

ENTREPRENEURIAL APPALACHIA: CASE STUDIES IN EVOLVING ECONOMIC SECTORS



NOVEMBER 2013

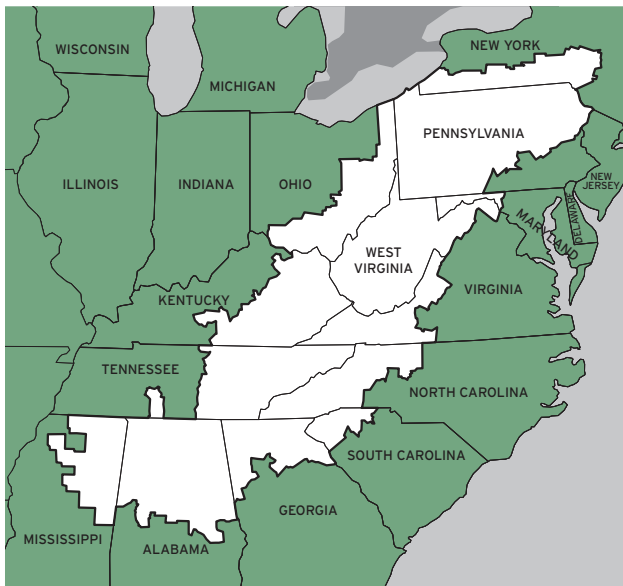
Prepared by Rural Support Partners on behalf of the Appalachian Regional Commission

Background and Overview

Throughout Appalachia, entrepreneurs are forging a new economic model—one based on local investment and local ownership—and their impact is already being felt in some of the Region’s evolving economic sectors, including energy, manufacturing, health care, and local food production.

Prompted in part by Appalachia’s need for economic diversification, the Appalachian Regional Commission (ARC) supported this research as a way to summarize entrepreneurial opportunities within these economic sectors and to examine innovative projects that demonstrate multiple benefits to rural and underserved communities. Aided by an advisory team who provided valuable insight into the case study selection process, the examples presented in this guide demonstrate job creation potential, cross-sector partnerships, and community impact.

We invite you to read about seven successful entrepreneurial efforts throughout Appalachia, with a focus on extracting those lessons with the most potential for informing local and regional economic development efforts in your community.



Appalachia

Appalachia is a 205,000 square-mile region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi. It includes all of West Virginia and portions of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia.

About the Appalachian Regional Commission

The Appalachian Regional Commission is a regional economic development agency that represents a partnership of federal, state, and local government. Established by an act of Congress in 1965, ARC is composed of the governors of the 13 Appalachian states and a federal co-chair, who is appointed by the president. ARC’s mission is to be a strategic partner and advocate for sustainable community and economic development in Appalachia.

For more information on ARC programs to support entrepreneurs and entrepreneurial communities, please visit www.arc.gov/entrepreneurship.

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Photo courtesy Ken Murray

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Introduction

The Appalachian Region, particularly its most economically distressed counties, has historically been dominated by a few industries such as mining, textiles, tobacco, and timber. Dependence on these industries as economic drivers and employers has left many communities vulnerable to economic fluctuations. As these industries continue to face increasing competition, specialization, and market changes, Appalachian communities that lack economic diversity are facing the prospect of diminishing job opportunities and deepening economic distress.

In light of this, numerous communities are exploring entrepreneurship and small business development as promising job creation strategies. Entrepreneurship helps to diversify the Region's economic base, develop and market local assets, strengthen existing businesses, foster the development and use of innovative technologies, and tie economic activity to community well-being. In this way, local communities can potentially limit their economic vulnerability while fostering home-grown economic opportunities, ultimately leading to additional jobs, the creation of locally rooted wealth, and more resilient communities.



Evidence suggests that the energy, health, manufacturing, and local food sectors demonstrate promising entrepreneurial opportunities, particularly for rural and/or underserved areas. For each of these economic sectors, this report contains an overview of trends and opportunities, as well as case studies that showcase innovative models, approaches, and strategies.

The case study profiles that follow describe

- A **Kentucky** energy-efficiency initiative aimed at reducing energy costs for rural households
- An **Ohio** business incubator that supports clean-energy startup companies
- A **South Carolina** partnership that works to create healthier environments and improve community wellness
- An **Alabama** program that increases health-care career opportunities by connecting university medical students, rural high schoolers, and local health-care providers
- A furniture manufacturer in **West Virginia** that creates hand-crafted, value-added products from Appalachian hardwoods
- A cluster of innovative local food initiatives in **West Virginia** that use rural-urban connections, place-based branding, and agritourism to increase income for food and farm entrepreneurs
- A local food hub that helps small farmers in **Virginia** and **Tennessee** access larger markets

These cases help illustrate the innovative economic development work taking place across Appalachia, while examining the crucial role of organizations and networks that support local entrepreneurs. Our hope is that these examples can inform the variety of actors working to strengthen Appalachia's economy through entrepreneurship and small business development.

Energy Sector Overview



National Trends

Renewable energy is emerging as a promising sector in Appalachia, supported by significant national growth and investment in the fields of clean energy and energy efficiency. The United States has lagged behind many countries in renewable energy development, but there is increasing federal interest in renewable energy in response to the growing concerns around the depletion of natural resources and the environmental impacts of global warming.¹ From 1998 to 2007, jobs in the renewable energy economy grew nationally by an average of 1.9 percent compared with total employment growth of only 0.4 percent. Venture capital investment in renewable energy and energy efficiency grew from less than \$1 billion in 1998 to \$12.4 billion in 2007.²

Another significant trend in the national energy economy is the rise in green-building certifications. Increasingly, the U.S. Green Building Council's LEED (Leadership in Energy & Environmental Design) certification has become a mandate in the construction and renovation of public-sector buildings. Because of these national trends and substantial

investments in clean energy and energy efficiency, there is potential for an economy that recognizes the limitations of non-renewable resources and capitalizes on economic opportunities in renewable energy.³

Opportunities & Challenges in Appalachia

The coal industry has historically had a large presence in Appalachia, but its economic returns are declining. This decline is due in large part to the depletion of the resource base and competition from new energy sources such as natural gas. Employment and earnings within the coal industry are expected to decrease 25-30 percent over the next ten years, while the tax revenue coming from the coal industry is expected to decline 20 percent over the next ten years as mining volumes decrease.⁴ The decline in coal production also limits any employment opportunities within the industry to the replacement of an aging workforce rather than hiring for newly-created jobs.

Natural gas exploration and extraction will continue to provide significant, but perhaps temporary, employment gains in Appalachia's shale regions. While job creation and

¹ Regional Technology Strategies, Inc. with Penn State University. Dec. 2011. "Energy Workforce Trends and Training Needs in Appalachia." Appalachian Regional Commission: p. A-1.

² Regional Technology Strategies, Inc. p. A-6.

³ The Cadmus Group, Inc with Regional Research Institute, West Virginia University and Virginia Polytechnic Institute and State University. Dec. 2011. "Planning and Financing Energy Efficient Infrastructure in Appalachia." Appalachian Regional Commission: p. 9.

⁴ Regional Technology Strategies, Inc. p. A-24.

income to landowners are likely short-term benefits of this trend, the entrepreneurial potential within the shale gas industry is limited by high concentration, specialization, and well-established outsourcing channels. At the same time, the history of resource extraction industries suggests the risk of continued boom-and-bust cycles may not provide steady long-term growth and employment. There is also a concern that shale gas extraction may negatively impact other sectors, such as forestry and agriculture, through the potential for water contamination and other environmental and public health impacts.

Economic Impact & Job Creation Potential

ARC considers energy to be a promising sector in Appalachia due to the sector's rapid growth and generation of new employment opportunities. In 2009, total energy-related employment in Appalachia, including supply chains and related industries, was nearly one million.⁵ Nationally, 43 percent of energy-related jobs are in energy efficiency, and federal resources are increasingly focused on energy efficiency.⁶ Initial studies have shown that energy efficiency investments in Appalachia could create 77,000 net new jobs in the Region by 2030 and cut projected energy use by 24 percent, resulting in energy savings of over \$21 billion for the Region.⁷ These jobs, many of which involve renovations and retro-fits, build upon existing workforce skills.

Renewable energy offers additional opportunities for Appalachia, both in terms of entrepreneurship and job creation. Demand for clean energy services in Appalachia currently has the capacity to create 41,000 jobs in more than 650 businesses or organizations related to solar components, and 89,579 jobs in 1,318 businesses or organizations related to the wind industry, as noted in a study recently prepared for ARC.⁸

Energy efficiency and clean energy practitioners point out that supportive policies will be crucial for the evolving energy economy to realize its full potential. In order to accelerate the development of the sector, Appalachia

needs financing incentives that spur investment in energy efficiency and renewable energy among energy developers, businesses, institutions and homeowners alike. Electric power providers also need a state-legislated portfolio standard for renewable energy generation and energy efficiency savings, in order to guarantee a market for electricity generated from renewable energy sources.

Connection to Rural & Underserved Communities

An economy focused on expanding renewable energy and energy efficiency opportunities provides job creation potential for the unemployed and the underemployed. Much of the employment potential in renewable energy and energy efficiency is in "middle-skill jobs," which require more than a high school diploma but less than a four-year degree. At the national level, the American Recovery and Reinvestment Act provided additional federal resources to create new clean energy jobs and expand worker training efforts in this sector.⁹ Rural workers with the support of community colleges and other institutions providing re-training programs, can benefit from the emerging labor needs of the green energy economy.

