Botetourt County workers for the 2007-2012 period, using U.S. Census American Community Survey data. Approximately 43 percent of farmers are 65 years or older (see **Figure 2.8**) compared to 36 percent for Virginia, which means that a large cohort of farmers will be exiting the workforce in the near future. The pipeline of new and beginning farmers is relatively small. Botetourt has only 73 farm operators or 13 percent who have been operating a farm for fewer than 10 years. This compares to 18 percent for Virginia.

Unlike several other Virginia communities facing farm succession challenges, Botetourt has not hosted a beginners farm program to teach agricultural, entrepreneurial, and farm management skills needed to launch a successful farm operation. However, a beginning farmer program is offered in nearby Roanoke city at the Roanoke Higher Education Center through a partnership with Virginia Tech and VT EarthWorks at the Catawba Sustainability Center in Roanoke County. Moreover, Virginia Cooperative Extension offers classes, workshops, and training on varied agricultural topics, which has in recent years included lessons on backyard poultry, rabbits, small ruminants, food safety, fruit tree grating, livestock/equine training, pesticide application, and selecting/purchasing hay. Virginia Western Community College also currently offers a noncredit course on the Fundamentals of Beekeeping at the Greenfield Education and Training Center

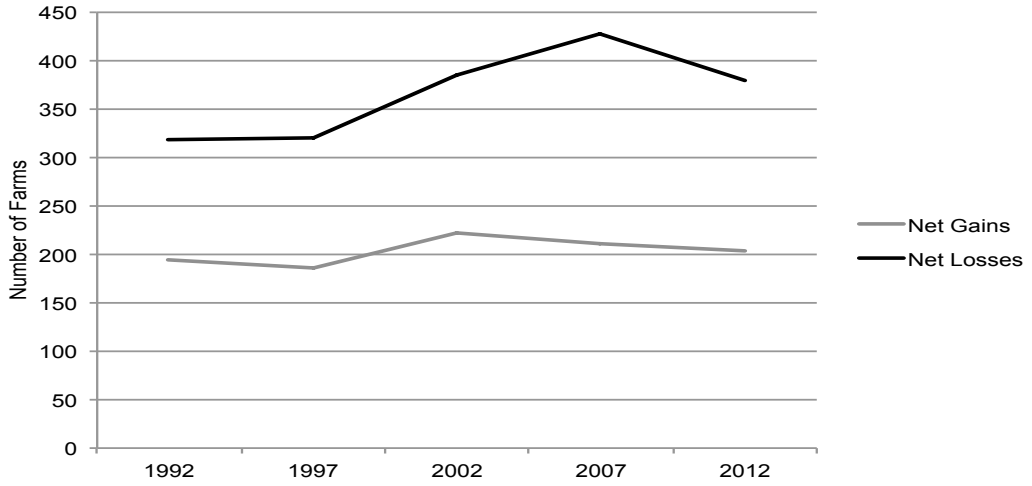
Botetourt County has seen a large transition from agriculture to non-agricultural land uses in recent decades, with growing residential, commercial and industrial development. Development has primarily affected the southern half of the county,

Figure 2.6 Number of Botetourt County and Virginia Farms by Sales Size, 2012



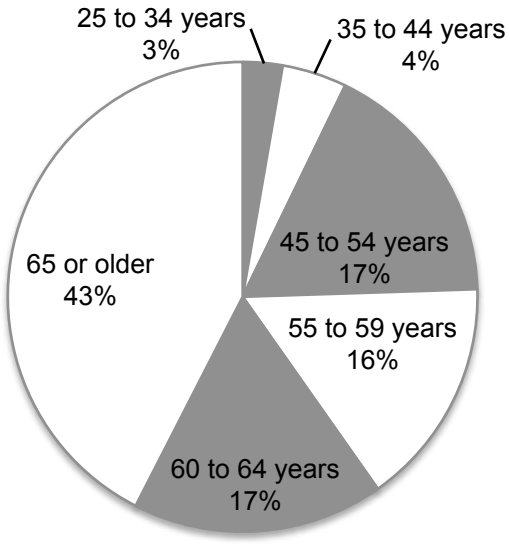
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Census of Agriculture, Various Years

Figure 2.7 Number of Botetourt Farms with Net Gains and Losses, 1992-2012



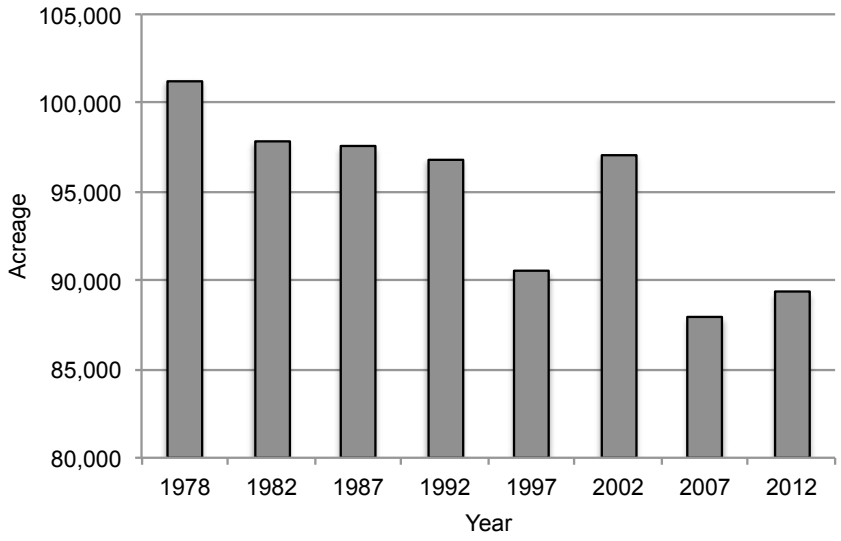
Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Census of Agriculture, Various Years

Figure 2.8 Percentage of Botetourt Farm Operators by Age Group, 2012



Source: U.S. Department of Agriculture, National Agricultural Statistics Service, Census of Agriculture, Various Years

Figure 2.9 Botetourt County Farm Acreage, 1978-2012



Source: National Agricultural Statistics Service, Census of Agriculture, Various Years; Note: 1992 and earlier years are not adjusted for survey nonresponse error

in the vicinity of Troutville and Daleville. The northern section of the county remains very rural and agricultural. **Figure 2.9** indicates that farm acreage dropped by over 10,000 acres from 1978 to 2012, an approximately 11.8 percent rate of decline over the period that is still lower than the 20 percent rate of attrition for the state as a whole. Botetourt County features generally deep and well-drained loamy topsoil but slopes, rockiness, and fertility can vary widely (USDA, SCS 1994). The most productive undeveloped soils are located in the central portion of the valley region and terraces and floodplains throughout the county. The flat to gently and moderately sloped areas in these areas create good growing conditions for crops and orchards. Steeper slopes are generally restricted to pasture and woodlands. Some of these prime agricultural soil areas are under development pressures.

Agriculture preservation and vitality are important goals in county planning (see **Table 2.1**). The farm sector is valued for its contribution to the economy and for providing esthetic and environmental benefits. In public and stakeholder forums convened to formulate county plans, area residents have repeatedly expressed the desire to manage local growth and development, maintain the rural character of the county, and make agriculture an integral part of the county's economic development strategy. Moreover, residents and stakeholders have identified several future agricultural development opportunities including agritourism, local food systems, and manufacturing agricultural and wood-based value-added products. A recently developed 2040 vision for the county sees an emerging agriculture sector that features "high-tech traditional farming and innovative and sustainable uses of our natural resources."[2]

The Botetourt County government supports rural and agricultural land preservation primarily through its zoning regulations and land use assessment program. The county assesses land at the use value in agriculture for agriculture, horticultural, forestal and open space real estate with an assessment of $500 per acre for cropland, $360 per acre for pasture, $200 per acre for forest land and $2,000 per acre for open space. Residents also participate in land conservation programs offered through the state government land preservation tax credit program

2 *Botetourt 2040 Vision: Honoring Our History, Enjoying the Present, and Shaping the Future*. Mimeo.

Table 2.1 Agricultural Objectives in County Planning Documents

Document	Objective	Activities
Comprehensive Plan	Rural and agricultural land preservation	Define and identify priority areas for forestal, agricultural and open space conservation
		Develop farmland and forestry retention programs, such as agricultural and forestal districts
		Encourage use of conservation easement programs
		Continue implementation and promotion of County Conservation Easement Program
	Farming viability	Provide support to working farms
		Support farmers markets
Tourism Strategic Plan	Tourism	Develop an agricultural tourism product
		Encourage development of a county fair site
Economic Development Strategic Plan	Agriculture marketing	Establish Shenandoah Valley brand of local agricultural products
		Organize agricultural farm and winery tours as an annual event
	Agriculture-related entrepreneurship	Provide technical assistance to farmers interested in agritourism such as farm stays
		Establish restaurant featuring locally-produced food and beverages

and land trust easement purchases. At the end of FY2014, 15,697 acres were under conservation easement and a total of 101,545 acres (29 percent of the total county land area) are permanently protected from development as a result of easements and publicly owned federal, state, and county owned natural areas including over 70,000 acres in the Jefferson and George Washington National Forests. The county does not have agricultural or forest districts, a special state designation that provides use value assessments with additional protections. Nor has it adopted a Purchase of Development Rights ordinance.

The County also supports the agriculture community in other ways. The county provides funding towards supporting staffing in Virginia Cooperative extension. It has also supported the formation of a farmers market (now located in Town Center) and a county fair. The fair, reintroduced in 2013 after being discontinued in the 1950s, is held for two days during the summer near the town of Buchanan. It is currently searching for a new site to relocate and expand. Cooperative Extension also created a regional Food Expo at the Botetourt Sports Complex in 2009. The county participates in the Fields of Gold Shenandoah Valley agritourism program that markets area agritourism venues, including food specialty stores, restaurants, and a farmer's market. It also benefits from local food promotion through the Buy Fresh Buy Local for Shenandoah program with sponsorship by Virginia Cooperative Extension and local land trusts.[3] County public schools support local agriculture by sourcing a portion ($38,000 or 5%) of its total $760,000 school food budget from local sources.[4]

Several stores and farm stands in Botetourt County offer locally produced food products. They include Heritage Family Markets, Ikenberry Orchards

3 Fields of Gold http://www.fieldsofgold.org; Buy Fresh Buy Local for Shenandoah http://buylocalshenvalley.org

4 Food to school census http://www.fns.usda.gov/farmtoschool/census#/

Store, All Things Healthy, and Glebe Hill Gardens, all located in Daleville. Additional marketing and showing resources in the immediate region include the Roanoke-Hollins Stockyard in Cloverdale for selling livestock,[5] the Lexington Horse Center in nearby Lexington, VA which is a world-class horse showing facility and the Green Hill Park equestrian center in Salem, an outdoor ring which many Botetourt residents use for horse shows and competitions. The Botetourt County Horseman's Association is a local non-profit organization that promotes the interests and education of area equine and horse-riders, and the Botetourt County Cattlemen's Association represents area cattle livestock and dairy operators.

5 A rail transloading facility has also been proposed in Cloverdale for bulk shipping of soybeans and grains..

SECTION THREE
AGRICULTURE AND FOOD INDUSTRY EMERGING TRENDS

The agriculture and food industries have entered a new era of disruptive innovation. While these industries have always been on the forefront of change, the pace of change is accelerating because of the explosion of new biological, mechanical, information, and communication technologies; an increasing emphasis on environmental sustainability; accelerating fragmentation of consumer markets; and surging entrepreneurial finance activity that has begun to recognize promising opportunities in food and agriculture. In the future, entrepreneurial qualities, willingness to adopt new technologies and more rapid response to changing consumer preferences will assume more importance in the marketplace. This section examines how some of the major changes in consumption and production are reshaping the industry.

Consumer Trends

Consumer demand for food has long fluctuated in response to growing household incomes, transportation improvements, urbanization, advances in dietary and medical knowledge, industry production and marketing improvements, and other factors. Contemporary tastes are being shaped by popular media featuring culinary tourism, high pressure cooking competitions and celebrity chefs, as well as greater consumer educational attainment, population aging, increasing ethnic diversity, globalization, and the proliferation of smart phone and social networking technologies. Consumers are more interested in knowing where their food comes from, how it was grown, its nutritional properties, and how it is prepared. Social and environmental criteria such as corporate responsibility, adequate worker compensation, use of environmentally sustainable production practices, and humane treatment of livestock and poultry increasingly influence consumer decisions. Many American consumers are becoming more "European" in their food preferences with greater attention to food terroir, understanding the "story behind the food", slow enjoyment of food and its culinary attributes, socially interacting with food producers and other consumers, and a desire for fresher, interesting, and unique products. In some larger urban markets, corner dry goods stores, micro grocers, butchers and boutique food shops featuring fresh, organic, and craft food products are proliferating.[6] Sales of organic foods alone reached an estimated $35 billion in 2014, up 161 percent from $13.3 billion in 2005 (see **Figure 3.1**). Consumers are also increasingly adopting special diets for lifestyle, health, and ethical reasons. Joining vegetarian diets in the popular lexicon in recent years are vegan, paleo, raw-food, gluten-free, Mediterranean as well as diets popularized by nutritional authors and weight reduction organizations such as Atkins, South Beach, and Weight Watchers.

Driving many of the emerging food trends are Millennials. These younger adult consumers place more emphasis on health, the environment, and interesting or entertaining food experiences than previous generations. They are more knowledgeable about food than their parents because of greater use of information technology to locate information about food products, services, and experiences. Changing consumer tastes create business opportunities in functional foods, organic, natural, and local foods, and culinary tourism.[7] Millennials are also increasingly skeptical towards "Big Food", placing a higher value on originality and small batch craft products, creating new markets for boutique and specialty products.

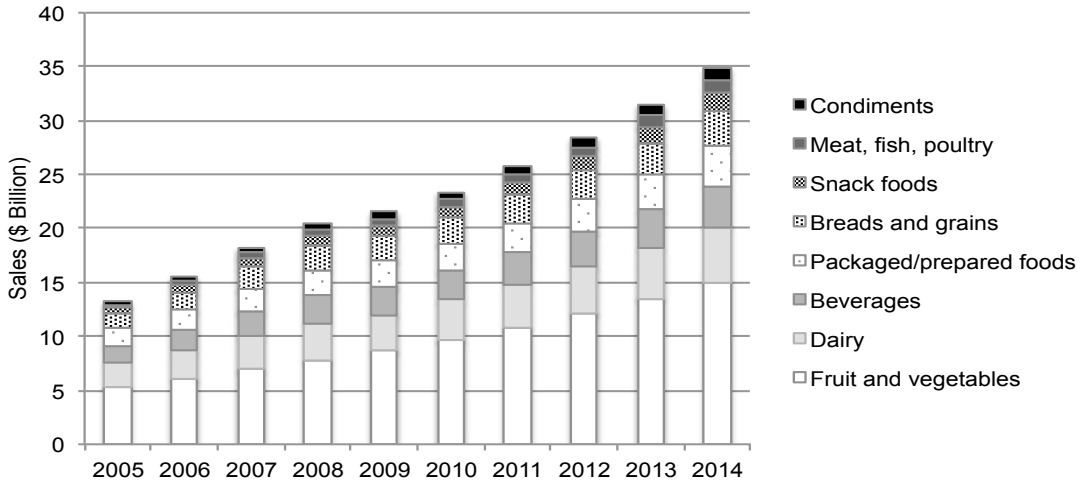
Consumers have also demonstrated a growing interest in decreasing food waste. It is estimated that up to 40 percent of food in the U.S. is wasted (Gunders 2012). In Europe and Australia, food waste has sparked an "ugly food movement" that has increased demand for fruit and vegetables with imperfect appearances.[8] New refrigerators,

6 Dizik, Alina. Where your favorite condiment is never out of stock. *Wall Street Journa*l. March 4, 2015, p. D3.

7 Bunge, Jacob. Fields of Gold: GMO-Free crops lucrative for farmer, natural, and locally grown products. *Wall Street Journal*. Feb. 2, 2015.

8 Mitchell, Dan. Why people are falling in love with "Ugly Food" *Time* March 27, 2015. http://time.com/3761942/why-people-are-falling-in-love-with-ugly-food/

Figure 3.1 U.S. Organic Food Sales by Category, 2005-2014



Source: USDA, Economic Research Service using data from Nutrition Business Journal. 2012-2014 values are estimates.

filters, and containers that tap into advances in food preservation technology are also making it easier for consumers to reduce food spoilage and preserve product freshness for longer periods of time.[9] New technologies to overhaul production and distribution systems to further mitigate spoilage and waste are in the research and development pipeline.

The new consumer trends threaten older business models that rely on low costs, economies of scale, and product standardization. Large food conglomerates such as Kraft, General Mills, and Campbell are losing market share to rapidly growing smaller food business startups that cater to specialty niches.[10] Fast food chain McDonald's has responded to competition from restaurants, catering to new consumer tastes in recent years by introducing healthier fare, curtailing its use of meat raised on antibiotics, customizing its menu and raising employee wages to little avail.[11] According to one observer: "Consumers nowadays want a more authentic, genuine food experience, and they are skeptical of the ability of large food companies to create that."[12] Meanwhile, specialty food sales are booming with the National Association for Specialty Food Trade reporting that sales hit a record level of $88.3 billion in 2013 and experienced further growth in 2014.[13]

Changes in consumer tastes are affecting agriculture producers, including ones that are important to Botetourt County. The dairy industry has become much more efficient in recent years with dairy consolidation and greater use of breeding, feeding, and robotic milking technologies (MacDonald et al. 2007). However, domestic demand for fluid milk products has declined, while demand for organic milk and soy or almond based milk substitutes has surged due to the increasing concern with animal antibiotic and hormone use and the growing popularity of vegan diets (see **Figure 3.1**).[14] Dairy production is also increasingly geared towards processed foods such as cheese and yogurt, and dried milk for international markets. The beef industry

9 Byron, Ellen. When good fruit goes bad. *Wall Street Journa*l. April 22, 2015. pp. D1 & D3.

10 Josephs, Leslie and Annie Gasparro. Balance of power shifts in groceries. *Wall Street Journal.* March 26, 2015.

11 Kesmodel, David, Jacob Bunge, and Annie Gasparro. McDonald's to curb antibiotics use. *Wall Street Journal.* March 5, 2015, pp. B1-B2.

12 Gasparo, Annie. Campbell Soup outlines aggressive cost cuts. *Wall Street Journal.* February 18, 2015.

13 Phillips, Erica E. Food 'accelerators' and the $10 bag of pasta. *Wall Street Journal* Jan. 6, 2015.

14 Jacob Bunge and David Kesmodel. America's move to soy hobbles dairy. *Wall Street Journal*. July 18, 2014.

is facing similar challenges. Per capita domestic demand for beef products has been trending downward because of changing demographics, including increasing ethnic diversity and population aging (Davis and Lin 2005). Also, new U.S. dietary guidelines recommend that Americans cut back on their consumption of meat and add more fish and vegetables to their meals.[15] Although farmers are experiencing higher returns due to a temporary fillip in cattle prices due to tight inventories after drought related culls several years ago and lower feed costs, long-term prospects are less promising. Meat, egg, and dairy producers also face new competition from plant-based protein products such as Beyond Meat and Hampton Creek that more convincingly mimic the textures and flavors of meat, eggs, and cheese.[16] Although a small portion of the overall market, demand for alternative beef products such as natural, organic, grass-fed, and heritage breed beef, and artisan meats are growing in importance (Mathews and Johnson 2013).

15 Tracy, Tennille. Diet Experts Push More Plants, Less Meat in Nod to Environment. *Wall Street Journal.* February 20, 2015.

16 Silicon Valley gets a taste for food. *The Economist*. March 7, 2015. pp. 13-15.

Agricultural producers have discovered new markets for their products outside of the domestic food industry. An expanding middle class in rapidly growing developing countries has contributed to increasing international demand for U.S. food and fiber exports, including beef (see **Figure 3.2**) and dairy. Although not important locally, agricultural production to provide feedstocks for biofuel production has grown rapidly over the past several decades. Agricultural waste is also being repurposed for fuel and other products. For example, Tranlin, Inc., a China based pulp and paper company that recently announced that it is locating in Chesterfield County, will manufacture paper products from agricultural field waste that generates a humus-based organic fertilizer byproduct.

Production Trends

On the production side, the agricultural and food industries are undergoing a similar transformation across the value chain. New agricultural technology (or AgTech) is transforming farm inputs, production practices and management, agricultural processing, and logistics and distribution.

Figure 3.2 U.S. Domestic Beef Consumption Per Capita and Beef Exports as Percentage of Production, 1989-2012 (Actual) and 2013-2024 (Projected)

Source: USDA (2015), Agricultural Trade Data and Food Availability Data System

Bioengineering advances have resulted in seeds, feeds, and biocatalysts that improve crop and livestock productivity and product quality. Genetically Modified Crops (GMO) enhance crop herbicide tolerance, insect resistance, and environmental stress resilience, improve product nutritional, storage and visual characteristics, and create new traits for use in pharmaceutical and fiber products (Fernandez-Cornejo, Wechsler, Livingston, and Mitchell 2014). Feed enzymes and growth hormones produce similar qualities for livestock and poultry products. Farmers have adopted these new inputs at high rates, though consumers are increasingly wary of their use because of health, environmental, and animal welfare concerns. Some major producers and purchasers have followed suit by slowing or curtailing their use.[17]

Farms are also increasingly combining data and automation in production. A growing number of large crop producers are adopting precision agriculture, which involves the use of yield monitors, variable rate seeders and spreaders, GPS maps, and data and algorithms to identify the optimal levels and assignments of inputs such as fertilizer, irrigation, herbicide, and pesticides for crop production (Schimmelpfennig and Ebel 2011). More farmers are also using crop robotics such as driverless tractors, robotic fruit harvesters, weeding, spraying and pruning controllers, drones for overhead farm monitoring and mapping, and automated grain bins to control temperature and moisture levels to prevent grain storage damage. Livestock and poultry farms have also become much more automated. Dairy farms increasingly rely on automated milking systems such as rotary or parlor milking systems, automatic feeding systems, and manure handling and bedding systems. Wearable technologies have found agricultural applications such as wearable sensors for livestock to monitor animal vitals and smart glasses for farmers to monitor farm production and performance dashboards in real time.[18] Although most of these AgTech technologies are more suitable for larger farms, Stone Barns has identified 34 technologies suitable for smaller farms.

