

Western North Carolina

Natural Products Economy Opportunity Assessment

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Purpose of Study

The purpose of this study is to answer the following three questions:

- What is the current state of NP industry in WNC?
- What are the barriers to growth?
- What is the future potential?

The use of Natural Products has a long and varied history in the region of Western North Carolina. It can be traced back to the indigenous people of the Cherokee Indian Tribe who lived off the land for both food and medicine. These traditions continue today and are utilized by a diverse community that has benefited significantly from the remarkable biodiversity found here.

The region is known as a temperate rain forest with over 15,000 species of plants able to thrive in the climate. The high elevations have a canopy of trees in the forest that produce a cooler temperature allowing northern plant species to survive and the lower elevations produce a different ecosystem for the more southern tolerant plant species. In addition, an abundant supply of mountain water is generated at the higher elevations and serves to benefit the entire region allowing the growth of almost any type of plant. This wet environment also supports a high diversity of fungi with over 2000 species documented in the region and scientists estimate that there are many more unidentified fungi.

From this extraordinary natural resource, it is not surprising that a natural product economy would emerge as a viable and sustainable economic development opportunity. It operates in conjunction with other industries in the region including tourism industries, personal and home care industries, food manufacturing and packaging industries, education and research industries, agriculture industries, and home and garden industries. As in all areas of the world, where economic growth occurs, there are always challenges. In this case, the unique beauty and eclectic nature of the region has attracted large numbers of retirees, leading to widespread suburban development that threatens the region's irreplaceable biodiversity and creates significant challenges to the artisan agricultural community by driving land prices so high it is difficult to obtain the margins necessary for a profitable farming venture. It is now necessary to formally gather all the industries of WNC whose market and nature overlap to develop a plan to collaborate and work together to improve the regional economic development. By themselves they cannot foster a strong and sustainable economy, but together they can succeed. For the purpose of this report, we will refer to this as the Natural Products and Service Economy (NPSE).

The actual size and impact of this economy is very difficult to accurately determine because of the fragmented markets in which it operates. The purpose of this research assignment is to begin accumulating the market information available within the 14 counties of Western North Carolina (see Exhibit 1) and to identify the gaps of what is needed and make some recommendations to enhance the growth on a regional level.



Exhibit 1: NC Western 14 Counties

Project Investigation Methodology

The research process begins by obtaining a snapshot of the “current reality” described by prominent natural product experts. To do this, individuals were interviewed from all sectors of the industry including business owners, associations, forest and plant experts, technical assistance program directors, farmers, manufacturers, educators, and scientists. All interviewees are currently operating within the NPSE or are resources available to the region (see Appendix A for a list of interviewees).

These individuals were asked a series of questions about their role, current programs and future vision for the NPSE (see Appendix B for a list of interview questions). Based on the interviewee’s responses to these questions, the information was compiled to identify and evaluate the following:

What is working? (Our skills and abilities & Positive market trends)

What is not working? (Things we have tried but need to be altered or discontinued)

What is needed? (What other skills, resources or certifications are needed?)

What are the barriers? (Known or expected challenges in the market, legal, or competition)

One of the purposes for this detailed interview process was to identify clusters of activity and then map the value chain that currently exists. The information obtained from experts in the field suggests the current state of the Natural Product and Service Economy in WNC involves five (5) categories within the value network (See Exhibit 2).

Another purpose of the interview was to compile potential visions for the future of NPSE, identify the resource gaps, and define the barriers and challenges to the future growth of the economy. This information was used to identify areas that appear regional in scope and would serve to make the natural product and services economy stronger in WNC.

In addition to the interview, a senior business capstone class at Western Carolina University was challenged with preparing extensive market research to investigating driving forces for the NPSE at international, national and regional levels. Benchmarked against WNC regional resources and capabilities, the students identified growing and emerging natural products and service industries that are most suitable for WNC. Six opportunity clusters with their associated driving and impacted industries within WNC NPSE emerged.

After compiling and reviewing the information from both sources, the project report will outline discoveries and recommendations to serve as a catalyst for regional economic growth. The recommendations are regional ideas that support the key industry drivers within the Natural Products Service Economy. The long-term desired result is to establish a baseline and a methodology to track the impact of this large, fragmented economy for the benefit of the multi-county region.

Market Research Highlights

Twenty-first century consumers are increasingly health conscious and concerned about where their food comes from, how it is made and by whom. These consumers demand product authenticity and aim to leave a smaller footprint behind. Roughly 36% of U.S. consumers investigate companies' environmental practices before making a purchase decision. IBIS World Industry Report indicated that revenue from genetically modified products from 2012 to 2014 has dropped by 12.3% and continues to steadily decline. These market developments are due to some of the following trends:

- High meat and sugar consumption have led to an increase in diabetes and obesity rates in the U.S. and global¹. Countries, such as China, are making plans to cut consumptions of these products by 50%.².
- Everything from technology overload to anxiety about healthcare and the economy is taking a toll on Americans. A recent study revealed that the average stress level among Americans rose from an all-time low of 4.8 in 2015 to 5.1 in early 2017 on a scale of 10. As a result, more consumers are reporting disrupted sleep, anxiety, irritability, and fatigue and turning to self-care techniques like meditation, exercise, and dietary changes to mitigate the effects of stress. Consumers want to feel some degree of certainty in the world; and the ability to take care of each other, the planet, and feel more intentional and purpose-driven than ever before.
- Roughly 38% of consumers in 2016 indicated knowing the ingredients in foods are essential in their buying decisions³. For this reason, companies are investing more attention to ingredient transparency and product labeling.
- Deforestation and forest degradation are estimated to contribute up to 20% of global greenhouse gases (GHG) every year causing high CO₂ levels and ultimately global warming⁴. Climate change is projected to increase by more than 2°C above pre-industrial levels and may even exceed 5°C over by the end of the century. Such intensified conditions negatively impact natural and wild plant growth and cultivation⁵.
- United Nation's 2015 climate change report indicated that 37% of bee species are declining while 9% of butterfly and bee specifics are facing distinction⁶ due to Colony Collapse Disorder (CCD). For North America, this means more than 700 honeybee species are declining and risk distinction⁷.

¹ Bhupathiraju & Hu (2017). Epidemiology of obesity and diabetes and their cardiovascular complications. PMC National Institute of Health.

² Barkley & York

³ <https://www.bloomberg.com/view/articles/2018-06-29/usda-should-trust-the-facts-on-gmo-labeling>

⁴ <https://www.maplecroft.com/about/news/ccvi.html>

⁵ European Union, <http://www.consilium.europa.eu/en/policies/climate-change/>
https://ec.europa.eu/clima/policies/strategies/2050_en

⁶ <http://time.com/4688417/north-american-bee-population-extinction/>

⁷ <https://www.epa.gov/pollinator-protection/colony-collapse-disorder>

As a result, the natural and organic industry is expected to be valued at \$25M in 2025. Larger companies are becoming more green and switching to organic practices, or merging smaller organic based businesses⁸.

- Global organic food sales grew from \$68.5B in 2013 to \$81.6B in 2015. Globally 27% of consumers tend to agree that organic foods are worth the price⁹. The U.S. is the leading market for organic food sales with \$35.9B euros, Germany second with \$8.6B euros, France ranked third with \$5.5B euros, and China fourth with \$4.7B euros. Other fast growing emerging markets Switzerland and Denmark¹⁰.
- Retail sales of organic food increased from \$3.6B in 1997 to \$18.9B in 2007, accounting for over 3 percent of total U.S. food sales¹¹.
- Grand View Research indicated that global organic beauty market is projected to reach \$15.98B by 2020 with an annual growth rate of 8-9%.
- According to The NPD Group, consumers over the past decade under the age 40 have increased fresh vegetable intake by 52%. Grocery stores increased vegetarian options by 25% and vegan products by 257%¹².
- Nielsen's 2015 Global Health & Wellness Survey of 30,000 individuals online suggested that consumer mindset about healthy foods has shifted and they are ready to pay more for products that claim to boost health and weight loss, GMO-free, have no artificial coloring/flavors and are deemed all natural¹³.
- Plant-based proteins to replace meats are on the rise, which is a more sustainable, affordable, and nutritious alternative. These proteins can be found in peas, chia, hemp, beans, and lentils¹⁴.
- Growth in fitness technology also signified consumers' increased healthy lifestyle choices. In 2013, fitness bands sales had reached \$3.3M in the U.S. and digital fitness market is valued at \$330M¹⁵. Consumers' healthy living choices also enhanced small kitchen appliance sales for blenders, juice extractors, and citrus juicers. The overall global wellness economy reached \$3.7T in 2016 and is expected to accelerate by 17% in the next five years¹⁶.
- In North Carolina, to protect the health of beehives, state lawmakers are pushing to enforce the Pollinator Protection Act. Neonicotinoid, one of the most widely used pesticides in the U.S. resulting in a loss of honeybee colonies, would be banned from unlicensed home, garden, and landscape applications, which result to 25 percent of its use¹⁷.

⁸ <http://www.freshfacts.co.nz/files/freshfacts-2015.pdf>

⁹ Worldwide sales of organic foods, 2015

¹⁰ Worldwide sales of organic foods, 2015

¹¹ Smith, 2009

¹² <https://www.foodnavigator-usa.com/Article/2018/01/03/Veganism-continues-to-climb-among-early-adopters-brand-loyal-consumers>

¹³ Gagliardi, 2015

¹⁴ https://www.washingtonpost.com/lifestyle/wellness/checking-the-crystal-ball-for-2017-food-trends/2016/12/07/ead326ac-ac2a-11e6-8b45-f8e493f06fcd_story.html?noredirect=on&utm_term=.3644203f9158

¹⁵ Think Fit Bit, Fuel band and Timex Sport

¹⁶ <http://www.womensmarketing.com/blog/2014/11/health-and-wellness-market/>

¹⁷ <https://www.wral.com/bee-protection-bill-filed-in-nc-house-/16586133/>

One of the risks associated with a fast growing natural and organic products market is the regulation, or lack of, behind the “natural” and “organic” claims. Currently, the use of the word “natural” on product labels is not regulated by any regulatory standards. On the contrary, “organic” market is highly regulated where claims must be certified by USDA and attested by the organic seal on the label. The market is costly for businesses with the exception of organic farmers who sell \$5000 or less¹⁸. Because of this, since 2016 more than 100 firms each year rebrand with “natural” identities, some without any changes to the business practices.

Based on these trends, six natural and organic products and services market opportunities emerged: health and wellness spas, medicinal and botanical supplement manufacturing, food and beverage services, craft breweries and craft beer production, cosmetic and beauty products manufacturing, and pet food manufacturing.

NPSE Industry Opportunities

The *Health and Wellness Spas* (NAICS: OD4186) industry has an increased interest in the use of natural products and other natural alternatives. This industry is defined as "companies that offer spa services, such as massages, facials, and body treatments. The health and lifestyle services industry include places that offer these services such as day spas, spa resorts, hotel spas and medical spas"¹⁹. The primary services include massages, various bodywork treatments, skin-care, hair, and nail treatments. Other revenue streams include the retail distribution of spa-related and cosmetic products.

The International Spa Association has found that the primary consumer is women between ages 21 and 65, 77%, contributing to 55% of the industry total revenue. Another key target market is seniors, who currently generate roughly 19% of the total industry revenue and their primary purpose for frequenting spas are for health and medical treatment purposes. At the same time, men between the ages 21 and 65 have emerged as a strong market in recent years, growing from 18% to 23% of the total market from 2013 to 2018. Other growing market segments include teenagers and children, who currently account for 10% of total industry revenue. Many spas are offering special deals and packages for both men and families with teens and young children to attract these target markets.

In a 2017 consumer survey, spa frequenters indicated that the use of natural products and services are important to them and believe it will be the biggest trend within this industry in 2018. Customers are paying more attention to natural ingredients and local products when select spa treatment products. Mark Lumpkin, spa director of Whiteface Lodge in New York, described this as the “new farm-to-table-to-spa movement that integrates numerous components of wellness, education, and relaxation”²⁰.

The 2017 IBIS World Industry Report indicated that the competitive advantage in the wellness spa industry is based on price, service quality, location, customer loyalty, and brand

¹⁸ <https://www.ams.usda.gov/rules-regulations/organic/labeling>

¹⁹ <https://www.travelandleisure.com/trip-ideas/spa-vacations/destination-spas>

²⁰ <https://www.luxurytravelmagazine.com/news-articles/2017-wellness-trends-from-resort-spa-experts>

recognition. Spas on average spend 3.1% of its total revenue on marketing and advertising. To differentiate from other spas and cultivate a pool of loyal customers, Spa operators must possess business expertise and the ability to provide a range of different services to various markets. Some differentiating factors might include technology applications, such as wellness apps and on-demand massages and home services.

The ***Medicinal and Botanical Supplement Manufacturing*** industry, particularly Vitamin and Supplement Manufacturing (NAICS: 32541d) is composed of many smaller industries and markets; from antibiotics to vitamins, herbal supplements to nicotine, or essential oils to morphine. The market is segmented into six broad sectors: vitamins and minerals, herbal and botanical, protein powder, meal replacements and weight-loss products, specialty and elite sports nutritional, and other. The industry has a predicted annual growth of 2.8% from 2017 to 2022, a slight decline from 2012 to 2017 at 3.1%. The total industry export is estimated at \$737.8M.

There are 1,187 businesses within the U.S. operating within the vitamin and supplement manufacturing industry contributing total revenue of \$30.2 billion and is projected to grow to \$60B in 2021. The industry has a low market concentration. In 2017, the four largest companies accounted for approximately 16.4% of the total market. These companies include Nature's Bounty Co., the Otsuka Group, Glanbia Performance Nutrition, and Abbott Laboratories Inc. The industry remains fragmented due to the wide varieties of products offered. New entrants are challenged to find competitive advantages over these established companies. To be successful, they must differentiate through innovative and effective products, which require a substantial investment in research and development.

Focusing on the natural products, the industry produces herbal supplements, medicinal herbs, natural beauty products, and functional herbal food products. BMB Report indicated that there is an increase in the use of medicinal herbs and other natural plant products for treatment purposes. According to Nutraceutical's World, global herbal dietary supplements market is valued at \$11B and growing at an annual rate of 3 to 12%. As of 2016, North America holds 28% of the market for supplement consumption and is expected to continue this growth momentum over the next 13 years^{21 22}. Among the many ingredients, wheatgrass and barley ranked top in sales growth at 131%. Golden seal, ginseng, bloodroot, and black cohosh are also growing in global demand and native to Western North Carolina growing conditions.

The ***Food and Beverage Service*** industry, particularly Single Location Full-Service Restaurants and Street Vendor (NAICS: 72211b & 72233) emphasizing food tourism was defined by the world food travel association as, "The pursuit and enjoyment of unique and memorable food and drink experiences, both far and near." An important factor of food and beverage industry is the overall experience; it is a gateway into other cultures through taste, food preparation, and the whole atmosphere. Food and drink provide memories that define a travel experience.

Farm-to-table restaurants are growing in the U.S. driven by consumers' demand for fresher locally grown healthy alternatives and a sustainable farming movement. For restaurants,

²¹ Zion Market Research

²² American Botanical Council

the farm-to-table movement allowed their support of local agriculture, providing customers quality foods, and contributing to local economy. While seasonality affects 100% local sourcing, some staple items do not rely on seasonality. They include dairy products, alcohol, and meats. For produces that are affected by seasonality, technology innovations such as greenhouses have been implemented²³. A core customer segment within this industry is people who are interested in trying new and sometimes unorthodox food options. These people are excited to experience new things, and at the same time they are conscious of the environment and often choose businesses that are socially responsible.

Food truck or mobile cuisine has also gained traction. Mobile food market has been growing at an annual rate of 8.4% and brought \$2.7M in 2017, compared to the \$803.8M in 2014. The industry has created over 15,000 jobs. Restaurants are also using this option for catering and bringing food to the public.

With digitalization, grab and go mobile apps are gaining popularity, a market driven by tech-savvy and busy millennials demanding fast and convenient services. Beyond restaurants, you can order freshly prepared food for quick pick up without any wait.

Breweries (NAICS: 31212) and **Craft Beer Production** (NAICS: OD4302) industries, defined by the 2017 IBIS World Industry Report, are "The Breweries industry primarily produces alcoholic beverages made from malted barley and hops such as beer, malt liquor, and non-alcoholic beer. This industry excludes wine, brandy, cider and distilled beverages such as vodka and rum. Bottling purchased malt beverages and manufacturing purchased malt are also excluded from this industry". Some of craft brewery industry success factors include: brand recognition, logistic strategies, quality control, and marketing.

Although small-scale independent breweries represent a small proportion of the industry revenue, the popularity of craft beers has led to significant growth among this class of brewers over the past five years and is expected to continue to grow over the next five years. Craft beer represents 8.4% of the total revenue for the beer industry. Unlike traditional breweries with commercial scale bottling operation facilities throughout the U.S. and globally, small-scale breweries have become a big hit with consumers due to their local flair offering variety of styles and quality ingredients. As a result, the 2018 National Beer Sales and Production data indicated that craft beer industry revenue was increasing at an annual rate of 1.4% from 2012 to 2017 and valuing at \$32.9B in 2017.

Per capita consumption of beer is higher among individuals aged between 21 to 35 years old. However, the rise of micro-pubs enables breweries to sell food directly on the premises. Due to this trend, industry revenue is expected to grow exponentially over the next five years. According to 2016 Craft Brewing Business publications, it is estimated that 74% of craft

²³ Farm to Table: A look into who supports it and its significance in America today; by Marissa Iacono, spring 2013.

beer drinkers use mobile devices for beer purchases. Among them, 60.2% used smartphones to obtain information about particular beer before making a purchase.