The rural poor also benefit directly from energy efficiency upgrades that can bring down the cost of energy in their households. Because of sub-standard housing stock in large portions of Appalachia, many low-income rural households spend the highest income percentage in the nation on electricity to heat their homes and run appliances. As such, rural communities stand to benefit greatly from energy efficiency improvements to their homes.

A more diversified energy economy will also bring a variety of indirect economic benefits to the Region's rural communities. Appalachia's geographical diversity and the isolation of many rural areas creates distribution challenges that can contribute to much higher electricity costs.¹⁰ These distribution challenges and the related costs can be mitigated by diversifying the sources of rural electricity to include wind and solar as well as coal and gas.

⁵ Regional Technology Strategies, Inc. p. viii.

⁶ Regional Technology Strategies, Inc. p. 80.

⁷ Regional Technology Strategies, Inc. p. 2.

⁸ Glasmeier, Amy, Ron Feingold, Amanda Guers, et al. The Pennsylvania University. September 2007. "Energizing Appalachia: Global Challenges and the Prospect of a Renewable Future." District of Columbia: Appalachian Regional Commission.

⁹ Bozell, Maureen R. and Cynthia D. Liston. May 2010. "Building Effective Green Energy Programs in Community Colleges." New York: Workforce Strategy Center.

¹⁰ Interview: Bill Blair, HowSmartKY™ Program Coordinator, 11 September 2013.

Energy Case Study I: How\$martKY™

Location: Berea, Kentucky
Contact: www.maced.org/howsmart-overview

How\$martKY™, a project of eastern Kentucky-based Mountain Association for Community Economic Development (MACED), provides on-bill financing for energy efficiency retrofits to rural homes. The project offers significant energy savings for area residents, increases home values, and helps utility co-ops lower costs for their consumers.

“Energy efficiency is the low-hanging fruit.”

—Bill Blair, How\$martKY™ Program Coordinator

Opportunities for Appalachia: Reduced Energy Costs & New Jobs

The benefits provided by this energy model are particularly important to Appalachia because of the predominance of rural communities in the Region. Rural households tend to pay significantly more for power, since it costs utilities more to deliver the power to a geographically isolated population.¹¹ In addition, many rural homes in Appalachia suffer from inefficient and substandard housing stock. Kentuckians use 24 percent more electricity at home than the national average, which disproportionately burdens lower-income households.¹² In addition to reduced costs for home owners, energy-efficiency retrofits offer a new job market for Appalachia's many contractors, installation specialists, and middle-skilled repairers. And finally, everyone benefits from a diversified energy economy that decreases the costs of powering homes, allowing for the savings to be productively invested or spent on local goods and services that may help create more local jobs.

Critical Resources and Partners: Utility Partnerships & State Policy Support

One critical factor in How\$martKY™'s success is its partnership with rural electric co-ops. These membership-based co-ops, of which there are 16 in eastern Kentucky, bring power to rural communities and are accountable to

¹¹ Interview: Bill Blair, How\$martKY™ Program Coordinator, 11 September 2013.

¹² “How\$martKY Offers Energy Efficiency for Everyone.” Mountain View: Spring 2011. MACED.

their members. They see reduced energy usage among their members as a strategic goal, and when MACED proposed a pilot project to test on-bill financing, four co-ops agreed to participate. Meanwhile, the start-up capital and financing capacity MACED provided was essential in getting the pilot project off the ground.

The How\$mart process itself is an exercise in partnership. When a co-op like Grayson Rural Electric gets a complaint from a member about their high power bill, they are able to offer How\$mart as a solution. An energy advisor from the co-op will visit the home and offer to set up an energy audit through How\$mart. If there are efficiency improvements to be made, How\$mart will then hire a trained contractor to make the retrofits at no upfront cost to the home owner. The improvements are paid off over time with the savings that appear on the power bill.

For MACED to be able to finance a home's retrofits on its energy bill, the Kentucky Public Service Commission needed to approve a tariff – an additional charge line on the bill. What began as a pilot tariff was made permanent following the demonstrated effectiveness of this approach, meaning that any Kentucky utility can now provide on-bill financing for energy-efficiency retrofits through the How\$martKY™ program.



Photo courtesy Ivy Brashear, Mountain Association for Community Economic Development

Economic Impacts: Job Creation, Energy Savings, & Increased Home Value

Contractors and workers in rural Kentucky are already benefitting from the extra work How\$martKY™ provides. The flow of How\$mart jobs is steadier than most contractors are used to, helping them keep more

employees on a full-time work schedule. With MACED providing technical assistance and support for contractors to be re-trained and insured to do the retrofits, contracted businesses have a chance to both improve their credentials and diversify their customer base. Of the 17 different contractors who have worked with How\$mart, some have already added crews, and there is additional job creation potential as more rural workers are trained to do retrofits.

The most significant impacts, however, are those enjoyed by the rural residents themselves. For rural communities, the households most in need of efficiency improvements are also the least capable of paying for them. Already faced with high distribution costs, residents of older homes in rural communities tend to spend more of their income on energy due to sub-standard building quality. How\$mart allows them to make changes that they otherwise couldn't afford, directly impacting their energy savings as well as their comfort and safety. As a result, 49 percent of How\$mart participants have low to moderate income, and 101 homes have been upgraded in distressed counties.

How\$mart retrofits also increase the value of homes by at least the cost of the retrofit, bringing them up to code and improving their future marketability. According to Tina Preece, an energy advisor at Grayson Rural Electric, as the housing stock improves, "instead of driving down the road and seeing houses getting dilapidated and being abandoned, we actually get homes that are more marketable and people staying in the region. We see the retrofitted homes as improving our communities." The long-term savings on a home's energy bill is also significant, often providing the equivalent of a substantial income boost to residents once the retrofit is paid off.

How\$mart coordinator Bill Blair captures this impact in the story of a grandmother whose heat pump broke down. Left with no other heating options for the winter, she kept herself

Best Practices & Lessons Learned

- ☀️ Learn from what others have done. Energy efficiency is a difficult field to figure out on your own; How\$martKY™ is based on a Kansas program, and can in turn inform other efforts.
- ☀️ State-level policy support for an on-bill tariff is essential, and someone needs to take the lead on pulling together stakeholders and advocating for these policies.
- ☀️ Make it easy for energy co-ops to see the benefit of participating in a pilot project.
- ☀️ An intermediary support organization—like MACED—is necessary to provide startup capital and play the assessment and financing roles.
- ☀️ Build on your local workforce and show contractors the benefits of being trained for energy-efficiency retrofits.
- ☀️ Focus on rural communities since that is where the need, opportunity, and impact are greatest.



and her two children warm with dangerous kerosene heaters. Their How\$mart-financed retrofit addressed pressing comfort and safety issues with no out-of-pocket costs, while ultimately providing them with around 30 percent energy savings. From the energy utilities' perspective, says Preece, "Anything that can help provide basic income or savings to people who are struggling is a benefit."

Additional Resources

For more information on clean energy and energy-efficiency support: **New York State Energy Research and Development Authority** (NYSERDA – New York); **Southern Alliance for Clean Energy** (Southeastern US); **Clean Energy States Alliance** (National); **PENN Futures** (Pennsylvania)

How\$martKY™ by the Numbers

243	127	8	\$76,874	\$5,784	\$40	\$52
Energy Assessments Conducted	Energy Retrofits Completed	Existing Jobs	Projected Annual Savings	Average Retrofit Cost	Average Monthly How\$martKY™ Charge (Paid on Customer Bill)	Average Monthly Savings per Customer

Energy Case Study II: Ohio University Innovation Center

Location: Athens, Ohio

Contact: www.ohio.edu/research/innovation

Since 1983, the Ohio University Innovation Center (OUIIC) has served southeastern Ohio as a business incubator in multiple sectors. Among their many client businesses, OUIIC has housed eight clean-energy startups, one of which has graduated and created employment opportunities in the Athens area. Of the current clients, two have received pre-seed and angel investment and a third is in due diligence for pre-seed funding. These energy companies accelerate sector development by capitalizing on new technologies, such as those that convert wastewater or carbon dioxide (CO₂) to biofuels and alternative energy. OUIIC's business incubator model capitalizes on the growing opportunity for clean energy startups in Appalachia. Three of the Center's energy client companies include:

- **Third Sun Solar:** This OUIIC graduate company installs small residential solar systems as well as megawatt-scale solar arrays for large clients around Ohio. Third Sun Solar has grown an average of 50 percent per year over the last 3 years, with revenues of \$4 to 5 million since 2009.
- **ECO2Capture™:** Founded by three Ohio University (OU) professors, ECO2Capture's initial product offerings improve overall process efficiency for retrofit and new-build algae production systems, capturing CO₂ from the air to support algae growth for algae biodiesel production and other end-products.
- **E3 Clean Technologies:** Founded by an OU professor, the company is dedicated to the commercialization of electrochemical devices that clean up the environment and produce clean energy. GreenBox™ technologies remove ammonia from wastewater and smog-forming compounds from exhaust while producing zero-emissions hydrogen fuel as a byproduct.