Due to societal concerns, farms will be under increasing pressure in the future to reduce their environmental footprint. Botetourt County farmers in the Chesapeake Bay Watershed region are already affected by regulations to improve Chesapeake Bay water quality. In the future, climate change policies may have an even more profound impact. These changes have the potential to help or hinder farmers because farms are both emitters and potential carbon sinks. Here too technology has a role to play. Farms are introducing technology to at once reduce waste generation, decrease energy costs, and improve farm productivity. Precision farming technologies and livestock manure systems can decrease waste and nutrient runoffs. Waste recycling systems and energy production systems such as manure digesters have proven useful in minimizing waste while reducing farm energy needs.

Agriculture will also increasingly face human resource challenges. New farmers and workers will require more education and training as the new agricultural technologies described above become more prevalent. Here too, new farm technology may help. Smart phone apps and social media tools are increasingly used for farm management, farm education and professional development, and networking with other farmers.

Agriculture finance is also in flux. While farms and small value-added food processing enterprises have traditionally relied on family savings, banks, and farm credit agencies for funding, new financing tools are emerging. Crowdsourcing channels such as Kickstarter have spawned numerous agricultural and food industry imitators which offer funds in return for equity and initial product batches. The number of angel or venture capital investors that invest in early and seed stage agricultural and food companies has skyrocketed, attracting major

17 Bunge, Jacob. Joining flock, Tyson acts on antibiotics. Wall Street Journal. April 28, 2015. P. B3.; Nassauer, Sarah. Wal-Mart: Food suppliers must treat animals better. *Wall Street Journal*. May 22, 2015.

18 One example of this type of product is Tekware http://www.tekwearag.com

investing firms such as Google Inc.'s venture-capital arm, venture capital firm Kleiner Perkins Caufield & Byers, and food conglomerate Monsanto Co.[19] The *Wall Street Journal* reported that venture capitalists invested approximately $486 million in agriculture and food startups in 2014, which was 54 percent higher than the year before.[20] AgFunder reported an even higher figure of $2.36 billion of venture capital financing in 264 AgTech startup deals for 2014 (AgFunder 2015).

19 Bunge, Jacob. Google ventures invest in agricultural technology startup. *Wall Street Journal*. May 19, 2015.

20 Brat, Ilan and Jacob Bunge. Silicon Valley sows seeds for new era in farm tech. *Wall Street Journal*. April 7, 2015.

SECTION 4
SUMMARY OF FOCUS GROUP AND PUBLIC SURVEY COMMENTS

In order to solicit information about the status and development potential of Botetourt County agriculture, a series of focus group discussions was held with local agriculture industry stakeholders. Approximately one month after the focus groups were hosted, a follow-up web-based survey of the general public was conducted by Botetourt County. This information was synthesized and organized for the purpose of assisting in identifying goals, objectives, and activities for strategic planning

Focus Groups

Three focus group discussions involving 41 area stakeholders were organized. The meetings were held on February 19, 2015 at the Greenfield Education and Training Center in Daleville, VA. **Appendix A** describes the manner of selecting focus group participants and focus group composition, questions asked, methods used, and specific focus group comments. The overall goals of the discusssions were to: (1) explore attitudes towards agriculture, forestry and related economic development in Botetourt County, (2) obtain information about the current status of the industry including regional industry strengths and weaknesses, perceptions of the contributions and value of the industry, industry trends, industry opportunities and challenges, and industry needs, and (3) gather ideas for promoting the area as a destination for individuals or entities that wish to pursue traditional and non-traditional agriculture activities.

Focus group comments were organized into eight categories, including: (1) value of agriculture, (2) county agricultural assets, (3) farm succession, (4) agricultural education, (5) agricultural marketing, (6) local foods, (7) role of government, and (8) farm viability and new markets. Each of these categories is described in further detail below.

Value of Agriculture

Participants place a high value on maintaining and developing agriculture in the community for the contribution it makes to the food supply, environment, quality of life, economy, county tax revenue, area heritage, and community fabric. Farms provide nourishing food to consumers. They are also responsible stewards of the land and help to preserve the rural character of the area. Farms stimulate the economy and generate a fiscal surplus for the county government. Farms are also great places to raise a family, members of which have a strong work ethic and moral values. At the same time farming may not be an attractive career option to everybody, including many youth who favor less rural careers and lifestyles. Farming provides very little opportunity for vacations or large blocks of leisure time. Farming is also hard work that requires both a "good head and hard back." However, agriculture is achieving greater prominence and respect in today's society as consumers become more interested in the origins and nutritional qualities of their food.

County Agricultural Assets

Botetourt County has many assets for supporting a viable agriculture industry. It has plenty of open space, good soil quality, and ample water supply. Many farms are also permanently protected by conservation easements. Area farms have access to good transportation infrastructure, including two interstate highways and railroads served by CSX and Norfolk Southern. The county is also centrally located to serve large urban markets in the region. Botetourt County's increasing agricultural diversity is also an asset, with farm to table, agritourism, orchards, and value-added products providing more farming options. Botetourt County has several supportive organizations that provide information, technical assistance, marketing and networking opportunities for farmers, including the Farm Bureau, Cattlemen's Association, and Virginia Cooperative Extension. The Roanoke Stockyards is an important resource for area livestock farmers. The recent revival of the Botetourt County Fair has helped agriculture by raising the profile of agriculture in the community and stimulating youth

interest. Finally, close proximity to Virginia Tech, a leading land grant university with a large portfolio of R&D activities in agricultural and forestry sciences, is seen as an important resource for local agriculture.

Farm Succession

Focus group members saw a need to involve more youth and adults in farming. However, there are enormous challenges in ensuring that farms are passed along to the next generation. Many farm children are not willing to take up the family farm and instead opt for non-agricultural careers, often leaving the area for education and work. Other families are often two or three generations removed from agriculture and far less likely to have the knowledge or resources to begin farming. Owning a farm is difficult due to high local land prices coupled with the costs of equipment purchases. Moreover, many youth lack the initiative to work on a farm, and farming can seem less attractive than other career opportunities. Participants saw opportunities to increase youth involvement in agriculture and to encourage hobby and part-time farming. Interest in farming is growing from people who were not raised on a farm. Also, by highlighting agriculture as a high-tech profession and promoting internship and apprenticeship opportunities, farming may gain more traction as a viable career option. Financial assistance such as down-payment assistance, low-interest loans, and favorable cost shares for environmental quality improvement adoption are available to assist new and beginning farmers. But, more remains to be done.

Agricultural Education

Agriculture education is an important factor that affects the county's ability to generate a steady supply of future farm owners and a well-trained agricultural workforce. Focus group participants reported that in some respects the county is doing a good job in this area. Future Farmers of America was recently revived at county schools and student participation is increasing. 4-H remains a popular program. However, more could be done to introduce students to agriculture in elementary school, such as visitations to local farms, recognition of the Food for America Day, and the introduction of science curriculum linked school gardening programs similar to those that are available elsewhere in the region. Efforts need to be made to remove the stigma associated with farming as an intellectually unchallenging field of work. Career advising for high school students could be expanded to provide a better introduction to the wide array of career options available in agricultural fields, both on and off the farm. Agriculture could also be promoted as a high tech discipline that requires critical thinking skills in business and science by demonstrating and using agricultural technologies in the classroom. Opportunities also exist to make use of local farm resources by tapping into the knowledge of multi-generational farmers. Secondary students should have opportunities for supervised agricultural experiences, student internships, agricultural apprenticeships, and high school credit or dual enrollment course credit for work on a farm. New course options being explored by Danby Lancaster Community College such as a certificate in sustainable farming and fermentation sciences could be useful tools for improving local post-secondary ag-related educational opportunities. Finally, young farmers need to be better connected to small-scale commodity growing opportunities for education and income.

Agricultural Marketing

Agricultural stakeholders identified a need to better market area agriculture. This marketing includes several different components. First, local government should communicate the positive aspects of farming (including economic impacts and fiscal, social, and environmental benefits) to the wider community and provide information about local agriculture businesses and agricultural career opportunities. Second, local farmers and community members need more information about market opportunities, resources, and incentives available for building an agribusiness. Third, local or regional agricultural products could be branded. Fourth, a mechanism needs to be put in place to cooperatively market local products. Fifth, a local indoor agricultural facility for livestock showing,

agricultural education, and industry events would be a valuable tool for promoting agriculture. An agriculture website could be developed to showcase area agriculture and create a tool for communication and building market connections.

Local Foods

The demand for local foods has increased in the Roanoke metropolitan area as it has elsewhere. The Botetourt County farmers market is a resource for selling into this market, while providing local employment opportunities and helping to keep land in agriculture use. Local stakeholders see additional opportunities to expand local food production. First, connections are needed so that bulk buyers such as restaurants, retailers, and institutions are able to find and purchase local food products. In order to supply this market, a local food hub that aggregates, cleans, packages, warehouses, markets, and distributes products from individual farms may be needed. The farm equipment and packaging supplies cannot be purchased on an affordable scale for small farms, and a local food hub would be better able to achieve this scale and develop relationships with numerous intermediaries. Stakeholders also identified a possible need for additional agricultural product processing capability in the area such as cannery, commercial kitchen, mill, slaughter facility, etc. However, the new Seven Hills meat processing plant in Lynchburg may help meet the need for processing locally raised beef.

Role of Government

Agricultural stakeholders identified a lack of cohesion between the agriculture community and county government, and the need for the county to make a strong statement in support of the agricultural community. Some suggested creating an advisory council to bring farmers together to help solve local agricultural problems and to improve communication and policymaking. This council could possibly work with an agriculture development office and agriculture coordinator to provide agricultural development services in areas such as farm planning, transitioning, training, research, marketing, and financial assistance. Participants would like to see the same level of services provided to agriculture as offered to other businesses through economic development recruitment, business park expansion, and economic development incentives. They also recommended a review of tax and regulatory policy toward agriculture.

Farm Viability and New Markets

Agricultural stakeholders saw a need for local farmers to expand into new markets and diversify their enterprises. They also requested assistance in identifying viable new agricultural commodities to produce through market research that matches area capabilities with market opportunities. Some saw new opportunities in indoor agriculture, agritourism, and varied crops such as hemp[21], poultry, soybeans, and tomatoes. If environmental regulations and community resistance could be overcome, a large cattle feed lot would allow farmers to expand beyond cow to calf operations to feeder operations. Additional pollinator plants would support beekeeping. Attracting farmworkers has also become more difficult and an organized effort to attract low-income workers through housing and transportation programs may be needed.

Public Survey

On March 23rd, Botetourt County posted a web-based survey using SurveyMonkey to solicit additional feedback from the public about agricultural trends and needs. The survey was available for approximately three weeks in order to give the public ample opportunity to participate. The survey asked respondents for some basic demographic data (i.e., place of residence, age, and gender) and their current level of involvement in the county agriculture industry. The survey also posed five key questions that were also presented to the focus groups:

- What ideas do you have to make agriculture more viable for the area in the future?

21 Governor Terry McAuliffe signed legislation permitting industrial hemp cultivation by licensed growers as part of university research programs. The law went into effect July 1, 2015.

- What agricultural tools or technologies would be beneficial to area farmers?
- What agricultural products or innovations have you seen in other communities that you thought might be useful in Botetourt County?
- What systems and/or infrastructure (e.g., transportation, distribution facilities, facilities for processing and storage) are needed?
- What are the most important things the County could do to enable agriculture to grow?

The web survey form allowed respondents to offer open-ended responses. Forty-nine responses were received. Tabulated results for the demographic questions and individual responses to each question are presented in **Appendix B**.

Responses largely paralleled those of the stakeholder focus groups in emphasizing the importance of agriculture marketing, local foods, developing new markets, agriculture education and farm succession, and improving local government's role in promotion of agriculture. However, some responses were different and are categorized below.

Sustainable Agriculture

Several respondents expressed concern about the production practices of farmers and low rates of farm Best Management Practices adoption, especially given favorable recent cost share programs offered by the state and federal government. They also expressed concerns about the agricultural land base and expressed support for preserving open space and slowing sprawl through purchasing development rights and additional land use regulations.

New Markets

Some respondents support expanding the number of farmers markets, and one suggested creating a year-round indoor market. Organic and natural agriculture products and grass-fed beef may present additional potential. Area farmers could also use high tunnels to extend the season for growing fresh produce. Other possible product fits are quail, and sheep or alpaca farming for fiber products.

Agriculture Infrastructure

Respondents indicated that good agriculture infrastructure, including distribution and supply facilities as well as good local roads, are needed to support local agriculture. Broadband Internet expansion is also important. One respondent thought that Virginia Tech and Cooperative Extension expertise could be utilized more effectively to assist local farmers. In addition, farm equipment lease/share programs might be developed.

Agriculture Information

Two respondents indicated a desire for holding locally accessible farm expos, shows, or demonstrations to support the agriculture sector. Local farms might also benefit from additional farm management technical assistance and information about government grant and loan programs or other external funding opportunities

SECTION 5
STRATEGIC PLAN

The stakeholder focus group discussions, community surveys and additional material (e.g., county agriculture statistics, agricultural and food industry trends, agricultural economic development plans from other communities) were used as resource materials in developing the Botetourt County strategic plan In addition, an agriculture plan steering committee was consulted. Based on this information we identified seven goals that would assist agricultural development in the county. Listed beneath each goal are two or more objectives that would support the goal, and nested within each objective are one or more activities that would assist in achieving the objective (see **Table 5.1**). Finally, for each goal, we provide a description of resources (**Boxes 5.1-5.7**) for key elements such as best practices, models drawn from Virginia communities, and other information that may be useful for further exploration.

Based on feedback from the steering community and agricultural focus groups, we identified the following goals:

1. Improve Administration, Planning and Policy Coordination for Agriculture

Agricultural stakeholders identified a clear need for a greater agricultural focus in future economic development efforts. They also desired improved and more formalized communication channels with county government and more clout in defining the agricultural agenda. Staff time provided for agricultural development by existing personnel or a dedicated new agricultural coordinator position was also requested. This goal focuses on expanding the voice and policy-making involvement of the agricultural community in local public policy through new administrative and planning mechanisms, participating in leadership development, implementing an agricultural strategic plan and improving coordination with local, regional, and state organizations and agencies.

Objective #1 Expand Agriculture Development Administrative and Planning Capacity

Implementing many of the recommendations made in this study, providing a regular forum for reviewing and updating the plan, and building a network of relationships within and outside the community will likely require the creation of a formal agricultural advisory committee that meets on a regular basis, perhaps 4-8 times per year, and is empowered to offer recommendations directly to the Board of Supervisors. A member of the Board of Supervisors should be appointed to serve in an ex-officio capacity. Many counties that have agriculture development programs have a dedicated part-time or full-time staff position assigned to work with the board in implementing board recommendations adopted by the board of supervisors. The county may want to consider creating a staff position dedicated to the agriculture development program.

Alternatively, the County could help establish and partly fund a 501(c)(3) entity with a staff-person and Board of Directors for administering all agricultural development functions. A community organization may create additional opportunities for cultivating farm and business participation and leadership, collaborating with other jurisdictions, securing funding from fundraising, private sector investment, and competitive grants writing, and promoting accountability.
Therefore, the following actions should be seriously considered:

- Consider the establishment of an Agriculture Development Board or non-profit organization
- Consider the creation of an agriculture coordinator function/position
- Examine the possibility of establishing a 501(c)(3) in collaboration with other community and regional partners to administer agricultural development.

Objective #2 Work Towards Adopting an Agriculture Strategic Plan, Review, and Update

One of the first activities of the Agriculture Development Board would be to review and adopt the Agriculture Development Strategic Plan and create an annual work plan. Staff should also see that the development plan is incorporated into the overall county economic development plan. The Strategic Plan should be reviewed on at least an annual basis and an annual work plan presented to the public, perhaps in an annual agricultural forum where members of the community have an opportunity to ask questions and offer input. We also recommend that the Board develop annual performance accountability measures and benchmarks. Examples of variables to track would be farm income, youth participation levels in FFA and 4H, number of new and beginning farmers, number and type of Cooperative Extension farm contacts, and external grant funds received in support of agriculture development. A prototype Botetourt County Agriculture Development Performance Accountability Plan partially populated by data is provided in **Appendix C**.

In summary, the following actions are recommended for consideration:

- Adopt Agricultural Development Strategy work plan
- Integrate agriculture into overall economic development strategy
- Annually review, update, and publicly present revised work plan
- Create performance accountability measures and benchmarks
- Hold an annual Botetourt agricultural forum to discuss agriculture issues, trends, and opportunities

Objective #3 Develop Agriculture Leadership Capacity

As Vince Lombardi once said: "Leaders are made, they are not born." Leadership is the key element of any successful economic development strategic plan. To this end, we recommend that Agriculture Development Board members be offered leadership education and training opportunities. In order to expand the influence and impact of the agriculture community, attention should also be paid to ways to encourage members of the farm community to serve on local government boards and commissions.

- Promote Agriculture Board leadership training
- Encourage farm community to serve on other boards and commissions

Objective #4 Coordinate Plans and Activities with Local, Regional, and State Organizations and Agencies

In order to avoid duplication of effort, foster synergies, and learn from other examples and models, the Agriculture Development Board should find creative ways to collaborate with partners within and outside the county. Indeed, many of the recommendations in this report may best be undertaken on a regional basis such as the Roanoke metropolitan area or planning district level. Therefore, Agriculture Development Board members and staff should meet with representatives from other organizations and agencies and build lasting relationships (see **Box 5.1**). Therefore, the following action steps are proposed:

- Continue to send county representative to Virginia Agriculture Development Officer (VADO) affinity groups
- Encourage coordination with other regional organizations and agencies
- Build relationships with VDACS and DoF and keep them apprised of agriculture development plan progress

2. Preserve Valuable Farmland

Boteourt County is under some development pressure emanating primarily from Roanoke and Salem cities as residents move out in search of newer housing in a more bucolic setting. However, this new development has resulted in the conversion of farmland to residential and commercial land uses and has raised the price of farmland beyond levels

Box 5.1. Agriculture Development Administration and Planning

At least thirteen Virginia localities currently have agriculture development boards (Augusta, Bedford, Charles City, Chesterfield, Essex, Fauquier, Franklin, Halifax, Loudoun, Pittsylvania, and Stafford Counties and the Cities of Chesapeake and Virginia Beach) and five have dedicated agriculture development officers (Fauquier County, Halifax County, Loudoun County, Pittsylvania County, and City of Virginia Beach). In addition, seventeen localities (including Botetourt) are represented on the Virginia Agricultural Development Officers Group as of 2015, an affinity group established by VDACS that provides networking and professional development opportunities for Agriculture Development Directors or Economic Development Directors involved in agriculture development. The ordinances that created these positions illustrate the kinds of tasks they have been assigned. For instance, the Pittsylvania County Agriculture Development Director is charged with "designing and implementing a comprehensive plan for agricultural economic development, promoting agriculture and forest industries as well as enhancing the economic viability of farming and extending the Pittsylvania County agricultural infrastructure." The Director has organized a number of initiatives, including planning and managing a large agricultural complex, marketing and industry recruitment activities, and researching and promoting new products such as poultry and value-added processing. The Fauquier County Director is responsible for "promoting county agriculture industry, increasing the economic viability of farming, and advising the County Board of Supervisors on agricultural economic development issues." Among the office's duties are administering the county's purchase of development rights program, promoting area products by publishing a farm product and services directory, maintaining the Fauquier Agriculture HomeGrown program, coordinating new and beginning farmer training, managing the annual Fall Farm Tour, and serving as a county liaison for agricultural advocacy and business groups.

Several localities have seen the benefits of combining efforts and forming multi-jurisdictional commissions for agricultural development. Though in its initial stages, Virginia's Region 2000 Partnership Local Government Council (Amherst County, Appomattox County, Bedford County, Campbell County, and Lynchburg City) has begun to implement a region wide plan to coordinate regional marketing, strengthen local food production and distribution, and promote agricultural entrepreneurship and career development opportunities. Similar multi-jurisdictional efforts are being undertaken in the Lenowisco Planning district and New River Valley.

The Virginia GO Initiative, a proposed program to support private sector growth through regional collaboration that was recently announced by the Virginia Business Higher Education Council and Council on Virginia's Future, is currently being studied by the Governor and General Assembly. If implemented, this program will provide additional incentives and impetus for multi-jurisdictional collaboration and private-public partnerships.

Successful models of multijurisdictional collaboration can be found outside of Virginia. For example, the Southern Maryland Agricultural Development Commission is funded by Tobacco restitution funds and supports local foods production, marketing, and education and training activities. The Hudson Valley Agribusiness Development Commission (HVADC) was formed by Columbia, Duchess, Orange and Ulster Counties with a dedicated stream of local

Box 5.1. Agriculture Development Administration and Planning (continued)

funding that leverages additional foundation and state and federal government grants. The function of the HVADC is to strengthen the viability of the agriculture sector by providing planning and development services, technical assistance and professional development, financial assistance, and marketing and distribution promotion.

Another organizational model is provided by the agricultural one-stop-shop which improves coordination, and reduces farmer costs of doing business by combining several local agriculture-related agencies, organizations and functions under one roof. Pittsylvania County has created a one-stop-shop for regional agribusiness technical and financial assistance, education and training, marketing, distribution and showing in the recently constructed Olde Dominion Agricultural Complex. The complex hosts the Pittsylvania County Farm Bureau, Farm Service Agency, Pittsylvania County Soil and Water Conservation Service, Virginia Cooperative Extension, Pittsylvania County Agriculture Development Office, and Olde Dominion Agricultural Foundation.

Websites

Fauquier County Department of Agricultural Development: www.fauquierag.com/

Region 2000 Partnership Local Government Council. Strategic Plan for the Agriculture and Forestry Economy in Virginia's Region 2000. (July 2014): http://www.localgovernmentcouncil.org/images/14_07_PLA_region-2000-Strategic-Plan-for-the-Agriculture-and-Forestry-Economy.pdf

GO Virginia: http://www.govirginia.org

Southern Maryland Agricultural Development Commission: http://www.smadc.com/

Hudson Valley Agribusiness Development Commission: http://www.hvadc.org/

Olde Dominion Agricultural Foundation: http://www.theodac.com/

Virginia Agriculture Leaders Obtaining Results (VALOR): http://www.valor.alce.vt.edu

that will sustain a viable farming industry. Current efforts to preserve farmland appear to be somewhat ad hoc and do not make use all of policy tools available. In addition to supporting county land preservation targets, news tools could also be used in innovative ways to provide capital for new and beginning farmers and value-added enterprises.