Currently young adults below 35 years old dominate 58% of the craft beer market. Within this group, women are emerging as a key target market segment making up 15% of the overall craft beer consumption. This target market segment has a specific name called the “pink boots society”. Another emerging market segment is the Hispanic community. This market segment is also growing in craft beer consumption and is anticipated to occupy 31% of the market by 2019.

Recently, organic beer has also gained popularity. Market Research Future indicated that in 2018, North America dominates the organic beer market closely followed by Europe while Europe is fastest growing, specifically Germany and Spain. Organic beer drinkers have some specific characteristic, which include: environmentally conscious, health conscious, and inspired to experience new tastes.

The *Cosmetic and Beauty Products Manufacturing* industry (NAICS: 32562) focuses on the preparing, blending, compounding, and packaging of beauty and cosmetic products. There is a wide range of products included in this industry, anything from natural and synthetic perfumes; makeup items such as face powders, eyeshadows, lipsticks and mascaras; hair preparations; body and face creams; beauty creams and lotions; and all other toiletries.

In 2017, the cosmetic and beauty product manufacturing industry reported \$53B in revenue at an annual growth rate of 4%. According IBIS World 2017 report, skin care product sales dominates the industry at 28.9% and is followed by hair care product sales at 22.3%. Perfumes and colognes sales were the lowest at 10.6% of total industry revenue. The industry is expected to experience significant growth between the years of 2016 and 2022. Households earning more than \$100,000 a year tend to look for higher quality beauty and cosmetic products. The industry expects a compound annual growth rate of 4.3% during the same period²⁴. Over the past five years, the 2017 IBIS World Industry Report reported that the industry has experienced significant merger activities and an increase in profit margins.

U.S. hair products represent 24% of the overall cosmetic and beauty products market. Shampoo and conditioner are the two core segments leading the growth of the industry²⁵. According to IBIS World, U.S. alone spends roughly \$4B on perfume every year. This accounts for 1/3 of the world’s spending on perfume. The average age range of individuals buying perfume is between 18 to 30 years old. Females are the core target market for this industry with an average spending between \$30 to \$80/product. The anticipated compound annual growth rate for the U.S. make-up market is 3.8% from 2013 to 2018 and is expected to reach \$8.4B in 2018. The fragrance and perfume markets are also expected to experience positive growth through 2019, with an annual growth rate of 2%. On average, women 15 and up spend \$342/year on makeup and are most likely to purchase makeup online due to convenience. U.S. deodorant market is expected to grow by \$3.47B by the end of 2019. Consumers are starting to prefer products that contain more natural and organic ingredients and deodorant manufacturers

²⁴ <https://www.alliedmarketresearch.com/cosmetics-market>

²⁵ <https://blog.marketresearch.com/the-market-for-beauty-and-cosmetics-products>

are one of the first to tap into this trend (Maida, March 24, 2016). Men's grooming products market has also broadened within the past several years and projected to reach \$60.7B by 2020. Specifically, shaving products and fragrances have experienced significant growth and are valued at \$17.5B, a growth of 8.1% since 2015²⁶.

The use of essential oils and the demand for products that contain essential oils for aromatherapy are increasing at an annual rate of 12% as people start using these oils for everything from fragrance to remedies. Cosmetic and beauty product manufacturers are becoming more experimental with incorporating essential oils in their products²⁷.

The industry exhibits a low level of market concentration. In 2017, four of the largest companies generated 25.6% of the total industry revenue. U.S. Census data shows that more than 65% of companies employ fewer than 20 employees and only 5% of companies employ more than 500 people. Since 2011, industry employment has been steadily increasing at an annual rate of 4%. This has led to an increase from 52,512 employees in 2011 to 63,816 in 2016. Imports and exports of the beauty products are showing an increase over the past five years. Imports have grown from \$6.2B in 2011 to \$8.1B in 2016, an annual growth of 3.9%. Also, exports have grown from \$6.3B to \$9B, an annual growth rate of 5.3%.

Consumers worldwide are also becoming more concerned about product ingredients and inclined to choose cosmetic products that contain natural and environmentally sustainable ingredients. A recent study has shown that an increase of 51% of customers who are willing to purchase products from companies that implement environmentally sustainable practices²⁸. In 2016, 58% of new product development within the bath, soap, and shower sector integrated herbal claims; and a 6% increase in organic formulations and natural product developments²⁹. Grand View Research announced that the global and organic beauty market is expected to rise from \$11.6B in 2016 to \$15.98B in 2020 and \$21.78B in 2024.

Finally, the ***Pet Food Production*** industry, particularly dog and cat food manufacturing and other animal food manufacturing (NAICS: 311111 & 311119) is defined as a specialty industry that concentrates on a dry and semi-moist dog and cat food in cans or packages. Feed for farm livestock is not included. This industry is moderately concentrated. In 2016, the top-four companies accounted for 50.4% of total industry revenue.

According to the 2017-2018 National Pet Owners Survey, 68% of U.S households own a pet. This has increased by 56% since 1998. Overall spending on pets is also increasing with online purchases and more pet owners are moving towards organic food and products especially with the discovery of the harmful impact of GMO.

²⁶ Major Cosmetic Trends to Follow in 2018, <http://www.inno-foodproducts-brainbox.com/2017/10/04/4-major-cosmetic-trends-to-follow-in-2018/>

²⁷ 9 natural personal care predictions for 2017, <http://www.newhope.com/beauty-and-lifestyle/9-natural-personal-care-predictions-2017>

²⁸ The 5 top trends for the cosmetic market 2017-2018, <https://www.pennellifaro.com/en-ww/the-5-top-trends-for-the-cosmetic-market-2017-2018>.

²⁹ Category Insight: The Rise of Organic Beauty Products, <http://www.stephensonpersonalcare.com/blog/2017-02-28-category-insight-the-rise-of-organic-beauty-products>

As people push for more proteins in their own diet, they are also selecting a more "primal" diet for their pets. To meet this need, pet food manufacturers launched new formula varieties including single-proteins, multiple proteins, and exotic proteins. Some pet owners are even making actual meals for their pets with things such as grilled chicken and raw and dehydrated meats. Pet owners believe that vegetables and grain are also important diet ingredients for their pets.

Currently U.S. individuals ages 50+ are the core purchasers of natural pet food, due to higher disposable income levels. However, research has shown that millennials, 20-35 years old, are more informed consumers compared to the older generations, and if this generation had the money to spend on more expensive, natural pet food, they would³⁰. National Online Consumer Survey indicated that because millennials, responsible for 43% of pet owner growth from 2007-2015, have been brought up in a more health-conscious society and more informed on healthy and natural foods, this generation of pet owners is also most likely, roughly 69%, to choose natural ingredients over unnatural mass-produced foods for their furry companions. Thus, clean labels that are easy to read and include ingredients that are familiar to human consumers are becoming more important to pet owners.

Based on the investigation of the six industry opportunities and an understanding of Western North Carolina regional resources and capabilities, further research of how these opportunities correlate with WNC's current NPSE value network was conducted.

³⁰ Pet Owners Millennials: What it Means for the Pet Food Market. *Packaged Facts*, <https://www.packagedfacts.com/Content/Blog/2017/02/07/1-in-3-US-Pet-Owners-Millennials-What-it-Means-for-the-Pet-Food-Market>

Current Reality of WNC NPSE Value Network

The project research revealed that the current NPSE value network could be divided into 5 categories. Each category has a valuable role in the growth and future potential of WNC.

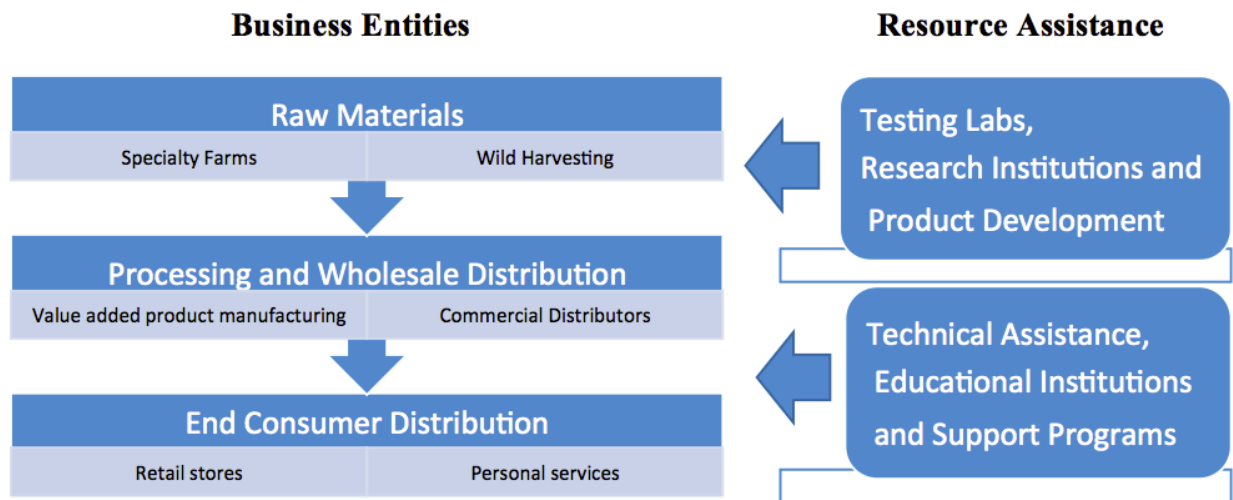


Exhibit 2: WNC Current NPSE Value Network

The value network categories are further explained below followed by the secondary research conducted by the student teams to identify suitable NPSE opportunities for WNC.

1) Raw Materials: Specialty Farming and Wild Harvesting

Specialty farming includes row farming and forest farming that produces vegetables, berries, flowers, herbs and medicinal plants. Over the last decade, Asheville and the greater Western North Carolina region have made significant strides towards building a robust local food economy. USDA 2012 report indicated that annual sales under the Appalachian Grown local foods brand alone top \$200 million. WNC area is also one of only a few areas in the country that experienced an increase in the number of new farms in the most recent agricultural census.

Wild Harvesting include chefs, tourist, hobbyists, and professional foragers. The bounty of wild edibles and medicinal plants are plentiful in the national forests and private mountain property. The products can be sold to national distributors, local restaurants and bars who use these plants to create a unique value proposition by marketing foraged flavors and craft cocktails. The large distributors sell product to small and large companies producing medicinal or enhanced products where the plant is highlighted as an ingredient. The growing demand for these plants create concern that wild harvesting is not regulated and will eventually result in an unsustainable practice. See the article by Jodi Helmer called *“Wild Food Foraging Adventures in Asheville”*.

2) Processing and Wholesale Distribution: Value added manufacturing and Wholesale Distribution Centers

Manufacturing facilities-These companies range from 1 to 500 employees and are a perfect fit for WNC since they usually do not require a large footprint, they utilize the natural resources of the region and they are a “clean” industry. In addition, they support the local retail and service industries by providing products that intrigue tourists and enhance the place-based regional image of WNC as a craft and artisan region promoting the holistic well-being of an individual. These companies manufacture craft beer/soda/liquor, nutraceutical drinks, essential oil, medicinal supplements, cosmetics, body hygiene products and skin care products, pet food, value-added food products, cleaning supplies, aroma therapy products and seasonings.

Wholesale Distribution Centers- These individuals or companies purchase the medicinal plants in raw and dried form and sell to large companies who use them as ingredients in the various manufactured products above. These distributors also supply the small manufacturers in our area with various ingredients not found in WNC. They are vital to the growth and development of this economy since there are not enough products grown or foraged in WNC to supply the demand of the manufacturers.

3) End Consumer Distribution: Retail Stores and Personal Services

Small local retail establishments scattered across WNC comprise the major method of distribution for the manufacturers of Natural Products. These businesses compliment tourism and create a unique experience for travelers. These retail organizations include taprooms, restaurants, apothecary shops, health food stores, specialty grocery stores and general merchandise stores.

Personal care services are also a compliment to sense of place tourism and the wellbeing trend that continues to increase in the US. They include spas, yoga studios, acupuncture, chiropractic care, massage, facials and body wraps, meditation, and outdoor wellness adventure tours.

4) Testing Labs, Research Institutions and Product Development Entities

Testing Labs are a vital piece of the value chain to the NPSE. There is an ongoing argument about what comprises organic and what is considered natural. Consumers and regulators are demanding more reliability and accountability from natural products companies as evidenced by the issuance of good manufacturing practice (GMP) guidelines for dietary supplements from the U.S. Food and Drug Administration (FDA). These new regulations came into full force in June 2010 effectively mandating the removal of substandard products from the market. Published studies indicate that as many as 66% of products currently on the market fall into this category, i.e. adulterated. Western North Carolina hosts both a high concentration of the state’s organic farmers, as well as strong community support for locally grown, organic produce. For many years, organic farmers,

non-profits, and extension agents requested that more organic research be conducted in the western part of the state. North Carolina State University, in cooperation with the NC Department of Agriculture & Consumer Services, launched the Mountain Organic Research and Extension Unit in 2010 at the Mountain Research Station in Waynesville, NC. This unit provides certified organic land for university-led research and extension programs to support organic farmers in western North Carolina.

Organic is the only true standard that is determined by the US government. Overall, organic operations must demonstrate that they are protecting natural resources, conserving biodiversity, and using only approved substances. The organic standards are captured in the Organic Food Production Act, USDA organic regulations, and the National Organic Program Handbook. Testing serves to give credibility and assurance that the components of each product are accurate.

Natural has no real meaning; however, dietary supplements for humans and animals as well as cosmetics must be tested to verify the ingredients are labeled correctly and to assure the ingredient content is accurate. For the most part, they associate natural as something that is grown outside with limited interaction.

Research Facilities are institutions that focus on enhancing the natural products use and providing the scientific research that the growers, wild harvesters, and manufacturers can use to create new products, label products with credibility and open new markets and opportunities. These facilities usually include Universities with talented research scientists who are interested in medicinal plants, developing and growing crops more effectively and efficiently, and doing short and long-term trials on animals and humans to verify the medicinal properties are performing and calculating the recommended dosage. If this type of scientific research becomes available, the margins on natural remedies will increase significantly and health plans will begin paying for their use.

Product Development Entities are the companies or non-profit agencies that work to develop prototypes of new crops, products or processes that will lead to new revenue streams for the industry. Sometimes, the manufacturers do this in-house but there are government agencies that provide resources to assist in the advancement of these products.

5) Technical Assistance, Education Institutions, and Support Programs

Technical Assistance are the agencies in the area dedicated to providing information on how to start a business, lean manufacturing and Good Manufacturing Practices (GMP). They specialize in the technical issues such as licenses and certifications that are required to operate in the industry.

Educational Facilities are the agencies in the area that offer programs of certification or degrees on apothecary, massage therapy, alternative medicine, acupuncture, yoga, natural anxiety relief programs, cosmetic and skin care, herbalist, wild plant harvesting, growing herbs, forest farming, etc...

Support Programs are the agencies that continue alongside the company to counsel and assist with barriers to growth. These are agencies that serve as networks or connectors to the specialty resources available as the need arises and are usually concerned with supporting the economic development of the region.

NPSE Opportunities and WNC Current NPSE Value Network

Current trends on a worldwide scale are moving toward healthy living and having a healthy living mindset. It is believed that a balanced healthy lifestyle is essential to enjoying a satisfying life. So, what is a healthy living mindset and how is it changing our economic landscape across the nation?

- 4) **Physical Health:** You are what you eat. Natural and organic food-removing the processed food and preservatives from your diet can prevent major illnesses such as heart disease and diabetes. Healthier people maintain independence as they age.
- 4) **Mental Health:** This is considered just as important in the balance of a healthy person. It is about embracing the positive and rejecting the negative. Appreciate yourself by setting time aside to go on vacation, stay in touch with friends and family, laugh and interact with others.
- 4) **Emotional health:** This consists of limiting stress and anxiety through taking more time to unwind through exercise, yogo, massage, meditation, natural supplements and aromatherapy.
- 4) **Take actions toward a lifestyle change in all three areas:** Small steps are encouraged but should be incorporated in every decision you make. Food choices, medicinal supplement choices, activity and vacation choices.

“The most important thing of all is to ensure you spend time doing a hobby or activity you love. When we participate in doing something we love, we radiate so many positive emotions, all magnetizing out into the universe to bring you back more joy and happiness. So many people get stuck in a rut and lose focus on what is important and brings them pleasure. Find something you love to do, and do it daily. Make time for it, and even better, makes a career out of it! Life is supposed to be an enjoyable experience. Of course, you can learn through pain, but why learn through pain when you can learn and grow through pleasure?”³¹

1) Specialty Farming and Wild Harvesting

Industrial farming is slowly decreasing globally due to increasing costs and employment challenges. The industry’s employment rate has dropped from 29.51% in 2015 to 28.74% in 2017. However, with the population on the rise, global food demand is expected to increase by 59% by 2050. The 2011 Associated Press reported that UN estimated that farmers would need to produce 70% more food by 2050 to meet global demands by more than 9B people. In the U.S., although continue to remain as one of the largest industries, crop production is decreasing and livestock increasing³². Average household food spending has increased from \$6,586.93/year in 2014 to \$7,041.89/year³³. So where did the shift in food demand occur?

³¹ <https://www.namcopool.com/how-to-develop-a-healthy-living-mindset/>

³² Schierhorn, (2016). Employment in agriculture, n.d. USDA Economic Research Service (Highlights From the February 2018 Farm Income Forecast)

³³ <http://www.pewtrusts.org/en/research-and-analysis/issue-briefs/2016/03/household-expenditures-and-income>

U.S. disposable personal income is expected to grow at a steady annual rate of 4.2% from 2016 to 2026. Although at a slower rate, savings will also steady increase at an annual rate of 2.9%. These families in the upper third household income are more likely to choose healthy options and eat at home and even spend more on their pets³⁴.