Opportunities for Appalachia: Clean-Energy Startups & Entrepreneurial Support

Energy production has historically been an important sector for Appalachia, but with coal expected to decline by an estimated 53 percent over the next 27 years,¹³ the energy

¹³ McIlmoil, R., Evan Hansen, Nathan Haskins, & Megan Betcher. May 2013. "The Continuing Decline in Demand for Central Appalachian Coal: Market and Regulatory Influences." Downstream Strategies: page x.

landscape is changing. As the energy sector transitions, Jennifer Simon, the Director of OUIIC, recognizes the importance of supporting alternative energy startups, even as coal and natural gas remain key industries for Appalachia.

Across Appalachia, there is a critical need to support businesses that are exploring clean energy innovations like remediation-to-energy technologies and solar power. These startup businesses and innovations create new employment and entrepreneurial opportunities, while building demand for a diversified labor force that can plug into the energy supply chain. However, the success of these businesses depends on support from organizations like OUIIC as they make the transition from idea to planning to startup.

Critical Resources & Partners: Industry-Specific Support, Angel Fund Investors, Universities

Thirty years ago, according to Simon, southeastern Ohio was a community that lacked an entrepreneurial ecosystem or strong business support structure. There was limited access to investment capital, knowledge resources, and executive talent. Today, several crucial partnerships have helped OUIIC create a robust support system for clean energy startups and others. According to Simon, "What our ecosystem does is provide an entire system of assistance that can help a company thrive."

What is an Angel Investor?

"Angel Investors" are individuals who invest money in small emerging entrepreneurial companies. They are interested in both a return on their investments and in business development in their communities. They are called "Angels" because they typically provide the first 'real' outside investment, which is essential for the viability of the company.

OUIIC works closely with TechGrowth Ohio to support entrepreneurs with financing and industry-specific business development assistance. This partnership provides "executive-in-residence" services for new companies which are often in need of crucial market research support, as well as business coaching, marketing support, and help for clients building a pitch to potential investors.

Another partner of the Center is the East Central Ohio Tech Angel Fund, which connects local angel investors to companies with start-up or growth capital needs. They collaborate to support business plan development and help businesses get to the point where they can attract larger investments from mainstream lenders.

The Center is a part of Ohio University, which provides a pipeline of research and invention. Many of the technological innovations OUIIC has supported came directly from the university. The scientific expertise of the university, when combined with business and capital support systems at OUIIC, has helped several innovative ideas mature into businesses.



Photo courtesy *HIVelocity* magazine, Benjamin French

OUIIC also recognizes the “power of place,” and promotes peer-to-peer learning and assistance through “Founder Forums,” which bring together entrepreneurs and inventors to discuss common challenges and potential solutions. An example of the synergy that occurs among entrepreneurs at OUIIC is the story of an engineer at Third Sun Solar who recognized, through peer conversations, that heavy hardware and mounting equipment made some solar installations cost-prohibitive. Based on this realization, the engineer started the company Ecolibrium Solar, which produces an innovative light-weight mounting system that significantly reduces the cost and time to install solar arrays.

Economic Impacts: New Businesses & Job Creation

With 86 percent of their client companies since January 2008 still in business, the Center demonstrates the kind of economic impact a business incubator can have when it focuses its entrepreneurial support services on

Best Practices & Lessons Learned

- ☀ Utilize universities and other institutions as research and invention hubs as well as deal flow generators.
- ☀ Identify client company needs through continued one-on-one consultations and matchmaking with other providers within the ecosystem.
- ☀ Connect companies with university resources to improve product development.
- ☀ Connect new companies with executive talent or corporate experience related to their sector.
- ☀ Provide access to investment capital that suits the company’s stage of development.
- ☀ Provide business development coaching for things like business plans and investor pitches.
- ☀ Encourage the development of companies that address emerging gaps in the clean energy sector.

promising sectors like clean energy. The energy startups OUIIC has supported are already beginning to transform the local economy and impact the industry at large. Through their support of small businesses, the OUIIC has seen more than 30 jobs created directly by energy companies who have graduated from the program and an additional 15 jobs created by current clients. Additional indirect employment opportunities have been created for contractors and others. Jobs created by these companies (e.g. installers, lab technicians, office assistants) cover a wide range of skills and training levels that are already present in the region’s labor force and transferable to the alternative energy sector. In a county where nearly 30 percent of the population lives below the poverty level, the Center’s graduate companies have committed to fair wage principles, paying workers wages that are two to three times higher than the regional average. Meanwhile, a longer-term impact on rural and underserved communities will take the form of technologies that emerge from an increasingly diversified and competitive energy market. Alternative energy companies like OUIIC’s clients are part of a process of energy innovation that is lowering costs and reducing barriers to market entry.

Additional Resources

For more information on other hi-tech business incubators: **Ben Franklin Technology Partners** (Pennsylvania), **Clean Venture** (California), **SJF Institute** (North Carolina), **Alfred State College: School of Applied Technology** (New York)

Health Sector Overview



Photo courtesy Julie McCombs, LiveWell Greenville

National Trends

The size and importance of the health-care industry make it a dynamic economic driver for the Appalachian Region. Nationally, the health-care and social-services sector has grown over 23 percent since 2002.¹⁴ The requirement within the Affordable Care Act of 2010 to purchase health insurance will result in a greater number of people with health coverage, likely leading to increased demand for health-care workers. Demographic changes, industry shifts, and federal policies have placed an increased cost burden on states, and rural communities in particular, to create more robust healthcare delivery systems.¹⁵ Federal health-care policies and national trends that focus on creating healthy communities will continue to shape the health sector's evolution in Appalachia for many years to come.

Opportunities & Challenges for Appalachia

Appalachia has ongoing health-care concerns that represent both a need and an opportunity to develop a robust health sector. The Region faces documented disparities in the incidence, prevalence, mortality, and

burden of diseases such as diabetes, strokes, and certain forms of cancer, and suffers disproportionately from adverse health conditions such as obesity and substance abuse.¹⁶ Additionally, Appalachia has a higher proportion of residents age 65 and over than the nation as a whole, which creates needs and opportunities for additional health-care jobs. There is a growing demand for innovative health-care delivery systems that can reach geographically isolated rural communities. These needs will in turn create opportunities for comprehensive approaches to improving public health and wellness that combine educational campaigns, wellness infrastructure, and proactive local policies to encourage healthier living.

Economic Impact & Job Creation Potential

The health-care industry is a significant economic driver and employment generator for many Appalachian communities. In addition, community wellness directly impacts the competitiveness of a town, city, or region, and can be considered an indirect economic driver.¹⁷ Combining health-care innovations and comprehensive public-health initiatives is the most complete approach to increasing Appalachia's community health and economic competitiveness.

¹⁴ Hess, R., Hampton, P., Music, D., Thakur, R., Mailo, N. 2012. "2012 Blueprint Mississippi Health Care Study Appendix." Newmark Grubb Knight Frank: p. 5.

¹⁵ PDA, Inc. and the Cecil B. Sheps Center for Health Services Research, University of North Carolina—Chapel Hill. Jan. 2012. "Health Care Costs and Access Disparities in Appalachia." Appalachian Regional Commission: p. 25.

¹⁶ Ezell, T., Lambert, D., Ogle, E. Feb. 2012. "Strategies for Economic Improvement in Appalachia's Distressed Counties." Appalachian Regional Commission.

¹⁷ Ezell, T. et. al. p. 14.

There are multiple components of the health-care sector – including delivery, support, and innovation – which creates multiple avenues for generating employment and increasing household income. The total national economic impact of hospital payroll spending is \$5.8 billion, and the health-care sector is projected to generate approximately 3.2 million more jobs before 2018. On a more micro level, one physician creates approximately 21 jobs and more than \$2 million in long-term revenue for the community.¹⁸

Further, healthy communities tend to be economically competitive communities. Studies have shown that work time and productivity lost due to health issues cost businesses in the United States more than \$250 billion in lost economic output per year.¹⁹ When the workforce is healthy and productive, there tend to be fewer costs associated with health-care. A healthy community has increased prospects for local entrepreneurship as well as for business attraction, retention, and growth, because investors and entrepreneurs are cognizant of how the health of the workforce will impact their operational success. If the health of the workforce is viewed as a detriment, it can have a negative effect on business development.



Photo courtesy Melissa Cox

Connection to Rural & Underserved Communities

Counties identified by the ARC as economically distressed face barriers in providing health care to rural communities. At the same time, local health-care facilities in economically distressed communities are often among the largest employers.²⁰ However, the growth of telemedicine and school-based health-care delivery has begun to address this issue and offer greater health-care options for remote areas.²¹ If Appalachian communities invest in telecommunication and information technologies to provide clinical health-care, they will be able to better address the needs of rural and underserved members of their community.

Further, in Appalachia, the share of residents ages 65 and over is expected to increase over the coming years as the large baby boom cohorts continue to move into this age group. This will necessitate more trained health-care workers to provide them with critical services. Many rural communities could benefit from workforce development that prepares a new generation of rural health-care practitioners to provide for their own communities. Community wellness is also increasingly important to Appalachia's rural populations, as proactive public-health and wellness policies can increase a community's well-being and economic potential, and lower long-term health-care costs.

¹⁸ Hess, R., Hampton, P., Music, D., Thakur, R., Mailo, N. 2012. "2012 Blueprint Mississippi Health Care Study." Newmark Grubb Knight Frank: p. 5.