Objective #1 Create New Farmland Preservation Incentives

Botetourt could adopt several tools not currently in use that would temporarily or permanently protect land from residential and commercial development while at the same time assist new and existing farmers to develop more viable farm enterprises. Purchase of Development Rights (PDR) has been used in other communities to provide funding to new and beginning farmers and for creating value-added agricultural enterprises. To make the maximum impact on agriculture viability while preserving farmland, it is recommended that these tools be restricted to assisting working farms and that priority be given to supporting new and beginning farm enterprises or farms that will use the funds or tax savings to develop innovative value-added products.

- Evaluate possibility of establishing Purchase of Development Rights (PDR) program for working farms
- Study feasibility of Transfer of Development Rights (TDR) program

Box 5.2. Farmland Preservation

Numerous planning and policy tools are available to help protect valuable farmland, including agricultural zoning, use value assessment, purchase of development rights and transfer of development rights. Botetourt currently employs some of them. Zoning is the primary tool used by Botetourt County to regulate land use transitions. The County also has a use value assessment program which provides real property tax relief to farm owners with assessed values valued at their agricultural and forestry uses rather than their residential and commercial development values. Currently, 186,116 acres are enrolled in use value assessment.

State statute also allows two additional local tax incentive programs that Botetourt does not currently use. One is the establishment of agricultural and forestry districts as a way to obtain use value assessment. Districts of statewide significance must be at least 200 acres in area. But, districts of local significance can be much smaller. These districts offer landowners additional safeguards such as protection against state and local government encroachment to install public utilities and roads. Currently, 28 localities in Virginia have created such districts. State statute also allows localities to adopt a sliding scale property tax rate for landowners enrolled in land use assessment programs that allow a portion of the use value taxes to be deferred for up to 20 years. Loudoun County is currently the only locality to use this incentive. It allows properties that commit to more than 10 years a 99 percent deferral of taxes and properties that commit to more than 5 years a 50 percent deferral. Loudoun County is an affluent county in northern Virginia that is under significant development pressure. Therefore, this tool may be less useful in other local contexts.

Protection through extinguishment of development rights is another approach that has been used to protect farmland. Over 15,000 acres in Botetourt County have also been permanently protected through private easement, mainly through landowners taking advantage of state land preservation incentives such as the land preservation tax credit program and local Land Trust development rights purchases. Within Virginia, 22 local governments have adopted PDR or TDR ordinances (Albemarle, Clarke, Culpeper, Cumberland, Fauquier, Franklin, Frederick, Goochland, Isle of Wight, James City, Nelson, New Kent, Northampton, Rappahannock, Rockbridge, Shenandoah, Spotsylvania, Stafford, and Washington counties and Chesapeake and Virginia Beach cities) and 16 of these have funded the programs. Most of these localities lie in Virginia's urban corridor and have experienced considerable development pressures. PDR programs purchase the right to develop a private property from a landowner, in the process creating a conservation easement. TDR programs allow development rights to be traded in a private market to be used for developing additional density elsewhere in the locality. VDACS hosts a website that posts a complete list of local PDR and TDR programs with links to program descriptions and ordinances as well as an advisory documents for establishing a local PDR or TDR program, *A Model Purchase of Development Rights* (PDR) for Virginia and *A Model Transfer of Development Rights Ordinance for Virginia Localities*. Localities have funded their PDR programs through a variety of funding mechanisms such as general fund transfers, special tax assessments, funding from state agencies (i.e., the Virginia Department of Agriculture and Consumer Services' Office of Farmland Preservation and the Virginia Department of

Box 5.2. Farmland Preservation (continued)

Conservation and Recreation Virginia Land Conservation Fund), funding from federal agencies (e.g., the U.S. Department of Agriculture and the National Park Service), and funds from private land trusts, other non-profit organizations and private donors. Other financing options include borrowing through issuing general obligation bonds, borrowing from state agencies such as the Virginia Resources Authority (which was authorized to lend for land conservation in 2007 by the General Assembly), and payment in installment purchases.

PDR programs have been used creatively in other communities to boost agriculture in other ways by providing the funds needed for new and beginning farmers to enter farming by purchasing land and equipment. They have also allowed existing farms to create new value-added businesses. For example, the owners of Moo Thru Milk Farms in Fauquier County used funds obtained from the county Purchase of Development Rights program to build a commercial creamery and store to sell its locally produced grass-fed dairy cow products directly to the public.

Websites:
Virginia Department of Agriculture and Consumer Services, Office of Farmland Preservation: http://www.vdacs.virginia.gov/preservation/index.shtml

Loudoun County Rollback Taxes and Sliding Scale Option: http://www.loudoun.gov/index.aspx?NID=664

Moo Thru Farms: http://www.moothrumilk.com/

Objective #2 Reduce Land Use Conflicts that May Hinder Agriculture

Some agricultural stakeholders described an increase in land use conflicts between established farmers and new residents. This conflict typically grows when residents encroach on land previously used for agriculture. The Right to Farm Act was adopted by the Virginia General Assembly to prevent localities from imposing onerous regulatory and permitting requirement on production agriculture. Some Virginia localities have adopted agricultural preservation zoning with lower density requirements and greater accommodation for agritourism and agricultural direct sales. Localities in other states have adopted local right-to-farm ordinances that establish notification procedures for residents who choose to locate in agricultural zones in close proximity to agricultural operations.

- Review and adjust if needed county zoning ordinances to reduce conflicting uses and protect agriculture as an important part of the county economy
- Develop brochures to educate the public about agricultural issues

3. Facilitate Farm Succession and the Agricultural Workforce

Botetourt County has an aging population of farm operators and relatively small entry rate for new and beginning farmers. Without a change, the number of farmers will begin to rapidly dwindle in the coming decades. Agricultural stakeholders noted the importance of improving exposure to agriculture at all points along the educational pipeline that begins in K-12 and continues through the post-secondary level. Hobby farmers and gardeners without agricultural backgrounds should also be cultivated as a potential source of future farmers. Additional farm financing programs and entrepreneurship training could be provided and additional resources committed to improving estate planning and making connections between existing and prospective farmers.

Objective #1 Encourage Increased Youth Exposure to Agriculture

Through the efforts of Virginia Cooperative Extension and county public schools, Botetourt County has seen revived interest in youth farm-related activities such as 4-H and FFA. However, more might be done to help stimulate youth interest and provide more hands-on gardening and farming experience. Agricultural stakeholders noted that Roanoke area school districts demonstrate how school gardens can be incorporated into the science curriculum, introduce students to new technology, and spark student interest in agriculture. They also recommended that summer internships and supervised farm experiences be used as tools to educate secondary students about farm careers. Lastly, public schools agricultural career counseling was identified as an area in need of improvement.

- Evaluate possibility of establishing school gardens/greenhouses with science curriculum links
- Introduce supervised farm experiences and internships for secondary students
- Improve agriculture industry career counseling in public schools

Objective #2 Encourage Expanded Post-Secondary Agricultural Learning Opportunities

Agriculturally related noncredit coursework is available from area agencies. Virginia Cooperative Extension currently offers gardening workshops and a beginner's poultry class. Virginia Western Community College provides a fundamentals of beekeeping course. Both regional community colleges also offer programs that are germane to growing the agribusiness sector, including a culinary arts AAS at Virginia Western Community College and a Forest Technology AAS at Dabney S. Lancaster Community College. Both community colleges are also a conduit for Ed-to-Go distance learning coursework in agriculturally related subjects. Dabney S. Lancaster Community College is currently exploring the possibility of expanding agribusiness offerings including a sustainable agriculture certificate and a program in fermentation sciences to support the growing Virginia wine, brewing, cider, and distillery industries. Botetourt County should consider supporting such ventures and encourage the community colleges to create additional continuing education programs in support of local farming similar to what has been offered in other community colleges (e.g., hobby farming, viticulture and enology, herbs, mushrooms, hydroponics, cooking).

- Support creation of new community college programs under consideration to assist agriculture such as fermentation sciences
- Examine possibility of offering additional noncredit post-secondary training opportunities for hobby and beginning farmers (e.g., non-timber forestry products, viticulture) including courses through distance learning modalities

Objective #3 Support Beginner Farmer Training and Technical Assistance

The County has two important resources for training beginning farmers right in its backyard. For several years, the Roanoke County Higher Education Center in conjunction with Virginia Tech has offered a Growers Academy. During the 2015 year, this academy was held in Wythe County. The possibility to host the academy at the Greenfield Education and Training Center is worthy of further exploration. Another important nearby resource is the VT EarthWorks at the Catawba Sustainability Center in Catawba, VA, which operates a farm incubator that provides land and technical assistance to aspiring farmers. Closer linkages should be formed with this center.

- Evaluate hosting the Growers Academy for one year at the Greenfield Education and Training Center
- Explore creating stronger linkages with VT EarthWorks at the Catawba Sustainability Center in Catawba, VA

Objective #4 Consider Marketing and Providing Beginning Farm Financial Assistance Programs

The costs of land and equipment are significant barriers to new and beginning farmers. The USDA Farm Service Agency (FSA) offers several loan programs that assist farmers with land ownership and operating requirements and one program directed at beginning farmers that helps with down payment. However, this latter program is not widely marketed because of limited funding for outreach and marketing. Furthermore, additional resources may be needed beyond the down-payment assistance provided by the FSA. Several communities have created "critical farms programs" whereby local purchase of development program funds are targeted to new and beginning farmers to provide down payment for leveraging additional loans for land and equipment purchases. In some communities, agricultural microenterprise grants have been created to provide assistance to agriculture-related startups.

- Consider improving local marketing of FSA and other farm credit programs
- Explore creating critical farms program to support new farm owners
- Consider offering a microenterprise grant program for new farmers

Objective #5 Promote Farm Estate Planning and Multigenerational Connections

Many aging Botetourt farmers are likely to become much less active in farming in the near future because of physical limitations but may still wish to see their farm operation continue. Professional advising services on the subjects of estate planning, valuing assets for producing retirement income, tax advising, and tools for transferring assets can aid planning for farm succession. These same farmers may also be valuable resources for mentoring and consulting younger and beginning farmers. VDACS and Virginia Cooperative Extension have programs such as a Farm Succession Planning Workshop, Virginia Farm Mentor Network and Farm Link program that could be promoted within the area.

BOX 5.3. Farm Succession and Agricultural Workforce

With an aging population of farm operators, developing a farm candidate pipeline to continue the tradition and equipping them with the knowledge, tools, land and capital to create viable agribusiness has been a challenge for many communities. Programs and initiatives to counter the trend begin as soon as grade school with 4-H and school gardens (programs that teach children about nature and plants to develop nutritional knowledge and support a science-based curriculum) and continue into high school with vocational agricultural programs and FFA.

According to recent research, beginning farmers face numerous obstacles to farming, including the price and availability of land for purchase and rent and the cost of farm equipment (Ahearn and Newton 2009). With longer life spans, farm heirs also often face long delays in inheriting the family farm.

Farmers have traditionally relied on inheritance and loan financial assistance from the Farm Service Agency (FSA) and Farm Credit System (FCS) (Ahearn and Newton 2009). The FSA also offers a down payment loan program that provides borrowers assistance with down payment costs. Favorable cost shares are also available for young and beginning farmers for introducing conservation and best management practices on farmland through environmental programs such as Environmental Quality Incentives Program (EQIP) and Conservation Stewardship Program (CSP) (Ahearn and Newton 2009). Some communities have become more

BOX 5.3. Farm Succession and Agricultural Workforce (continued)

active in beginning farm finance by offering microgrants and microloans. Critical farm programs seek to use agricultural easement purchases as a tool to finance new agricultural ventures at the same time as they help preserve farmland. Crowdsourcing has also become a more common way to secure funds from family, friends, and investors to fund agriculture ventures. Several agricultural and food crowdfunding platforms such as BarnRaiser, CircleUp, and Crowdfooding have come into existence that offer tools for connecting farm entrepreneurs with interested investors and consumers.

Agricultural education and entrepreneurial training programs are important components of a farm succession initiative. Supervised agricultural experiences (SAE) are a necessary part of a successful high school agricultural education program. The Future Farmers of America identifies several kinds of these experiences, including career exploration, experimental and analytical research, school based enterprises and entrepreneurship, service-learning, and student placements and internships. Few public school districts appear to make use of supervisory placements and internships. However, some private businesses and non-profit organizations involved in sustainable and organic agriculture offer promising internship models (e.g., Polyface Farms and Appalachia Science in the Public Interest).

Several Virginia and regional resources exist to work with young and beginning farmers to build farm and business knowledge and skills. The Certified Farm Seeker (CFS) program sponsored by VDACS and the Virginia Farm Bureau helps young farmers create a farm business plan and provides training on whole farm planning, business fundamentals, land acquisition and management, and marketing. It also provides hand-on farm experience. The Virginia Farm Link program connects beginning and expanding farmers with retiring farmers who have land, equipment, and farm knowledge that they wish to transfer. A Virginia Farm Link database provides an electronic inventory of participating farms and agribusinesses. The Growers Academy is a program sponsored by Virginia Cooperative Extension and the VT Earthworks that provides a 6-week training on topics such as business plan development, agricultural production practices, and marketing.

Farm incubators and accelerators provide additional hands on experience and mentorship for beginning farmers. The VT EarthWorks at the Catawba Sustainability Center in Catawba, VA is an agriculture accelerator for local food producers that provides land for lease, marketing assistance, technical assistance, and other business support.

Websites

City Schoolyard Garden: http://www.cityschoolyardgarden.org

Virginia Department of Education: Agricultural Education: http://www.doe.virginia.gov/instruction/career_technical/agriculture/

Start to Farm (USDA): http://www.start2farm.gov/

Virginia Beginning Farmer and Rancher Coalition Program, Virginia Cooperative Extension: http://www.vabeginningfarmer.alce.vt.edu/

Catawba Sustainability Center: http://www.cpe.vt.edu/sustainable/

BOX 5.3. Farm Succession and Agricultural Workforce (continued)

Websites (continued)
Certified Farm Seeker: http://www.vdacs.virginia.gov/preservation/program.shtml

Future Farmers of America: https://www.ffa.org/about/supervised-agricultural-experiences

Appalachia- Science in the Public Interest: http://www.appalachia-spi.org/grow-rockcastle-youth-intern-program.html

Virginia Farm Link Program: http://www.vdacs.virginia.gov/preservation/program.shtml

Frederick County (MD) Critical Farms Programs: https://frederickcountymd.gov/1465/Critical-Farms-Program

CircleUp: https://circleup.com/

Orange County (NC) Informational Guide for Farmers:
http://www.orangecountync.gov/document_center/DEAPR/Informational_Guide_for_Orange_County_Farmers.pdf

Virginia Cooperative Extension, Guide for Virginia Forest Landowners: http://pubs.ext.vt.edu/420/420-139/420-139_pdf.

- Encourage the establishment of farm succession planning and financial planning workshops for retiring farmers
- Establish local mentoring program presence to link new farmers with established farmers
- Promote VDACS Farm Link program

4. Promote Agriculture Innovation and Entrepreneurship

Community leaders and citizens place a high value on creating an innovative and high tech agricultural sector. In the Botetourt 2040 Vision ("Honoring Our History, Enjoying the Present And Shaping the Future"), the county envisions a future Botetourt County that is characterized by "innovative agricultural enterprises" that features "high-tech traditional farming and innovative and sustainable uses of our natural resources." Objectives in this plan would help to support such a vision by improving technological diffusion, networking, entrepreneurship, and recruitment and support for high technology firms and startups in high tech industries for the agricultural value chain.

Objective #1 Promote Agricultural Modernization and Technology Diffusion

As David Osborne and Ted Gaebler observed in Reinventing Government: "What gets measured, gets done. If you don't measure results, you can't tell success from failure." Therefore, measuring Botetourt County's performance in this area and selecting appropriate benchmarks will be an important part of this effort. The agricultural census provides some potential measures of agricultural innovation and adoption of sustainable natural resource practices such as the number of farms that adopt certain best management practices (conservation tillage, alley cropping or silvopasture), internet access, and alternative energy production (e.g., solar, wind turbines, methane digesters). Additional local and state comparison data may be available from the Natural Resources Conservation Service. The U.S. Department of Agriculture Agricultural Resource Management Survey (ARMS) periodically surveys national farmers on technology that could be used for benchmarking purposes but the sample is too small to infer local performance. Periodic local farm

surveys may be needed to adequately capture local farm modernization characteristics and progress.

Cooperative Extension and industry associations provide the best linkages to emerging best practices and new technologies for farmers. However, open house technology demonstrations, area workshops, and conventions/conferences might provide ways to introduce a wider agricultural and food industry and public audience to advanced technology and their applications across the agricultural supply chain. Therefore, the county may want to cooperate with its local and regional partners to organize, sponsor and host such events.

- Measure and benchmark local farm adoption of agriculture technology
- Help organize, sponsor or host AgTech and food systems innovations conferences or expos
- Sponsor public on-farm demonstrations of Botetourt County high-technology use in agriculture
- Sponsor local lectures and workshops on trends and opportunities in AgTech and sustainable agriculture

Objective #2 Connect with Innovators

The single best resource for local innovation and entrepreneurship in the region is Virginia Tech. Building enduring connections between Botetourt staff and Virginia Tech agriculture and innovation related departments could provide useful information about area startups, Virginia Tech business spinoffs, and agricultural technology business opportunities. Botetourt County agriculture officials and staff might also benefit from connecting with policy innovators elsewhere by arranging site visits and field trips to promising models in the region, including best practices identified in this report.

- Network with Virginia Tech extension, centers, departments, and intellectual property staff
- Arrange for field trips where innovative agriculture development models exist

Objective #3 Encourage Agriculture-related Entrepreneurship

Aside from cultivating a new generation of farmers, Botetourt County could play a role in encouraging food industry entrepreneurship and innovation. A growing number of communities are investing in food incubators/accelerators to provide technical assistance, training, and support services for food industry startups. The Roanoke metropolitan region offers sufficient market size and accessible university food industry expertise to make creating such a resource in the region viable. In addition, Botetourt County might develop new funding tools such as microenterprise grants and loans or low-interest revolving loans to help close the funding gap for new enterprises with innovative products or processes.

- Identify funding vehicles (e.g., microenterprise grant, low-interest revolving loan fund) targeted at farmers and other agribusinesses that have promising innovation models such as bioenergy production, waste-to-energy, precision farming, and innovative specialty products
- Study the feasibility of establishing or working with new or existing commercial kitchens and canneries in region to create regional food incubator/accelerator to encourage innovation and entrepreneurship in food sector (see 5.3.1)

Objective #4 Target AgTech Companies and Startups for Recruitment

The Roanoke Regional Partnership targets several sectors that are relevant to AgTech including food processing and life sciences. The Roanoke region also hosts a number of companies that could be characterized as producing AgTech R&D and high-technology products including American Biosystems in Roanoke (microbials used in feed and aquaculture products), Novozymes Biological (enzymes used in turf/plant health), and Luna Innovations (nanoparticles for remedying groundwater contamination, groundwater flow monitoring technology). Botetourt County could

BOX 5.4. Agriculture Innovation and Entrepreneurship

Botetourt County's relatively close proximity to a leading agricultural research university, location on the periphery of a small metropolitan area (over 300,000 people) and growing ecosystem support for business startups such as the Corporate Research Center and Roanoke-Blacksburg Tech Council provide advantages for local agricultural innovation and entrepreneurship. However, the county does not host any firms engaged in agricultural R&D. County farms and firms also have not attracted external farm and firm-based agricultural R&D funding such as Small Business Innovation Research (SBIR) agricultural grants and the much smaller SARE (Sustainable Agriculture Research) grants that would demonstrate translational research capabilities. The region currently hosts limited infrastructure and program support for an agribusiness industry cluster, though the Roanoke Regional Partnership does identify food processing as one of its target sectors. An example of how highly successful food industrial clusters can be created on a large scale is provided by the Danish Food Cluster project which combines strategic planning with branding, networking, innovation, and technology transfer initiatives to grow local food industries.

Agricultural innovation could occur anywhere along the agricultural value chain (i.e., farm inputs, crop and animal production, primary processing, secondary processing, distribution and logistics, and consumer consumption) and often the most significant discoveries occur as a result of combining innovations in different areas (Dutia 2014). Agricultural and food technology are rapidly growing areas for angel and venture capital funding and entrepreneurial support services. In 2014, AgTech attracted $2.36 billion in financing in over 264 deals, including investments in bioenergy, biomaterials and biochemical, crop an soil technology, decision support technology, drones and robotics, farm to consumer, food e-commerce, indoor agriculture, food safety and traceability, and waste mitigation (AgFunder 2015). Platforms such as AgFunder providing a vehicle for linking accredited investors with promising agricultural and food startups, and new agricultural venture capital funds such as Cultivian Sandbox are rapidly growing their portfolios. Agricultural and food startup incubators and accelerators are also becoming more common. These organizations provide entrepreneurial training and financial assistance for early stage companies. Many of these ventures are industry-supported and investor-supported and focus on particular parts of the value chain such as inputs (Royse Law Agtech Incubator) or distribution and consumers (Food-X) while others rely in part on local government or university funding (e.g., NOFFN Incubator, NextFarm Accelerator).

Virginia Tech is Botetourt County's single best resource in the region to support agricultural innovation and entrepreneurship. The university hosts over a dozen academic departments and research centers with frontier research programs that intersect with agriculture and forestry (see table below) and many of the research areas are supported by ongoing extension and outreach activities. In addition, Virginia Tech provides marketing and entrepreneurial support services for its licensed technologies and business spinoffs.