This shift is driving organic farming practices. Globally, 50.9M hectares of agricultural land are managed organically and U.S. ranked third in the organic agricultural land with 2M hectares. Since 2000, WNC regional push for more organic farming has also increased due to a growing, public disdain for genetically modified foods³⁵.

This shift is also driving locally grown food sales. In the U.S. local food sales grew from \$5B in 2008 to \$12B in 2014; and is forecasted to grow to \$20B in 2019. The primary outlets for farm direct sales are farmers markets and specialty stores³⁶. Thus an increase in the number of farmers markets globally has been observed. WNC is home to over 12,000 farms producing fruits and vegetables, meat and dairy products, and non-food crops such as Christmas trees and nursery plants³⁷. Because of this, the number of people showing interest in gardening is also slowly increasing. In 2017, 9.2% of Americans engage in some sort of gardening activities, a slight increase since 2008. According to a study by National Gardening Association in 2014, this population is primarily women above age 45 who hold a college degree or have some college education. Southern states, including North Carolina, are the top U.S. states where home gardeners reside, followed by the midwest, west, and northeast (see Exhibit 3).

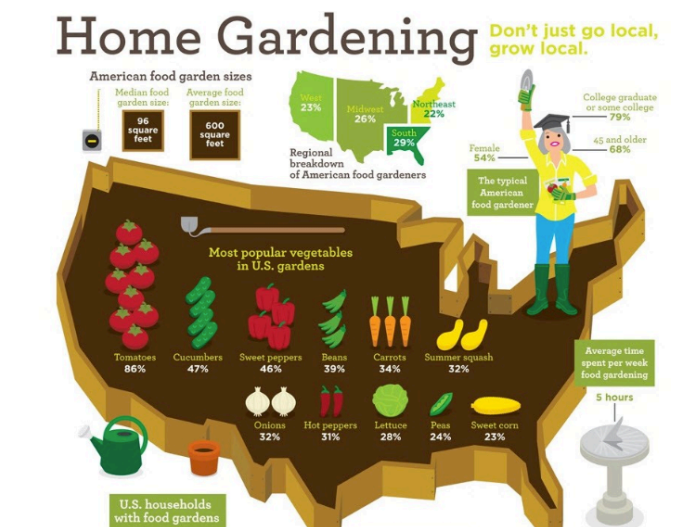


Exhibit 3: Map of U.S. Home Gardening Activities

Finally, since California being the first state passed a proposition to legalize marijuana for medical use in 1996, medical marijuana has become a growing and prosperous industry for many states. As of April 2017, marijuana also known as cannabis, has been approved in 29 states

³⁴ https://www.bls.gov/emp/ep_table_410.htm

³⁵ Broad Opposition to Genetically Modified Foods, 2003

³⁶ <http://www.businessinsider.com/the-demand-for-local-food-is-growing-2017-4>

³⁷ <http://asapconnections.org/>

for medical use to treat symptoms associated with AIDs, cancer, and glaucoma. Medical marijuana 2017 sales reached \$3.2B³⁸. It is estimated by 2024, the cannabis U.S. consumer market will reach \$37.3B.

While home gardening is growing, wild harvesting is also on the rise. A large component of the NPSE relies on medicinal herbs. Many of these are native to the Western North Carolina forests including ginseng, goldenseal, black cohosh, and bloodroot. The wild harvesting and sale of these medicinal herbs have been a source of revenue and part of the recreational culture of mountain families throughout the region. These herbs are also personally used as medicine by crafting tinctures for a variety of common ailments using recipes handed down from many generations. The activity of “wild-harvesting”, also referred to as “foraging”, is growing in popularity as the mindset of consumers have shifted to “crafting” your medicine and food from natural ingredients. Currently, many restaurants in the region are offering trips into the forest as an agritourism event where participants pick wild plants from the forest and then watch while chefs use the ingredients in the meal they prepare. This outdoor activity is for many people enhance the image of quality life and living while educate them on the benefits of plants that grow wild in the forest. In addition to tourists and residents, there are many herbalists, herb schools, herb product manufacturers, and raw botanical material sourcing companies in our region whose businesses depend on these wild plants. Some require the plants to be grown naturally in the forest before they will purchase the product³⁹.

The demand for medicinal plants continues to grow internationally, and the wild medicinal plants are feeling the pressures of over-collection for commercial use. Here in Western North Carolina, the depletion of wild plant populations threatens not only the plants, but also the culture and tradition of the resident people.

2) Value-Added Manufacturing and Wholesale Distribution

Value-Added Food Products

Research indicated that there are three types of food industries. First is driven by demand where these manufactures are located near their customers, such as bakeries and soft drink bottling companies. The second type is agriculturally related thus located near agricultural zones due to bulky or perishable principle ingredients. Examples include meat and grain processing facilities. The last type is called footloose food manufacturing where companies make foods with high values relative to their distribution costs. Some products may include flour mixes, frozen foods, canned foods, and other prepackaged specialty foods. Compared to demand-driven and agriculturally related businesses, footloose have the highest value-added contribution⁴⁰.

³⁸ <https://www.newsobserver.com/news/politics-government/state-politics/article148100559.html>

³⁹ <https://newcropsorganics.ces.ncsu.edu/2017/11/wild-harvesting-medicinal-herbs-its-still-the-norm-for-many-products/>; and <https://www.exploreasheville.com/stories/post/wild-food-foraging-adventures-in-asheville>

⁴⁰ Salin, Atkins, & Salame (2002). Value Added in Food Manufacturing and Retailing: A Ratio Analysis of Major U.S. States.

In 2018, increased number of food manufactures is experimenting with unusual flavors, protein-based ingredients, products beyond their traditional reach, and paying more attention to cleaner, healthier, raw-form and plant based ingredients. Value-added food manufactures and processors are continuing to reduce sugar content, eliminate genetically modified ingredients, and clean up labels. On average 42% consumers of all ages and ethnicity depend on product labels to learn helpful and accurate information about the health and wellness of a product⁴¹.

Healthy foods, prepared foods, gourmet foods, and ready-made meals show hug potential for growth. Food processing companies are working hard to meet these sophisticated consumer demands while adapting to the nutritional labeling law and higher labor costs. Some high potential value-added ingredients include natural additives, thickeners, preservatives, and sweeteners⁴².

To respond to consumer preference shifts, food manufacturing and processing technology is gaining interest among food manufactures, such as Industrial Internet of Things (IIoT)⁴³. Other related technology advancements also include smart packaging and material applications such as nanotechnology, process automation and control, and production management principle improvements⁴⁴.

Regardless of the type of foods, food manufactures and processors must pay close attention to convenience, environmental stewardship, and labeling in future product development and packaging design⁴⁵.

Spa Related Products

The global spa industry, valued at \$99B in 2015, is expected to grow at a compound annual growth rate (CAGR) of 5.66% from 2017 to 2021 with the U.S. being the largest spa market at \$16B. This increase is primarily due to today's workforce's unprecedented stress, increased population in urban, nature-deprived areas, and increased healthy living mindsets⁴⁶. The spa (wellness and medical) industry traditionally is a female-dominated industry with hair and nail, skin care, and massages. However, the International Spa Association research showed that males consumers now make up 23% of spa consumers and 45% of spas have shifted services toward men. Business Wire in 2016 reported that global spa market is expected to grow at a compound annual growth rate of 8.7% from 2016 to 2020.

Because of a growing demand for spas, revenue in essential oils is expected to reach \$1.5B by the end of 2018. However, it is important to note that due to people's increased

⁴¹ www.packagedfacts.com

⁴² USDA Foreign Agricultural Service 12/28/2017 GAIN Report

⁴³ <https://www.foodprocessing.com/articles/2017/food-industry-interest-growing-iiot/>

⁴⁴ Mahalik, & Nambiar (2009). Trends in food packaging and manufacturing systems and technology. Trends in Food Science and Technology.

⁴⁵ Canada Agriculture and Agri-Food Emerging Food Innovation: Trends and Opportunities report, 12/14/2015.

⁴⁶ <https://www.marketresearch.com/First-Research-Inc-v3470/Spa-Services-10833741/?progid=89756>

development of allergens, companies are more conscious in putting warning labels on products containing natural ingredients, such as lavender⁴⁷.

Aromatherapy is another market that is growing significantly due to spa industry growth. Its global market size was valued at \$4.35B in 2016 and is expected to grow by 8.4% by 2024 reaching \$8.21B. Spas and aromatherapists are demanding 100% therapeutic grade essential oils to be used for healing pain, injuries, sleep enhancement, skin care, and alleviating allergies. The millennial and generation x are becoming increasingly aware of aromatherapy's benefits in enhancing body's inherent constitution⁴⁸.

According to the American Medical Spa Association, these customers are seeking personalized products and services for their specific spa treatment needs. For example, in the UK In the UK, the most desired aromatherapy delivery method is topical followed by aerial (see Exhibit 4). Because the spa industry is highly fragmented, competitive brand positioning is necessary.

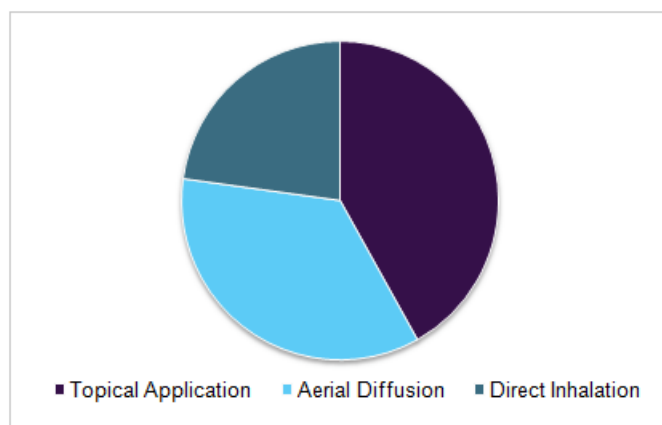


Exhibit 4: 2016 UK aromatherapy % of market share by mode of delivery

Beauty Products

It was also interesting to discover that hardship in economy often translates to a boost in beauty product sales among women⁴⁹. Organic beauty product sales are expected to grow 74% from 2013 to 2018. Nutraceutical's World reported that herbal beauty products are showing the strongest average growth between 8-12% annually. When researching products, particularly for skincare, haircare and color cosmetics products, these customers are paying more attention to the natural and organic labels before purchasing these products⁵⁰.

Between 2002 and 2012, adults are increasing use of non-vitamin and non-mineral natural products, particularly in fish oil/omega 3 and probiotics/prebiotics. The use of green tea

⁴⁷ <https://www.theatlantic.com/health/archive/2015/01/the-allergens-in-natural-beauty-products/384326/>

⁴⁸ <http://markets.businessinsider.com/news/stocks/global-aromatherapy-market-to-2024-growing-trend-of-essential-oils-adoption-1005552269>

⁴⁹ <https://www.reuters.com/article/beauty-sales-recession-idUSL2E8I3AJI20120705>

⁵⁰ <https://formulabotanica.com/global-organic-beauty-market-22bn-2024/>

and milk thistle has also observed a steady increase. On the contrary, the use of Echinacea, ginseng, and ginkgo has observed a significant decreased⁵¹ (see Exhibit 5). Vitamins and supplement sales will reach \$13.9B by the end of 2018, a 58% increase from 2008.

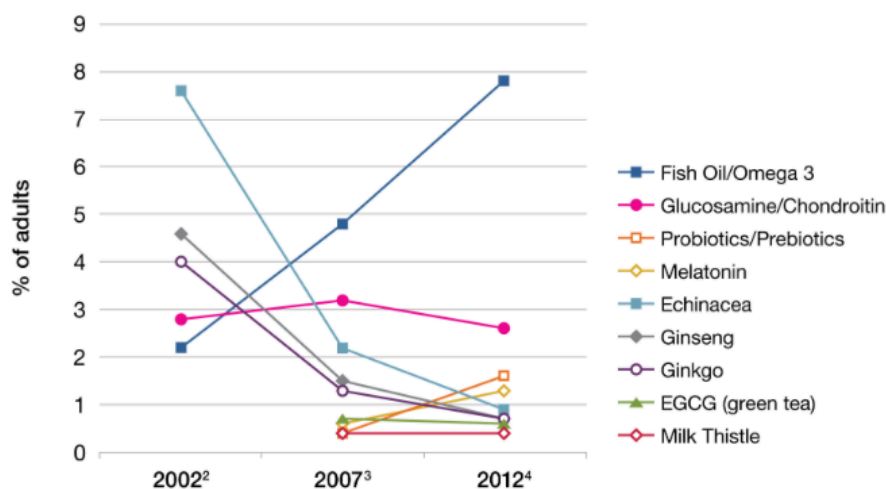


Exhibit 5: 2002-2012 Vitamin and Supplement Sales Distribution

Cleaning Products

Another industry where natural and more sustainable alternatives are gaining moment is the cleaning products industry. In 2009, 67% of consumers said they were interested in seeking out sustainable cleaning products. However, these customers are not willing to give up product performance, cost-effectiveness, and ease of use for eco-friendly attributes. For this reason, companies are competing in product development using natural and renewable sources that cost and perform as sourced from petrochemicals. Some of these ingredients may include palm, coconut, and other plant oils⁵².

To encourage U.S. manufacturing industries growth in diverse industries such as value-added food manufacturing, spa and beauty products manufacturing, and cleaning products manufacturing; EDA investment priorities include: workforce development and manufacturing (skill training centers for manufacturing sectors, particularly apprenticeships and work-and-learn models); job creating manufacturing industries in advanced and high-value products enhancing manufacturing supply chain; and critical infrastructure such as broadband, energy, roads, water, and sewer⁵³.

3) Retail Stores and Personal Services

⁵¹ <https://nccih.nih.gov/research/statistics/NHIS/2012/natural-products/trends>

⁵² <https://www.smithersapex.com/news/2013/november/5-important-trends-in-the-cleaning-products-market>

⁵³ <https://www.eda.gov/about/investment-priorities/disaster-recovery/>

Consumers are becoming more aware of the need and benefits of eating better foods and retailers are responding to this shift in demand by stocking the shelves with more natural/organic products and brands. Thus buying natural/organic food are becoming more common than ever before. In 2017, this equate to 9.6% of Americans. A recent study by Kline Research also suggested that these consumers are choosing to pay premiums for products that are natural or “perceive to be natural”.

Kline Research also indicated that in 2016, the personal care market grew by 9% in the U.S. and will reach \$25.1M by 2025, according to Grand View Research. However it is important to note that primarily larger niche players such as Honest Beauty, Farmacy, and SheaMoisture are expected to dominate this growth.

Craft breweries in North Carolina add \$1M and 10,000 jobs to the economy and the industry is growing at a fast rate⁵⁴. According to the NC Craft Brewing Guild, tourism and craft beer are key contributors to the increase in economic growth in North Carolina. Production from breweries doubled from 2015-2016 from 675,000 to 1.2M barrels. The trend of craft breweries is expected to continue its momentum.

In regards to consumer use of social media and ecommerce, research indicated that over half of global social media users are brand followers. Social media value market was estimated at around \$2.91B in 2016 and is predicted to reach \$18.67B by the end of 2022⁵⁵.

In-store mobile payment is expected to reach \$503B by 2020, which reflects an increase of 80% compound annual growth rate between 2015 and 2020. People started to carry less cash and rely more on debit, credit cards, and mobile payment options such as mobile wallets. In 2014, 40% people carried less than \$20, 29% between \$20 and \$50, 12% between \$50 and \$100, 5% between \$100 and \$250, 2% above \$250, and 9% don’t carry cash with them at all. Retailers’ revenue from mobile point-of-sale (POS) systems, such as Square, is expected to reach approximately \$50B in 2021, a significant growth from the \$6.6B in 2016⁵⁶. This rise in the use of mobile payment technology creates opportunities for reliable and efficient transactions.

Similarly, revenue generated from e-commerce expected to reach \$4.5T in 2021, another significant growth compared to \$1.3 trillion in 2014. This is a reflection of the growth in the number of digital shoppers from 1.32B in 2014 to 2.14B in 2021. Smartphone (or m-commerce) sales revenue is projected to reach \$693.36B in 2019 globally, comparing to \$50.92 billion in 2014⁵⁷. Such increases are primarily due to consumers’ increased desire for convenient shopping experiences.

Growth in e-commerce significantly influenced online vitamins, minerals, and supplement sales, which is growing at a rate double that of the supplements industry as a

⁵⁴ <http://www.reflector.com/News/2017/05/10/Breweries-economic-impact-growing-guild-director-says.html>

⁵⁵ Mordor Intelligence

⁵⁶ <https://finance.yahoo.com/news/mobile-wallets-fire-151100015.html>

⁵⁷ <https://www.shopify.com/enterprise/global-ecommerce-statistics>

whole⁵⁸. Online supplements sales reached \$2.8B in 2016, and has a 10-year CAGR of 14%, compared to the brick-and-mortar CAGR of 8.5%. With consistent double-digit growth over the last ten years and forecast over the next five, online supplement sales is expected to reach 9% of total supplements market share by 2021, up from just 2.8 percent in 2006. The Internet has provided a massive opportunity for both legacy brands and startups alike. An increasing number of companies are now launching directly to consumers through either their own e-commerce platforms or through online distributors, such as Amazon⁵⁹.

4) Testing Labs, Research Institutes, and Product Development

At the March 2018 Natural Products Expo West in Anaheim, California many new natural product development trends emerged. Some of these trends include⁶⁰:

1. Plant-based products as meat and dairy alternatives are gaining attention among hardcore carnivores.
2. Mixes with the option for consumers to customize by adding additional ingredients.
3. Natural products offering globally inspired flavors are rising in popularity.
4. Products and product packaging offering zero waste and friendly to the environment are gaining consumer appreciation.
5. Food and beverages including CBD is proven to provide many health benefits.