¹⁹ Ibid.

²⁰ Ezell, T., Lambert, D., Ogle, E. Feb. 2012. "Strategies for Economic Improvement in Appalachia's Distressed Counties." Appalachian Regional Commission.

²¹ Lane, N., Andrew Lutz, Kimberly Baker, Bob Konrad, Thomas Ricketts, Randy Randolph, Charles Tran, Christopher Beadles. Jan. 2012. "Health Care Costs and Access Disparities in Appalachia." PDA, Inc. and UNC Chapel Hill: p. 121.

Health Case Study I: LiveWell Greenville

Location: Greenville County, South Carolina
Contact: www.livewellgreenville.org

LiveWell Greenville is a health coalition in Greenville County focused on reducing childhood obesity and creating healthier community environments. Through its eight working groups (At School, Before & After School, At Work, Around Town, At Worship, At the Doctor, At Mealtimes, and For Fun), LiveWell provides support and advocacy for health-related projects in the county. The coalition's goal is to help maximize impacts on the health environment and showcase the community as a model for improving health and wellness.

Opportunities for Appalachia: Public Health & Collective Impact

LiveWell Greenville is a model based on collective impact, a specific form of collaboration that includes sharing a common agenda, measuring similar data, communicating among partners, and having a separate support organization coordinating these activities.²² The collective impact model holds potential for Appalachia because it is based on the premise that the complex nature of large-scale social change is more than a single organization can achieve independently. The collective model provides a “more powerful and realistic paradigm for social progress” in Appalachia and elsewhere.²³

LiveWell works to create healthy environments through a broad range of collaborative partnerships that help increase the impact and reach of the initiative. The types of projects LiveWell supports are common opportunities across Appalachia, and include parks and recreational facilities, public education programs on the importance of healthy environments, walkable business districts, bike repair mentorship programs for at-risk youth, and farm-to-school programs that increase the amount of local, fresh food in K-12 schools and after-school programs. All LiveWell projects are based on the recognition that a healthy community depends on having an environment where people are able to make healthy choices.

²² Hanleybrown, F., Kania, J., and Kramer, M. (2012). Channeling change: Making collective impact work. *Stanford Social Innovation Review*: Leland Stanford Jr. University.

²³ Hanleybrown et. al.: p. 1.

A similar coalition may be a useful tool for Appalachian communities facing a multitude of health concerns, including substance abuse, malnutrition, obesity, and mental illness. An inclusive coalition model can build on and connect a community's existing health programs to create an environment that addresses multiple health concerns.



Photo courtesy Julie McCombs, LiveWell Greenville

Critical Resources & Partners: Existing Community Assets and Cross-Sector Collaboration

Because LiveWell Greenville focuses on advocacy, one of its main challenges has been communicating the impact of the coalition. In order to overcome this challenge, LiveWell has encouraged the development of the “Swamp Rabbit Trail” to help increase visibility for a broader range of health initiatives. The Swamp Rabbit Trail, built in 2010, is a 17.5-mile multi-use public recreation corridor created with support from the city of Greenville, Greenville County, and Furman University. New businesses have sprung up around the trail since its development, and sales have increased for surrounding businesses by as much as 85 percent.²⁴ LiveWell Greenville has provided support and publicity for the Swamp Rabbit Trail, and the early success of the trail has helped LiveWell by providing a concrete, visible example of how the coalition's work helps create positive health and economic outcomes in the community.

LiveWell Greenville's structure has been critical to its success. The initiative began with a leadership team made up of community leaders motivated to address childhood obesity. Two years later, LiveWell assembled an influential advisory board made up of CEOs, city managers, county managers, and others, which meets twice a year to oversee

²⁴ Reed, J. (2012). Greenville Health System Swamp Rabbit Trail: Year 1 Findings. Furman University.

the coalition's strategic direction. LiveWell Greenville's structure has been effective thanks in large part to the YMCA, which operates as the support organization for the initiative. The coalition's multi-institutional evaluation team has also played an important role. Each of the coalition's eight aforementioned working groups has an evaluator tasked with tracking changes in policy and environments, which allows LiveWell to measure its impacts against local, state, and federal standards and build community support for its work.

Support and resources from multiple funding sources have also been critical to the initiative's success. LiveWell received large foundation grants for its start-up funding, but the coalition has also generated support from the local community. It has secured backing from local parks and recreation entities, and has also received private investment from companies like Elliott Davis, Rosenfeld Einstein and South Carolina Tool, which recognize the value of a healthy, productive workforce.

Economic Impacts: Health Equity, Employment, & Increased Marketability

LiveWell Greenville's focus on health equity creates a healthy environment for everyone in Greenville County. Although LiveWell Greenville reaches 200,000 community members, its work is intensely focused on underserved communities. LiveWell works with Title I schools to foster healthier school environments and impact family health



Photo courtesy Julie McCombs, LiveWell Greenville

Best Practices & Lessons Learned

-  Establish three criteria before launching a health coalition: a **specific goal** (reducing childhood obesity), a **clear method for creating change** (through environmental and policy change, not individual behavior), and a **powerful motivating factor** (making Greenville County one of the healthiest communities in the nation).
-  Working groups are idea generators and platforms for organizations to partner and create larger impacts, but they need consistent leadership and support to keep the work moving forward.
-  An evaluation team can contribute to the coalition's overall sustainability by providing continuous feedback for improvement.
-  Using the collective impact model and a backbone support organization is critical for achieving large scale social impact.
-  If specific health initiatives need their own voice, help the community create spin-off organizations.
-  Make the healthy choice an easy and attractive option that encourages participation from the local population.

through after-school programs and connections with faith-based organizations.

Affiliated projects are providing employment opportunities and creating economic impacts in the community. For example, \$500,000 in revenue for local farmers was generated when LiveWell created avenues for fresh produce to reach 91 schools and 72,000 students in the Greenville school district. Similarly, LiveWell helped attract funding to complete an economic impact analysis of the Swamp Rabbit Trail. As a result, there is now data on how the increasingly walkable business districts are generating between 30 and 85 percent more revenue for Greenville County businesses.²⁵ These health-based economic outcomes make Greenville County a marketable and attractive community for businesses and families looking to relocate to the area.

²⁵ Reed, J. (2012). Greenville Health System Swamp Rabbit Trail: Year 1 Findings. Furman University.

Health Case Study II: Hale County Health Development Partnership

Location: Hale County, Alabama
Contact: www.cchs.ua.edu/crm/rural-health-programs

The Hale County Health Development Partnership (HCHDP) is a workforce development pipeline program in western Alabama developed by the Department of Community and Rural Medicine at the University of Alabama in Tuscaloosa. HCHDP is an entrepreneurial partnership among rural high schools, medical students and residents at the University of Alabama, and Hale County's health-care industry. These partners work together to increase the number of students from rural areas who enter the medical profession and return to practice in rural communities. The partnership's main activity is a year-long program for 10th graders, which provides field trips and hands-on learning to introduce them to rural health care and the specific medical professional opportunities available locally.

Opportunities for Appalachia: Health Care Needs & Underserved Students

Hale County has struggled with limited access to health care and a shortage of medical providers. In light of this, the partnership's goal is to increase the number of rural medical professionals by tapping into the potential of local high school students. When these students return to practice medicine in their rural communities, the economic impacts can be powerful. On average for a rural community, when a single rural physician establishes a practice it generates approximately 21 jobs and over \$2 million in long-term revenue within the local economy.²⁶

“We need to transition as the health policies of the U.S. change. This partnership is helping us to change, to capture opportunities, to meet our mission.”

—Dr. John Wheat, Principal Investigator,
Hale County Health Development Partnership

²⁶ Interview: Dr. John Wheat, Hale County Health Development Partnership Principal Investigator, 25 September 2013.



Photo courtesy Melissa Cox

The expanded health insurance coverage mandated by the federal Affordable Care Act (2010), coupled with a rise in common lifestyle diseases and an aging rural population, will likely increase the demand for health-care delivery in most rural communities. HCHDP is working to address this need while creating economic opportunities for local students. Developing locally-based health-care delivery systems is a great way for a rural community to “grow its own,” according to Dr. John Wheat, the principal investigator for the HCHDP. The Hale County initiative is an example of how rural communities can “show kids that they don’t have to leave to do something good [...] they don’t have to think they need to escape from their home community to find work.”

Critical Resources & Partners: Community Relationships & State Investment

The success of the Hale County Health Development Partnership has relied on strong relationships within the community and support at the local, state, and federal levels. One critical partner for this project has been the Rural Alabama Health Alliance, a group of area economic development and health-sector representatives that has provided the University of Alabama with advice, encouragement, and political support, helping to establish credibility for their efforts in rural communities like Hale County.

Thanks to a strong existing relationship with Hale County community leaders, the university was able to form a local advisory council made up of members of the school board, teachers, health-care professionals, judges, parents, and other interested community members. The thoughtful involvement of the local community in the planning and program development process has helped build momentum, excitement, and local support for the project.

“Over the past 12 years, the University of Alabama’s rural health programs, including the HCHDP, have produced 50 doctors who have located practices in rural Alabama communities. These placements have leveraged the state’s \$6 million investment to bring an additional \$200 million in rural health economic impacts to Alabama.”