Websites
AgFunder: http://agfunder.com/

Ewing Marion Kauffman Foundation, Agtech: Challenges and Opportunities for Sustainable Growth
http://www.kauffman.org/what-we-do/research/2014/04/agtech-challenges-and-opportunities-for-sustainable-growth

BOX 5.4. Agriculture Innovation and Entrepreneurship (continued)

Websites (continued)
Cultivian Sandbox: http://cultiviansbx.com/

Food-X: http://www.food-x.com/

Royse Law Agtech Incubator: http://royselawincubator.com/

Sustainable Agriculture Research and Education (SARE) Program: http://www.sare.org/

USDA, National Institute of Food and Agriculture (NIFA) Small Business Innovation Research (SBIR) program: http://nifa.usda.gov/program/small-business-innovation-research-program

Danish Food Cluster: http://danishfoodcluster.dk

West Virginia Agriculture Innovation Showcase: http://www.easternwv.edu/documents/WV-AG-Showcase-Oct-15-17-Information-10-13.aspx

The Future of Unmanned Vehicle Systems in Virginia: http://www.doav.virginia.gov/Downloads/Studies/UAVs%20in%20Virginia/TheFutureOfUVSInVirginia2014.pdf

School	Department	Selected Program Areas
College of Agriculture and Life Sciences		
	Animal and Poultry Sciences	Animal breeding and genetics; growth and muscle biology; nutrition
	Biological Systems Engineering	Animal waste management; watershed management; precision farming and machinery management, food engineering, bioenergy, biopharmaceuticals
	Crop and Environmental Sciences	Agronomy; crop improvement, breeding and genomics; environmental science
	Dairy Science	Nutrition and feeding
	Entomology	Integrated pest management, Apiculture
	Food Science and Technology	Food innovations, enology and fermentation science, food processing and packaging
	Horticulture	Floriculture, viticulture, horticultural crops, plant tissue culture
	Human Nutrution, Foods, and Exercise	Nutraceuticals
	Plant Pathology, Physiology, and Weed Science	Plant pathology, weed management and control
College of Natural Resources and Environment		
	Sustainable Biomaterials	Wood products, manufacturing systems
	Forest Resources and Environmental Conservation	Agroforestry, forest management
College of Engineering		
	Institute for Critical Technology and Applied Science	Unmanned vehicles, drones, and robotics
Other Programs		
	Institute for Critical Technology and Applied Science	Sustainable energy, biobased materials, sustainable water
	Virginia-Maryland College of Veterinary Medicine	Animal clinical sciences
	KnowledgeWorks	University startup business Incubation
	Intellectual Properties	University technology commercialization

build on this framework by developing specialized industry targets that complement Roanoke Valley targets with AgTech capabilities.

- Identify industry targets for AgTech
- Utilize firm databases to identify firms within target industries
- Distribute marketing materials to targets
- Join trade associations and attend trade shows for identified target industries

5. Expand Local Food Sales, Production, and Capacity

Demand for local foods has grown both nationally and regionally. Agricultural stakeholders see more opportunity to develop this market. The Roanoke region is home to the Historic City Market, which is a natural focal point for local food promotion. It is also served by a number of CSAs and local websites and publications that promote regional foods. However, local and regional branding of products is limited and the buy local campaigns are fragmented and overlapping. Also, the area is not served by a local food hub to improve farm to table distribution. Furthermore, there may be opportunities to further develop entrepreneurship in value-added food industries thorough shared use agriculture processing facilities.

Objective #1 Increase Local Food Marketing

Botetourt County is currently included in the Shenandoah Valley Buy Fresh Buy Local marketing campaign (which is based on templates and branding materials provided by a national non-profit group headquartered in Pennsylvania) and the Fields of Gold agritourism program. In each of these branding and advertising marketing efforts, it forms the southernmost boundary of the marketing area. Regional stakeholders felt that additional resources could be put forward to create an explicit Botetourt identity for local products such as Botetourt beef. Alternatively, Botetourt County could be folded into another branding strategy focused on the Roanoke Valley and perhaps also including the New River Valley. Other communities that have developed strong local food marketing initiatives have offered additional support for producers and buyers by providing training and technical assistance to and publishing local food directories that inventory local actors important to the local food supply chain. It may also be possible to expand participation in regional food tours, though only one higher end Botetourt restaurant features a menu with locally sourced ingredients.

- Evaluate developing regional brand for local agricultural products
- Consider develop a "buy local" campaign that explains the economic and nutrition benefits of local agricultural products
- Offer local workshops for farmers in marketing practices such as direct marketing
- Develop a directory of local farms and other agricultural resources (e.g., credit, ag. supply, custom services)
- Expand representation and participation in existing regional food tours
- Appoint representative and coordinate activities with any local food policy council that is established in the future

Objective #2 Encourage the Establishment of a Local Food Hub

Nine communities in Virginia have local food hubs that serve as intermediaries to aggregate and distribute agricultural locally grown food products to market end users such as institutions, retail establishments and restaurants. These food hubs are organized differently and include public, private for-profit, and private non-profit entities. A glance at the size and demographics of communities on the list suggests that the Roanoke Valley should be able to support a local food hub. However, a feasibility study would provide guidance about the proper business model, scale, location, and operational features. Botetourt County could provide additional support for a food hub by establishing a local food policy in which Botetourt County adopts certain goals to support greater farm to school and farm to institution purchases of local food.

- Study the feasibility of establishing local food hub in conjunction with other regional partners
- Consider establishing a local food program for Botetourt County, including greater farm to school and farm to institution purchases

Objective #3 Explore Community Value-Added Production Facility Needs

Stakeholders identified the potential need for a shared-use food and agricultural processing facility

BOX 5.5. Local Food Sales

Many communities are examining their untapped potential for expanding local food production. Some have elected to invest in new programming and facilities to facilitate local food production, distribution, and value-added for a growing market of consumers who want fresh and locally produced food. The initial phase of such efforts often involves a regional foodshed analysis where local supply is compared to local consumer demand to better understand specific gaps that might be filled with local products. In addition, potential regulatory, organizational, and marketing barriers are identified. Many communities have created Local Foods Councils or developed local food strategic plans to facilitate local food entry. Virginia Cooperative Extension provides a study guide that describes the various elements needed to facilitate local food growth. A feasibility study and business plan development are often the final planning steps taken before launching a joint local food support venture.

Many communities have found that local food hub intermediaries make it much easier for smaller producers to expand their distributional channels. Food hubs are enterprises that aggregate agricultural products from small and midsized farmers to provide sufficient scale to enable them to sell to large purchasers (Low et al. 2015). Smaller producers often do not produce in large enough volumes, adhere to regulatory quality standards, or provide fast enough delivery to meet the needs of larger retailers, wholesalers, or food service establishments. Food hubs provide aggregation, cleaning, packaging, and quality control services as well as marketing, transportation, and distribution services. Many food hubs also offer technical assistance to local farmers such as Good Agricultural Practices (GAP) and Good Handling Practices (GHP) training and education about farm management and product development. Food Hubs utilize different business models nationwide: 40 percent are private businesses, 30 percent are nonprofits, and 20 percent are cooperative ventures (Low et al. 2015). Virginia currently hosts nine food hubs (Charlottesville Food Hub, Appalachian Harvest in Duffield, Blue Ridge Local in Elkwood, Coastal Farms in Windsor; EcoFriendly Foods LLC in Moneta; Good Food - Good People in Floyd; Milton's Local in Richmond; Off the Vine Market Inc. in Williamsburg and Produce Source Partners in Ashland). The Appalachian Sustainable Development Center is Virginia's earliest food hub. The Virginia Tech operated Catawba Sustainability Center in nearby Catawba, Virginia is currently examining the feasibility of establishing one for the Roanoke Valley region (Virginia Tech Office of Economic Development 2015).

Some communities have supported local food distribution by sponsoring efforts to create community value-added food processing facilities or food incubators and accelerators. There are different types of facilities that feature various configurations of milling, fermentation, creamery, cooking, backing, processing, freezing, drying, packaging, and storage capabilities. For example, Blue Ridge Food Ventures in Asheville, North Carolina, established in 2005, offers a 11,000 square food value-added processing facility with equipment for preparation, cooking and baking, packaging, storage, and shipping and provides technical assistance and business planning services on site.

The most common community food preparation facilities are community canneries that offer limited cooking and packaging capabilities. Community kitchens provide more processing tools and services than canneries but fewer than value-added food processing facilities that are often larger

BOX 5.5. Local Food Sales (continued)

and provide more types of equipment and on-site technical assistance. Food incubators and accelerators provide an even wider array of business development assistance to entrepreneurial food ventures than value-added food processing facilities. Community slaughtering and packing facilities have also become more common. Virginia hosts 11 canneries, many of which have been in existence for over 50 years when community canneries were established to support the war effort, including two in nearby Franklin County (Meade 2011). The Prince Edward County Cannery in Farmville was recently upgraded to a Commercial Kitchen called the Virginia Food Works. Locally, residents of Highland and Bath counties helped to raise funds from grants, loans, and private investors to build a VDACS inspected meat processing center called Alleghany Meats (part of the Allegany Highlands Agricultural Center) that processes small lots of beef, bison, hogs, goats and sheep (Haskell 2012). In addition, LEAP, Inc., a Roanoke based non-profit that promotes local food sales through area farmer markets, has identified a need for this service (Bonham, Lyon-Hill, Erickson, and Sirmons 2014). It is on schedule to open an 800 square foot community kitchen workshop later in 2015. In some of the larger metropolitan areas, for-profit firms are playing an increasing role in commercial kitchen leasing.

Farm to school programs are another tool to expand local food markets. These programs not only seek to increase access to fresh local food but improve student understanding of the agricultural and food system, provide nutrition education, and increase awareness of agricultural careers (Low et al. 2015). Farm to school programs sometimes utilize school gardens, farm field trips, local food taste tests, and Harvest of the Month promotions (Low et al. 2015).

Websites

Know your Farmer, Know your Food (USDA)
http://www.usda.gov/wps/portal/usda/knowyourfarmer?navid=KNOWYOURFARMER

USDA, Regional Food Hub Resource Guide
http://www.ams.usda.gov/AMSv1.0/foodhubs

Appalachian Foodshed Project (Enhancement Grant Funds and Toolkits)
http://www.appalachianfoodshedproject.org

Local Food Hub, Charlottesville, VA: http://localfoodhub.org

Appalachian Sustainable Development: http://asdevelop.org/

Virginia Farm to Table: http://virginiafarmtotable.org/

USDA Food and Nutrition Service Farm to School Resources:
http://www.fns.usda.gov/farmtoschool/farm-school-resources

Blue Ridge Food Ventures: https://www.advantagewest.com/food-and-natural-products

Alleghany Meats: http://www.alleghanymeats.com

to serve small businesses and community members in the region. The facility might offer tools found in a cannery, commercial kitchen, value added production facility, creamery, cidery or mill that would allow foods to be cooked, baked, canned, frozen, and dehydrated. It would also offer users technical assistance and training and certification in different food preparation areas. These facilities are becoming more common across the United States and can be found in Virginia as well (see **Box 5.5**). In recent years, several Virginia communities including Floyd County, Prince Edward and Staunton have conducted feasibility studies to examine the possibility of offering or expanding community value-added facilities. It is recommended that the need for a USDA/FDA certified facility in the Roanoke Valley region be studied in a similar manner or that collaborative linkages with existing area facilities be developed.

- Study feasibility of establishing, using, or expanding regional shared use agriculture processing facilities in conjunction with regional partners that might include cooling and packing, canning, community kitchen, dairy processing, etc.
- Provide technical assistance, training, and certification in areas related to local food economy such as organic production, cooking, and preparation

6. Enhance Marketing and Promotion of Agriculture

Agricultural stakeholders identified a need to improve the visibility and image of agriculture and area producers. This goal is supported by objectives that attract more positive attention to agriculture and highlight the agricultural resources available in the county. The revival of the county fair after being dormant for over 50 years has been a significant factor in raising the profile of agriculture in the community. Securing a permanent site for the fair and developing the site with a multipurpose facility is seen as an important component of the agricultural marketing effort.

Objective #1 Improve Awareness of Area Agriculture and Agricultural Resources

A website and associated social media would be useful tools in promoting Botetourt agriculture, agritourism, connecting agricultural producers and consumers, and keeping the public apprised of agriculture public policy developments. In addition, some Virginia communities have developed printed brochures and other materials that contain maps of farms, farm stands, and farmers' markets that are open to the public and locations of other agricultural resources and attractions. Several Botetourt farms and orchards currently offer individual farm tours. Virginia communities are also increasingly promoting area farms by organizing spring and/or fall open houses or interactive tours of area farms with multiple stops on an itinerary where consumers can learn more about how their food is made and purchase products or services.

- Consider establishing a Botetourt County agriculture website and social media presence
- Develop a Botetourt County agricultural facts brochure highlighting size, features, and career opportunities in agriculture
- Develop a farm tour program

Objective #2 Promote Cooperative Marketing Arrangements

Stakeholders indicated that an attempt was made to form a local cooperative for marketing cattle, but this venture later failed. However, there is interest in exploring the idea anew.

- Study feasibility of forming marketing and purchasing group such as a cooperative for jointly marketing and shipping livestock and/or other agricultural products

Objective #3 Consider Expanding County Fair

Stakeholders agreed that the revived Botetourt Fair has been a major boost for the morale of the agricultural community and an important event

BOX 5.6. Agriculture Marketing and Promotion

A well designed agricultural website, social media presence, and smartphone applications can be effective tools for disseminating information and marketing products and services available in the community. For example, Loudoun County hosts a website that carries current news about the agricultural community; a calendar of events; information and links for farms, farmers markets and roadside stands, wineries, and agritourism venues; information about agriculture committees and programs; and a photo gallery. Its Facebook page and Twitter feeds have thousands of friends and followers.

There are already several attractive websites that features Botetourt farms, businesses, and resources including Fields of Gold which promotes Shenandoah Valley agritourism, Buy Fresh Buy Local for Shenandoah, which promotes local foods, The Roanoke Valley Locavore, which does the same for the Roanoke Valley, and Bon Appetit Appalachia, which features a map of culinary and food resources for the entire Appalachian region. A local microbrewery is also featured on Roanoke Food Tours website as part of its craft beer tour.

Many communities have agricultural and multi-use facilities for hosting shows, competitions, and community events that lead to increased tourism. They can also be used to market area products and services such as local foods and livestock through shows and expositions and provide a venue for youth education and adult professional development activities. The number of Virginia communities that have multipurpose facilities is too long to list. However, a few recently constructed facilities such as the Pittsylvania County Olde Dominion Agricultural Center in Chatham and Coalfield Regional Agricultural Center in Wise illustrate some of the amenities available. These facilities contain office space, space for holding educational programs and meetings, livestock pavilions for marketing and showing livestock, and corral systems to serve the building. Since a Botetourt facility would be multipurpose, it could be used by other members of the community as a venue for a variety of community events such as high school and college graduations and family reunions, dog shows, gun shows, wine festivals and more.

Websites

Loudoun Farms: http://www.loudounfarms.org/

Fields of Gold: http://www.fieldsofgold.org

Buy Fresh Buy Local for Shenandoah: http://buylocalshenvalley.org

The Roanoke Valley Locavore:
http://roanokevalleylocavore.com/wordpress/
https://www.facebook.com/pages/Roanoke-Valley-Locavore/350731487878

Roanoke Food Tour: http://www.roanokefoodtours.com/

Bon Appetit Appalachia: http://visitappalachia.com/bonappetitappalachia/

to showcase the talents and achievements of area farmers and youth agriculturalists. They would like to scale up this effort by locating and developing a permanent site, including the construction of a multipurpose building that could be used for agricultural functions such as livestock shows, horse shows and other community events such as dog shows, gun shows, live bands, and festivals. The fair site could also serve as a permanent site for hosting annual food evens that celebrate local food heritage.

- Identify location for permanent site
- Consider developing additional infrastructure for site (e.g., parking, multipurpose building)

7. Improve Farm Viability and Profitability

Many agricultural stakeholders believe that the future of Botetourt County agriculture lies in expanding into new markets, including alternative, specialty and ethnic products, diversifying farm production and making farms more productive and profitable. This goal is supported by several objectives.

Objective #1 Explore the Potential for New Agricultural Products

Recent food trend data indicate that alternative, specialty, and ethnic food products are growing in popularity. Alternative crops include field crops, oil crops, legumes, vegetables, cereals, and pharma crops (GMO crops developed to produce medicines or industrial chemicals). Stakeholders believe that there may be opportunities for area farms to cultivate new crops and also produce artisan value-added products for local markets such as cream, cheese, and cider. Botetourt County soils and farms have historically produced a wider variety of farm products, including a valley tomato and poultry. In order to determine the most appropriate crops and livestock, additional market analysis is needed, including studying the capability of local soils to produce various types of crops to meet current market demands.

- Explore the potential for serving growing ethnic and religious markets (e.g., Hispanic, kosher/halal) and specialty markets (e.g., heritage livestock, exotic livestock) and provide technical assistance and training to farmers
- Encourage production of artisan/specialty value added food products like cream, cheese, cider
- Conduct agricultural market study to examine economically viable alternative livestock and crop production opportunities

Objective #2 Promote Landowner Forestry Management Practices

Botetourt farmers own approximately 28,702 acres of woodland. Stakeholders see the potential for farmers and other large landowners to more effectively manage their forest resources for timber and pulpwood production. For instance, Virginia Tech offers a SHARP (Sustainable Harvesting and Resource Professional) Logger program and a Virginia Forest Landowner Education Program (VFLEP) that provide training on land stewardship, sustainable forestry, harvest planning, and best management practices. Training and technical assistance is also available from Cooperative Extension on establishing silvopasture forest buffers for reducing soil erosion and improving cattle management. Non-timber specialty crops such as mushrooms, ginseng, and goldenseal also offer area landowners potential new products to grow and harvest.

- Help market landowner education and technical assistance programs for forestry management
- Consider promoting non-timber crops (e.g., mushrooms, ginseng, goldenseal) that can utilize county forest resources.

Objective #3 Review Taxes and Regulations for Possible Reform

A wide variety of regulations and tax rules affect farmers differently than many businesses and residents. Therefore, one of the first acts of an Agriculture Development Board should be to examine these regulations and suggest ways they might be modified without compromising public

BOX 5.7. Farm Viability and Profitability

Farm technical assistance, farm modernization, and farm diversification provide ways to make farms more productive and profitable, and to smooth fluctuations in farm income over time. Farms can be diversified by adding new crops and livestock (heritage breeds and exotic livestock such as red deer, bison and elk or game birds such as pheasant, quail, and partridges, small ruminants such as dairy and meat goats, sheep and lambs), catering to growing ethnic markets for specialty products and products that conform to religious diets (e.g., halal, kosher), utilizing land differently (forest management for timber and non-timber products such as mushrooms, ginseng, and goldenseal, silviculture), adopting new land management practices that help optimize production such as agricultural best management practices, improved marketing and distribution practices or providing new services such as entertainment and energy production. Several Virginia localities (e.g., Pittsylvania County, Virginia Beach) have undertaken detailed studies to determine alternative crops cultivation possibilities using information on soil and water requirements and market conditions.

Virginia's land grant universities, Virginia Tech and Virginia State University, have undertaken extensive research on alternative crop and livestock possibilities for the Commonwealth at various research and extension centers. In addition, Virginia Tech has developed computer-based software tools using geographical information systems and optimization routines to evaluate alternative crop cultivation potential.

Websites

Vegetables and Specialty Crops
Virginia Cooperative Extension: https://pubs.ext.vt.edu/category/vegetables-specialty-crops.html

List of Alternative Crops and Enterprises for Small Farm Diversification
USDA, National Agricultural Library, Alternative Farming Systems Information Center (AFSIC):
http://afsic.nal.usda.gov/list-alternative-crops-enterprises-small-farm-diversification

Rural Economic Analysis Program, Department of Agricultural and Applied Economics, Virginia Tech
Evaluating alternative agricultural enterprises in a flue cured tobacco-producing region of Virginia: A case study.
http://ageconsearch.umn.edu/bitstream/14839/1/rr030058.pdf

Bhardwaj, H.L., A. Hankins, T. Mebrahtu, J. Mullins, M. Rangappa, O. Abaye, and G.E. Welbaum. 1996. Alternative Crops Research in Virginia.:https://hort.purdue.edu/newcrop/proceedings1996/V3-087.html

health and safety. Because new and beginning farmers as well as farmers who make investments in new technology or farm modernization take on higher risks, the possibility of offering targeted assistance should be explored.

- Review County regulations and ordinances that impact area farmers and recommend ways that rules/regulations might be modified
- Consider special targeted tax incentives or grants for new farmers or farm modernization projects

Objective #4 Promote Soil, Water, and Energy Conservation Programs

Community survey respondents expressed a concern that area farmers are not participating adequately in existing soil, water, and energy conservation grant programs that offer generous federal and state

government matching shares, sometimes paying the total cost of the investment of a best management practice or technology. One of the duties of an agricultural coordinator could be to better disseminate information about these farm grant and loan programs from various funding sources.

- Promote soil, water, and energy conservation incentive programs

Table 5.1 Strategic Plan Goals, Objectives, and Actions

Item		Description
GOAL #1 Improve Administration, Planning, and Policy Coordination for Agriculture		
Objective #1	**Expand Agriculture Development Administrative and Planning Capacity**	
	Action 1:	Consider the establishment of an Agriculture Development Board or non-profit organization
	Action 2:	Consider the creation of an agriculture coordinator function/position
	Action 3	Examine the possibility of establishing a 501(c)(3) in collaboration with other community and regional partners to administer agriculture development
Objective #2	**Work Towards Adopting an Agriculture Development Strategy, Review, and Update**	
	Action 1:	Adopt Agricultural Development Strategy work plan
	Action 2:	Integrate agriculture into overall economic development strategy
	Action 3:	Annually review, update, and publicly present revised work plan
	Action 4:	Create performance accountability measures and benchmarks
	Action 5:	Hold an annual Botetourt agricultural forum to discuss agriculture issues, trends, and opportunities
Objective #3	**Develop Agriculture Leadership Capacity**	
	Action 1:	Promote Agriculture Board leadership training
	Action 2:	Encourage farm community to serve on other boards and commissions
Objective #4	**Coordinate Plans and Activities with Local, Regional, and State Organizations and Agencies**	
	Action 1:	Continue to send county representative to Virginia Agriculture Development Officer (VADO) affinity group meetings
	Action 2:	Encourage coordination with other regional organizations and agencies
	Action 3:	Build relationships with VDACS and DoF and keep them apprised of agriculture development plan progress
GOAL #2 Preserve Valuable Farmland		
Objective #1	**Create New Farmland Preservation Incentives**	
	Action 1:	Establish Purchase of Development Rights (PDR) program for working farms
	Action 2:	Study feasibility of Transfer of Development Rights (TDR) program
Objective #2	**Reduce Land Use Conflicts that may Hinder Agriculture**	
	Action 1:	Review and adjust if needed county zoning ordinances to reduce conflicting uses and protect agriculture as an important part of the county economy.
	Action 2:	Develop brochures to educate the public about agricultural issues
GOAL #3 Facilitate Farm Succession and the Agricultural Workforce		
Objective #1	**Encourage Increased Youth Exposure to Agriculture**	
	Action 1:	Evaluate possibility of establishing school gardens/greenhouses with science curriculum links
	Action 2:	Introduce supervised farm experiences and internships for secondary students
	Action 3:	Improve agriculture industry career counseling in public schools
Objective #2	**Encourage Expanded Post-Secondary Agricultural Learning Opportunities**	
	Action 1:	Support creation of new community college programming under consideration to support agriculture such as sustainable farming and fermentation sciences certificate or degrees
	Action 2:	Examine possibility of offering additional noncredit post-secondary offerings for hobby farmers (e.g., gardening, viticulture) including offerings through distance learning modalities.