New natural products and business development efforts are supported by an emergence of food business accelerators and incubators across the country helping start-up brands to pave the way to address food challenges and consumers' unmet eating needs.

Testing is also an important component of regulatory compliance to ensure safe and effective products to end consumers. With the increased consolidations of testing labs, ingredient and supplement companies now have fewer labs to choose from which streamlines product-testing process within health and nutrition industries. As a response to consumer demand, companies are not required to be transparent not only with ingredient listings on packaging but also provide full disclosure of certificate of analysis (CoAs) to prove product authenticity⁶¹.

Natural products research and development continue to provide insight for pharmaceutical industry development with drug discovery programs based on microbial and phytochemical products⁶². "A natural product is a chemical organic substance which is produced by the living organisms found in the nature that are produced by the pathways of primary and secondary metabolism"⁶³. They are the foundations for drug discovery⁶⁴. The Natural Products

⁵⁸ <https://www.forbes.com/sites/davidlariviere/2013/04/18/nutritional-supplements-flexing-their-muscles-as-growth-industry/>

⁵⁹ <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/cashing-in-on-the-booming-market-for-dietary-supplements>

⁶⁰ <https://www.foodbusinessnews.net/articles/11416-ten-trends-at-natural-products-expo-west?page=10>

⁶¹ <https://www.naturalproductsinsider.com/labtesting/strengths-and-vulnerabilities-natural-product-testing>

⁶² Borris, R. (1996). Natural products research: perspectives from a major pharmaceutical company. *Journal of Ethnopharmacology*, 51:1-3.

⁶³ KSean M. Natural Products Research. *Nat Prod Chem*. 2012; Res 1:e101.

Research Laboratories (NPRL), within the UNC Eshelman School of Pharmacy led by Dr. Kuo-Hsiung Lee, is one of the leading natural products pharmaceutical research centers. NPRL's current research programs include bioactive natural products, medicinal chemistry, new anticancer and anti-AIDS drugs, and Chinese medicine.

5) Technical Assistance, Educational Institutes, and Support Programs

To develop a sustainable growth of natural/organic industries in WNC in specialty farming, wild harvesting, value-added manufacturing for both food and non-food products, and brick-and-mortar and online retailers and distributors, a holistic value network including necessary supporting services and resources must be a part of WNC's economic development infrastructure. These would include partnerships in product research, development and testing; and technical assistance and education.

SBA's definition of a small business is 500 employees or less. Given that definition, small businesses make up the majority of all businesses in Western North Carolina. Supporting services and resources provide the knowledge, education, and expertise small businesses are often missing to help business owners overcome challenges, discover new opportunities and grow economic development for the region.

The WNC region has a vast network that includes universities, economic development agencies, chambers of commerce, lenders, investors and entrepreneurs themselves that provide technical expertise such as herbal apothecary knowledge and formal training in the art of Chinese medicine. According to the national Association of the Small Business Development Centers (ASBDC), companies that receive technical assistance average four times more sales and seven times more job growth than the national averages. In addition, 66% of the entrepreneurs who sought assistance were successful in starting their business idea.

Nationwide, small businesses employ 58 million people, nearly half of all American workers are employed by small businesses in the private sector. These small businesses have deep roots in their communities hiring and training the local workforce to become valuable employees. Given this information, small businesses are drivers of the economy through job creation and innovation. Supporting their formation and growth will move our economy forward and make our communities healthier.

U.S. Department of Education indicated that in WNC, we have (8) public or private colleges and universities with an additional seven (7) community colleges within our region. The strong federal and NC state funding for education and support services make WNC a great place to begin and grow a small business with access to counseling, training programs and an educated professional workforce.

⁶⁴ Beutler, J. (2009). Natural products as a foundation for drug discovery. US National Library of Medicine National Institute of Health.

Private Colleges and Universities	Community Colleges
Brevard College	A-B Technical College
Lenoir-Rhyne University	Blue Ridge Community College
Mars Hill University	Haywood Community College
Montreat College	Isothermal Community College
South College	McDowell Community College
University of North Carolina at Asheville	Southwestern Community College
Warren Wilson College	Tri-County Community College
Western Carolina University	

Table 1: WNC College and University Resources

Future WNC NPSE Opportunity Clusters

The WNC region has the potential to become the “Napa Valley of Natural Products” according to the industry experts interviewed. There is an existing infrastructure in place that could serve as a foundation for regional collaboration to market a joint image that would become the driving force of many tourism related industries currently emerging and thriving within the region.

Based on (1) student research of global, national and regional market trends of natural products and services, (2) interviews with regional industry experts, and (3) data mining of existing NPSE regional businesses, specific growth opportunity clusters suitable for the Western North Carolina region were identified (see Exhibit 6).



Exhibit 6: WNC NPSE Industry Opportunity Clusters

Six opportunity clusters were identified: tourism, personal and health care, food manufacturing and packaging, education and research, agriculture, and home and garden. Specific industry level prospects within each of the opportunity clusters were distinguished. These industries are defined as either a ***driver for regional economic growth*** or ***impacted by regional economic growth*** within this cluster or the overall economy of the region. Appendix C summarizes all driving industries for regional economic development.

Tourism Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Outdoor Recreation	114	<i>Fishing, Hunting and Trapping:</i> This subsector comprises establishments primarily engaged in catching fish and other wild animals from their natural habitats. These establishments are dependent upon a continued supply of the natural resource. The catching of fish is the predominant economic activity of this subsector and it usually requires specialized vessels that, by the nature of their size, configuration and equipment, are not suitable for any other type of production, such as transportation. Hunting and trapping utilize a wide variety of production processes and are classified in the same subsector as fishing because the availability of resources and the constraints imposed, such as conservation requirements and proper habitat maintenance, are similar.	✓	
	712	<i>Museums, Historical Sites, and Similar Institutions:</i> Industries in the Museums, Historical Sites, and Similar Institutions subsector engage in the preservation and exhibition of objects, sites, and natural wonders of historical, cultural, and/or educational value.	✓	
	72111	<i>Hotels (except casino hotels) and Motels:</i> This industry comprises establishments primarily engaged in providing short-term lodging in facilities known as hotels, motor hotels, resort hotels and motels. These establishments may offer food and beverage services, recreational services, conference rooms and convention services, laundry services, parking and other services.		✓
	72112	<i>Casino Hotels:</i> This industry comprises establishments primarily engaged in providing short-term lodging in hotel facilities with a casino on the premises. The casino operation includes table wagering games and may include other gambling activities, such as slot machines and sports betting. These establishments generally offer a range of services and amenities, such as food and beverage services, entertainment, valet parking, swimming pools, and conference and convention facilities.		✓
	72121	<i>Recreational Vehicle (RV) Parks and Recreational Camps:</i> This industry comprises establishments primarily engaged in operating recreational vehicle parks and campgrounds, hunting and fishing camps, and various types of vacation and adventure camps. These establishments cater to outdoor enthusiasts and are characterized by the type of accommodation and by the nature and the range of recreational facilities and activities provided to their clients.		✓
Food and Beverage	31213	<i>Wineries:</i> This industry comprises establishments primarily engaged in manufacturing wine or brandy, from grapes or other fruit. Establishments primarily engaged in growing grapes and manufacturing wine; manufacturing wine from purchased grapes and other fruit; blending wines; or distilling brandy are included.	✓	
	31214	<i>Distilleries:</i> This industry comprises establishments primarily engaged in distilling liquor, except brandy; blending liquor; or blending and mixing liquor and other ingredients.	✓	
	72233	<i>Mobile Food Services:</i> The industry comprises establishments engaged in preparing and serving meals and snacks for immediate consumption from motorized vehicles or non-motorized carts.	✓	

	OD4302	Craft Beer Production: This industry includes microbreweries and brewpubs that produce beer for resale or consumption on premises. A microbrewery produces a limited amount of beer, typically no more than 6.0 million barrels (189,000,000 US gallons) of beer per year. A brewpub brews and sells beer on the premises and may prepare and serve food to dining patrons. A brewpub may also be considered a microbrewery if it engages in a significant amount of beer distribution on a regional level.	✓	
	31212	Breweries: This industry comprises establishments primarily engaged in brewing beer, ale, malt liquors and non-alcoholic beer.	✓	
	72211B	Single Location Full-Service Restaurants: This industry includes single-location, independent or family-operated restaurants that provide food services to patrons who order and are served while seated (i.e. waiter and waitress service), and pay after eating. These establishments may sell alcohol and other beverages, in addition to providing food services to guests.	✓	
	445	Food and Beverage Stores: This subsector comprises establishments primarily engaged in retailing a general or specialized line of food or beverage products.		✓

Table 2: Tourism Related Industries

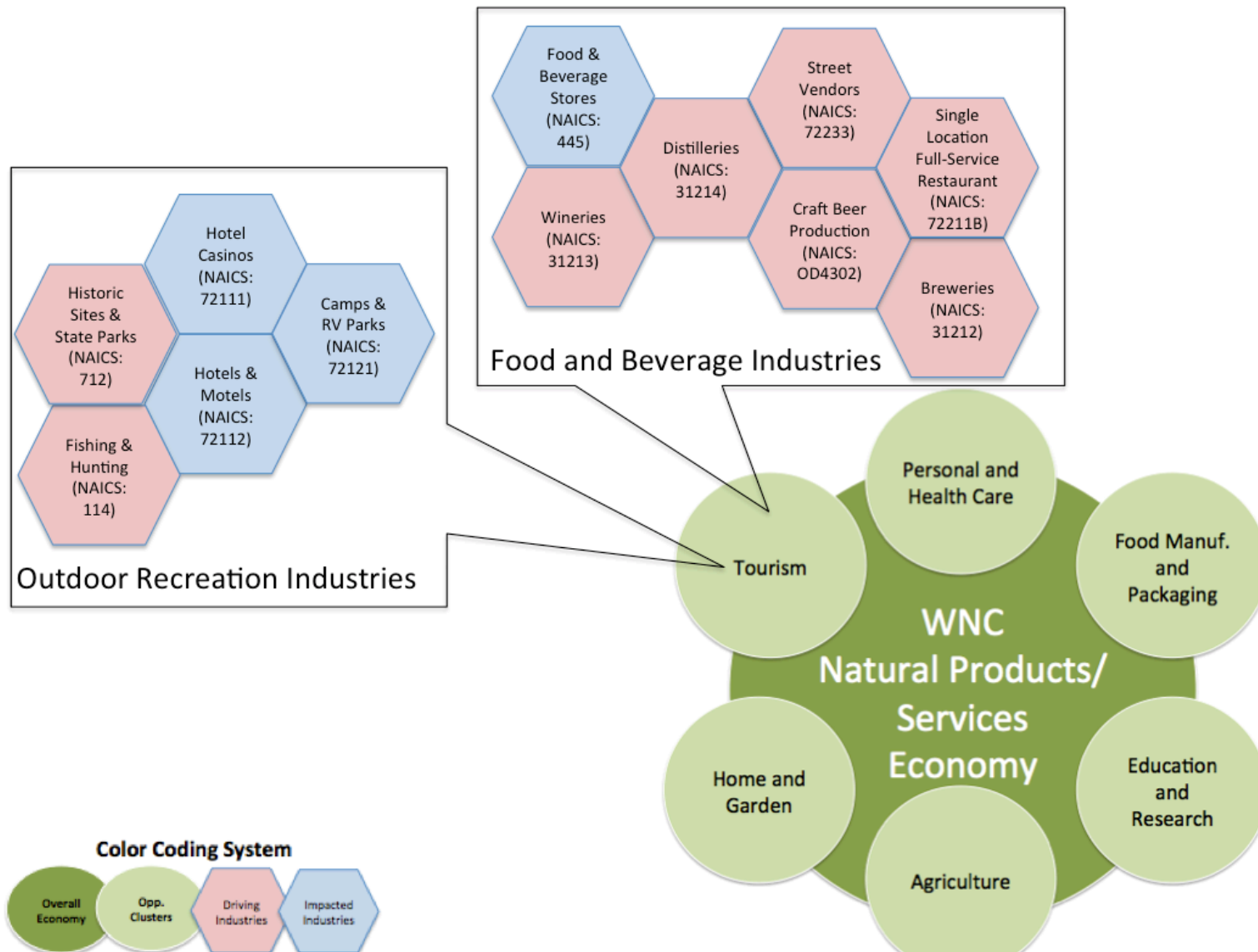


Exhibit 7: Driving and Impacted Industries within Tourism Opportunity Cluster

Personal and Health Care Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Health and Personal Care Products	32562	Cosmetic & Beauty Products Manufacturing: This industry prepares, blends, compounds and packages beauty products and cosmetics. Products included in this industry are perfumes, makeup items, hair preparations, face creams, lotions and other toiletries. Toothpastes, toothbrushes, soaps and body washes are not included in this industry.	✓	
	32541D	Vitamin & Supplement Manufacturing: Vitamin and supplement manufacturers primarily develop and manufacture products that are consumed by mouth and contain an ingredient intended to supplement the diet. Key groups within this industry include standard vitamin and mineral supplements, as well as sports nutrition products and herbal supplements. This industry excludes manufacturers of energy drinks, infant formula and prescription or over-the-counter (OTC) medications used to prevent or treat illnesses.	✓	
	OD5061	Essential Oil Manufacturing: The Essential Oil Manufacturing industry develops and produces concentrated hydrophobic liquids that contain aroma compounds from plants. An oil is essential in the sense that it carries a distinctive scent or essence of a particular plant. This industry does not include products manufactured for medical, pharmacological or culinary purposes.	✓	
	44619	Health Stores: The Health Stores industry includes retailers that primarily sell health and personal care products. Industry establishments include nutritional supplement stores, convalescent and prosthetic supply stores and specialized medical supply stores. The industry excludes pharmacies and optical goods, perfume, cosmetics and beauty supply stores. Online sales are also excluded from the industry.		✓
	446120	Beauty, Cosmetics & Fragrance Stores: This industry comprises stores that primarily retail cosmetics, perfumes, toiletries and personal grooming products. Establishments include beauty supply stores, specialty cosmetics stores and fragrance stores.		✓
	424210	Drug, Cosmetic & Toiletry Wholesaling: Drug, cosmetic and toiletry wholesalers primarily distribute pharmaceutical products intended for internal and external consumption, such as tablets, capsules, vials, ointments and powders. The industry includes a range of biological and medical products, and botanical drugs and herbs. The industry does not include businesses that primarily distribute surgical, dental or hospital equipment.		✓
	OD6010	Health Food & Supplement Store Franchises: This industry sells health food and nutritional supplements.		✓
Personal Care Services	OD5460	Nutritionists & Dietitians: This industry includes establishments of health practitioners who have a bachelor's degree, licensure, certification or registration in, and primarily advise on, matters of diet and nutrition and their effects on health. These practitioners operate private or group practices in their own offices or in the facilities of others, including hospitals or other medical centers.	✓	

	621392B	Alternative Healthcare Providers: This industry provides health services that are not classified in any other industry, such as meditation, yoga or massage. The practitioners in this industry operate private or group practices in their own offices or in the facilities of others, such as hospitals, medical centers or patient homes. This industry does not include chiropractors; mental health specialists; physical, occupational and speech therapists; audiologists; or podiatrists.	✓	
	621399	Offices of All Other Miscellaneous Health Practitioners (including herbalists): This U.S. industry comprises establishments of independent health practitioners (except physicians; dentists; chiropractors; optometrists; mental health specialists; physical, occupational, and speech therapists; audiologists; and podiatrists). These practitioners operate private or group practices in their own offices (e.g., centers, clinics) or in the facilities of others, such as hospitals or HMO medical centers.	✓	
	OD4186	Health and Wellness Spas: Companies in this industry offer spa services, such as massages, facials and body treatments. The industry includes day spas, spa resorts, hotel spas and medical spas.	✓	
	OD4185	Pilates & Yoga Studios: This industry comprises facilities that offer Pilates and yoga instruction to individuals or groups. Pilates is a body conditioning routine used to build strength and flexibility, while yoga is a physical and spiritual practice focused on breath control, flexibility and strength. This industry does not include Pilates and yoga classes taught at gyms or other health club centers.		✓
	OD4189	Personal Trainers: This industry includes individuals who offer one-on-one and small-group fitness training. Personal trainers may also provide personalized diet programs. Personal trainers are typically employed by gyms, fitness studios and hospitals, or they are self-employed. Large-group instructors and professional athletic trainers are not included as part of this industry.		✓
	OD6028	Massage Services: This industry primarily provides therapeutic and nontherapeutic massages. Therapeutic massages encompass soft-tissue manipulation techniques while nontherapeutic massages are primarily for relaxation purposes.		✓