—Dr. John Wheat

The HCHDP also benefits from multiple levels of government support. Created by the Alabama Legislature in 1989, the Family Practice Rural Health Board provides funding for rural health programs across the state. The board receives \$1.5 million per year from the state to encourage medical education programs to bring more doctors to rural communities. The university was able to use grants from the board to fund its rural health initiative, and now, thanks to the success of programs like the Hale County Health Development Partnership, the state legislature provides additional funding to run the university’s rural health programs.

Economic Impacts: Homegrown Physicians & Leveraged Funding

The economic and community impacts of the Hale County Health Development Partnership occur on several levels. The University of Alabama creates real-world training opportunities that put medical students in touch with rural communities. For medical students and residents, training in Hale County and interacting with the high school students in the program provides a personal understanding of the unique needs associated with rural health care. At the same time, local health-care professionals benefit from the medical residents who train in Hale County. Lastly, the program’s students acquire a basic understanding of what a career in rural health care can offer them.

Best Practices & Lessons Learned

-  Link University medical training programs with rural communities to increase health care access.
-  Advocate for state and federal support for rural health initiatives that combine education and economic impacts.
-  Harnessing local leadership to take the reins of multi-institutional programs is challenging but critical. According to Dr. Wheat, “kids need to start connecting with their local leadership because we want them to be imprinted upon locally rather than being imprinted upon from the enthusiasm of the University of Alabama.”
-  Create local partnership with the school system, a Cooperative Extension System office, or an Area Health Education Centers (AHEC) as a way to build stakeholders willing to share project responsibility.
-  Begin with a strong community-based leadership team that understands and represents the local community’s particular needs, structure, political realities, and resources.

Since the HCHDP began in 2011, 20 students from Hale County have gone through the program, and impacts are beginning to show. Dana Todd, one of the residents who participated in the program, grew up in Hale County. After completing her residency, including an HCHDP elective in the community, Dr. Todd returned home to open her own practice—a move that will increase access to health-care services for local residents and bring a variety of economic benefits to the community.

The pride HCHDP generates for the community also facilitates residual economic impacts. Dr. Wheat observes, “It’s really remarkable to see the evolution of [the students’] personalities as they feel like they are part of this bigger thing. The more pride a kid takes in their community, the better off that community is economically, socially, spiritually, however you want to measure it.”

Additional Resources

For more information on innovative health initiatives: **Center for Rural Health Innovation** (North Carolina); **Kentucky Trail Towns** (Kentucky); **Itawamba Community College Allied Health Program** (Mississippi)

Manufacturing Sector Overview



Photo courtesy Robert Peak

National Trends

The manufacturing sector in the United States has been transformed by the forces of globalized trade. Since as early as the 1970s, manufacturing has steadily lost jobs and businesses to outsourcing and overseas competition. There are signs, however, that this trend is beginning to reverse, due to rising wages overseas and increased shipping costs, as well as to productivity gains and technological improvements in the United States. By 2015, the cost difference between manufacturing and shipping from Asia and manufacturing in the U.S. will likely be less than 10 percent.²⁷

Manufacturing firms are increasingly interested in domestic production because of reduced transportation costs, tighter quality control, the ability to drive products to markets faster, and growing consumer demand for American-made and socially-responsible products. American workers are also becoming more attractive to corporations, due in part to increases in worker productivity.²⁸ As a result, there are early signs of a “re-shoring” of manufacturing. A worker-

owned textile cooperative in Burke County, North Carolina, Opportunity Threads, has already helped an American company relocate its production operations from Bangladesh to the Region.²⁹ *The Washington Post* reports that this trend will likely become more common across a variety of manufacturing industries.³⁰

These global economic trends are accompanied by increasing consumer demand for products that are made locally or in the United States. A raft of surveys and retail scans show that consumers highly prioritize goods that are domestically produced. According to consumer surveys, the trend towards “Made in the USA” has three main drivers: 1) a sense of patriotism, 2) a desire to help the American economy, and 3) the belief that American-made products are of higher quality.³¹

Opportunities & Challenges in Appalachia

For decades, manufacturing has accounted for one of the largest shares of total Appalachian employment; providing 10.9 percent of all jobs in the Region as recently as 2011.³² The Appalachian Region’s dependence on manufacturing

²⁷ White, Martha. “The Economic Impact of Made in the USA”. Industry Edge. Accessed 6.26.13. <http://industryedge.nationalhardwareshow.com/2013/06/the-rising-demand-for-made-in-the-usa-products#sthash.roNYy4U8.dpuf>

²⁸ Plumer, Brad. “Is U.S. manufacturing making a comeback – or is it just hype?” *Washington Post*. Accessed 10.8.13. <http://www.washingtonpost.com/postlive/conferences/manufacturing>

²⁹ Interview: Molly Hemstreet, Manager, Opportunity Threads. Sept. 24, 2013.

³⁰ Plumer.

³¹ White.

³² Appalachian Regional Commission. 2011. “Economic overview of Appalachia–2011.” Accessed at: <http://www.arc.gov/images/appregion/Sept2011/EconomicOverviewSept2011.pdf>



Photo courtesy Robert Peak

has also been a vulnerability, as the Region lost over 473,000 (24.6 percent) of its manufacturing jobs between 2002 and 2008.³³ The rejuvenation of the manufacturing sector is an opportunity to reverse this decline, and there are promising signs. In 2011, for example, North Carolina saw its first net increase in manufacturing jobs in 16 years.³⁴

Appalachia's existing manufacturing infrastructure, knowledge, and workforce position the Region well as the sector enters what may be a new

economic phase. As director of the North Carolina-based Manufacturing Solutions Center (MSC), Dan St. Louis has been forecasting the rise, decline, and gains of this sector for the past 34 years. He argues that the Region currently has a powerful, but time-sensitive, opportunity in this sector. "Manufacturing has a real and true history in Appalachia, it is something we have a competitive edge in. But we are going to lose that edge in five years if we don't do something now."³⁵ Factories and other facilities are available to be re-tooled for hi-tech and other forms of manufacturing. Young entrepreneurs are pushing innovative production models and capitalizing on emerging niches in the market. At the same time, Appalachia has a workforce that may be well-suited to the manufacturing sector, including a large population of middle-skilled workers—those with more than a high school diploma but less than a four-year degree.

Economic Impact & Job Creation Potential

Manufacturing has the potential to generate new businesses and return experienced workers back to work.

³³ Appalachian Regional Commission. 2011. "Economic overview of Appalachia-2011". Accessed at: <http://www.arc.gov/images/appregion/Sept2011/EconomicOverviewSept2011.pdf>.

³⁴ NC Rural Center. "Our Manufacturing Future." Accessed at: http://www.ncruralcenter.org/index.php?option=com_content&view=article&id=607.

³⁵ Interview: Dan St. Louis, Director, Manufacturing Solutions Center. Sept. 25, 2013.

The industry shift towards higher craftsmanship standards and the increase in "green-collar" industries is helping to generate new types of manufacturing that can build on existing workforce and infrastructure.³⁶ Workforce development training programs from community colleges and other institutions across Appalachia will be critical to capturing new manufacturing opportunities. Meanwhile, regional leaders are already crafting a new narrative for manufacturing: that it not only pays well, but also involves craftsmanship, skilled technicians, a collaborative approach, and a focus on sustainability.³⁷

The sector also offers increasing opportunities for small businesses and entrepreneurs. A forthcoming report from the Massachusetts Institute of Technology, "Production in the Innovation Economy," predicts that domestic manufacturing will shift away from a landscape dominated by large corporations. "Instead, the future of manufacturing will consist of smaller firms that may not always have enough money to train workers, commercialize new products and procure financing on their own."³⁸

Connection to Rural & Underserved Communities

Manufacturing is especially important to rural communities throughout Appalachia. In North Carolina, for example, it accounts for 14 percent of total employment and \$9.3 billion in annual wages in rural communities.³⁹ Manufacturing also provides higher-quality jobs than many rural industries; in North Carolina, the average rural manufacturing wage of \$42,297 is nearly a third higher than the average for other private, non-manufacturing jobs.⁴⁰

Workforce retraining offers significant opportunities for low- and middle-skilled workers in rural communities. Community colleges, universities, nonprofit organizations, and regional collaborations such as the Appalachia Funders Network are supporting a wide range of services for business development and job training, helping prepare the Region to meet the demands of the rapidly changing manufacturing sector.⁴¹

³⁶ Economic Modeling Specialists, Inc. May 2009. "How to Prepare Jobseekers for the Green Economy." Moscow, ID: Economic Specialists, Inc. as cited in RTS Inc. ARC Energy Workforce Trends and Training Needs, p. A-25.

³⁷ Interview: Molly Hemstreet, Manager, Opportunity Threads. Sept. 24, 2013.

³⁸ MIT: Production in the Innovation Economy. As cited in Plumer.

³⁹ NC Rural Center.

⁴⁰ Ibid.

⁴¹ Plumer.

Manufacturing Case Study I: Gat Creek Furniture

Location: Berkeley Springs, West Virginia
Contact: www.gatcreek.com

As a West Virginia native and furniture designer, Gat Caperton was uniquely positioned to recognize the opportunity to connect Appalachia's bountiful hardwood forests with value-added furniture production. He stepped into this niche, and Gat Creek Furniture was born.