Table 5.1 Strategic Plan Goals, Objectives, and Actions (continued)

Item		Description
Objective #3	**Support Beginner Farmer Training and Technical Assistance**	
	Action 1:	Evaluate hosting the Growers Academy for one year at the Greenfield Education and Training Center
	Action 2:	Explore creating stronger linkages with VT EarthWorks at the Canawba Sustainability Center in Catawba, VA
Objective #4	**Consider Marketing and Providing Beginning Farm Financial Assistance Programs**	
	Action 1:	Consider improve local marketing of FSA and other farm credit programs
	Action 2:	Explore creating critical farms program to support new farm owners
	Action 3:	Consider offering a microenterprise grant program for new farmers
Objective #5	**Promote Farm Estate Planning and Multigenerational Connections**	
	Action 1:	Encourage the establishment of farm succession planning and financial planning workshop for retiring farmers
	Action 2:	Establish mentoring program to link new farmers with established farmers
	Action 3.	Promote VDACS Farm Link program
GOAL #4	**Promote Agriculture Innovation and Entrepreneurship**	
Objective #1	**Promote Agricultural Modernization and Technology Diffusion**	
	Action 1:	Measure and benchmark local farm adoption of agriculture technology
	Action 2:	Help organize, sponsor or host AgTech and food systems innovation conferences or expos
	Action 3:	Sponsor public on-farm demonstrations of Botetourt County high-technology use in agriculture
	Action 4:	Sponsor local lectures and workshops on trends and opportunities in AgTech and sustainable agriculture
Objective #2	**Connect with Innovators**	
	Action 1:	Network with Virginia Tech extension, departments, centers and IP staff
	Action 2:	Arrange for field trips where innovative agriculture development models exist
Objective #3	**Encourage Agriculture-related Entrepreneurship**	
	Action 1:	Identify funding vehicles (e.g., microenterprise grant, low-interest revolving loan fund) targeted at farmers and other agribusinesses that have promising innovation models such as bioenergy production, waste-to-energy, precision farming, and innovative specialty products
	Action 2:	Study the feasibility of establishing or working with new or existing commercial kitchens and canneries in region to create regional food incubator/accelerator to encourage innovation and entrepreneurship in food sector (see 5.3.1)
Objective #4	**Target AgTech Companies and Startups for Recruitment**	
	Action 1:	Identify industry targets for AgTech
	Action 2:	Utilize firm databases to identify firms within target industries
	Action 3:	Distribute marketing materials to targets
	Action 4:	Join trade associations and attend trade shows for identified target industries
GOAL #5	**Expand Local Food Sales, Production, and Capacity**	
Objective #1	**Increase Local Food Marketing**	
	Action 1:	Evaluate developing a regional brand for local agricultural products
	Action 2:	Consider developing a “buy local” campaign tht explains the economic and nutritional benefits of local agricultural products
	Action 3:	Offer local workshops for farmers in marketing practices such as direct marketing
	Action 4:	Develop a directory of local farms and other agricultural resources (e.g., credit, ag. supply, custom services)
	Action 5:	Expand representation and participation in existing regional food tours
	Action 6:	Appoint representative and coordinate activities with any local food policy council that is established in the future

Table 5.1 Strategic Plan Goals, Objectives, and Actions (continued)

Item		Description
Objective #2	**Encourage the Establishment of a Local Food Hub**	
	Action 1:	Study the feasibility of establishing local food hub in conjuction with other regional partners
	Action 2:	Consider establishing a local food purchase program for Botetourt County, including greater farm to school and farm to institution purchases
Objective #3	**Explore Community Value-Added Production Facility Needs**	
	Action 1:	Study feasibility of establishing, using, or expanding regional shared use agriculture processing facilities in conjunction with regional partners that might include cooling and packing, canning, community kitchen, dairy processing, etc.
	Action 2:	Provide technical assistance, training, and certification in areas related to local food economy such as organic production, cooking, and preparation
GOAL #6	**Enhance Marketing and Promotion of Agriculture**	
Objective #1	**Improve Awareness of Area Agriculture and Agricultural Resources**	
	Action 1:	Consider establishing a Botetourt County agriculture website and social media presence
	Action 2:	Develop a Botetourt County agricultural facts brochure highlighting size, features, and career opportunities in agriculture
	Action 3:	Develop a farm tour program
Objective #2	**Promote Cooperative Marketing Arrangements**	
	Action #1	Study feasibility of forming regional marketing and purchasing group such as a cooperative for jointly marketing and shipping livestock and/or other agricultural products
Objective #3	**Consider Expanding the County Fair**	
	Action #1:	Identify location for permanent site
	Action #2:	Consider developing additional infrastructure for site (e.g., parking, multipurpose building)
GOAL #7	**Improve Farm Viability and Profitability**	
Objective #1	**Explore the Potential for New Agricultural Products**	
	Action #1	Explore the potential for serving growing organic and natural foods, ethnic and religious markets (e.g., Hispanic, kosher, halal) and specialty markets (e.g., heritage livestock, exotic livestock) and provide technical assistance, training and financial assistance to farmers
	Action #2	Encourage production of artisan/specialty value added food products like cream, cheese, cider
	Action #3	Conduct agricultural market study to examine economically viable alternative livestock and crop production opportunities
Objective #2	**Promote Landowner Forestry Management Practices**	
	Action #1	Help market landowner education and technical assistance programs for forestry management
	Action #2	Consider promoting non-timber crops (e.g., mushrooms, ginseng) that can utlize county forest resources
Objective #3	**Review Taxes and Regulations for Possible Reform**	
	Action #1	Review County regulations and ordinances that impact area farmers and recommend ways that rules/regulatory burdens might be eased
	Action #2	Consider special targeted tax incentives or grants for new farmers or farm modernization projects
Objective #4	**Promote Soil, Water, and Energy Conservation Programs**	
	Action 1:	Promote soil, water, and energy conservation incentive programs

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APPENDIX A
FOCUS GROUPS TECHNICAL REPORT

Executive Summary

Organization of the Technical Report

This technical report consists of the Executive Summary, a detailed description of the methods used in the three focus groups and a detailed listing of the ideas and feedback generated from the focus groups. The Executive Summary allows for a quick understanding of the essential information obtained from the focus groups. The Methods section provides a more detailed understanding of how the groups were recruited and conducted. The section titled Reports from the Focus Groups provides the detail behind the overarching themes listed in the Executive Summary, as well as some details about the setting and composition of the groups.

Background

At the request of the Botetourt County Economic Development Office, the Weldon Cooper Center at the University of Virginia entered into a contract to describe and report on the status of agriculture in Botetourt County, and to solicit input about agriculture development needs and opportunities. Within the Cooper Center, the Center for Economic and Policy Studies (CEPS) served as the lead agency on the project, providing economic analysis and final reporting services. The Center for Survey Research (CSR) assisted with data collection and reporting services.

This technical report describes the results from three focus groups recruited by Botetourt County and conducted by CSR. This technical report is part of the final deliverables for the project. The study was sponsored and funded by the Botetourt County Economic Development Office with assistance provided by the Virginia Department of Agriculture and Consumer Services (VDACS) Governor's Agriculture and Forestry Industries Development Fund.

Overview of Results

Focus groups are not intended to be generalizable to larger populations. They are intended to provide insights into the variety of experiences and opinions relevant to the research question, and to illuminate different ways in which people think about and talk about issues or concepts important to the researchers. Therefore, the results described in this report should be taken as generalizable only to the participants in the focus groups. However, the results from these groups seem to align with "general knowledge" about issues and trends in agriculture.

With that in mind, the focus groups revealed the following themes:

- Agriculture is important to the community for a wide variety of reasons (e.g., quality of life, tradition, environment, county fiscal condition, food quality and security).
- Botetourt County has numerous agricultural assets including good soils, a large land base, agricultural land protected by conservation easements, dedicated farmers, close proximity to large urban markets, good road and rail infrastructure and access, strong supportive associations and agencies (e.g., Farm Bureau, Cattlemen's Association, Cooperative Extension), close proximity to Virginia Tech, and growing agricultural production diversity (e.g., wineries, agritourism, orchards, value-added products).
- Botetourt County agriculture is threatened by increasing urban/residential development and land price appreciation, farm succession problems, labor availability, government regulatory and tax policy, and increasing fragmentation of land ownership.

- Farm succession is a large problem because of the high cost of land and capital and unique work ethic/skill set required to operate a successful farm. Although there are loan programs available for beginning farmers, capital access can still be a problem. More might be done to market existing programs and develop new financing options to support new and beginning farmers.
- New agriculturally related programming is needed for area schools that supports local farms, new farmers, and the farm workforce. Examples include: (a) child farm tours, (b) observing Food for America day, (c) greater use of farm technology in the agriculture classroom, (e) dual enrollment agricultural coursework, (f) student farm internships, apprenticeships, summer work opportunities and supervised summer agricultural experiences, (g) food gardens/campus farms, and (h) student counseling that makes students aware of the wide array of agriculturally related occupations available.
- There may be additional opportunities to develop new agriculturally related curricula at the local community college level. Examples of new programs that are actively being considered are a certificate program in sustainable agriculture and a program in fermentation sciences.
- The County Fair has raised the profile of area agriculture. The agriculture community believes that constructing a multi-purpose facility at a permanent fairgrounds location would provide additional benefits to the farm sector and the wider community.
- There is a need for additional cooperative agricultural product marketing in the areas of (a) aggregation and transportation of local products, (b) branding/labeling local products, (c) establishing a web presence for the agriculture community, and (d) presenting information about the benefits of area agriculture to the wider public.
- There may be opportunities to further grow the local food economy. There are information disconnects in the farm to table chain, including information for area retailers and restaurants about suppliers and information for area producers about market prices and buyers. The region should explore establishing a food hub to provide product aggregation and marketing and technical assistance to area farmers. There may also be an opportunity to create a value-added production facility/food incubator in the region for processing agriculture products (e.g., community kitchen, cannery, flash freezing, milling, creamery). The proposed Seven Hills meat processing plant in Lynchburg could increase the capacity of area farmers to sell more local meat products.
- The voice of the agricultural community is often not heard in local government. The county should establish an agricultural development board to improve communication and coordination with local farmers. It should also dedicate more resources to agriculture development, including assigning staff to serve as agricultural coordinator. New initiatives could be developed to provide regulatory relief, improve agricultural productivity and technology adoption, institute targeted attraction/retention tax breaks for agribusiness firms, and decrease land use conflicts that result from close proximity of new residences to farm operations.
- The agricultural community believes there may be opportunities for new or expanded local agricultural products including: (a) poultry, (b) soybeans, (c) specialty and niche agricultural products, including products that serve a growing, more ethnically diverse population nearby, (d) silviculture/forestry, and (e) hobby agriculture for new residents who own large land tracts that previously consisted of farmland.

Summary of Focus Group Protocol

Potential participants for all three of the focus groups were listed by agricultural cooperative extension staff working in Botetourt County. Using local knowledge, potential participants were selected for their roles in a variety of agricultural production sectors, agricultural education, finance, support services, sales of agricultural products and advocacy groups. This was not a probability sample.

To recruit participants in the focus groups, the agricultural cooperative extension staff in Botetourt County contacted potential participants by telephone to determine their interest in participating. The cooperative extension staff worked out the preferred scheduling of the participants. One to two days prior to the focus groups, CSR e-mailed or telephoned those who had agreed to participate to remind them about the focus groups. Participants were served snacks and beverages. No cash incentives or other gifts were offered.

CSR and CEPS staff developed a focus group moderator's guide with a sequence of suggested questions and conversation-starters. The groups included a small writing activity, and the use of flip charts to display lists of ideas or issues raised by the participants.

CSR and CEPS are grateful to the Botetourt County Economic Development Office, the county agricultural cooperative extension service, Greenfield Business Park and Virginia Western Community College for their hosting and support for the focus groups.

More detail about the focus group protocol can be found in the Methods section of this report.

Methods

Protocol

Botetourt County agricultural cooperative extension staff recruited three focus groups with participants who are actively involved in agriculture, forestry or related activities in Botetourt County. CSR conducted the focus groups.

To recruit participants in the focus groups, Botetourt County agricultural cooperative extension staff used local knowledge to construct a list of selected individuals engaged in agriculture, forestry or related activities in Botetourt County. These "targeted" people were contacted by telephone by the cooperative extension staff to determine their interest in participating. The cooperative extension staff worked out the preferred scheduling of the participants. One to two days prior to the focus groups, CSR e-mailed or telephoned those who had agreed to participate to remind them about the focus groups. Participants were served snacks and beverages. No cash incentives or other gifts were offered.

CSR and CEPS staff developed a focus group moderator's guide with a sequence of suggested questions and conversation-starters. The groups included a small writing activity, and the use of flip charts to display lists of ideas or issues raised by the participants. All of the groups were conducted in English; no other languages were required.

All focus groups were held on Thursday, February 19, 2015 at the Virginia Western Community College facility in the Greenfield Business Park in Daleville, Virginia. This date coincided with severe winter weather conditions including nearly one foot of snow earlier in the week, high temperatures during the day in the low teens and low temperatures overnight approaching zero degrees. Despite these conditions and the unusual hardships they presented for agricultural producers, forty-one out of forty-eight participants were able to attend – a remarkable attendance rate.

The morning group (9-11 a.m.) included 16 individuals representing beef cattle, advocacy, finance, wineries, dairy, orchards, Farm Bureau, agritourism, education, land conservation, local foods, young agriculturists, poultry, realty and forestry.

The afternoon group (1-3 p.m.) included 10 individuals representing beef, farm implement sales, finance, farm service agency, farm supply, swine, education, beef cattle, planning and zoning, sheep, forestry and dairy.

The evening group (6-8 p.m.) included 15 individuals representing young agriculturists; natural resources conservation; education; local foods (poultry, swine and vegetables); nursery; custom harvesting; sustainable agriculture, beef and vineyard; viticulture and beef cattle; bee keeping and meat goats.

Mr. Jay Brenchick, Botetourt County Economic Development Director, opened each group with a brief statement, introduced the researchers from CSR and CEPS, and then left the room for the duration of each group. Cooperative extension service staff were in the room to answer any technical questions that might arise, and to observe the groups. Also in the room to observe all three groups was Mr. Jack Leffel, Fincastle District Supervisor on the Botetourt County Board of Supervisors.

CSR and CEPS are grateful to Mr. Brenchick; Ms. Kathleen Guzi and Ms. Katherine Carter in the cooperative extension service; Greenfield Business Park and Virginia Western Community College for their support and hosting of the focus groups.

Overall Goals of the Focus Groups

- Explore attitudes towards agriculture, forestry and related economic development in Botetourt County.
- Ask participants about the current status of the agriculture industry including local industry strengths and weaknesses, perceptions of the contributions and value of the industry, industry trends, industry opportunities and challenges, and industry needs.
- Gather ideas for promoting the area as a destination for individuals or entities that wish to pursue traditional and non-traditional agriculture activities.

Questions Presented

The following questions were developed for the moderator's guide to help the discussions at each of the focus groups:

1. Why is agriculture important to Botetourt County?
2. What are some positive aspects of agriculture in Botetourt County?
3. What are some negative aspects of agriculture in Botetourt County?
4. How has Botetourt agriculture changed over the years?
5. How do you think it will change in the future?
6. What are Botetourt County's agricultural assets?
7. What opportunities are there for agricultural development?
8. What do you see as some of the needs and challenges facing Botetourt County agriculture?
9. What ideas do you have to make agriculture more viable for the area in the future?
10. What agricultural tools or technologies would be beneficial to area farmers?
11. What agricultural products or innovations have you seen in other communities that you thought might be useful in Botetourt County?
12. What systems and/or infrastructure (e.g. transportation distribution facilities, facilities for processing and storage) are needed?
13. What are the most important things the County could do to enable agriculture to grow?
14. Is there anything else you would like to share with us about agriculture in the region?

Detailed Information from the Focus Groups

Participant comments organized by topic or theme

Way of Life

- Agriculture preserves a way of life for people who have been here for generations
- The next generation is more concerned about where their food originates
- No vacation or free time; retirement is tied up in the land
- Good food, good people
- Best place in the world to raise a family
- Farmers are committed to this way of life to provide for others
- Agriculture feeds the world
- Small town character has an appeal to a certain group of people
- Maintain a land ethic; work to be custodians of the land
- Keep the land producing without harming it
- Need to have and show pride in what farmers do
- Hard way of life

Succession

- Need people willing to do farming
- How can one generation continue the previous generation's legacy?
- Many families are two-three generations removed from agriculture
- Young people cannot afford to farm
- Need to get the youth involved as a future generation of farmers (through technology, High school credit to work on a farm)
- Lending options or financial resources for younger generation to get started
- Kids don't want to get their hands dirty; they want to have fun but not get involved
- Lack of initiative and desire to work a farm
- Perspective that farming is not a lucrative career
- Increased interest seems to be with people who did not grow up in farms
- Low-interest money is available to help people get involved
- New farm bill offer incentives for farmers, veterans
- People leave the County for other careers

Education

- FFA is doing well
- Lots of institutional knowledge with multi-generational farms
- Use of technology to attract young people in the industry
- New course options at Dabney Lancaster; dual enrollment classes
- High School credit to work on a farm
- Take children to visit the farms
- Ag/non-ag misunderstanding
- Need research on how to increase the profit margin/new models of warehousing
- Youth can learn that agriculture is a tangible asset
- People don't know how much science and technology goes into farming
- Lack of education of what farmers do and how things are processed
- Need to show that agriculture classes are as valuable as AP classes
- Food for America Day

- Supervised Agricultural Experiences
- Dual enrollment agriculture classes
- Student interns and campus farms
- Find commodities on a smaller scale for youth to get involved

Marketing

- Need marketing support
- Need to do more bragging about the positive aspects of agriculture
- Need to provide outreach to let people know about available resources
- Younger generation needs to do a better job of marketing
- Produce auction
- Could do more to show the benefits of agriculture
- Good publicity in the local paper and on television on agriculture business
- Needs to be high tech to attract youth
- Show the diversity of agricultural careers
- Need a website for communication

Local Foods

- Local food restaurants
- Need a way to find resources available such as local foods
- Local foods in restaurants and stores – people want to buy local
- Benefit of locally grown food; provides employment, conservation of land
- Known quality of our food when it's locally grown
- Good food, good people – a la carte menu type of service
- Could provide local foods to the schools with a processing center

Assets

- Lots of open space; good productive land base
- Good infrastructure – roads and rail
- Lime and other nutrients in the soil
- Unique resources are available in the county
- Easements in place to protect the land
- Tourism such as wineries, pumpkin patches
- Virginia Tech land grant university
- County Fair
- Orchards
- Publicly-owned land that could be multiple-purpose
- Location - In the middle of nowhere but the crossroad of everything
- Associations – Farm Bureau, Cattleman's Association, Cooperative Extension etc – disseminate information and connect people
- Good for the County's budget; farmers don't require more public resources
- More farm to table operations to support the family
- Diverse products
- Increased soybean production
- Close to a large part of the population to distribute products

Role of Government

- An agriculture coordinator
- An Agriculture Development Office
- A strong cooperative
- County incentives
- Sometimes it's stepping out of the way so farmers can move forward
- Land use tax credit
- Need the County government for support of local, small businesses
- There are no tax breaks; need more resources for ag development
- Need sustainability resource from the County
- Cash incentives from the County to help new farmers
- There is a lack of cohesion between farmers and the County
- Provide a multi-use facility to increase County revenue
- Provide an agriculture protection zone if you are following safe farm practices
- SHARP for new farmers
- An advisory council to bring farmers together to help solve problems
- Assistance to do land modification to make the land sustainable
- Family transition plans
- Need a strong statement from the County to show support of the agricultural community

Opportunities

- Branding – what can Botetourt be named for?
- Multi-purpose facility
- Apprentices to work with farmers
- Hydroponic greenhouse
- Expansion of a farmer's market, County Fairs
- Fermentation Science
- Community gardens
- Hemp
- Need central storage and processing
- Take advantage of the open land owned by the County to bring profits
- Agritourism – taking children to visit the farms
- Poultry farming
- Attract low-income workers through housing/transportation programs
- Develop relationship with chain stores for local foods
- Processing center
- Multi-head feed lot
- Communication improvements
- Create a pollinator plant

Regional Possibilities

- Cannery
- Commercial kitchens
- Feed mills
- Processing centers
- Slaughter facility
- Source of laborers
- Customers to buy local products

- Farm school – raise cattle; sell produce; plant a garden
- Distribution facilities
- Importance of infrastructure

Technology, Equipment, and Infrastructure
- Need farm equipment/packaging supplies that's affordable for small farms
- Lack of transportation to support agriculture needs
- Cost of shipping

Participant comments organized by question

1. Three things that come to mind when you think about agriculture (writing exercise)

Jobs
Cattle farming
Smaller farms; smaller numbers of livestock
Critical importance of open land to our culture
Lacks respect
Boating
Farmer's market
Local foods
Commitment and work ethic
Orchards
Diversified
Community engagement
Getting youth involved
Farm land use
Public land
Land conversion
Encouraging youth
Long-range planning
Every farm is a business
Part-time farmers
Family farmers
Coordination of all the components
Workforce – finding manual laborers
Education in the schools
Branding
Regionalism
Flat land
Money, time, commitment
Good stewardship
Local products
Economic impact
Natural fit
Viable
Long history of orchards and dairying
Farmer's market