Table 3: Personal and Health Care Related Industries

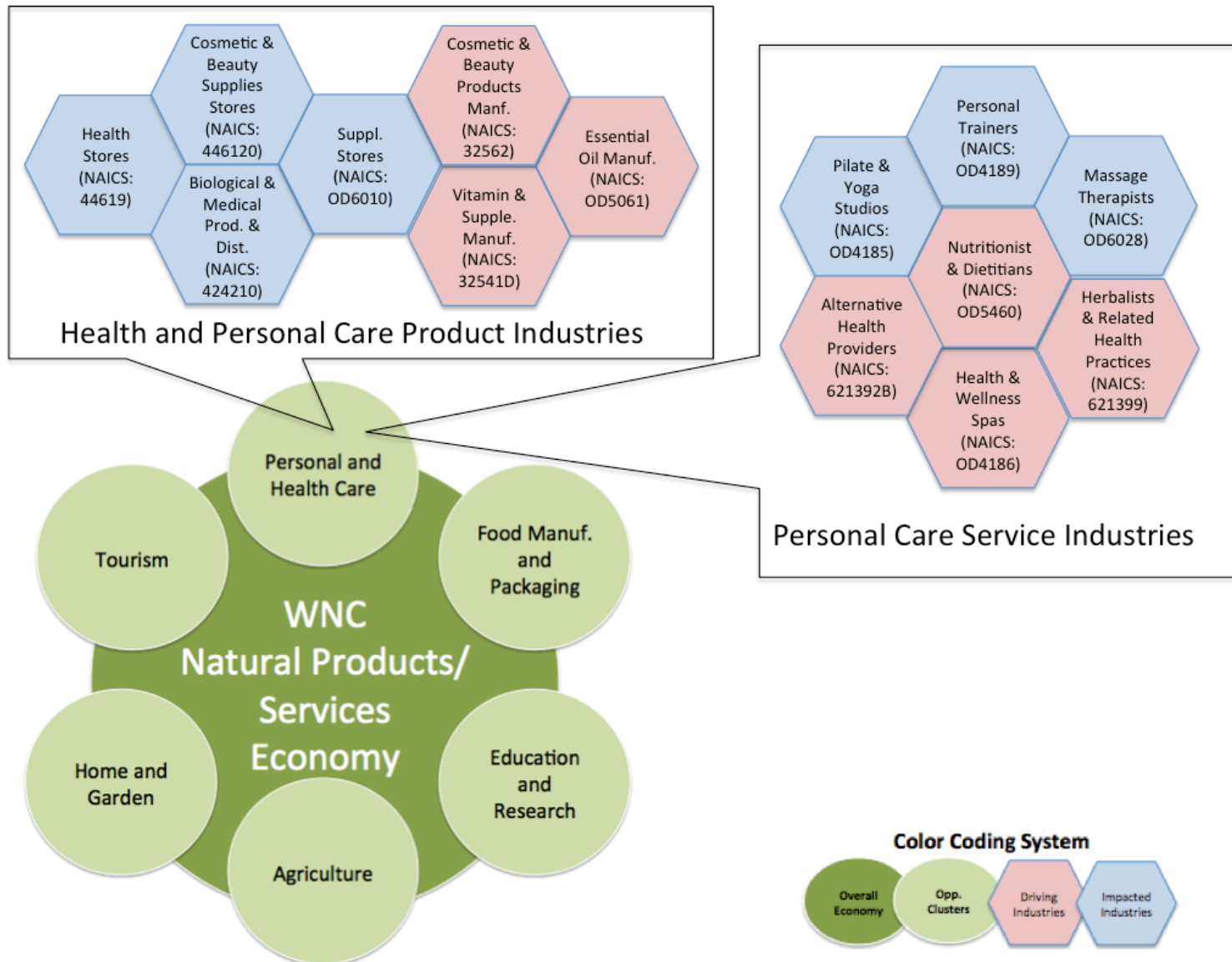


Exhibit 8: Driving and Impacted Industries within Personal and Health Care Opportunity Cluster

Food Manufacturing and Packaging Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Pet Consumption	311111	<i>Dog and Cat Food Manufacturing:</i> This U.S. industry comprises establishments primarily engaged in manufacturing dog and cat food from ingredients, such as grains, oilseed mill products, and meat products.	✓	
	311119	<i>Other Animal Food Manufacturing:</i> This U.S. industry comprises establishments primarily engaged in manufacturing animal food (except dog and cat) from ingredients, such as grains, oilseed mill products, and meat products.	✓	
	32541D	<i>Vitamin & Supplement Manufacturing:</i> Vitamin and supplement manufacturers primarily develop and manufacture products that are consumed by mouth and contain an ingredient intended to supplement the diet. Key groups within this industry include standard vitamin and mineral supplements, as well as sports nutrition products and herbal supplements. This industry excludes manufacturers of energy drinks, infant formula and prescription or over-the-counter (OTC) medications used to prevent or treat illnesses.	✓	
Human Consumption	311	<i>Food Manufacturing:</i> This subsector comprises establishments primarily engaged in producing food for human or animal consumption.	✓	
	31151	<i>Dairy Product Production:</i> Operators in this industry manufacture dairy products such as pasteurized milk, cream, butter, yogurt, cheese and dry, condensed and evaporated milk. Operators supply these goods to a variety of market segments such as retailers, wholesale and food services. Producers of dairy products such as ice cream and frozen yogurt are excluded from this industry	✓	

Table 4: Food Manufacturing and Packaging Related Industries

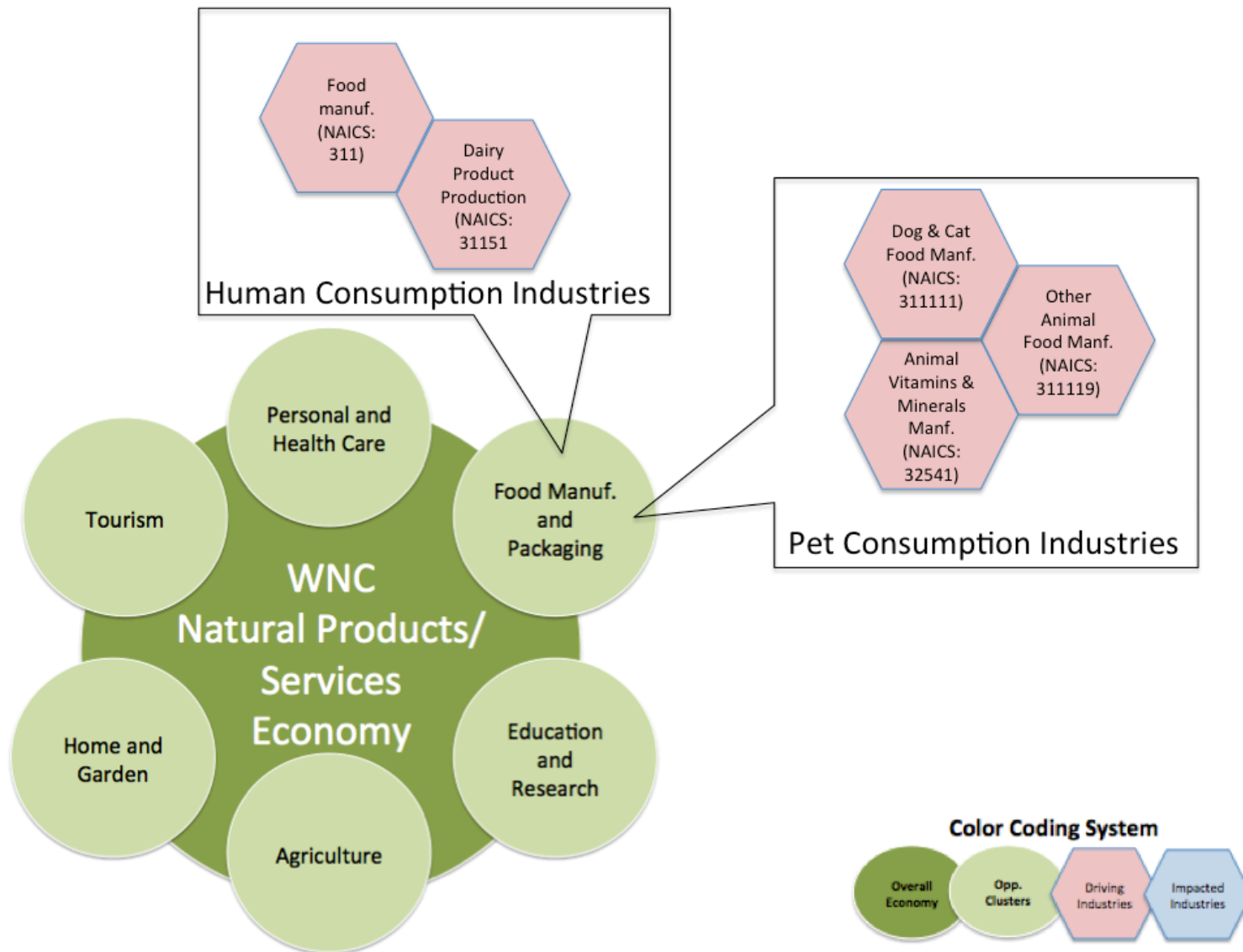


Exhibit 9: Driving and Impacted Industries within Food Manufacturing and Packaging Opportunity Cluster

Education and Research Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Education	611310	Colleges, Universities, and Professional Schools: This industry comprises establishments primarily engaged in furnishing academic courses and granting degrees at baccalaureate or graduate levels. The requirement for admission is at least a high school diploma or equivalent general academic training. Instruction may be provided in diverse settings, such as the establishment's or client's training facilities, educational institutions, the workplace, or the home, and through diverse means, such as correspondence, television, the Internet, or other electronic and distance-learning methods. The training provided by these establishments may include the use of simulators and simulation methods.	✓	
	611519	Other Technical and Trade Schools: This U.S. industry comprises establishments primarily engaged in offering job or career vocational or technical courses (except cosmetology and barber training, aviation and flight training, and apprenticeship training). The curriculums offered by these schools are highly structured and specialized and lead to job-specific certification.	✓	
	611710	Educational Support Services: This industry comprises establishments primarily engaged in providing noninstructional services that support educational processes or systems.	✓	
	8099 (SIC)	Health and Allied Services, not elsewhere classified: Establishments primarily engaged in providing health and allied services, not elsewhere classified.	✓	
Research	5417	Scientific Research and Development Services: This industry group comprises establishments primarily engaged in conducting original investigation, undertaken on a systematic basis to gain new knowledge (research), and in the application of research findings or other scientific knowledge for the creation of new or significantly improved products or processes (experimental development). The industries within this industry group are defined on the basis of the domain of research; that is, on the scientific expertise of the establishment.	✓	

Table 5: Education and Research Related Industries

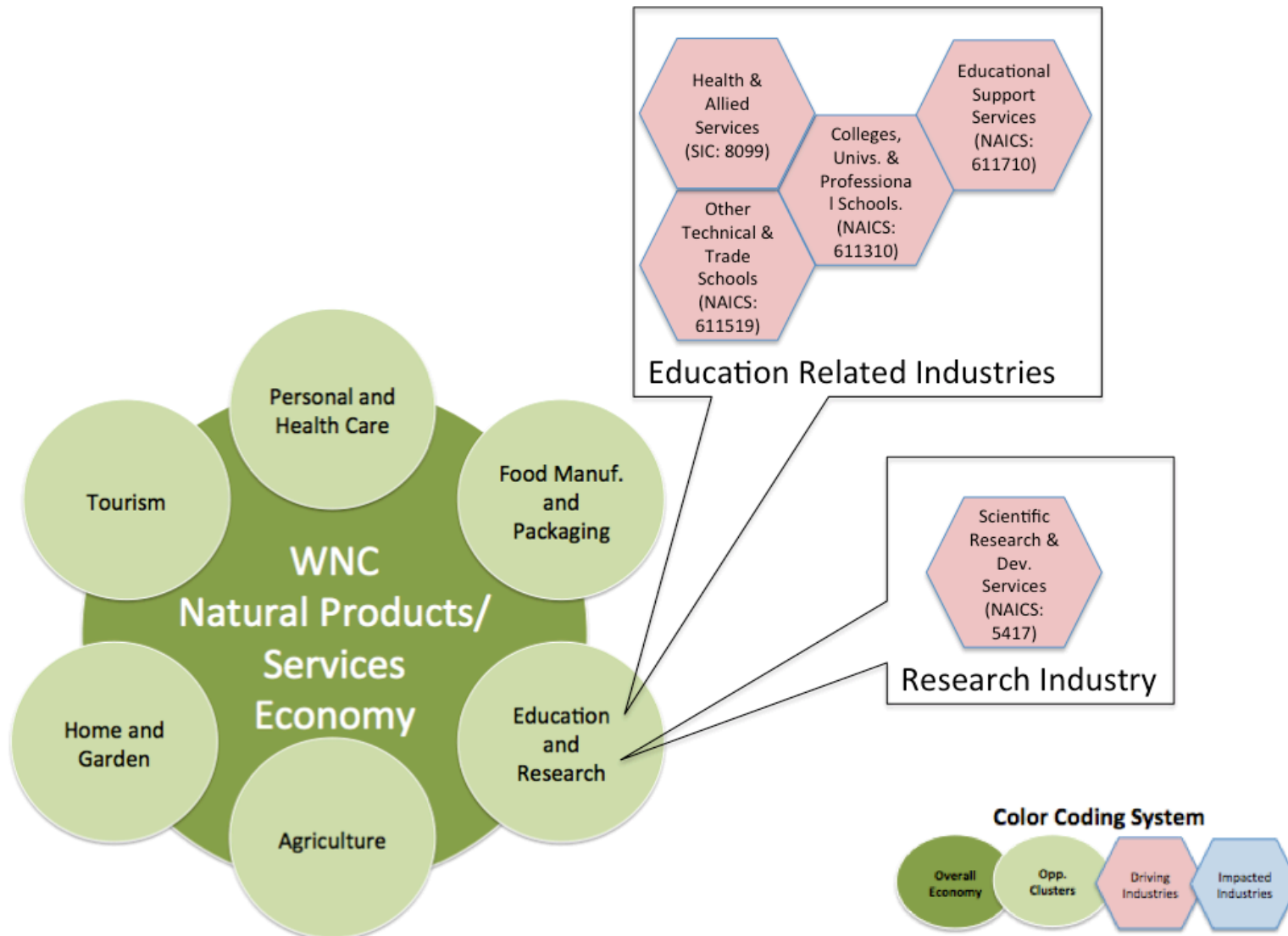


Exhibit 10: Driving and Impacted Industries within Education and Research Opportunity Cluster

Agriculture Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Farming	113	<p>Forestry and Logging: This subsector comprises establishments primarily engaged in growing and harvesting timber on a long production cycle (of ten years or more). Long production cycles use different production processes than short production cycles, which require more horticultural interventions prior to harvest, resulting in processes more similar to those found in the Crop production subsector. Consequently, Christmas tree production and other production involving production cycles of less than ten years, are classified to the Crop production subsector.</p> <p>Industries in this subsector specialize in different stages of the production cycle. Reforestation requires production of seedlings in specialized nurseries. Timber production requires natural forests or suitable areas of land that are available for a long duration. The maturation time for timber depends upon the species of tree, the climatic conditions of the region, and the intended purpose of the timber. The harvesting of timber, except when done on an extremely small scale, requires specialized machinery unique to the industry. The gathering of forest products, such as gums, barks, balsam needles and Spanish moss, are also included in this subsector.</p>	✓	
	112	<p>Animal Production and Aquaculture: This subsector comprises establishments, such as ranches, farms and feedlots, primarily engaged in raising animals, producing animal products and fattening animals. Industries have been created taking into account input factors such as suitable grazing or pasture land, specialized buildings, type of equipment, and the amount and type of labour required.</p> <p>An establishment is classified within this subsector provided that fifty percent or more of the establishment's agricultural production consists of animal production or aquaculture. Establishments with fifty percent or more animal production or aquaculture and with no one product or family of products accounting for fifty percent of the production are treated as combination animal farms and classified to 11299 All other animal production.</p>	✓	
	11231	Chicken Egg Production: This industry comprises establishments primarily engaged in raising chickens for the production of eggs, including hatching eggs.	✓	
	11235	Chicken and Turkey Meat Production: This industry includes farms that raise chickens and turkeys for meat production. Downstream meat processors and food producers supply farmers with chicks, feed and payment, according to contractual agreements. Farmers provide growing facilities, animal care and agricultural expertise. Revenue is recorded in the final prices that farmers receive per average weight of a live animal. This industry excludes chicken egg production, poultry hatcheries and other poultry production.	✓	

	11221	Hog and Pig Farming: Establishments in this industry farm hogs and pigs in operations that include breeding, farrowing, weaning and raising feeder pigs or market-size hogs. The term pig usually refers to the domestic mammal when it is young or small, while hog is the name typically given to domesticated pigs that weigh more than 120 pounds. While hog feedlots are included in the industry, the transportation of the livestock is excluded.	✓	
	11135	Fruit and Nut Farming: Farmers in this industry grow nuts such as almonds and peanuts, as well as fruits like apples, berries, grapes and other noncitrus goods. Operators in this industry sell their crops to downstream processors and fresh produce wholesalers and retailers.	✓	
	11120	Vegetable Farming: Operators in this industry grow a wide variety of vegetables and melons in open fields and in greenhouses. This report does not include some notable crops such as corn, soybeans or wheat, which are included in other reports.	✓	
	11212	Dairy Farms: Establishments in this industry primarily raise cattle for milk. The industry includes only the sale of raw milk and excludes the production of drinkable fluid milk and processed dairy products like butter, cheese and powdered milk. Those value-added activities are covered in the Dairy Product Production industry.	✓	
	11142	Plant and Flower Growing: Establishments in this industry grow nursery plants, such as trees and shrubs; flowering plants, such as foliage plants, cut flowers, flower seeds and ornamentals; and short rotation woody trees, such as Christmas trees and cottonwoods. These plants can either be grown under cover or in an open field.	✓	
Farm Related	NN004	Agribusiness: The Agribusiness industry includes businesses that directly engage in or directly benefit from agricultural activities. Businesses in this industry may produce agricultural commodities, buy agricultural produce or supply goods and services to farms and the agriculture industry. This industry focuses on the food-supply chain up to, but not including, the point of retail sale.	✓	
	115	Support Activities for Agriculture and Forestry: This subsector comprises establishments primarily engaged in providing support services that are essential to agricultural and forestry production.		✓
	OD5341	Farm Supply Stores: Stores in this industry sell a variety of home improvement, gardening, livestock and crop products. They are consumer-facing rather than farmer-facing and offer a format similar to traditional home improvement stores. Products sold in these outlets range from garden supplies to power tools, animal feed and power generators.		✓
	325311	Nitrogenous Fertilizer Manufacturing: This U.S. industry comprises establishments primarily engaged in one or more of the following: 1 Manufacturing nitrogenous fertilizer materials and mixing ingredients into fertilizers; 2 Manufacturing fertilizers from sewage or animal waste; and Manufacturing nitrogenous materials and mixing them into fertilizers.	✓	