Opportunities for Appalachia: Value-Added Manufacturing & Demand for USA-Made Products

The reinvention of manufacturing in Appalachia presents a promising horizon, according to Caperton, who calls himself "a believer in value-added manufacturing for Appalachia." For hardwood furniture manufacturing in particular, being close to a source of high-quality raw materials is a significant advantage as shipping costs increase. At the same time, manufacturing technologies are becoming increasingly effective and affordable, allowing enterprises in rural Appalachia to compete in larger markets.

"16 years ago, West Virginia was cutting down trees, sending them away, and buying back the furniture made from them. I believed the entire process could be done here when I bought the company, and it's proven to be a viable and successful business."

—Gat Caperton, owner, Gat Creek

Appalachia is also endowed with what Caperton calls a "fantastic agrarian workforce. People get up early and work hard, are 'ingenuitive,' and are self-sufficient." These qualities may make Appalachian workers ideally suited for value-added manufacturing, and allow Gat Creek to avoid having to hire outside experts since the locals can figure it out for themselves.

Manufacturing in Appalachia is also capitalizing on a renewed emphasis on products that are made in the United States.

According to Caperton, this interest didn't exist five years ago, but now there is a great appreciation from mainstream buyers. The "Made in the USA" narrative has historically been about auto workers and patriotism, but is now more about environmental and community sustainability. "People recognize that it's good for companies to be based here and to employ people who work here. Buying USA-made costs a little more, but affects a lot more."

Critical Resources & Partners: Capital, Coaching, Production Networks, and "Gazelle" Customers

Traditional manufacturing businesses are relatively bankable, due to the tangible assets and inventory that make it easy for banks to make loans. Even so, capital is a significant early barrier for entrepreneurs. Caperton's advice is for companies to focus on being capital-efficient, operating as leanly as possible with limited capital. Caperton is also a board member of a local community development lender, the Natural Capital Investment Fund (NCIF). NCIF and other community development financial institutions are powerful resources for providing and leveraging capital, particularly for the many investments in Appalachia that are small-scale and effort-intensive.

Besides capital, good coaching and technical assistance from experienced business professionals and others has been critical to Gat Creek's success. "With good



Photo courtesy Robert Peak

coaching and technical assistance, you can overcome a lot of barriers. Having ARC and other service providers involved in the Region, there are some unique resources in Appalachia that are pretty valuable. There are lots of business support resources out there," says Caperton, "But it's hard for a lot of people to find them, and figure out how to tap and use them, at the same time as you're trying to run a business."

Gat Creek also makes use of an innovative production network to increase sales volume. All of the design, finishing, and marketing is done in-house, and products are sold under the Gat Creek brand. However, about half of the unfinished furniture – mostly drawers and other simple components that aren't as technology-intensive – is built by a network of 20 small workshops. These largely Amish and Mennonite workshops, grouped in two clusters in Ohio and Pennsylvania, allow Gat Creek to achieve larger production volume and focus on their specialty of design, marketing and value-added finishing.

Lastly, Gat Creek has capitalized on the growing value-added niche in the furniture market. Manufacturing businesses face difficulties securing larger retail partners who can help operations like Gat Creek reach a broad base of end consumers. The key to accessing large urban markets, where the demand for high-end furniture products is greatest, is identifying the right customers. Caperton has utilized what he calls the "Gazelle strategy," where a company like Gat Creek builds a partnership with a large urban retail chain that appreciates their value-added products. The retail partner(s) – Crate & Barrel is one of Gat Creek's examples – create a pipeline to urban demand that allows the business to increase its scale and focus on producing quality products, rather than having to constantly search for new markets.

Economic Impacts: Local Ownership & Quality Jobs

For Caperton, economic impact begins with local ownership. When a company is locally owned, the money it generates stays in the community; it gets services from other local businesses, helps maintain the tax base, and continually invests in the general health and well-being of the region. Gat Creek's annual sales are approximately \$14 million, and much of that remains in the local economy.

Best Practices & Lessons Learned

- ✂ Take advantage of support resources such as capital from CDFIs, technical assistance, and business coaching.
- ✂ Be capital efficient and operate as leanly as possible.
- ✂ Capitalize on the Made in the USA trend; tell your story and build on the local connections.
- ✂ Build production networks that increase capacity and allow you to focus on your strengths.
- ✂ Identify your "value-add" – the consumer demand you're meeting and the market niche you're filling.
- ✂ Find the "gazelles" – build relationships with large urban retailers who value your work and understand how to position your product for success.
- ✂ Be aware that manufacturing in a rural community isn't easy, but is ultimately very valuable. It is hard for rural companies to serve urban markets, but when it works, it's a powerful business model.

"Our payroll turns over a lot in this community," says Caperton, "That impact on the economy is very real and very powerful."

While his company provides work for 120 employees, the number itself doesn't mean much to Caperton. "It's great to create jobs, but the number of jobs is not a great measure. One good job is worth five low-quality jobs. Manufacturing should generate good jobs." Good manufacturing jobs entail tangible elements like a living wage, safe workplace, and health care, as well as intangibles like a workplace that appreciates the laborers and gives them a chance to have pride in their work.

Additional Resources

For other manufacturing network models: **Carolina Textile District** (North Carolina), **Contraxx Furniture** (Ohio), **Mid-Atlantic Technology, Research, and Innovation Center** (West Virginia)

For more information on CDFIs: **Natural Capital Investment Fund** (West Virginia); **Virginia Community Capital** (Virginia); **Kentucky Highlands Investment Corporation** (Kentucky); **Mountain Bizworks** (North Carolina)

Local Food Sector Overview



National Trends

In recent years, the local food sector has demonstrated strong and steady growth on a national scale. The dialogue about food, and in particular local food, has begun to enter the mainstream of American consciousness. This trend is apparent in media coverage, policy changes, academic publications, and increased consumer demand for local food.

The growth in demand for local food in recent years has been impressive. Direct-to-consumer sales, which include local farmers markets, community-supported agriculture programs and on-farm sales, grew 117 percent between 1997 and 2007, from \$551 million to \$1.2 billion.⁴² Overall, including retail and restaurant purchases, total local food sales in 2008 were slightly less than \$5 billion nationally, and have continued to grow steadily through 2012.⁴³

Federal, state, and local governments have shown increased support for local food systems through policy changes and resource allocation. Federal grant and loan programs, as well as technical assistance and training, are

widely available and increasingly utilized. Meanwhile, there is a robust network of regional and national organizations dedicated to supporting and expanding local food systems.

Opportunities & Challenges in Appalachia

The local food sector is particularly promising for the Appalachian Region. Appalachia possesses a variety of cultural assets supportive of local food system development, including an on-going tradition of small farming and home gardening, regional food diversity, knowledge of seed-saving and the cultivation of heirloom varieties of local food, and a rich cultural heritage of craft, music, storytelling, literature, and customs related to food. Appalachia is also home to some of the nation's most visionary leadership in the local food movement, as numerous organizations are working to develop a diversified local food infrastructure of farmers markets, food-processing facilities, shared-use kitchen incubators and processing centers, and aggregation and distribution centers.

One of Appalachia's core challenges, however, is the relatively small size of its farms. For example, median farm size in Appalachian Kentucky is just 83.5 acres; in West Virginia, 89 acres; in Ohio, 79 acres; in Virginia, 70 acres.⁴⁴ Therefore, developing local food systems that

⁴² Martinez, Steve. et. al. 2010. "Local Food Systems: Concepts, Impacts, and Issues." United States Department of Agriculture Economic Research Service, Washington, DC: May 2010. p. 8.

⁴³ Matson, James, Martha Sullins and Chris Cook. "Role of Food Hubs in Local Food Marketing." USDA Rural Development Service Report 73. January 2013. p. 9.

⁴⁴ USDA National Agricultural Statistical Service, 2007. Accessed at <http://www.nass.usda.gov>.

serve as economic drivers requires strategies that increase capacity and market access for small producers. According to the Central Appalachian Network, needed services and infrastructure include processing, aggregation and distribution facilities; models and systems that connect farmers to institutional markets while continuing to support direct sales outlets; technical and business support to local producers; and development of value-added infrastructure and knowledge.⁴⁵

Economic Impact & Job Creation Potential

Local food is increasingly recognized as a high-impact sector for job creation and economic development. Income and employment benefits in the local food sector occur through substitution (buying local instead of farther away) and localization (processing closer), and both methods result in additional jobs and more dollars circulating in the local community.⁴⁶ Economic output multipliers, which measure the impact of sales on the local economy, range from 1.55 to 1.78. This means that every dollar of local food sales stimulates another \$0.55 to \$0.78 in other sales and income in the local economy.⁴⁷

A recent study found that if West Virginia farmers grew enough fruits and vegetables to meet the in-season fresh produce needs of all state residents, such a shift would generate 1,723 new jobs and contribute an additional \$35.7 million in local sales. Additionally, growing this extra produce would require cultivating less than 10 percent of West Virginia's undeveloped prime farmland.⁴⁸ These figures may be similar across the rest of Appalachia.

In 2009, approximately 94,000 people in Central Appalachia were employed in agriculture, yet there were over 97,000 farming operations, suggesting the importance of small-scale farming as a source of supplementary income. However, the employment potential in local food systems is not limited to production. A study found that for each full-time job created by farmers markets, nearly half of another full-time job was created elsewhere in the local economy.⁴⁹

⁴⁵ Central Appalachian Network and Central Appalachian Forestry Alliance. "Opportunities for Land-Based Economic Development in Central Appalachia."