Farm education and extension
Important for the future
Big part of the history of the County
FFA
4H
Southern States
Farming neighbors that share knowledge and equipment
Maintaining quality in land
Water available to farmers
Agritourism
Focus on Ag Development
Public attitude towards agriculture
Available land; restricted land
Sustainable farming – financially feasible
Continued tax status
Declining participation
Youth development
Farm profitability
Logging/chips
Way of life/lifestyle
Snow
Misunderstood
Barriers
Hard work
Business
Life in community
Food
Everyone is involved in agriculture
Competition
Important role to past history of Botetourt County
Important to the welfare of the County
Growth
Agriculture future
Planning
Dwindling
Potential in forestry
Opportunity
Inability to control prices
Tradition
Food providers
Conservation
Open space
Future of the family farm
Loss of productive farms due to urbanization. Big part of the history of the County
FFA
Small farms
Beef cattle
Promoting local products

Jobs
Good people – respect for the land, the animals, and the environment
Family values
Work ethic
Respect for what each individual does – you know what they do every day
Willing to help each other out – sharing equipment; pick up when others are sick
Lack of processing center
General public attitude toward agriculture
Who we are now and who we have always been
Sustainable farming
Financially feasible?
Food
Declining participation
Agritourism
Vineyards
Open land
Youth engagement
Competition with housing and development
Need to keep a strong cooperative
Land use tax keeps the farmers on the land
If Botetourt doesn't have the volume; there may be a need for a regional "hub."
Botetourt needs a branding – what can it be named for; the place for quality or some specific product

Ideas that generated from opening discussion:
An agriculture coordinator who could help with:

- Loaning and sharing equipment
- List of other farmers for support
- Pooling of resources
- Locating opportunities to sell your products
- Produce auction
- Work on growth
- Online resources
- Place to get help

2. Why is agriculture important to Botetourt County?
An open space area that is attractive
The land needs to be profitable – viable and marketable
Dynamics are going to change
Preserves a way of life for people who have been here for generations
Good for the County's budget – farmers don't require more public resources
Need to build farming for the next generation
The next generation is more concerned about where their food originates
Unique resources are available in the County
Agriculture feeds the world
Why is Botetourt any smaller or larger than any other place?
Large amount of the revenue in the County
For every dollar earned, agriculture uses 50-75% of public services
Balance or you would have to increase taxes

People don't realize where their food comes from
Many families are two-three generations removed from agriculture
Children don't know the source of their food
Farmers are committed to this way of life to provide for others
Without agriculture, no one would eat - Public health
Businesses in Botetourt County have lots of agricultural customers
Tax base – more revenue than expenses
Lots of opportunities for youth – scholarships and career opportunities
Base for any younger people wanting to learn more about farming
Younger people can contribute and agriculture is a part of their future
Youth can learn that agriculture is a tangible asset; you can leave as a legacy
Maintaining a land ethic; custodians of the land
Keeping the land producing without harming it
Open space

3. Positive aspects of agriculture in Botetourt County

Encouraged to see the FFA doing well
Easements in place to protect the land; generates revenue for the farmer
Tourism such as wineries; hosting school groups; pumpkin patches
Local food restaurants
Benefit of locally grown food and produce provides employment, conservation of land
Lots of institutional knowledge with multi-generational farms who know how to do it
Best place in the world to raise a family
Children learn about the cycle of life and the basics
Families work together on the farms
Diverse – orchards, cattle, row crops
Terrain is diverse – separates farmers from the other parts of the state
Land use tax program
Constantly changing; farmers are willing to adapt
Addition of bi-local population – non-agriculture
Farmer's market
Clean air
Creates a good quality of life - unique lifestyle

4. Negative aspects of agriculture in Botetourt County

No way to find resources available such as local foods
No central storage and processing
Cost of transportation to bring food not available in the County
Unknown quality of our food when it's not locally grown
Not enough support from the County government for support of local, small businesses
Not adequate local marketing support
Concern about future revenue
No tax breaks; need more resources for ag development
Need people willing to do farming – white collar/blue collar skills
Kids don't want to get their hands dirty; they want to have fun but not get involved
Lack of initiative and desire to work a farm
Perspective that farming is not a lucrative career
People leave the County

Lack of cohesion between farmers and the County
Not enough in Botetourt to support services agriculture needs
Lack of transportation to support agriculture needs
Costs more to receive support
Lack of dairy equipment
Double freight of beef out west and back
Cost of shipping the milk
Regulations – penalizes the US producer
Cheaper to get products outside the country
Competition for use of the labor force (city nearby)
Stronger US dollar hurts the farmer (we don't export as much)
Little to no control of price by the farmer (done by speculation)
Urbanization
Land use conflict
Ag/non-ag misunderstanding
Romantic view of what agriculture is - Influx of city people
Climate struggles
Prices/debt
No retirement – it's tied up in the land
Average age is increasing; young people cannot afford to farm
Students' attitude toward other kids involved in agriculture
Hard to overcome the stereotypes
People don't know how much science and technology goes into farming
Lack of knowledge
Publicity has helped; could do more to show the benefits of agriculture
Need to know what to show to the general public that might be misinterpreted
Lack of education of what farmers do and how things are processed

5. Current status of the industry – strengths, weaknesses, trends, needs

Strengths and assets:
Orchards
Land base – good productive land
Good roads, good rail – infrastructure
Lime in the soil (cement plant)
Other nutrients in the soil
Farm to market roads
Blue Ridge Parkway – tourism
Extension and Southern States resources – need to expand
Virginia Tech land grant university – education
Small town character has an appeal to a certain group of people
Local foods in restaurants and stores – people want to buy local
Farmer's markets
Publicly owned land that could be multiple-purpose
Land availability – protect them for the future
Location - In the middle of nowhere but the crossroad of everything
Rails, highways – distribution, people resources

Associations – Farm Bureau, Cattleman's Association, Cooperative Extension etc – disseminate information and connect people
Board of Supervisors
Livestock yard
Land use tax credit
Location – close to a large part of the population to distribute
Huge paper mill buying forestry resources from the County
County Fair – big educational tool
Youth Programs are a positive aspect
Two County Extension agents
Positive growth for children
Good publicity in the local newspaper on Ag business and activities
Good television ads on the news
Youth and their willingness to learn about agriculture
County's commitment to have a County agent

Challenges:
How can one generation continue the previous generation's legacy?
Farming is 24/7 – no vacation or free time
Need County government support
Need marketing resources
Need research on how to increase the profit margin
No sustainability resource from the County
Sometimes it's stepping out of the way so farmers can move forward
Traditional models of warehousing are outdated
Lending options or financial resources for younger generation to get started
Heavy regulation is an issue
Number of farms has dropped significantly
There used to be more orchards – famous area
There used to be more poultry
Tomatoes used to be a large crop in the mountains
No longer have canneries
Land became too valuable to farm
Interstate 81 changed the view of the County
Growth and development affects the agriculture culture
Need to get the youth involved as a future generation of farmers
Farmers need to be the ones to say the land will be farmed and not houses
Land value is based on economic development and not agriculture
Interest in agriculture in some parts of the County and not others
Farming will look different in the future – not as many chicken houses
Lack of support through the school system
Lack of support from the School Board
Conflict with sporting activities
Framing projects such as school farms to change the perspective
Find a common language for agricultural activities
Due to seasonal issues, it's hard to provide interns enough hours
Strict regulations that inhibit progress
Lack of processing to market your product

Inheritance tax loophole (Federal)
NAFTA – can't compete with international trade
Lack of capital for young people to get started as farmers
Land and equipment is high-priced
Financial barriers

6. Opportunities for agriculture in Botetourt County

Apprentices to work with farmers
Good food, good people – a la carte menu type of service
Learn more about a central hub; tie into other County work
People willing to change their perspective
Hydroponic greenhouse
Provide a farmer's market
Take advantage of the open land owned by the County to bring profits
Use of technology to attract young people in the industry
New course options at Dabney Lancaster; dual enrollment with high schools
Fermentation; beers (Fermentation Science)
High school credit to work on a farm
Agritourism – taking children to visit the farms
Community gardens; school Garden Clubs
Hemp growth
Potential land available before using good farmland
Farmer's market
County fair has positive results
Capture the local market
Need to do more bragging about the positive aspects of agriculture
Increased interest seems to be with people who did not grow up in farms
Increased need for feed mills because more people have chickens at home
Shell building for cattle shows and other activities – increase County revenue
New technologies are available
Low-interest money is available to help people get involved
New farm bill offer incentives for farmers, veterans
Need to provide outreach to let people know about the resources
Marketing is an important part of the process
Marketing needs to be high-tech and shows youth something new
Show the diversity of agricultural careers – full-time, part-time
Local foods movement
Need to show that agriculture classes are as valuable as AP classes
Need to help students know that there are more than 300 careers in agriculture
Continue to have and show pride in what farmers do
Processing center where people could bring in their vegetables to be processed
What do we want to be known for?
Provide other types of processing such as slaughtering, crushing grapes, etc.
Could provide local food to the schools with a processing center
Food for America Day being planned with several elementary schools
Supervised Agricultural Experience – 12-month contracts
Dual enrollment agriculture classes
Agriculture Development Office

Great employment opportunities locally (i.e. Southern States)
Student interns
Campus farms
Find commodities on a smaller scale for youth to get involved
Large-scale poultry; companies would support financially
Pollinator plants (honey, seeds, prevents erosion)
Specialty crops on smaller plots
Land conservation – use by agriculture
Farm Link matching
Assistance from the County to do land modification to make the land sustainable
Specialty markets for ethnic groups – meat goats
Provide life skill and training opportunities
Open conversation about cultural changes in the market
Once known for tomato production
Was the largest peach producer; then dairy
Continues to change over time
Increase in soybean production
Trying to figure out what to do with the land
Ideal site for vineyards
Need to be open to new market trends and opportunities
More farm to table operations to support your family
Diverse products
Local foods movement

7. What ideas do you have to make agriculture more viable for the area in the future?

Technology, Equipment, Labor Needs
Always available on a large-scale
No harvesting machinery for small farms
Equipment for small farms is not affordable
Packaging of other supplies is too large for small farms
GPS equipment not designed for this area
Effective means of communication
Mobile computer lab for ag use – educational tool
Resource people to work with people not familiar working the land
Cash incentives from the County to help new farmers
Younger generation needs to do a better job of marketing
Sustainable harvest (SHARP) for new farmers
Produce auction
Farmer-driven projects need support
Bring farmers together to help solve the problems
Need to get the youth involved as a future generation of farmers
Farmers need to be the ones to say the land will be farmed and not houses
Land value is based on economic development and not agriculture
Interest in agriculture in some parts of the County and not others
Farming will look different in the future – not as many chicken houses
Need to get the youth involved as a future generation of farmers
Family transition plans

Agricultural cooperative to keep agriculture lucrative
Zoning to keep areas protected for agriculture
Planned development
Lower tax rate for start-up farmers
FSA loans if you had a Development Officer to assist
Advisory Committee for the Board of Supervisors to assist in decision-making
Consider the impact of development on preserving the County's greatest asset
County Officer who is an advocate for the agricultural community
A website for communication

Facilities, Infrastructure Needs
Cannery
Commercial kitchens
Farm school – raise cattle; sell produce; plant a garden
Feed mills
Processing centers
Slaughter facility (new in Lynchburg)
Processing plant
Multi-head feed lot
Agriculture protection zone if you are following safe farming practices
Multi-use building – annual and not seasonal – increased economic impact
Processing plant if it's economically feasible
Knowledge that the County government understands the ag needs
Voluntary agriculture districts
Need a large animal vet

Relationship to Roanoke
Could be a good source of laborers
Customers to buy local products
Kroger warehouse is a good asset for distributing produce
Dependent on Roanoke for water-sewage needs

Overall Comments and Things Farmers Want to Convey
Traditional agriculture is overwhelmingly going to farm the land – produce beef cattle and crops. This is the overall goal of the County.
Need to be careful of the "fad" factor with some of the niche markets and processes.
Full-time farmers and younger farmers can transition into the next generation with increased poultry income.
While some want the government to get out of the way, the reality is that farmers need the support of the government.
Housing for low-income workers is not available in Botetourt County and transportation is an issue for them to come to Botetourt County to work.
County invests time and money in planning and zoning but groceries come from Kroger and not the local farmers.
There will always be opposition to the dust and other negatives that farms produce.
Agriculture is an important part of the County, and government leaders need to help convey that perspective.
Agriculture is important to the farmers and the citizens of this County.

Money is a key barrier – doesn't pay to farm the land, the land is too valuable to farm. The County needs to look at the amount of revenue that is spent within the County.

A serious economic problem is the need to sell the land for economic development to allow the farmer to retire when their family doesn't want to continue the farming business.

The government needs to listen to the farmers in some of the decisions they make to understand how it might impact agriculture.

When agriculture was the major base, the tax base was stronger for things like building schools.

Dairies have decreased but the volume of milk consumption is the same.

Southern States has had to diversify from large farming to smaller farms and urban needs.

There is poor communication and perspective about the status of agriculture in the area.

Local foods in restaurants and stores – people want to buy local

Would the comments made by this group affect economic development? Need a strong statement from the County to show support of the agricultural community.

County owns a 900-acre farm not currently being used. It could be leased as a spur.

APPENDIX B
AGRICULTURE SURVEY RESULTS

Table B.1 Agriculture Survey Respondent Characteristics

Characteristic		Percent of Total
County Resident?		
	Yes	77.55
	No	22.45
Role in Agriculture		
	Active or retired County Agriculture producer	16.33
	County Agriculture industry support	10.20
	County Agricultural land owner	26.53
	Citizen/Consumer interested in future of County agriculture	46.94
Gender		
	Male	50.00
	Female	50.00
Age		
	Under 25	0.00
	25-34 years	8.33
	35-44	5.56
	45-54	36.11
	55-64	25.00
	65-74	19.44
	75 or older	5.56
County Magisterial District		
	Amsterdam	13.89
	Blue Ridge	11.11
	Buchanan	13.89
	Fincastle	25.00
	Valley	11.11
	Not County resident	25.00

What ideas do you have to make agriculture more viable for the area in the future?

Fresh foods co-op

Smaller farmers with specialty crops.

Promote agriculture infrastructure. An agricultural community needs the infrastructure to survive. Readily available supplies and means for distributing/selling are critical to keeping the agricultural industry alive in the area.

Have a farm expo. So dealers and vendors can show what's available.

Since the average age of the American farmer is 57, we MUST attract the younger generation to agriculture through education, internships, training, etc. Encouraging partnerships which allow families to keep their agricultural lands and provide space for younger farmers to apprentice and work those lands will keep farming local and valuable.

Helping farmers transition to newer crops and sustainable farming will help supply the increasing demand for organic &/or locally raised, minimally processed food.

Market and promote agri-tourism opportunities. If there are any alternative agricultural products (non-conventional) that farmers could cultivate, this may allow farmers more production options to keep their farms viable in the future. Explore the farm-to-table economy. Dairy has slowly declined in the county over the years, is there another alternative product that the farms could efficiently produce given the soils, climate, etc.?

I currently lease out my land for beef cattle production, but I'd like to shift to a high value fruit or vegetable crop. I'm interested in learning what crops might be appropriate for the local climate and market. I'd like to learn about some viable but less common crops.

Promote local farmer's markets more. The little signs on Saturdays in summer for the Daleville farmers market are a start but there is nothing to alert weekday commuters about this wonderful market.

Increase support for small-scale farmer markets

More support initiatives by leaders such as the Chamber of Commerce, the Board of Supervisors, the Planning Board. More connections with Virginias Blue Ridge (formerly the Roanoke Valley Convention and Visitors' Bureau), Fields of Gold, the state Department of Transportation, and the legislature.

Have Farmers' market in Troutville or Daleville. Maybe announcements in the mailbox or flyers of have in the shopping areas.

More truck farming and farmer's markets. Develop organic farms and methods. Leniency for the homestead farmer, i.e., raising chickens in the backyard rules.

More free-roaming animal and organic farms. Need a local processing plant for the free-roaming, hormone-free cattle. Farms are sending their animals to North Carolina for processing.

More farm to table opportunities...more vertical integration and less middlemen

Keep barriers to agriculture and agritourism uses of land low.

Continued growth of farmers markets

Reduce property taxes for those that have farming income or large acre over 10 in the county that report Schedule F to the county.

Promote, support and encourage "Grow Local, Buy Local" produce and other farm products.

A local cannery

Make more of an effort to "market" locally grown fruit, produce, beef, pork, chicken, eggs, etc. Also promote the health benefits of consuming more fresh food over processed. Market the agricultural aspect of the area to businesses that may be interested in opening an agri-business (large scale produce production) in the area.

Stop suburban sprawl. Grow smarter.

Botetourt County has directed significant resources towards establishing tremendously successful James River-based recreational tourism, yet many cattle are not deterred from routinely defecating in and trampling critical riparian buffers. These farms may receive 100% reimbursement to install Ag BMPs (including fencing & watering systems) IF they enroll with their local SWCD before June 30, 2015. This is a critical need and opportunity that remains publicly unnoticed and unsupported by Botetourt County elected officials, government agencies & public relations staff.

To build from the inside out, we need to have a bigger impact in our communities with the food growers and the school systems. It would be in everyone's best interest for the school systems to provide healthier foods to our children. Fresh, organic, local. This need is great in the school system. Processed foods are hurting the children (all ages). In turn, the purchase from the school system to the farmers will increase sales for the farmers.

Hire an agricultural or rural economic developer in the Economic Development Office.

Getting agritourism businesses and landowners more involved in the process and in efforts to work towards a common goal.

County needs to allow agricultural business opportunities.

What agricultural tools or technologies would be beneficial to area farmers?

Faster internet

FOOD HUBS to sell products.

Broadband internet in the more rural areas would be welcome. Agriculture has become high tech and easy access to the internet facilitates information transfer and provides a method of becoming linked into the broader market. Satellite broadband is not really feasible due to the extreme cost and limits on data.

At the very minimum, broad education and exposure to agriculture through farm tours should be made available to area students and interested residents. Some of this already occurs but it should be expanded. Botetourt needs to focus not just on its agricultural heritage (which is important!) but on its agricultural future (which is even more important!)---this county MUST be more than a bedroom community for Roanoke. It can produce food for the region and be a model for agricultural sustainability.

Research. Farmers may not have the time or information available to research new products that are marketable.

An online resource for exploring different crop options.

Use fewer chemicals

A central location to advertise on social media for farmers to send information regarding their products for sale. More Extension help for new and existing farmers and gardeners, especially on latest techniques. Education on the relationship of biodiversity and best management practices and crop levels. Newest cash crop classes.

Visible more in the communities

Utilize existing expertise of Virginia Tech and make it available to are farmers.

Tax breaks

Promote services provided by the extension office as a resource to farmers. Partner with surrounding localities to create a larger pool of resources that would be available to farmers at no/low cost. Work with local restaurants and even the schools to serve food purchased from local sources whenever possible. One suggestion would be to provide tax breaks or incentives to restaurants that purchase locally grown.

Best management practices. Virginia's 100% cost-share reimbursement program that will decrease to 80% cost-share after the end of FY2015.

There are MANY tools and technologies that are available to area farmers. I am not sure the County has a role to play in that area other than maybe an equipment lease/share program similar to what many Soil and Water Districts do with no-till drills.

Education.

Agricultural center needed for demonstrations, programs, food markets, shows, expos, etc.

What agricultural products or innovations have you seen in other communities that you thought might be useful in Botetourt County?

Less reliance on pesticides and commercial fertilizers--more green and organic practices

Use of GIS and high tunnels for fresh produce year round

Botetourt should seriously consider creating a centrally located under roof facility for agriculture. This facility could be used to support a large-scale market and festival. St. Jacobs, Ontario has a very large market that reminded me of an upscale farm centered Happy's-like flea/farm market. It draws in thousands of visitors each weekend. That type of activity may be a little too large for Botetourt to support, but Antigonish, Nova Scotia has a very nice indoor farmer's market that draws several hundred visitors to a covered facility in the town center. http://www.antigonishfarmersmarket.ca/

Grass-fed beef resale

Montgomery County, Maryland is famous for its Agricultural Reserve---for the foresight in planning to restrict development on its prime agricultural soils. Look at comparisons between over-developed Loudoun County, VA, on one side of the Potomac and the AgReserve on the other with its orchards, farms, farmers market and all sorts of ag tourism to which the rest of suburban DC flocks to support. Closer to home, Floyd County has supported creative farming and agritourism. Rockbridge County, which ranked quite a bit higher

on community health than Botetourt, has many smaller farm operations for organic produce and pasture-raised animals and egg production.

Carter Mountain Orchard in Albemarle County generates large numbers of patrons every year from all over the state. The idea of marketing agricultural products in this type of agritourism setting seems beneficial, and may also stimulate the local economy in other ways.

Beekeeping seems to have a bit of a following and we need to promote and help our important pollinators and keep them safe from chemical harm. It is also something that can be done without a lot of space.

Agritourism

Of course, bees. Also quail. Wildlife sanctuaries. News of latest grants for farmers (not just from Farm Service), Bookkeeping services. County-supported Farmers Market, more emphasis on county fair and exhibitions

Farmers' Market and/or flyers

Farmer's markets and organic production of plant and animal products. Farming for fiber products - sheep, alpaca...

Farmers markets look like a good idea.

Cattle fencing. Alternative watering systems (solar, gravity-fed). Local ordinances to prevent land application of polluting poultry litter.

Refer to question 2. A collaboration between farmers and the school system.

There are many markets that Botetourt farmers are not engaged with that might be profitable to the farmers. I am not sure how many farmers in the area really run their businesses like a business- knowing their cost of production, break-even, and financial ratios. Without that knowledge it's hard to say if they can afford the innovations that are available in the market place.

What systems and/or infrastructure (e.g. transportation distribution facilities, facilities for processing and storage) are needed?

USDA butcher

Food hubs; explore food trucks

Agri-tourism seems to be an upcoming means of keeping the agriculture alive and providing income to farmers. Perhaps the county could develop a farm tour promotion within the Department of Tourism analogous to the Wine Trail that promotes tourism to the wineries. Seems the Department of Tourism is more active in promoting sports and athletics that attract the tournament attendees rather than general tourism and developing programs that draw from the thousands of people that pass through Botetourt County on a daily basis.

Local butcher/meat inspector who could process meat for resale locally. The closest I am aware of is in Lexington, Virginia.