Table 6: Agriculture Related Industries

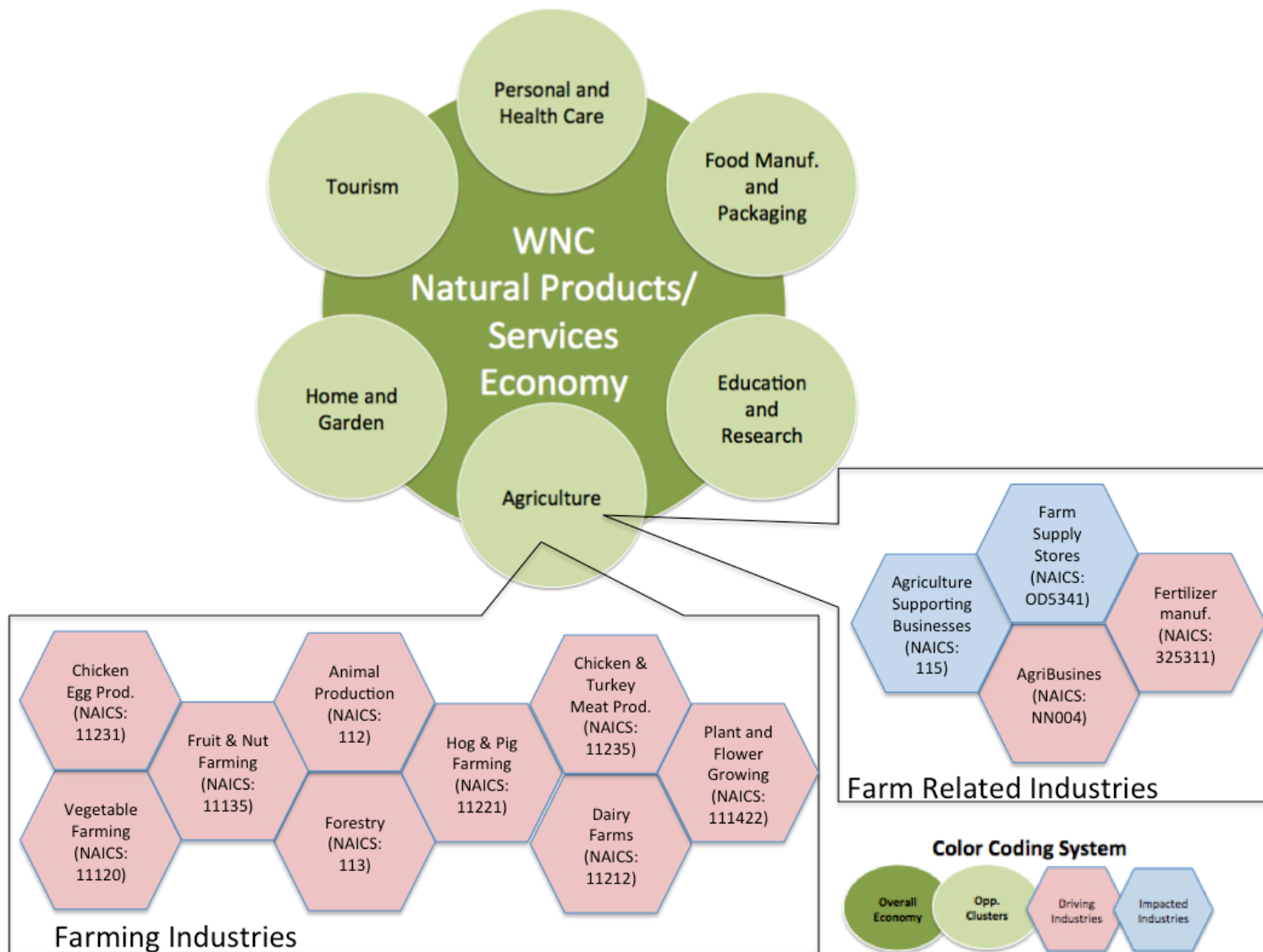


Exhibit 11: Driving and Impacted Industries within Agriculture Opportunity Cluster

Home and Garden Related Industries

Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry	Impacted Industry
Home Product and Services	32111	Sawmills and Wood Production: Companies in this industry primarily saw dimension lumber, boards, beams, bolts, poles, shingles, siding and wood chips from logs. Industry operators also chemically treat lumber to preserve and protect it from fire, moisture, mold and insects. This industry excludes establishments that plane purchased lumber and manufacture shapes, veneer and engineered lumber products and cut and transport timber.	✓	
	32561	Soap and Cleaning Compound Manufacturing: This industry produces substances that loosen and remove soil from a surface for personal hygiene, sanitization or cleaning clothes, linens and furnishings. The industry does not include manufacturers of synthetic glycerin, industrial bleaches or shampoos.	✓	
	23611	Residential Building Construction: This industry comprises establishments primarily responsible for the construction or remodeling and renovation of single-family and multifamily residential buildings. Included in this industry are residential housing general contractors (i.e., new construction, remodeling, or renovating existing residential structures), for-sale builders and remodelers of residential structures, residential project construction management firms, and residential design-build firms.	✓	
	236220	Commercial and Institutional Building Construction: This industry comprises establishments primarily responsible for the construction (including new work, additions, alterations, maintenance, and repairs) of commercial and institutional buildings and related structures, such as stadiums, grain elevators, and indoor swimming facilities. This industry includes establishments responsible for the on-site assembly of modular or prefabricated commercial and institutional buildings. Included in this industry are commercial and institutional building general contractors, commercial and institutional building for-sale builders, commercial and institutional building design-build firms, and commercial and institutional building project construction management firms.	✓	
	444110	Home Improvement Stores: Stores in this industry sell a range of home repair and maintenance goods, such as hardware, tools, electrical goods, lumber and structural material for construction and renovations. Hardware stores, which are generally smaller and consequently sell fewer items, are excluded from this industry. Home improvement companies purchase goods from manufacturers and wholesalers, and sell them to end users, such as do-it-yourself consumers and professional contractors.		✓
	561720	Janitorial Services: Operators in this industry clean building interiors, the inner parts of transportation equipment (e.g. aircraft, railcars and ships) and windows. Industry activities include contract cleaning services for factories, retail outlets, shopping centers and malls, business and government offices, trains and airlines and house-cleaning services.		✓

Gardening Related	561730	<i>Landscaping Services:</i> This industry primarily provides landscape care and maintenance services, including planting trees, shrubs, flowers, lawns or gardens. Industry companies may also design landscape plans or construct walkways, retaining walls, decks, fences, ponds and similar structures. The design of large-scale landscaped areas, such as the campuses of hospitals or schools, is included in the Landscape Design industry.		✓
	54132	<i>Landscape Design:</i> Operators in this industry plan and design the development of land areas for projects by applying their knowledge of land characteristics, locations of buildings and structures and use of terrain. Operators work on recreational areas, airports, highways, schools and land subdivisions in commercial, industrial and residential areas. This industry does not include landscape care and maintenance services, such as installing and caring for trees, lawns or gardens.	✓	
	424930	<i>Flower and Nursery Stock Wholesaling:</i> Operators in this industry sell flowers, nursery stock and florists' supplies to retail outlets. Distributors purchase flowers and nursery stock from farmers and buy florists' supplies from various manufacturers. This industry does not grow flowers or plants, nor does it distribute Christmas trees, plant seeds or bulbs.		✓
	444220	<i>Nursery and Garden Stores:</i> Stores in this industry primarily retail a broad range of nursery and garden products, including trees, shrubs, plants, seeds, bulbs and sod to households and the farming community. This industry also includes stores that retail farm supplies such as animal feed (excluding pet food). The growing and retailing of nursery stock is included in the Plant and Flower Growing industry.		✓

Table 7: Home and Garden Related Industries

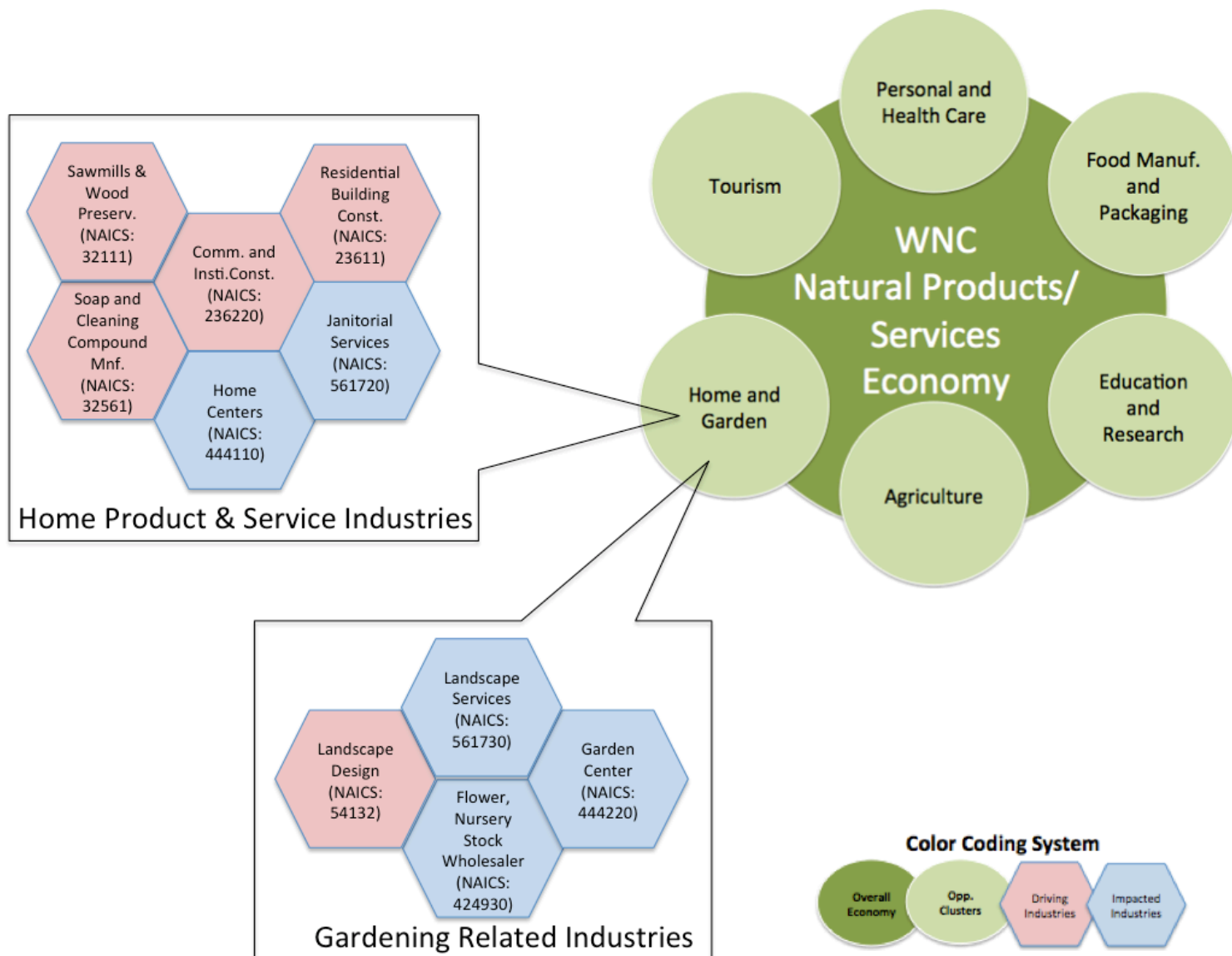


Exhibit 12: Driving and Impacted Industries within Home and Garden Opportunity Cluster

Repository of Existing WNC NPSE Value Network Businesses

As part of the project, a repository of existing entities within each of the five areas of the NPSE value network was compiled. There were two reasons to look at the existing entities in relation to the recommendations moving forward.

- 1) To determine the distribution of the NPSE across the region. It is evident in all cases that Asheville area is a hub of activity and serves as a draw for individuals interested in natural product manufacturing and education. There are several areas where we have discovered that as Asheville grows, so does the entire western region. These areas include craft breweries, vineyards and wineries, food to table restaurants, farmers markets and spas and natural healing products and services.
- 2) To determine if there are potential gaps in the NPSE across the region. In just the brief number of companies and resources plotted, there are existing entities in place to build the network needed to grow the NPSE exponentially if all parties work together for that regional goal. We have the proof that this will work in the example of the craft brewery industry. The trend of going outside the mainstream and tasting individualized beer has become so popular that even the major players have moved in that direction. With this trend in mind, WNC can market itself as a place outside the mainstream where you can get craft beverages, regionally grown food products and herbs, and crafted medicine from nature.

In the following Geo-spatial maps (Appendices D-H), you will see the entities compiled plotted across the region followed by a compilation of all the entities on one map to show the overlap of all the businesses and resources and give you a visual of the size and strength of the existing NPSE and the foundation of growing the economic development as a region.