⁴⁶ Martinez et. al.

⁴⁷ Swenson, D. 2010. "Selected measures of the economic values of increased fruit and vegetable production and consumption in the upper Midwest." Ames, IA: Leopold Center for Sustainable Agriculture. Otto, D. 2010. "Consumers, vendors, and the economic importance of Iowa farmers markets: An economic impact survey analysis." Ames, IA: Strategic Economics Group.

⁴⁸ Hartz, Laura, et. al. "West Virginia Food System: Seasonal Production Expansion and its Impacts." Downstream Strategies, West Virginia University, West Virginia Food and Farm Coalition. 17 January 2012.

⁴⁹ Otto, D.

In West Virginia 31 farmers markets generated an estimated 69 full-time equivalent jobs and \$656,000 in labor income.⁵⁰

It is also worth noting that local food intermediation models, such as food hubs, dramatically increase the scale of local food's economic impact. An analysis by the USDA's Economic Research Service found that "marketing of local food via both direct-to-consumer and intermediated channels grossed \$4.8 billion in 2008 – about four times higher than estimates based solely on direct-to-consumer sales."⁵¹

Other immediate economic benefits of a local food system can include improvement in residents' health (due to fresher and less processed food), food security (especially when supplemental benefits can be used at farmers markets), reduced environmental impact, and maintenance of working lands.⁵²

Connection to Rural & Underserved Communities

For small-scale rural farms, market entry and infrastructure remain key challenges. For these food and farm businesses, capacity constraints and the lack of distribution systems are typically the greatest obstacles to economic viability. Intermediation models such as food hubs are "part of a growing local food system that strengthens rural economies by lowering entry barriers and improving infrastructure to create, as well as expand, regional food markets. They can also create rural jobs. This rural on- and off-farm employment can expand opportunities and encourage skilled people, including youth, to remain in rural areas."⁵³

In addition, efforts to connect local farmers to public schools and to increase access to farmers markets are promising for public health reasons. And, despite claims that local food is not affordable for low-income consumers, a recent study found that price is not a barrier for low-income shoppers at farmers markets – rather, the keys to improving access to healthy, fresh, and local food are more accessible locations and increased information.⁵⁴

⁵⁰ Hughes, David, et al. 2008. "Evaluating the Economic Impact of Farmers Markets Using an Opportunity Cost Framework." *Journal of Agriculture and Applied Economics*, Vol. 40: p. 253-265.

⁵¹ Matson et. al. p. 9.

⁵² Hartz et. al.

⁵³ Matson et. al. p. 6.

⁵⁴ Project for Public Spaces & Columbia University. "Farmers Markets as a Strategy to Improve Access to Healthy Food for Low-Income Families and Communities." Robert Wood Johnson Foundation. Accessed at: <http://www.pps.org/wp-content/uploads/2013/02/RWJF-Report.pdf>.

Local Food Sector Case Study I: The Greenbrier Valley

Location: Greenbrier Valley, West Virginia
Contact: www.greenbriervalley.org

The Greenbrier Valley, in southeastern West Virginia, is the watershed shared by Pocahontas, Greenbrier, and Monroe counties. While efforts in the local food economy have a long history, several related initiatives that have been operating since 2010 show great promise. These initiatives include:

- **The Greenbrier Valley Local Foods Initiative (GVLFI):** The initiative, a project of the Greenbrier Valley Economic Development Corporation, provides technical assistance and training for food and farm entrepreneurs; recently launched the “Greenbrier Valley Grown™” brand; and is exploring the feasibility of a processing, aggregation, and distribution facility for area farmers.
- **The Greenbrier Valley Pasture Network (GVPN):** GVPN works to support and educate local farmers on pasture-raised meat production through regular meetings and workshops on topics such as conservation, land restoration, and animal health, as well as organizing an annual farm tour.
- **Monroe Farm Market (MFM):** MFM is a farmer cooperative that also serves as an aggregator and online marketplace for local food products. Through their web-based platform, MFM sells products from 25 farms in the Monroe County area and reaches markets as far away as Charleston, West Virginia.

Opportunities for Appalachia: Rural-Urban Connections, Branding, & Agritourism

These organizations work together to strengthen and connect their area’s agricultural assets, helping local food and farm entrepreneurs capitalize on the increasing consumer demand for locally-grown food and authentic rural landscapes. This growing demand for local agricultural products, and the corresponding opportunities for area farmers, is present across much of Appalachia.

The Greenbrier Valley also faces challenges that are seen throughout Appalachia, including lack of market access and distance from highly populated urban centers. To overcome the challenge of geographical isolation, the Monroe Farm Market creates rural-urban connections via its online marketplace and by serving as an aggregator and distributor of locally grown food. The online marketplace and pooling of local

products creates the opportunity for rural farmers to reach customers in larger urban demand centers such as Charleston, West Virginia.



Photo courtesy Leah Elizabeth Photography

The Greenbrier Valley Local Foods Initiative is also working to create rural-urban connections. GVLFI has launched a feasibility study to look at the possibility of developing a processing, aggregation, and distribution (PAD) facility. The PAD facility aims to aggregate and process the products of local growers in order to serve larger markets and increase food-based economic activity in the region. Meanwhile, the recently-launched Greenbrier Valley Grown™ brand will create a common place-based identity for local food and farm entrepreneurs that will result in increased market exposure and consumer awareness for local products. Greenbrier Valley Grown™ certifies not only produce and meat, but also value-added products, farmers markets, food-related retailers, and restaurants.

The Greenbrier Valley also has a growing demand for agritourism. The GVPN is currently working with Dr. Carol Kline, Assistant Professor from the Center for Sustainable Tourism at East Carolina University, to create a multi-stop farm tour that will connect visitors to agricultural sites across the Greenbrier Valley. Kline recognizes that agritourism will not fit all farmers’ interests right away. “The goal is not to convince farmers to sign up—it’s to let them know that this is a revenue generating alternative; it’s a tool that some are using successfully to increase brand recognition, form that emotional connection with customers, and educate people that not all meat is alike.” Participating farms receive agritourism resources, training, and marketing support to help maximize the income generation potential of their farms.

Critical Resources & Partners: Cross-Sector Collaboration, Supportive Policies & Funding

Collaboration between mainstream economic development institutions and grassroots organizations has been integral to the development of the Greenbrier Valley local food economy. The Greenbrier Valley Economic Development Corporation (GVEDC) has helped area farmers markets access funding, acted as the fiscal sponsor for non-501(c)(3) organizations, and provided office space for start-up groups. The West Virginia University Small Farms Center has provided local food education, networking opportunities at its annual conference, vendor guides, and toolkits for small farmers. In addition to providing local market outlets, grassroots organizations like the Monroe Farm Market, the Pocahontas County Farmers Market and the Greenbrier Valley Pasture Network also conduct community outreach and education, provide networking opportunities for growers and local food supporters, and help leverage additional resources for the continued development of the food economy. AmeriCorps VISTA positions have been used widely and successfully to increase the capacity of grassroots efforts and train the next generation of local food leaders.

Statewide policies that support local foods have also been essential. The West Virginia Food & Farm Coalition (WVFFC) works across the state to build public awareness and create policies that support the local food economy. One recent policy victory is the state's launch of a farm-to-school initiative, which works to connect K-12 schools with locally-produced foods. This represents a promising new economic opportunity for growers. In 2012, 20 county school systems purchased locally-grown agricultural products from West Virginia farmers. The value of these purchases was approximately \$90,000 for the first three months of the school year.

The investments of local, regional, and national funders have also been critical to the development of West Virginia's local food economy. In 2012, West Virginia received 2 out of the 13 federally awarded Rural Jobs Accelerator Grants offered through a partnership between the Economic Development Administration, the USDA Rural Community Development Initiative and the Appalachian Regional Commission. Also, since 2009, the Natural Capital Investment Fund, through its participation in the Central Appalachian Network (CAN), has provided critical start-up funding and organizational development support to grassroots local food efforts.

Best Practices & Lessons Learned

- Before implementing local food development projects, establish clear goals that are informed by feasibility studies, baseline measures, and business plans.
- Connect with regional and state-wide networks such as CAN and the WVFFC to share and connect strategies.
- Create partnerships with economic development entities by showing the economic impact of local food.
- Develop strategies for tapping into urban demand for local food and rural landscapes.
- Having regular community meetings is essential for maintaining project momentum and farmer participation.
- Invest in infrastructure needed to connect pieces of the supply chain – producers, aggregators, distributors, etc.
- Advance local and statewide policies to support local food systems.

Economic Impacts: Market Development & Producer Capacity

The West Virginia Food and Farm Coalition, West Virginia University, and the WVU Extension Office conducted a baseline study that concluded West Virginians spend \$2.5 billion on food for at-home consumption. Almost 18 percent – or \$421 million – of this amount is spent on vegetables and fruits.⁵⁵ According to the study, a five-percent increase in local food consumption by West Virginia residents would generate an increase in annual income of \$200 million for the state. Because 90 percent of money spent on local food returns to the economy, local food system development has enormous potential to positively impact rural and underserved communities in the Greenbrier Valley and across Appalachia.