With Botetourt surrounded by highways and railroads, transportation infrastructure shouldn't be a problem! What's more important is creating demand for local produce and other ag products, providing ways for farmers to market locally and regionally (such as a real farmers' market pavilion like most counties now have), CSAs, group marketing of organic produce to colleges, etc.

Solid, well-designed roads are essential for agri-tourism. I recall an article in the Fincastle Herald that the Blue Ridge Vineyard is on a very difficult road to traverse.

Depends on what I decide to grow

Permanent space for Farmers Market and County Fair--including 4-season barns, fenced in areas, stalls where needed, arena, space for parking, and lots of marketing

Older buildings - if up to code?

Something like the Farmer's Market near Greensboro, NC off I-40. Some inside display space, a restaurant featuring local produce as well as the outdoor areas we now have. Leading to a more permanent market and year round.

Meat processing facility.

Would a local community cannery be possible?

Cannery

If a large agri-business, or several smaller businesses moved into the area, this would create the need for a distribution center that would provide processing and storage services. This distribution center could even house an inside market to sell products to citizens. At one time, there were several canneries in the county that provided a place for citizens to take their food items to preserve it for future use. There would also be a need for support businesses that would physically transport products produced to other locations.

Permanent farmers markets (covered or indoor). Small farm business incubators.

I am not sure. Without a feasibility study I am not sure we can say.

Agricultural building and outside space.

What are the most important things the County could do to enable agriculture to grow?

Market it! Encourage folks to make it a priority in our area. Ex.: Host informational workshops on possibilities, care/maintenance of hobby-farm related enterprise (by 4H extension office or Va Tech?)

Get younger people interested in farming as a career pathway

Enlarge and better promote the Botetourt County Fair. Encourage more participation by Botetourt County residents to show goods/animals in the fair.

Before landowners place their properties in conservation or CREP have them ask local farmers if they would want to lease their farm for the same pay out.

Stop allowing usable farmland to be cut up in to mini McMansion homes for out of town folk to live and complain about the farm smells of the county.

Make sure that zoning protects the county's most valuable agricultural soils, encourage conservation easements and/or agricultural/forestal districts to protect farms and help landowners keep their farms in the family, consider ways to fund a Purchase of Development Rights program to protect and prime agricultural area, help support a Botetourt County Agricultural Fair, don't limit the agricultural region to the area north of Fincastle as there is valuable farmland still remaining north of Daleville and Troutville but south of Fincastle.

Continue to provide tax incentives to farms. Provide a countywide venue for a farmer's market.

Try a variety or outreach options - town meetings, online forums?

More marketing/promotion of our local foods.

Find ways for younger participation

See above--let people know we are an agricultural county

Ask the farmers - they should know what they need?

I'm not sure. Tax relief. Start-up help for going organic. Education. A local outlet for their product.

More advertising of products produced in Botetourt.

Dampen the demand for competing land uses...housing for instance.

Preserve open space and land use regulation that does not inhibit (and that potentially encourages) desirable agricultural uses.

Preserve and promote sound agriculture use and stewardship.

Lower land taxes

Quit encroaching on the rights of landowners from having control to do what they want with their property (i.e., zoning laws, noise ordinance).

Promote the area from an agricultural aspect. Growth within the County does not always need to be high-end housing that most residents can't afford or in the form of another fast food restaurant.

Make land affordable & create fiscal incentives for new farmers. The average age of a Virginia farmer is nearly 60. Land ownership is cost-restrictive & creates a massive obstacle for millennials seeking to break in to farming.

Educate! From children to seniors. From the health world to the financial world, agriculture is a HUGE topic, but not a hot topic in everyday conversation. Providing information that is easy to understand for all ages could be a start. And the biggest overall: the basics, which are always mishandled: reduced taxes, incentives. And then better local PR. Show the citizens what is available, the difference it will make it the lives of everyone, the need for better health via food intake, better health = less trips to the doctors.

Believe that the county should continue to assist local farmers in getting their products distributed locally. Consider partnering with the small business administration to do free training or seminars. Consider education programs about organic farming and publicize which farms in Botetourt are organic. There is a large market for local fruit, veggies, and meats Consider better-established facility similar to the farmers market downtown where vendors can setup and draw outsiders to the county who are looking for farm fresh food. http://inhabitat.com/va-tech-architecture-students-complete-prefabricated-covington-farmers-market/. Help establish web presence for the farms that don't have websites and social media. (Consider partnering with VA Tech / Hollins / any other trade school locally that offers web design to look for students to help with initial design)

Small business and agriculture friendly regulations. More support of ag education in schools. Develop an agriculture standing committee that can advise the Board of Supervisors when an ag related topic comes up.

Allow ag businesses in the county.

Is there anything else you would like to share with us about agriculture in the region?

It is essential to the quality of life in Botetourt.

Promote farming as a way to live and work here and have a great quality of life

Just remember that agriculture does not always mean large farms with hundreds of animals. Small-scale agriculture is a big business. In addition to the large farms, county leaders need to be cognizant of the many small operations in the county and ensure the plans and policies are beneficial to both large and small operators.

Many residents, especially newcomers in the last decade, do not know where their water comes from or where it goes. Their knowledge of soil structure is also non-existent and their ability to grow their own food is limited to a few varieties of plants and a whole bunch of Miracle-Gro fertilizer! We have to get people away from the Wal-Mart model of food supply and back to locally sourced production.

Thank you for asking for input!

I think the land along Craig Creek would be better rezoned to allow for 1 acre minimum building lot, instead of the larger lots required under the agricultural zone. Having vacation homes built along the creek, with proper septic systems, elevations and set backs, would be healthier for the watersheds by keeping the animal excrement further back, and benefit the tax base by adding more residences to the tax base. The cows near us have a very pretty view, but I am sure that those lots could be better marketed to those wanting a waterfront home, and the smaller lot size would make it valuable for the current owners to subdivide and resell.

Farms keep Virginia green and rural, but they must be preserved, once gone, no retrieving.

I've lived here most of my life and even though I've never farmed I identify with Botetourt as a rural, farming county (despite the bedroom growth in South County). I would like to see the farmers supported in a way that helps them and their families continue farming.

Some farm to table folks are in favor of eliminating regulations...I'm not in favor of that approach...many food regulations are in place for good public health reasons...keep the public health regs.

Botetourt is beautiful in so many ways. Maintaining the balance of growth with strengthening our economic base while preserving and capitalizing on our rich scenery, history and natural beauty is the challenge.

It is an important part of the history of Botetourt County and could possibly be a very important part to the future of the County, if it is planned correctly and marketed.

Clean farms = Clean creeks & rivers.

Every family should have their own form of "agriculture". From container gardens (which can produce so much, but so many aren't aware) to small gardens in one's backyard. Gardening is mentally and physically rewarding, yes. But it can also be financially rewarding! People can save SO MUCH MONEY, but simply growing their own vegetables. Tomatoes, for example. McDonald's will charge 50 cents for one slice of a tomato! (Personal experience, so I know it is true. Didn't do it either.) A single tomato at the grocer's market costs an obscene amount. Growing your own allows you to be in control of your finances. And another BIG WIN is being in control of the chemicals involved in the growth process!!

Thank you for recognizing the importance of this sector of the economy! While local is important and a hot trendy word, don't forget about the strength of VA ag exports to the commonwealth. Botetourt shouldn't just think about agriculture in the small, niche farm way, but also remember the importance of the larger operations and the strength that can come from that in job creation and preservation of open spaces.

APPENDIX C
BOTETOURT COUNTY AGRICULTURE DEVELOPMENT PERFORMANCE ACCOUNTABILITY PLAN

	2007	2012	Virginia Benchmark	Data Source
1. Administration and Planning				
Number of activities initiated and completed	NA	NA		Botetourt County
External grant funds received for agriculture development	NA	NA		Botetourt County
2. Farmland Preservation				
Total acreage under easement	NA	15,094		Virginia Department of Conservation and Recreation
Total acreage enrolled in use value	NA	186,116		Botetourt County
3. Farm Succession and Agriculture Workforce				
Number of 4-H participants	NA	NA		Virginia Cooperative Extension
Number of FFA participants	NA	NA		Botetourt County Public Schools
Number of Botetourt residents receiving beginning farmer training	NA	NA		Botetourt County
Number of farmers with less than 10 years operating any farm	NA	71 (12.2%)	18.7%	USDA, NASS, Census of Agriculture
Number of farm operators under 35 years of age	20 (3.1%)	16 (2.7%)	4.5%	USDA, NASS, Census of Agriculture
4. Agriculture Innovation and Entrepreneurship				
Number of farms with any type of Internet subscription	347 (54.4%)	379 (64.9%)	68.3%	USDA, NASS, Census of Agriculture
Number of farms with high speed/broadband subscription	191 (29.9%)	331 (56.7%)	58.6%	USDA, NASS, Census of Agriculture
Number of Virginia Cooperative Extension farm contacts	NA	NA		Virginia Cooperative Extension
Number of farms practicing rotational or management intensive grazing	NA	141		USDA, NASS, Census of Agriculture
5. Local Food Sales, Production and Capacity				
Number of farms reporting direct sales	33 (5.1%)	40 (6.8%)	7.8%	USDA, NASS, Census of Agriculture
Value of direct sales	$209,000 (1.5%)	$390,000 (2.1%)	1.1%	USDA, NASS, Census of Agriculture
Number of farms reporting sales to retail outlets	NA	6 (1.0%)	3.8%	USDA, NASS, Census of Agriculture
Average weekly vendors at farmers market	NA	NA		Botetourt County

Appendix C: Botetourt County Agriculture Development Performance Accountability Plan (continued)

	2007	2012	Virginia Benchmark	Data Source
6. Marketing and Promotion of Agriculture				
Attendance at County Fair	NA	NA		Botetourt County
County agriculture website hits	NA	NA		Botetourt County
7. Farm Viability and Profitability				
Number of farmers reporting net gains	211 (33.1%)	204 (34.9%)	38.2%	USDA, NASS, Census of Agriculture
Total farm cash receipts and other income	$15,870,000	$18,838,000		Bureau of Economic Analysis
Number of farms reporting value added activities	NA	35 (6.0%)	5.8%	USDA, NASS, Census of Agriculture
Number of organically certified farms	NA	2 (0.34%)	0.2%	USDA, NASS, Census of Agriculture
Number of farms with agritourism income	0 (0.0%)	12 (2.1%)	1.0%	USDA, NASS, Census of Agriculture

BOTETOURT COUNTY AGRICULTURE DEVELOPMENT STRATEGIC PLAN SUPPLEMENT

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Table 1 Strategic Plan Implementation Matrix

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
GOAL #1	**Improve Administration, Planning, and Policy Coordination for Agriculture**					
Objective #1	**Expand Agriculture Development Administrative and Planning Capacity**					
	Action 1:	Consider the establishment of an Agriculture Development Board or non-profit organization	BS (L)	IM	A	BCGF
	Action 2:	Consider the creation of an agriculture coordinator function/position	BA (L), BS	MT	C (Annual)	BCGF
	Action 3	Examine the possibility of establishing a 501(c)(3) in collaboration with other community and regional partners to administer agriculture development	BA (L), BS, FB, OR, RV	MT	C (Annual)	BCGF, PDBS
Objective #2	**Work Towards Adopting an Agriculture Development Strategy, Review, and Update**					
	Action 1:	Adopt Agricultural Development Strategy work plan	BA, BS(L)	ST	A	BCGF
	Action 2:	Integrate agriculture into overall economic development strategy	BA, BS(L)	ST	A	BCGF
	Action 3:	Annually review, update, and publicly present revised work plan	BA(L), BS	ST	A	BCGF
	Action 4:	Create performance accountability measures and benchmarks	BA(L)	ST	A	BCGF
	Action 5:	Hold an annual Botetourt agricultural forum to discuss agriculture issues, trends, and opportunities	BA(L), BF, BS, CA, CE, FB	ST	A	BCGF
Objective #3	**Develop Agriculture Leadership Capacity**					
	Action 1:	Promote Agriculture Board leadership training	BA(L), BS,CE, DL, VW, VT	MT	B	BCGF, RBDG
	Action 2:	Encourage farm community to serve on other boards and commissions	BA(L)	IM	A	BCGF
Objective #4	**Coordinate Plans and Activities with Local, Regional, and State Organizations and Agencies**					
	Action 1:	Continue to send county representative to Virginia Agriculture Development Officer (VADO) affinity group meetings	BA(L)	IM	A	BCGF
	Action 2:	Encourage coordination with other regional organizations and agencies	BA(L), BS, CE, MC, RV	IM		BCGF
	Action 3:	Build relationships with VDACS and DoF and keep them apprised of agriculture development plan progress	BA(L), VA	IM	A	BCGF
GOAL #2	**Preserve Valuable Farmland**					
Objective #1	**Create New Farmland Preservation Incentives**					
	Action 1:	Evaluate possibility of establishing Purchase of Development Rights (PDR) program for working farms	BS(L), BA, LT	MT	C (Annual)	BCGF, FPF
	Action 2:	Study feasibility of Transfer of Development Rights (TDR) program	BA(L), BS, LT	LT	A	BCGF, FPF

Table 1 Strategic Plan Implementation Matrix (continued)

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
Objective #2	**Reduce Land Use Conflicts that may Hinder Agriculture**					
	Action 1:	Review and adjust if needed county zoning ordinances to reduce conflicting uses and protect agriculture as an important part of the county economy.	BA(L), BS	MT	A	BCGF
	Action 2:	Develop brochures to educate the public about agriculture issues	BA(L), BS	MT	A	BCGF
GOAL #3	**Facilitate Farm Succession and the Agricultural Workforce**					
Objective #1	**Encourage Increased Youth Exposure to Agriculture**					
	Action 1:	Evaluate possibility of establishing school gardens/greenhouses with science curriculum links	BA(L), BS, CE	LT	D	BCGF, DKEP, FSGP, SGG
	Action 2:	Introduce supervised farm experiences and internships for secondary students	BA(L), BS, CE	MT	B (Annual)	BCPS
	Action 3:	Improve agriculture industry career counseling in public schools	BA(L), CE, FB, BP	MT	A	BCPS, VAECI
Objective #2	**Encourage Expanded Post-Secondary Agricultural Learning Opportunities**					
	Action 1:	Support creation of new community college programming under consideration to support agriculture such as sustainable farming and fermentation sciences certificate or degrees	BA, DL(L)	MT	U	DLCC
	Action 2:	Examine possibility of offering additional noncredit post-secondary offerings for hobby farmers (e.g., gardening, viticulture) including offerings through distance learning modalities.	BA, DL, VW	MT	U	DLCC, VWCC, DLT
Objective #3	**Support Beginner Farmer Training and Technical Assistance**					
	Action 1:	Evaluate hosting the Growers Academy for one year at the Greenfield Education and Training Center	BA, CE(L), VT, VW	MT	A	VPSU, BFRP
	Action 2:	Explore creating stronger linkages with VT EarthWorks at the Canawba Sustainability Center in Catawba, VA	BA, CE(L), VT	MT	A	VPSU
Objective #4	**Consider Marketing and Providing Beginning Farm Financial Assistance Programs**					
	Action 1:	Consider improve local marketing of FSA and other farm credit programs	BA(L), CE, FB, FC	MT		BCGF
	Action 2:	Explore creating critical farms program to support new farm owners	BA(L), BS, FC, LT, VA	MT	See 2.1.3	See 2.1.3
	Action 3:	Consider offering a microenterprise grant program for new farmers	BA, BS(L)	LT	B (Annual)	ARC, RMAP

Table 1 Strategic Plan Implementation Matrix (continued)

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
Objective #5	**Promote Farm Estate Planning and Multigenerational Connections**					
	Action 1:	Encourage the establishment of farm succession planning and financial planning workshop for retiring farmers	BA(L), CE, VT	MT	A	
	Action 2:	Establish mentoring program to link new farmers with established farmers	BA(L), CE	MT	A	BRFP
	Action 3.	Promote VDACS Farm Link program	BA(L), CE	MT	A	
GOAL #4	**Promote Agriculture Innovation and Entrepreneurship**					
Objective #1	**Promote Agricultural Modernization and Technology Diffusion**					
	Action 1:	Measure and benchmark local farm adoption of agriculture technology	BA, CE(L), VT	LT	B	BCGF, SARE, VPTU
	Action 2:	Help organize, sponsor or host AgTech and food systems innovation conferences or expos	BA, CA, CE, FB, VT(L)	LT	B	ARC, BCGF, BDBS, PDBS
	Action 3:	Sponsor public on-farm demonstrations of Botetourt County high-technology use in agriculture	BA(L), CE	MT	A	BCGF
	Action 4:	Sponsor local lectures and workshops on trends and opportunities in AgTech and sustainable agriculture	BA(L), CE, DL, FB, VT, VW	MT	A	BCGF, VPSU
Objective #2	**Connect with Innovators**					
	Action 1:	Network with Virginia Tech extension, departments, centers, and IP staff	BA(L), VT	MT	A	BCGF
	Action 2:	Arrange for field trips where innovative agriculture development models exist	BA(L)	MT	A	BCGF
Objective #3	**Encourage Agriculture-related Entrepreneurship**					
	Action 1:	Identify funding vehicles (e.g., microenterprise grant, low-interest revolving loan fund) targeted at farmers and other agribusinesses that have promising innovation models such as bioenergy production, waste-to-energy, precision farming, and innovative specialty products	BA(L)	LT	C	RMAP, RBDG
	Action 2:	Study the feasibility of establishing or working with new or existing commercial kitchens and canneries in region to create regional food incubator/ accelerator to encourage innovation and entrepreneurship in food sector (see 5.3.1)	BA(L), LP, OR, VT,	MT	A	B&I, RBDG

Table 1 Strategic Plan Implementation Matrix (continued)

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
Objective #4	**Target AgTech Companies and Startups for Recruitment**					
	Action 1:	Identify industry targets for AgTech	BA(L), CE, VT, FB	MT	A	BCGF, RBDG
	Action 2:	Utilize firm databases to identify firms within target industries	BA(L), SS	MT	A	BCGF
	Action 3:	Distribute marketing materials to targets	BA(L), SS	MT	B	BCGF
	Action 4:	Join trade associations and attend trade shows for identified target industries	BA(L)	MT	B	BCGF
GOAL #5	**Expand Local Food Sales, Production, and Capacity**					
Objective #1	**Increase Local Food Marketing**					
	Action 1:	Evaluate developing regional brand for local agricultural products	BA(L), BS, BT, CA, CE, CT, FB, OR, RV, TW, VT	MT	C	FMPP
	Action 2:	Consider developing a “buy local” campaign tht explains the economic and nutritional benefits of local agricultural products	BA (L), BF, BC, CE, FB	MT	C	FMPP
	Action 3:	Offer local workshops for farmers in marketing practices such as direct marketing	BA(L), CE, VT	MT	A	FMPP
	Action 4:	Develop a directory of local farms and other agricultural resources (e.g., credit, ag. supply, custom services)	BA(L), BT, CA, CE, FB	MT	B	BCGF, FMPP, PCDF
	Action 5:	Expand representation and participation in existing regional food tours	BA, BT(L), RF	MT	A	BCGF
	Action 6:	Appoint representative and coordinate activities with any local food policy council that is established in the future	BA, OR, RV	MT	A	BCGF
Objective #2	**Encourage the Establishment of a Local Food Hub**					
	Action 1:	Study the feasibility of establishing local food hub in conjuction with other regional partners	BA(L), BS, CE, CT, OR, RV, VT	MT	C	FMPP, LFPP, CFP, B&I, RBDG
	Action 2:	Consider establishing a local food purchase program for Botetourt County, including greater farm to school and farm to institution purchases	BA(L), BS	MT	C	BCGF, BCPS, FSGP, CFP
Objective #3	**Explore Community Value-Added Production Facility Needs**					
	Action 1:	Study feasibility of establishing, using, or expanding regional shared use agriculture processing facilities in conjunction with regional partners that might include cooling and packing, canning, community kitchen, dairy processing, etc.	BA(L),CT, LP, OR, RV, VT	MT	A	RBDG, VAPG
	Action 2:	Provide technical assistance, training, and certification in areas related to local food economy such as organic production, cooking, and preparation	BA(L), CE, DL, LP, VT, VW	MT	B	RBDG, VWCC

Table 1 Strategic Plan Implementation Matrix (continued)

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
GOAL #6	**Enhance Marketing and Promotion of Agriculture**					
Objective #1	**Improve Awareness of Area Agriculture and Agricultural Resources**					
	Action 1:	Consider establishing a Botetourt County agriculture website and social media presence	BA(L), CT	ST	C	BCGF, MLP
	Action 2:	Develop a Botetourt County agricultural facts brochure highlighting size, features, and career opportunities in agriculture	BA(L), CE	ST	B	BCGF, MLP
	Action 3:	Develop a farm tour program	BT(L), BA, BC, CE	MT	B	BCGF, MLP
Objective #2	**Promote Cooperative Marketing Arrangements**					
	Action #1	Study feasibility of forming regional marketing and purchasing group such as a cooperative for jointly marketing and shipping livestock and/or other agricultural products	BA(L), CA, CE, CT, FB, OR, RV	LT	C	RCDG
Objective #3	**Consider Expanding the County Fair**					
	Action #1:	Identify location for permanent site	BS(L), BA, CE	MT	F	BCGF
	Action #2:	Consider developing additional infrastructure for site (e.g., parking, multi-purpose building)	BA, BH, BS(L), CA, CE, FB	LT	F	AFID, BCGF, CFGLP, PDBS, RDBG
GOAL #7	**Improve Farm Viability and Profitability**					
Objective #1	**Explore the Potential for New Agricultural Products**					
	Action #1	Explore the potential for serving growing organic and natural foods, ethnic and religious markets (e.g., Hispanic, kosher, halal) and specialty markets (e.g., heritage livestock, exotic livestock) and provide technical assistance, training and financial assistance to farmers	BA(L), CE, VT	MT	B	AFID, OCSSP, SCBGP, SARE, VPSU
	Action #2	Encourage production of artisan/specialty value added food products like cream, cheese, cider	BA(L), CE	MT	A	VAPD, VPSU
	Action #3	Conduct agricultural market study to examine economically viable alternative livestock and crop production opportunities	BA(L), CE, CT, VT	LT	C	AFID, SARE, VPSU

Table 1 Strategic Plan Implementation Matrix (continued)