1) Specialty Farming & Wild Harvesting

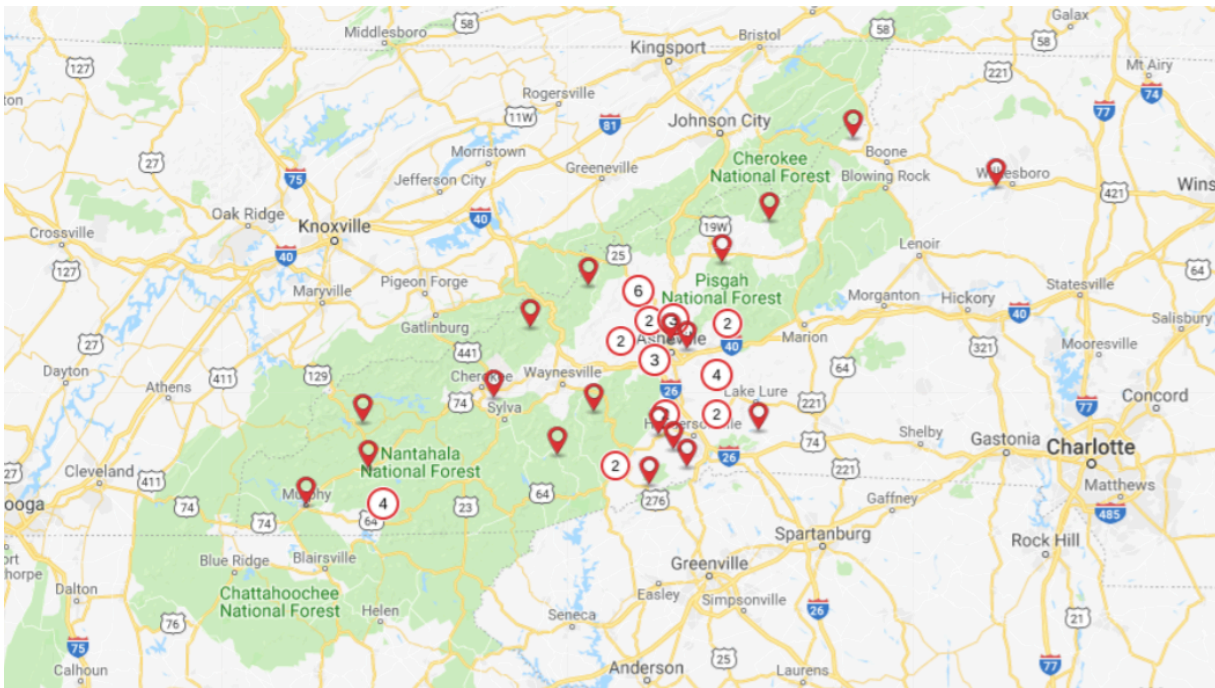


Exhibit 13: Map of WNC Growers

2) Value-Added Manufacturing & Wholesale Distribution

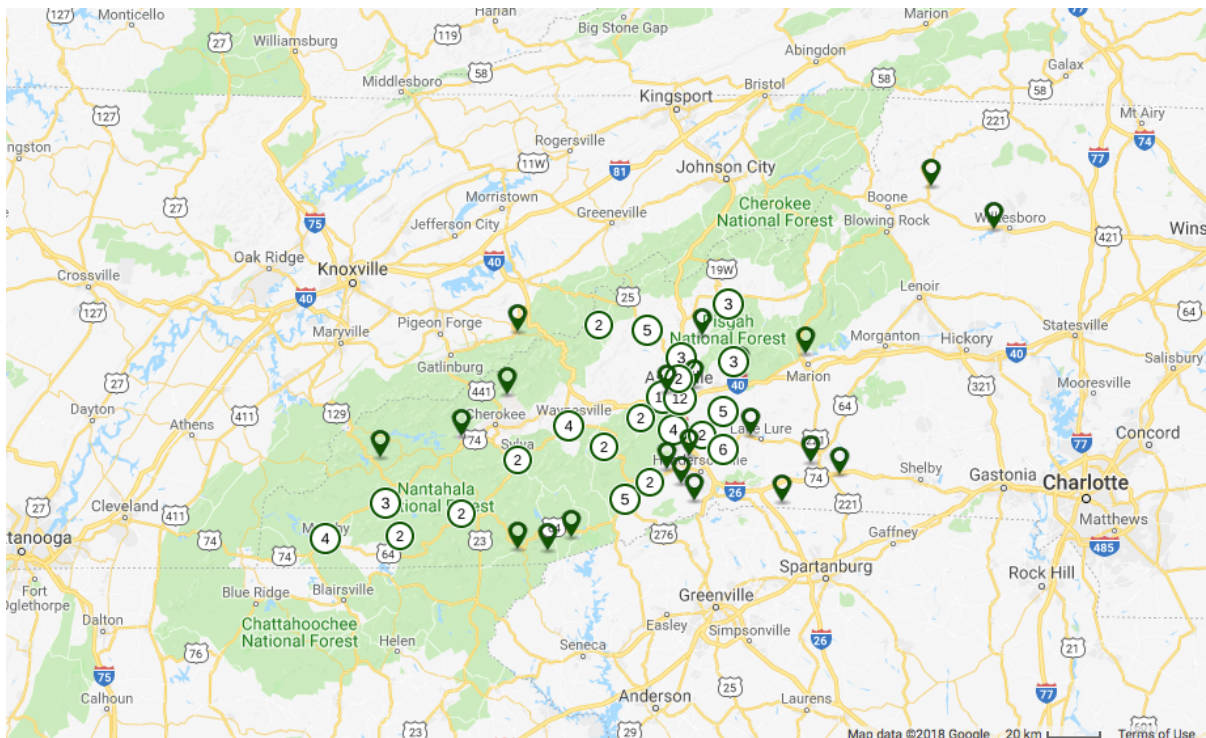


Exhibit 14: Map of WNC Manufacturers and Distributors/Brokers

3) Retail Stores and Personal Services

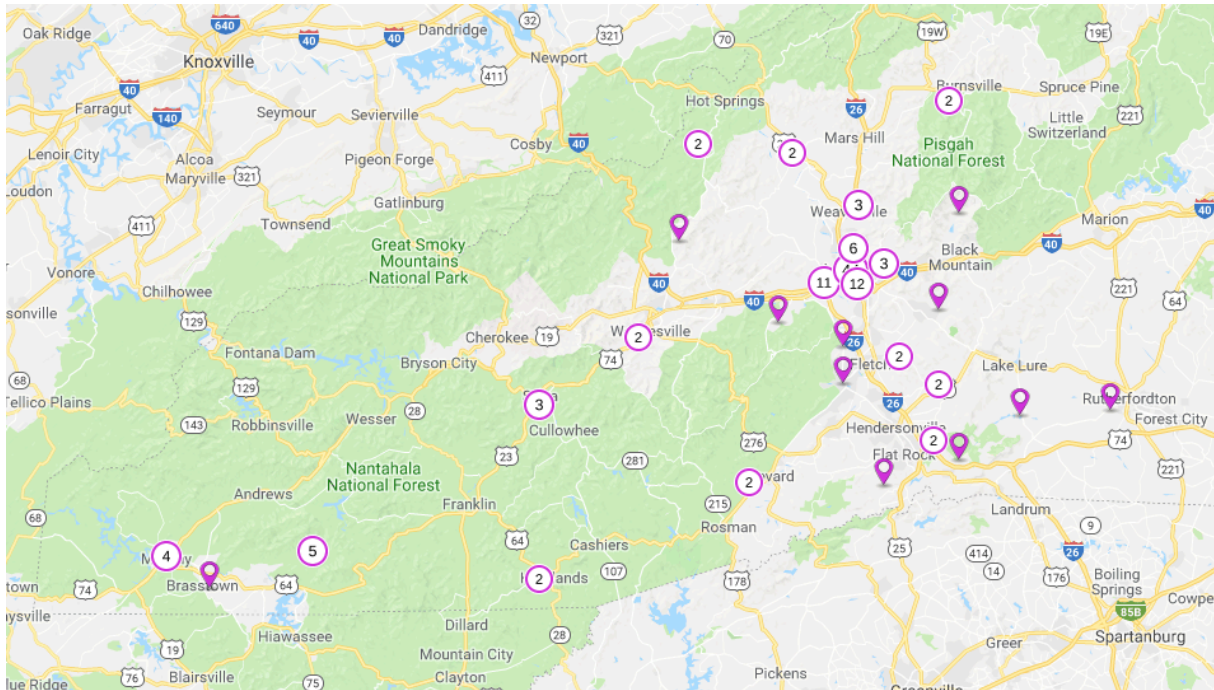


Exhibit 15: Map of WNC Retail and End Consumer Services

4) Testing Labs, Research Institutions, and Product Development

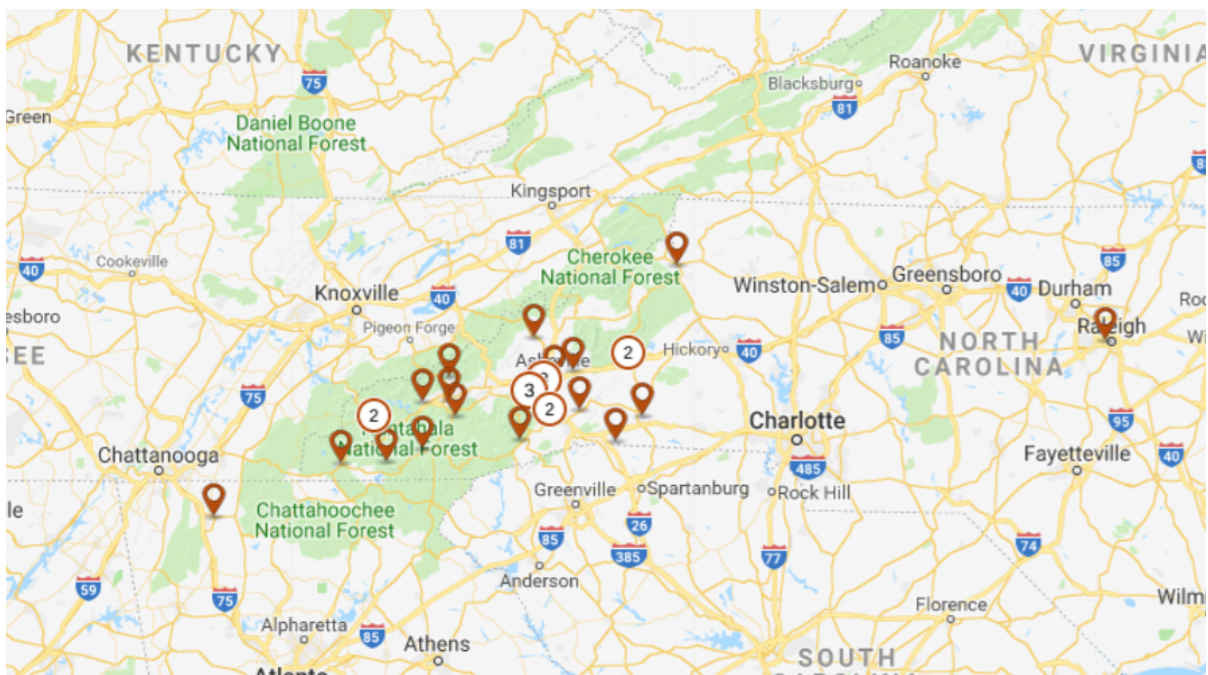


Exhibit 16: Map of WNC Testing Labs, Research Institutes, and Product Development Services

5) Technical Assistance, Educational Institutions, and Supporting Programs

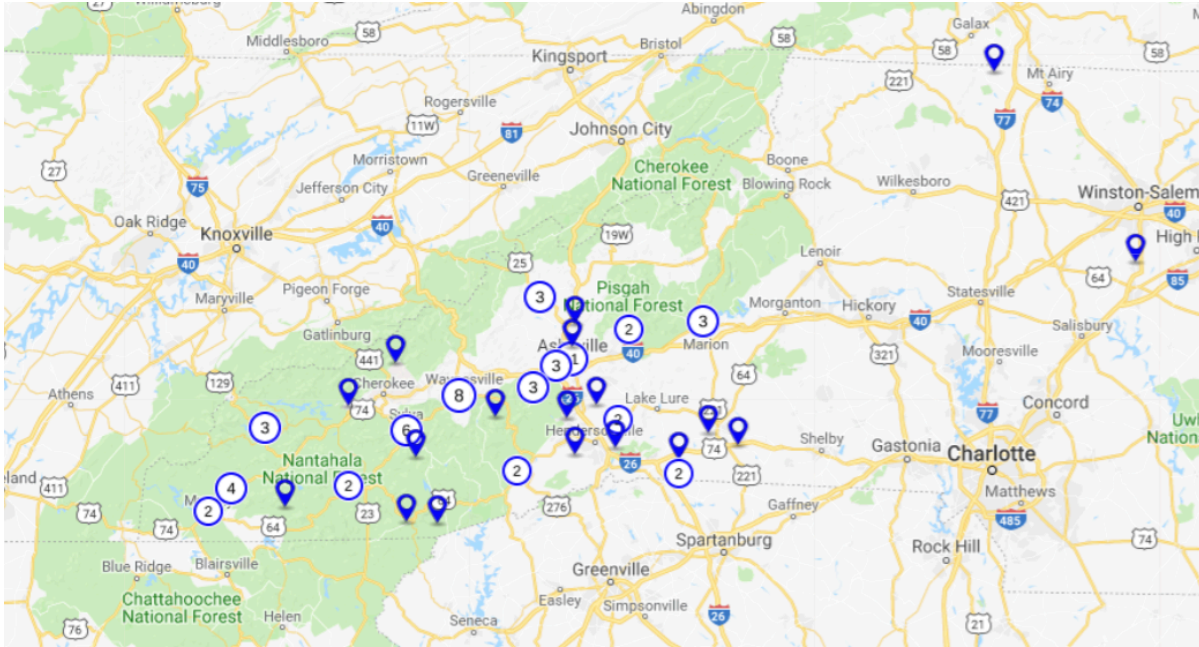


Exhibit 17: Map of WNC Education and Support Providers

Value Network Map Overlay

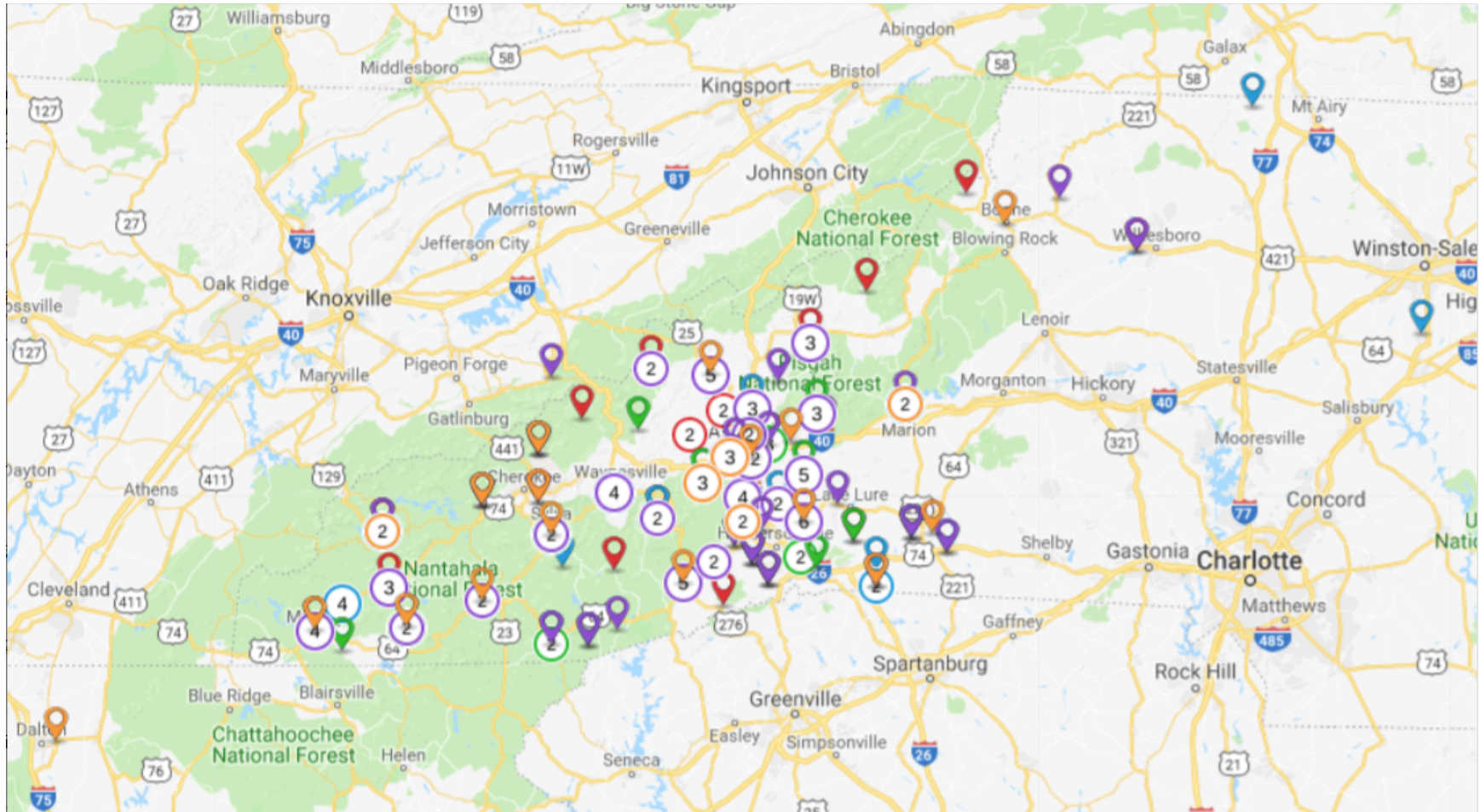


Exhibit 18: An Overlay Map of All Businesses and Resources within the 5 Areas of the Value Network

Recommendations

WNC has always been a place where people appreciate our traditions, respect the people before us, and support one another. A long-standing goal of the region has been to promote and recruit businesses that contribute to the growth of existing local industries or bring valuable resources from outside the region. The majority of the residents in the region, whether they are retirees, working professionals, students, or part-time dwellers, have simple tastes, passionate about their hobbies, enjoy active gardening or spending time outdoors, pay close attention to their health, and prefer modest lifestyles.

In the following sections, tables 7 - 11 present summaries of “what’s working”, “what’s not working”, “what’s needed”, and “what are the barriers” for each of the five value network components described in the previous sections. All of the factors identified are extracted from in-depth interviews and market research. The cells highlighted in **yellow** represent the researchers’ perspectives of regional competitive advantages and the cells highlighted in **red** key barriers for NPSE development. Based on the analysis of diverse information gathered, action-oriented recommendations are also proposed to highlight short-term and long-term next steps. These steps are a sampling of activities needed to begin building a stronger regional NPSE and position WNC as a “Terrior” for natural and healthy living. Crafting a coordinated regional image for Western North Carolina that creates a sense of place that is hard to duplicate in other areas. This image will provide a unique bond between the people, products and culture of the region to the consumers of the natural products. Dr. Steve Henson, a marketing professor at WCU, described it as follows, “It is Difficult to describe “Terroir”, a French word that measures a product by its “sense of place”— people are falling in love with the WNC and sense of place (craft products not standard main stream) Beer trail, Wine Trail, Cheese Trail, foodies farm to table. Sense of unique products and crafting mentality, for example: Jamaica Red Stripe Beer—It tastes different when you drink it in Jamaica so it connects you to the place. You can’t take Red Stripe out of its place or it tastes different. What we can do here is develop that taste of place that makes us unique and memorable. WNC is unlikely to develop high tech but by tying Natural products and services to place, this is our unique opportunity.”

1) Specialty Farming & Wild Harvesting

(1) Raw Material Specialty Farming & Wild Harvesting			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
Existing specialty farming knowledge such as small Farmers knowledge about growing herbs	Hesitant to expand into value-added products	More herb growers-current market movement into botanical supplements will increase demand for herbs	No clear definition of "Natural" vs. Organic
Homestead movement-next generation want quality of life-simplistic generating revenue from the land they own or lease	Farmers have limited farmland and need cash crops	Money and people to focus on growth of farming and resources outside of Agriculture for business tech. assistance	No person or agency is assigned to make sure the programs work and track the impact
SCC Farmers schools-teaching business techniques	Collaboration between farmers and manufacturing	Contract development between manufacturers and growers	Farmers not treated as businesses and lack the resources needed to expand into value-added product production
Shift in mindset to local food	Agriculture needs to be supported at a county level	On-going research of new crops in demand (non-traditional) ex: Elderberry is now in demand	No rewards for collaboration
Craft cocktails and the foraging flavors for restaurants are allowing attracting customers	Small scale dairy farms - high barriers due to regulation	Develop businesses that have impact on the value-chain to create better lives for WNC residents	Present Use Value (PUV) Land Tax Plan for non-timber crops to encourage using forest land for economic purposes.
Farmer markets are located in most towns and counties support retail operations for farmers	WNC is not a row crop place-production should be wild not row	Financing programs for growing herbs that sometimes take 4 years to produce product	Growing/ Harvesting ability in the National Parks, National Forests or NC Wildlife areas
WNC is leading the state in farmland protection initiatives.	Not enough agricultural supply for the medicinal supplement local market-mindset change required to produce a new type of crop	Post-harvest handling facility	Limited education for farming/harvesting workforce in non-timber forest products
Utilizes the natural resources in the region	Not taking advantage of the opportunities driven by national trends and demand from the consumer	Growing Hemp is an economic opportunity for WNC due to large profit margin in the CBD oil	Wild harvesters are not replacing the plants for sustainability.
Diverse ecosystem of forests, wetlands, and bodies of water	Production and regulatory environment for small producers	Growing Goldenseal in a controlled environment reducing the harvest time from 4 years to 18 months	Include farming as an outdoor recreation activity for fun and tourism

(1) Raw Material Specialty Farming & Wild Harvesting			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
Climate is moderate, soil is well drained, and an abundance of water supply makeup valuable agricultural sustainability factors, particularly for fruits and vegetables.	Support of the growers—the farmers will grow it but they need to have help with selling to distributors	State should move to develop the driving industries to grow NPSE	Involving the EBCI and tribal land to allow tribe members to grow medicinal plants
Forest land soil is very suitable for growing botanical herbs.	Growers need assurance that the products will be bought at prices with margins	Commercial demand will win and greenhouses for organic will be allowed—lets be ready	Labor must be relatively skilled with the ability to control the growth and potency while illuminating contamination.
Eco-tourism on the rise--tourist come to WNC to participate	The web presence of some non-profit organizations like the Herb Research Foundation have products but no clear information on how to use them and others like the Yellow Creek Botanical Institute has old news on the web.	Develop Niche markets—focus on what the product does and how it is beneficial--find your market to make money without worrying about natural and organic.	Look at the economics of a new crop early, involve businesses and be more systemic.
New tourism opportunity where chefs take people in the forest to forage for wild edibles, then prepare what they find.	Everyone is doing their own thing and there is no organization to serve or monitor the natural products economy.	Supply and demand issues - Need help with market analysis - Need to be able lease large tracts of land for wild harvesting both private and national forest.	Graham, Swain, Jackson Counties are made up of land suitable to grow the herbs but are owned by Federal and State government.
Government resources and programs supporting farming (Farmlink-program matching farmers with land to lease, and Forest Farming Coalition Program in WNC-Multi-Institutional partnership)	Currently, only 20% of the farms make over \$50,000 revenue a year, and roughly 46% of WNC farms do not have sales over \$2,500.		Mountain terrain limits the type and size of farming.