Central Appalachian Network (CAN) Local Food Data for Greenbrier Valley in 2012

\$122,558

Revenue to
25 producers

65

Employment
positions (full-
time jobs or
supplementary
income)

600

Acres of local food
production, over
500 organic or
chemical-free

⁵⁵ Hartz, L., Eades, D., Brown, C., McConnell, T., Hereford, A. Boettner, F. (Jan. 2012). "West Virginia food system: Seasonal production expansion and its impacts". Downstream Strategies. Accessed at: http://www.downstreamstrategies.com/documents/reports_publication/ds_food_system_report_final.pdf.

Local Food Sector Case Study II: Appalachian Harvest

Location: Duffield, Virginia
Contact: www.asdevelop.org/programs/appalachian-harvest

In recent decades, Southwest Virginia's agricultural economy has been adjusting to the loss of tobacco as a viable cash crop. Appalachian Sustainable Development (ASD), a nonprofit organization based in Abingdon, Virginia, recognized the need to equip traditional tobacco farmers with alternative crops and broader markets. While there was no single crop that could replace tobacco, the growing demand for locally-produced food spurred ASD's creation of Appalachian Harvest (AH) in 2000. AH is a food hub that provides an aggregation and distribution facility, branding and marketing services, and training and support for vegetable producers.

Opportunities for Appalachia: Demand for Local Foods & Aggregating Small Farmers

ASD Executive Director Kathlyn Terry and AH Manager Robin Robbins has observed a strong and steady increase in the demand for local produce among mainstream buyers. Appalachian Harvest has capitalized on this demand to help drive the growth of area farm and food businesses, building on the characteristics and assets of Appalachia's farming communities. According to Tamara McNaughton, a grower who sells to Appalachian Harvest, "People have been growing produce forever, but the markets have either been extremely local or [reached] through large distribution channels." AH represents a new model that helps aggregate produce from small- and medium-sized farms in order to meet regional demand, while also working with some larger farmers that help keep AH's supply consistent. As Robbins describes, "It's a response to the 'get big or get out' mentality. Many of our smaller guys are never going to get big, but there is power in numbers."

Alongside growing consumer demand, there is now wide acceptance among economic development professionals that local-food production is a viable development strategy.

Critical Resources & Partners: Startup Resources, Buyer Partners, and Farmer Capacity

Appalachian Harvest arrived early to the food hub scene, and could not have been successful without crucial support during its start-up phases. One of their earliest

challenges was finding investment and funding for initial infrastructure—a common barrier for aggregation and distribution projects. ASD was able to secure a variety of resources in the form of grants and government funding, and has steadily moved towards the goal of being self-sufficient. Currently, around 90 percent of AH's operating cost is covered by sales, with the remaining 10 percent coming from grants and other forms of fundraising.

Appalachian Harvest has also relied on consistent support from its buyer partners. In solving distribution logistics that address the geographical challenges of the area, they've leaned on the expertise of their experienced buyers. Partners such as Ingles Markets (a regional grocery store chain) and Whole Foods have provided advice on a range of issues and even loaned AH much-needed equipment during a crisis. Robbins shares that "our buyers are partners who have a stake in AH's success—without their patient support AH would not be functioning at its current level of capacity and without AH our buyers would have a much harder time meeting customer demand for local produce."



Photo courtesy Appalachian Sustainable Development

Obviously a food distribution entity can't be successful without its core partner—the farmer. AH has invested heavily in developing trust and relationships with area farmers and in increasing the capacity of local growers. While upholding common standards across a large and diverse collection of farmers remains a challenge, AH continues to prioritize farmer preparedness as a cornerstone of the enterprise. Good Agricultural Practices (GAP) and USDA organic certifications are expensive,

complicated, and often difficult for small farming operations. To lower this barrier, AH provides a cost-share for certification, training workshops, and tools that walk farmers through the preparations, paperwork, and inspections. The quality standards of mainstream buyers are also challenging for small growers, so AH provides a variety of tools and training that help farmers understand the quality requirements for every type of product.

Economic Impacts: Purchasing Security & Farm Income

Supporting small rural farmers, the mission of Appalachian Harvest, poses a number of challenges. Says Terry, “It would have been more practical to put our packinghouse in the middle of a large number of big farms near the interstate, but the goal was to provide opportunities where there weren’t any. This has always been the intention.” Aggregating produce from small farmers to meet mainstream commercial demand is not easy, but Appalachian Harvest has been successful in creating access to large wholesale buyers for farmers that would otherwise be excluded from this market.

By connecting to the consistent demand of larger markets, Appalachian Harvest provides a rare value for growers: “purchasing security.” According to McNaughton, “The guarantee of being able to sell is what allows a farmer to plan securely. Going to the farmers market you load up the truck and don’t know how much you’ll sell; with AH, we know whatever is picked is going to be sold. In the past, a farm family had to run around miles in every direction trying to peddle their produce. AH saves a lot of time on the sales, distribution, and marketing side of things.” This saved time allows growers to focus their efforts on adding acreage, expanding production, increasing farm income, and adding more jobs.

AH’s 2012 Numbers

Over	Purchases by	Over
\$1 million	18	175
in total sales	different retailers	farming jobs provided by 20 different producers

Best Practices & Lessons Learned

- 🍌 Approach food hubs or aggregation and distribution enterprises with a business mentality. The concept of “if you build it, they will come” isn’t true; you need a feasibility study and a solid business plan in order to make it work.
- 🍌 Prioritize farmer capacity and production volume to make sure you’re able to meet customer demand. The demand for local products will be there. Consistent supply is the challenge.
- 🍌 Have a diverse base of products. AH started with a sole focus on in-season organic produce, but it takes a diverse array of products (i.e. organics, conventional, and value-added products) to maintain a consistent cash flow throughout the year
- 🍌 Diversify your markets. It’s important to create a broad variety of market options to accommodate different-sized farmers.
- 🍌 Market the “social” aspect of your social enterprise, as well as the environmental benefits. Consumers are willing to pay more for products, and develop loyalty to brands, that they see as benefitting their own communities and regions.
- 🍌 Identify your core strengths and areas of expertise as a business. Focus on the roles that only you can play, and partner with others with complementary strengths to fulfill other roles.

Appalachian Harvest’s overall economic impacts are significant, especially given the challenges in which they operate. AH’s model helps create jobs all along the path to market, from the fields to the packinghouse to the distribution trucks. For Robbins and Terry, however, AH’s most important impact is the benefit for local farm families. Robbins warns to “never underestimate the importance of buying even a small volume of produce from a particular family. We only buy 3 or 4 cases of shiitake per week from one family, but that helps them make ends meet.”

Additional Resources

For more information on innovative local food initiatives: **Appalachian Sustainable Agriculture Project** (North Carolina), **Appalachian Center for Economic Networks** (ACEnet - Ohio), **Pennsylvania Association for Sustainable Agriculture** (PASA - Pennsylvania)

List of Interviewees

This project would not have been possible without the helpful contributions of all those interviewed for the case studies. We would like to thank the following interview participants for each case study:

How\$martKY™

- Bill Blair, How\$martKY™ Program Coordinator, MACED
- Tina Preece, Energy Advisor, Grayson Rural Electric

Ohio University Innovation Center

- Jennifer Simon, Director, Ohio University Innovation Center

LiveWell Greenville

- Bob Mihalic, Government Affairs Coordinator, Greenville County
- Eleanor Dunlap, Former Lead Facilitator, LiveWell Greenville
- Dr. Alicia Powers, Evaluation Coordinator from Furman University, LiveWell Greenville
- Katy Smith, Executive Director, Piedmont Foundation

Hale County Health Development Partnership

- Dr. John Wheat, Principal Investigator, Hale County Health Development Partnership
- Melissa Cox, Project Director, Hale County Health Development Partnership

Gat Creek Furniture

- Gat Caperton, Owner, Gat Creek Furniture

Greenbrier Valley

- Jennifer “Tootie” Jones, President of the Greenbrier Valley Pasture Network
- Dr. Carol Kline, Assistant Professor, East Carolina University, Greenbrier Valley Pasture Network
- Jill Young, Former Project Coordinator, Greenbrier Valley Local Foods Initiative
- Quincy Gray McMichael Lewis, Project Coordinator, Greenbrier Valley Local Foods Initiative
- Steve Weir, Executive Director, Greenbrier Valley Economic Development Corporation

Appalachian Harvest

- Kathlyn Terry, Executive Director, Appalachian Sustainable Development
- Robin Robbins, Manager, Appalachian Harvest
- Tamara McNaughton, Farmer and AH Grower

Acknowledgements

We would like to offer a special thanks to the project’s Advisory Team for their valuable input on the case study selection process and publication:

- Bobby Lewis, West Virginia State Director of Rural Development, USDA
- Jennifer Simon, Director, Ohio University Innovation Center
- Justin Maxson, President, Mountain Association for Community Economic Development (MACED)
- Kim Barber Tieman, Program Officer, Claude Worthington Benedum Foundation
- Mikki Sager, Vice President, The Conservation Fund
- Peter Hille, Executive Vice President, MACED

About the Authors: This paper was written by Rural Support Partners, a social enterprise working across the rural southeastern United States to strengthen anchor organizations, foster strategic networks, and support asset-based economic development efforts. The Rural Support Partners research team for this project consisted of Thomas Watson, Andrew Crosson, and Erin Harris, with writing support from Mary Snow and Kathryn Coulter.

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