Item	Description		Possible Implementation Partners (L=Lead)	Implementation Timing	Estimated Cost	Potential Funding Sources
Objective #2	**IPromote Landowner Forestry Management Practices**					
	Action #1	Help market landowner education and technical assistance programs for forestry management	BA(L), CE, VT	ST	A	BCGF, VPSU
	Action #2	Consider promoting non-timber crops (e.g., mushrooms, ginseng) that can utlize county forest resources	BA(L), CE, VT	MT	A	BCGF, VPSU
Objective #3	**Review Taxes and Regulations for Possible Reform**					
	Action #1	Review County regulations and ordinances that impact area farmers and recommend ways that rules/regulatory burdens might be eased	BA(L), BS, CA, CE, FB, SC	ST	A	BCGF
	Action #2	Consider special targeted tax incentives or grants for new farmers or farm modernization projects	BA(L), BS	MT	D	BCGF
Objective #4	**Promote Soil, Water, and Energy Conservation Programs**					
	Action 1:	Promote soil, water, and energy conservation incentive programs	BA(L), CE, LT, MC, VT	MT	A	CAWG, EQUIP, REAP, VAPD

Implementation Partner Legend

BA=Botetourt County Agriculture Board
BC=Botetourt County Chamber of Commerce
BF=Botetourt Farmers Market
BH=Botetourt County Horseman's Association
BP=Botetourt County Public Schools
BS=Botetourt County Supervisors
BT=Botetourt County Tourism
CA=Cattleman's Association
CE=Virginia Cooperative Extension
CT=Consultant
DL=Dabney S. Lancaster Community College
FC=Farm Credit Agencies and Financial institutions
FB=Farm Bureau
LM=Local Media
LP=LEAP
LT=Land Trusts
MC=Mountain Castles Soil and Water Conservation District
OR=Other Regional Local Governments (e.g., Roanoke County, Roanoke City, Salem City)
PO=Property Owners
RB=Realtors/Brokers
RF=Roanoke Food Tours, LLC
RV=Roanoke Valley-Alleghany Regional Commission
SS=Site Selection Professionals
TW=Towns of Buchanan, Fincastle, and Troutville
VA=Virginia Department of Agriculture and Consumer Services
VT=Virginia Tech
VW=Virginia Western Community College

Cost Estimate Legend

A=Under $1,000
B=$1,000 to $10,000
C=$10,000 to $50,000
D=$50,000 to $100,000
E=$100,000 to $500,000
F=Over $500,000
U=Unknown

Timing Legend

IM=Immediately (within 3-6 months)
ST=Short term (within 6 months -1 year)
MT=Medium term (2-3 years)
LT=Long term (3-5 years)

Funding Legend

Abbreviation	Agency/Organization	Program Name
AFID	Virginia Department of Agriculture and Forestry	Agriculture and Forestry Industries Development Fund
ARC	Appalachian Development Commission	Business Development Revolving Loan Fund Grant and Other Grant Programs
BCGF	Botetourt County	
B&I	USDA, Rural Development	Business and Industry Loans
BFRP	USDA, National Institute of Food and Agriculture	Beginning Farmers and Ranchers Program
BGF	Virginia Department of Agriculture and Forestry	Beehive Grant Fund
CAWG	Blue Moon Fund	Chesapeake-Appalachia Watershed Grants
CFGLP	USDA, Rural Development	Community Facilities Direct Loan and Grant Program
CFP	USDA, National Institute of Food and Agriculture	Community Food Projects
DKEP	Dominion Foundation	Dominion K-12 Educational Partnership
DLCC	Dabney S. Lancaster Community Colelge	
DLT	USDA, Rural Development	Distance Learning and Telemedicine Grants
EDA	Economic Development Administration	Public Works and Economic Development Program
EQIP	USDA, Natural Resources Conservation Service	Environmental Quality Incentives Program
FCGF	Fauquier County	
FCPS	Fauquier County Public Schools	
FINI	USDA, National Institute of Food and Agriculture	Food Insecurity Nutrition Incentive Program
FMPP	USDA, Agricultural Marketing Service	Farmers Market Promotion Program
FPF	Virginia Department of Agriculture and Forestry	Farmland Preservation Fund
FRV	Foundation for Roanoke Valley	
FSGP	USDA, Food and Nutrition Service	Farm to School Grant Program
HGFCT	Horace G. Fralin Charitable Trust	
IRP	USDA, Rural Development	Intermediary Relending Program
LFPP	USDA, Agricultural Marketing Service	Local Food Promotion Program
MLP	Virginia Tourism Corporation	Marketing Leverage Program
OCCSP	Virginia Department of Agriculture and Forestry	Organic Certification Cost Share Program
PDBS	Private Donations and Business Sponsorships	
RBDG	USDA, Rural Development	Rural Business Development Grant
RCDG	USDA, Rural Development	Rural Cooperative Development Grant
REAP	USDA, Rural Development	Rural Energy for America Program
REDL/REDG	USDA, Rural Development	Rural Economic Development Loans and Grants
RMAP	USDA, Rural Development	Rural Microentrepreneur Assistance Program
SARE	USDA, National Institute of Food and Agriculture	Sustainable Agriculture Research and Education
SCBGP	Virginia Department of Agriculture and Forestry	Specialty Crop Block Grants
SGG	Whole Kids Foundation	School Gardens Grants
VAECI	Virginia Department of Agriculture and Forestry and Virginia Tech	VA Agricultural Education Centers of Innovation
VAPG	USDA, Rural Development	Value-Added Producer Grant Program
VPTU	Virginia Polytechnic and State University and Virginia State University	
VWCC	Virginia Western Community College	

TABLE 2
FUNDING SOURCES

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
USDA Programs									
USDA, Agricultural Marketing Service	Farmers Market Promotion Program (FMPP)	This program provides funding for developing and expanding farmers markets, roadside stands, CSA's, and other direct sales channels.	$13,300,000	$100,000	No	Funds may be used for research and feasibility studies, advertising, business planning, training and technical assistance. Funds cannot be used for construction or equipment purchase.	Applicants may be private businesses, local governments, or non-profits. High poverty and food deserts receive priority consideration in the grant allocation process.	5/14/15	http://www.ams.usda.gov/AMSv1.0/FMPP
USDA, Agricultural Marketing Service	Local Food Promotion Program (LFPP)	This program funds entities that "process, distribute, aggregate, or store" local foods.	$13.3 million	Maximum of $25,000 for Planning Grants. Maximum of $100,000 for Implementation Grants.	25%	This grant funds both planning and implementation. Implementation funds can be used for training and technical assistance, outreach and marketing, operating capital, non-construction infrastructure improvements to facilities or information technology systems.	Applicants may be private businesses, local governments, or non-profits. High poverty and food deserts receive priority consideration in the grant allocation process.	5/14/15	http://www.ams.usda.gov/AMSv1.0/LFPP
USDA, Food and Nutrition Service	Farm to School Grant Program (FSGP)	The purpose of this program is to establish and assist farm to school programs to improve access to local foods.	$6 million	Planning: $45,000. Implementation and support service: $100,000.	25%	Funds can be used for planning and implementation. Implementation funds can be used to build or maintain school gardens, improve school nutrition education, and support procurement and promotion of local products for the school meal program.	Local government, non-profits, private agriculture producers	5/20/15	http://www.fns.usda.gov/farmtoschool/farm-school-grant-program
USDA, National Institute of Food and Agriculture	Beginning Farmers and Ranchers Program (BFRP)	This grant seeks to expand the number of new farmers by providing the skills and tools needed to create a viable agricultural operation.	$18,540,000	$250,000 per year for up to 3 years	25%	This grant is used to support education, training, outreach and mentoring programs for new and beginning farmers.	Higher education institution, Cooperative Extension, non-profit, private-for-profit, state and local government. Successful applicants are partnerships with regional or state service areas. Virginia Tech was awarded a BFRP grant which has been used to aid several Virginia regional programs.	3/13/15	http://nifa.usda.gov/funding-opportunity/beginning-farmer-and-rancher-development-program-bfrdp

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
USDA, National Institute of Food and Agriculture	Community Food Projects (CFP)	The purpose of this program is to enhance low-income community food security and self-reliance through improvements in education, outreach, and community food distribution systems.	$ 9 million	Planning: $30,000. Community Food Projects: $125,000 per year or $400,000 over four years.	Dollar for Dollar	Funds can be used for planning or implementaiton. Implementation may include construction and renovation, operating expenses, and marketing.	Local governments (food program services) and private nonprofit organizations. Approximately 18% of applications receive funding	3/17/15	http://nifa.usda.gov/funding-opportunity/community-food-projects-competitive-grants-program-cfpcgp
USDA, National Institute of Food and Agriculture	Food Insecurity Nutrition Incentive Program (FINI)	The aim of this program is to to increase the purchase of fruits and vegetables by low-income consumers participating in Supplemental Nutrition Assistance Program (SNAP) by providing incentives at the point of purchase.	$15 million	$500,000	Dollar for Dollar	Funds can be used for operating expenses	Government agencies and non-profit organizations	12/15/14	http://nifa.usda.gov/program/food-insecurity-nutrition-incentive-fini-grant-program
USDA, National Institute of Food and Agriculture	Sustainable Agriculture Research and Education (SARE)	The goal of this program is to support innovations in sustainable agriculture. Grant program areas include producer grants, professional development grants, and sustainable community innovation grants	$23 million	On-Farm: $15,000; Producer: $10,000; Sustainable Community: $35,000	No	Funds can be used for operating expenses related to research, education, and outreach	Higher education, Researchers, Cooperative Extension, Producers, Non-profits	5/4/15	http://www.southernsare.org/
USDA, Natural Resources Conservation Service	Environmental Quality Incentives Program (EQIP)	This program provides technical and cost-share assistance for a variety of practices that promote soil conservation through initiatives supporting on-farm energy, organic crop production, and seasonal high tunnels.	$1.6 billion	Organic -- $20,000 per year ($80,000 total)	Up to 50%	Energy audits, purchase and installation of renewable energy and energy efficiency equipment;	Agricultural producers and agricultural landowners	Year round	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
USDA, Rural Development	Business and Industry Loans (B&I)	This program provides low interest loans for rural business and non-profit agencies that are not able to obtain credit from other lenders and can demonstrate that they will create new jobs or retain jobs,	$919.8 million	$10,000,000 (Loan)	Sliding scale based on various criteria.	Funds can be obtained for land purchases, construction, renovation, and purchase of supplies, equipment, and inventory.	Private businesses, non-profits, and local governments located in a rural area.	Year round	http://www.rd.usda.gov/programs-services/business-industry-loan-guarantees
USDA, Rural Development	Community Facilities Direct Loan and Grant Program (CFGLP)	This program provides funding to develop community facilities for health care, public safety community support services, educational services, and local food systems in rural areas.	$2.2 billion	NA	Graduated scale that varies based on rurality, poverty rate, and income	Funds can be used for purchasing, constructing, or renovating community facilities, purchasing equipment and related project expenses. A point system based on population, median household income is used in making awards	Local governments, community-based non-profits corporations	NA	http://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program
USDA, Rural Development	Distance Learning and Telemedicine Grants (DLT)	The grant is designed to expand the telecommunications capabilities of rural health and education providers.	$19 million	$500,000	15%	Grant funds may be used for equipment purchase, instructional programming purchase and equipment use training.	State and local government agencies, non-profits, for-profit enterprises providing health and education services	NA	http://www.rd.usda.gov/programs-services/distance-learning-telemedicine-grants
USDA, Rural Development	Intermediary Relending Program (IRP)	This program low interest loans to local organizations for revolving loan financing programs to finance business and community development projects in rural areas.	$18.89	$250,000	No	The acquisition, construction, conversion, enlargement, or repair of a business or business facility; The purchase or development of land; The purchase of equipment, leasehold improvements, machinery, or supplies; Start-up costs and working capital; Pollution control and abatement; etc.	Nonprofits and cooperatives, local governments	NA	http://www.rd.usda.gov/programs-services/intermediary-relending-program

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
USDA, Rural Development	Rural Business Development Grant (RBDG)	This program provides grants for planning, training, technical assistance and other uses to promote rural business growth. The program is comprised of "opportunity" (RBOG) and "development" (RBEG) grants.	$24 million	RBOG grants: $50,000; RBEG grants: $500,000	No	Market development and feasibility studies; Business training, including leadership development and technical assistance for entrepreneurs, Distance learning networks, employment related adult education programs. The RBEG program also funds construction, equipment, and working capital	Local governments, non-profit organizations	6/30/15	http://www.rd.usda.gov/programs-services/rural-business-development-grants
USDA, Rural Development	Rural Cooperative Development Grant (RCDG)	The grant provides funding for rural cooperative startup, expansion or improvements.	$5.8 million	$200,000	No	Funds can be used for feasibility studies, planning, training, technical assistance, and research	Nonprofit corporations and higher education institutions	NA	http://www.rd.usda.gov/programs-services/rural-cooperative-development-grant-program
USDA, Rural Development	Rural Economic Development Loans (REDL) and Grants (REDG)	This program uses local utility organizations as intermediaries in dispensing funds to support rural economic development.	$40 million	NA	NA	Feasibility studies, planning, research, training, technical assistance, equipment, and construction	Loans and grants may be made to any entity that is identified by USDA Rural Development as an eligible borrower under the Rural Electrification Act.	NA	http://www.rd.usda.gov/programs-services/rural-economic-development-loan-grant-program
USDA, Rural Development	Rural Energy for America Program (REAP)	This program provides grant and loan financing to agricultural producers and rural small businesses for energy audits and renewable energy development.	Audits -- $1.9 million. Systems and Improvements: $135.6 million	$100,000 for energy audits; $500,000 for renewable energy system grants; $250,000 for energy efficiency grants	75% for grants. 25% for loans.	Funds may be used for feasibility studies, research studies, planning, construction, and the purchase and installation of renewable energy equipment,	Audits: State and local governments, higher education institutions, cooperative and public utilities; Systems and improvements: Agricultural producers, and small businesses in rural areas.	Year Round	http://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
USDA, Rural Development	Rural Microentrepreneur Assistance Program (RMAP)	The program provides funding for Microenterprise Development Organizations to provide training and technical and create microenterprise revolving funds to provide startup capita for rural microentrepreneurs.	$8.1 million	NA	NA	Working capital, debt refinancing, purchase equipment, supplies, and real estate.	Nonprofits, higher education institutions, business with 10 or fewer full time employees and located in rural area	NA	http://www.rd.usda.gov/programs-services/rural-microentrepreneur-assistance-program
USDA, Rural Development	Value-Added Producer Grant Program (VAPG)	This program assists farmers develop value-added products through processing or marketing.	TBD for FY 2015; typically $10-15 million	$75,000 for planning grants; $200,000 for working capital grants	$1	Funds can be utilized for planning or operating expenses related to producing and marketing value-added agricultural products.	Independent producers, agricultural producer groups, farmer- or rancher-cooperatives	February 2016	http://www.rd.usda.gov/programs-services/value-added-producer-grants
Other Federal Agency Programs									
Economic Development Administration	Public Works and Economic Development Program (PWEDP)	Grants are awarded for qualifying job creating economic development projects.	NA	NA	NA	Technical assistance, revolving loan funds, construction. Application, scoring, and prioritization through local development district based on need and Community Economic Development Strategy (CEDS).	District Organization of a designated Economic Development District, State or local government, higher education institution, non-profit organizations	June 12, 2015 for funding cycle 3 of FY 2015	http://www.eda.gov/funding-opportunities/
Appalachian Development Commission	Business Development Revolving Loan Fund Grant (BDRLF) and other grants	Grants are awarded for qualifying economic development projects in the Appalachian region.	NA	NA	NA	Variety of grants available (startup, project, operating) for business development and entrepreneurship, education and training, health care, infrastructure, and leadership development with application, scoring, and prioritization through local development district based on economic need and state ARC strategy statement alignment.	District Organization of a designated Economic Development District;) State or local government, higher education institution, non-profit organizations	NA	http://www.arc.gov/grants

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
Commonwealth of Virginia Programs									
Virginia Department of Agriculture and Forestry	Agriculture and Forestry Industries Development Fund (AFID)	This Virginia program provides planning and development grants to support the growth of agriculture and forestry-based businesses.		Planning: $20,000 (single district), $35,00 (multiple district entity); development $250,000	One for One	Planning, research, and feasibility studies. Business incentives and infrastructure or training support.	Virginia local governments. Beneficiary for development funds must be a new or expanding business producing agricultural or forestry value-added products.	NA	http://www.vdacs.virginia.gov/agribusiness/afid.shtml
Virginia Department of Agriculture and Forestry	Farmland Preservation Fund (FPF)	This grant program provides state matching funds for local purchase of development program easement purchases to support working farm and forestry land preservation.	$1.5 million	NA	50%	Funds are used to match locally appropriated funds for easement purchases as part of an local Purchase of Development Rights (PDR) program.	Virginia local governments	11/14/14	http://www.vdacs.virginia.gov/preservation/tools.shtml
Virginia Department of Agriculture and Forestry	Organic Certification Cost Share Program (OCCSP)	This purpose of this program is to ease the process of achieving organic certification to meet organic food demand. Funding is obtained from the USDA, AMS, Organic Certification Cost Share Program.	NA	$750	$0	Funds are used as cost share for certified organic operations to defray the costs of obtaining or maintaining organic certification.	Reimbursements are made to farmers who complete organic certification from an USDA accredited certification entity	11/1/14	http://www.vdacs.virginia.gov/marketing/organic.shtml
Virginia Department of Agriculture and Forestry	Beehive Grant Fund (BGF)	This grant program was established to promote the establishment of new beehives in Virginia to serve as plant pollinators.	$125,000	$200 per hive up to $2,400 per year.	No	Purchase of supplies and equipment for beekeeping	Residents of Virginia 18 years and older	NA	http://www.vdacs.virginia.gov/plant&pest/hivegrant.shtml

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
Virginia Department of Agriculture and Forestry and Virginia Tech	VA Agricultural Education Centers of Innovation (VAECI)	This project provides resources and support to local secondary agricultural education programs to support the recommendations of the Governor's Taskforce for Agricultural Education, including program design assistance incorporating new technology.	$160,000	The amount of available funding for local programs is eight grants of a maximum of $20,000 per school.	Each grant requires a commitment of up to $15,000 in matching funds that must come through the local school system.	Development and implementation of eight innovative program design models to support contemporary agricultural education through use of new classroom and laboratory technology. Development and implementation of new content resources (including content specific guidebooks) in agricultural education that address the recommendations of the Governor's Taskforce for Agricultural Education.	Agricultural associations, industry & producer groups, community based organizations, and higher education institutions	1/16/15	http://www.alce.vt.edu/signature-programs/secondary-ag/secondary-ag-index.html
Virginia Department of Agriculture and Forestry	Specialty Crop Block Grants (SCBGP)	This program provides funding to enhance the competitiveness of specialty products.	$565,000	$60,000	No	The grant provides funds for research and development, training and technical assistance in food safety, and other projects that improve the management and efficiency of the specialty food distribution system.	Agricultural associations, industry &/ producer groups, community based organizations, and academia that seek to improve the competitiveness of specialty crops in Virginia.	4/2/15	http://www.vdacs.virginia.gov/marketing/scrop.shtml
Virginia Tourism Corporation	Marketing Leverage Program (MLP)	This grant program assists local communities in developing new tourism marketing programs.	NA	Tier 1: $10,000; Tier 2: $50,000	Tier 1: Dollar for Dollar. Tier 2: Two to One match	Advertisements, printed materials, website development, digital and social media marketing, trade show displays, other marketing activities	Minimum of three entities (local governments, non-profit organizations, private businesses) must partner to be eligible.	Spring 2015	https://www.vatc.org/PAM/leverageprog/

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
Private Foundations and Trusts									
BB&T	CRA/Community Development Department (CRA)	BB&T funds community and/or economic development projects dealing with: (1) community restoration/revitalization; (2) affordable housing; (3) job creation or workforce development; and (4) child care, educational, health or social services.	NA	NA	NA	NA	Community nonprofits and local governments in BB&T service areas	NA	http://www.bbt.com/bbtdotcom/about/cra/default.page
Blue Moon Fund	Chesapeake-Appalachia Watershed Grants (CAWG)	The Blue Moon Fund's supports innovative projects that utilize "natural, social, and financial capital" to "protect landscapes and livelihoods threatened by climate change, In previous grant awards, it has funded local food, green industry, and farm waste reduction initiatives in support of sustainable development.	NA	NA	No	Successful applicants have been awarded funds for for research, planning and feasibility studies as well as funds for operational and capital expenditures.	Non-profit organizations and higher education institutions	Letter of inquiry required. t	http://www.blue-moonfund.org/
Dominion Foundation	Dominion K-12 Educational Parntership (DKEP)	The Dominion Foundation provides grant opportunities for primary and secondary schools. In the past it has awarded funds to programs K-12 programming for school gardening and greenhouses.	NA	$10,000	No	Equipment purchase, materials and supplies, and teacher training.	K-12 schools	5/15/15	https://www.dom.com/corporate/our-commitments/community/charitable-giving-and-the-dominion-foundation

Department/ Agency/ Organization	Name of Program	Description	Total Funds Available in Fiscal Year	Maximum Grant Request	Match Required	Use of Funds	Eligible Applicants	Application Due Date (Most recent fiscal year)	Website
Whole Kids Foundation	School Gardens Grants (SGG)	This foundation created by Whole Foods Markets provides funding for starting school gardens.	NA	$2,000	No	Supplies and equipment for school gardens	Public and private non-profit K-12 schools. The Foundation funds schools outside its store service areas.	10/31/15	https://www.wholekidsfoundation.org/
Foundation for Roanoke Valley (FRV)		The Foundation for Roanoke Valley serves provides funding in a variety of areas principally for organizations within West Central Virginia. It has also funded ag-related education and local food initiatives.	NA	NA	NA	Use of funds can vary based on purpose of grant.	Nonprofit organizations primarily in the cities of Roanoke and Salem and the counties of Roanoke, Alleghany, Botetourt, Craig and Franklin.	1/5/2015 and 8/14/2015	http://www.foundationforroanokevalley.org/
Horace G. Fralin Charitable Trust (HGFCT)		The Fralin Charitable Trust is one of the largest endowments in the Roanoke region and has funded educational, cultural, and social programs within the Roanoke area.	NA	NA	NA	NA	Nonprofit organizations	NA	NA

NA=Not Available or Not Applicable

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