Table 8: WNC Specialty Farming and Wild Harvesting Strategic Position Assessment

Recommendations

Overall Recommendation: Using the existing and abundant resources in the region, identify solutions to effectively overcome the barriers to farming and wild harvesting plants and herbs with economic value in WNC, thus, increasing the supply of products to meet the increasing demand occurring in the market in a sustainable way.

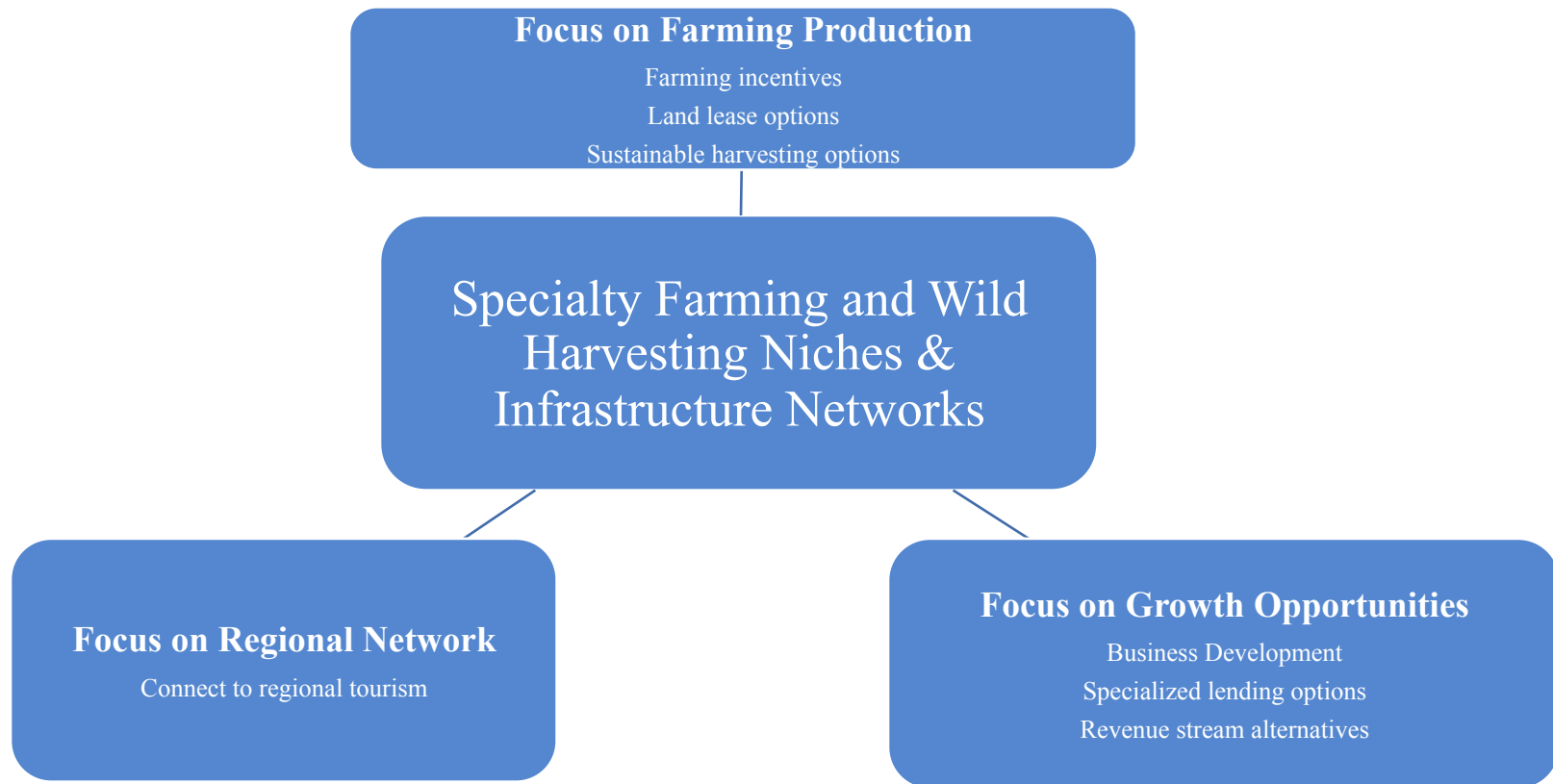


Exhibit 19: WNC Specialty Farming and Wild Harvesting Recommendations Relationship Mapping

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Focus on Farming Production	Complete a detailed feasibility study of medicinal plant production in WNC to determine	<ul style="list-style-type: none"> If there is an abundance of natural resources in WNC to supply the production process and expand the natural products economy 	✓	
	Investigate and invest in	<ul style="list-style-type: none"> Growing goldenseal in a controlled environment to reduce harvest time from 4 years to 8 months 		✓
		<ul style="list-style-type: none"> Growing hemp to harvest CBD oil, a high profit margin botanical product 		✓
		<ul style="list-style-type: none"> More herb growers to respond to national and international increased demand in natural botanical supplements 	✓	
	Improve WNC farmland access through	<ul style="list-style-type: none"> Long-term land lease agreements for private, EBCI, NC Wildlife, and national forests for specialty farming and wild harvesting 	✓	
		<ul style="list-style-type: none"> Partner with WNC FarmLink to establish incubator farms for both row and forest farming 	✓	
		<ul style="list-style-type: none"> Provide legal assistance to mountainous land owners to develop contracts for leasing property for forest farmers to produce herbs and medicinal crops that require a forest canopy 	✓	
		<ul style="list-style-type: none"> Land ownership assistance 		✓
	Provide necessary support for farmers who need	<ul style="list-style-type: none"> Technical assistance in land search and capacity analysis for small and diversified farm infrastructure 	✓	
		<ul style="list-style-type: none"> NC crop subsidy to lower risks for farmers to help change their perceptions of what they should be growing 		✓

Table 9: WNC Specialty Farming and Wild Harvesting Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Focus on Regional Network	Support farmers through regional networks of educational programs <i>through</i>	<ul style="list-style-type: none"> A training program tailored to address long-term financial planning, business skills and marketing expertise for farmers 	✓	
		<ul style="list-style-type: none"> A mentorship program for beginning farmers paired with more experienced farmer for guidance in developing a sustainable family farming life 	✓	
		<ul style="list-style-type: none"> Apprentice programs for young homesteaders to provide career ladder opportunities 	✓	
		<ul style="list-style-type: none"> An education program designed for the public and wild harvesters on wild harvesting techniques to sustain native plants in the region 	✓	
		<ul style="list-style-type: none"> County-specific agriculture training programs based on elevation and plant growing conditions 		✓
	Conduct research and develop partnerships <i>to</i>	<ul style="list-style-type: none"> Organize on-going research of non-traditional new crops in demand, ex: elderberry and ginger 	✓	✓
		<ul style="list-style-type: none"> Partner with EBCI to encourage tribal members to utilize the property for medicinal crop farming 		✓

Table 10: WNC Specialty Farming and Wild Harvesting Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Focus on Growth Opportunities	Business development <i>focusing on</i>	<ul style="list-style-type: none"> Driving industries in NPSE 	✓	
		<ul style="list-style-type: none"> Businesses that have impact on WNC NPSE value network to create better lives for WNC residents <ul style="list-style-type: none"> Medicinal plant production as a viable crop option for small family operated farms Utilize grower/owner-produced raw material to manufacture USDA National Organic Program (NOP) certified liquid extracts for the dietary supplement and medicinal plant, providing a steady reliable market for grower/owner and value-added product production and subsequent marketing of those products 	✓	
		<ul style="list-style-type: none"> Developing niche markets that are profitable first, then categorize whether they are natural or organic 	✓	
		<ul style="list-style-type: none"> Contracting development between manufacturers and growers 		✓
	Provide necessary support for farmers <i>who need</i>	<ul style="list-style-type: none"> On-going research knowledge of supply and demand for specialty crops, especially non-traditional new crop such as elderberry and ginger 	✓	✓
		<ul style="list-style-type: none"> Partnership with EBCI to encourage tribal members to utilize the property for medicinal crop farming 		✓
	Financial, physical, and human infrastructure development <i>to support</i>	<ul style="list-style-type: none"> Greenhouse infrastructure as commercial demand for organics will force intensified growing conditions 	✓	
		<ul style="list-style-type: none"> Facilities for post-harvest handling 		✓
		<ul style="list-style-type: none"> Skilled farmers who also own business and technical knowledge 	✓	
		<ul style="list-style-type: none"> Financial programs for farmers investing in slow producing specialty plants, such as herbs requiring 4 years to produce 	✓	
		<ul style="list-style-type: none"> Grant writing based on needs that have been identified, such as cold storage, green house, hydroponics, etc. 	✓	

Table 11: WNC Specialty Farming and Wild Harvesting Strategic Priorities and Actions

Resources and Programs

Appalachian Botanical Association	Amy Hamilton	http://www.aba-coop.com/
Living Systems Design Consulting	Zev Friedman	http://www.livingsystemsdesign.net/
Carolina Farm Credit		https://carolinafarmcredit.com/locations/branches/hendersonville.aspx
Carolina Farm Credit	Sherry Palmer	https://carolinafarmcredit.com/locations/branches/murphy.aspx
Carolina Farm Credit	Randy Rogers	https://carolinafarmcredit.com/locations/branches/waynesville.aspx
NC Dept of Agriculture		www.ncagr.gov
NC Community College-Southwestern Appalachian Farm School	Tiffany Henry	https://www.southwesterncc.edu/news/appalachian-farm-school-breaks-new-ground
USDA- Farm service agency-business development		https://www.fsa.usda.gov/
USDA- Agriculture Dept-Farm Services		https://www.fsa.usda.gov/
USDA- Agriculture Dept-Farm Services		https://www.fsa.usda.gov/
USDA- Agriculture Dept-Farm Services		https://www.fsa.usda.gov/
Appalachian Beginning Forest Farmer Coalition	Margaret Bloomquist Jeanine Davis	https://www.appalachianforestfarmers.org/
Appalachian Sustainable Agriculture Program (ASAP)		http://asapconnections.org/
NC Wine Growers Association	Patti Friszolowski	https://ncwinegrowers.com/
WNC Farm Links	Suzanna Denison	https://wncfarmlink.org/
Organic Growers School	Lee Warren	https://organicgrowersschool.org/
Smoky Mountain Native Plants Association		http://smnpa.org
NC Arboretum Bent Creek Germplasm Repository formerly Bent Creek Institute		https://www.ncarboretum.org/impact/germplasm-repository/

NC Herb Association	Camille F. Edwards	http://www.ncherbassociation.org/
NC State Univ Agriculture Extension		https://www.ces.ncsu.edu/categories/agriculture-food/
NCSU Ag Extension-Buncombe County	Steve Duckett	https://buncombe.ces.ncsu.edu/
NCSU AG Extension-Cherokee County	Doug Clement	https://cherokee.ces.ncsu.edu/
NCSU AG Extension-Clay County	Doug Clement	https://clay.ces.ncsu.edu/
NCSU AG Extension-EBCI Center	Chumper Walder, Jr.	https://ebci.ces.ncsu.edu/
NCSU AG Extension-Graham County	Randy Collins	https://graham.ces.ncsu.edu/
NCSU AG Extension-Haywood County	Dr. Bill Skelton	https://haywood.ces.ncsu.edu/
NCSU AG Extension-Henderson County	Dr. Terry Kelley	https://henderson.ces.ncsu.edu/
NCSU AG Extension-Macon County	Alan Durden	https://macon.ces.ncsu.edu/
NCSU AG Extension-Madison County	Ross Young	https://madison.ces.ncsu.edu/
NCSU AG Extension-McDowell County	Molly Sandfoss	https://mcdowell.ces.ncsu.edu/
NCSU AG Extension-Mountain Horticulture Crops Research	Jeanine Davis	https://mountainhort.ces.ncsu.edu/
NCSU AG Extension-Polk County	Scott Welborn	https://polk.ces.ncsu.edu/
NCSU AG Extension-Rutherford County	Jeff Bradley	https://rutherford.ces.ncsu.edu/
NCSU AG Extension-Jackson County	Rob Hawk, II	https://jackson.ces.ncsu.edu/
NCSU AG Extension-Swain County	Rob Hawk, II	https://swain.ces.ncsu.edu/
NCSU AG Extension-Transylvania County	Bart Renner	https://transylvania.ces.ncsu.edu/
Warren Wilson College- Farm		https://www.warren-wilson.edu/farm/

Table 12: WNC Specialty Farming and Wild Harvesting Growth Resources and Program

2) Processing and Wholesale Distribution-Manufacturers/Distributors/Brokers

(2) Processing and Wholesale Distribution Value Added Product Manufacturing & Distribution			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
Large number of entrepreneurs in the region	Some entrepreneurs making value-added natural products are off the radar	Meat processing plant in region	Proving and marketing for medicinal benefits
Resources to assist start-up businesses	Small value perceived for economic development impact	Manufacturing facility for hemp is an opportunity since CBD oil manufacturing has been approved in NC	CBD oil is still in the process of approval in NC
Small Manufacturing companies are well received in county economic development plans	Support for small scale processing technology for value added manufacturing	Local list of farmers who are interested in selling or growing herbs	Economic Developers need to shift their mindset to a more localized growth for manufacturing
30-40 existing manufacturers of medicinal supplements selling them on-line	Trying to supply all the demand in WNC. We need to forget the growing part and develop the processing and distribution.	Need funding for a huge dehydration and processing hub for buying and selling herbs, education on growing, and draws tourism	Research needed on end users and what they need
Breweries have increased demand and acceptance for more artisan products in food, cosmetics and medicine.	Local and state regulation burdens on small producers and manufactures	Co-op for manufacturers to buy raw products together	Pharmaceutical companies and investors know there is a supply problem
Breweries are incorporating flavors through herbs	Make the natural product production sustainable through partnerships; not grant based.		R&D to develop markets, create distribution channels, maintain quality
Regional strategic focus: specialty manufacturing, examples include recreational products, energy components, metal products, and machinery operations			
Regional strategic direction to reduce solid waste over the next 10 years			

Table 13: WNC Processing and Wholesale Distribution Strategic Position Assessment

Recommendations

Overall Recommendation: Develop a facility plan for WNC Natural Products Hub to support local growers and manufacturers in production and distribution of natural products. This facility would provide a physical space to bring resources together to assist all aspects of natural products supply chain, assistance to help small independent businesses overcome restricting barriers, and develop a connection to domestic markets and eventually international markets.



Exhibit 20: WNC Processing and Wholesale Distribution Recommendations Relationship Mapping

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Quality Control Support	WNC Natural Products Hub should work with small manufactures in a space certified in Good Manufacturing Practices (GMP) to	• Provide appropriate batch testing services for quality assurance	✓	
		• Provide assistance in understanding and application of all legal requirements for natural and organic product labeling	✓	

Table 14: WNC Processing and Wholesale Distribution Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Manufacturing and Distribution Support	WNC Natural Products Hub should offer local growers key services to reduce processing and distribution costs, which may include:	• Dehydration, processing, and packaging of raw ingredients ready for manufactures or end consumers		✓
		• Standard and climate-controlled storage		✓
		• Coordination of shipping within and outside of the region		✓

Table 15: WNC Processing and Wholesale Distribution Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Supplier Support	WNC Natural Products Hub should develop and house a cooperative that	• Locate and purchase raw material and/or ingredients from WNC growers and suppliers when possible before moving outside the region	✓	
		• Wholesale necessary ingredients to small manufactures at a reduced cost to encourage stronger profit margins		✓

Table 16: WNC Processing and Wholesale Distribution Strategic Priorities and Actions

Resources and Programs

Apple Pharms Ingredients	Ryan Fearon	http://applepharms.com/
Phoenix Research Products	Niki Metcalf	https://www.phenixresearch.com
NC Community College Business Incubator-AB-Tech	Jill Sparks	https://www.abtech.edu/business-incubation
NC Community College-BioNetwork-Natural Products Lab	Chris Reedy	https://www.ncbionetwork.org/contact-us/asheville/natural-products-laboratory
NC Community College-McDowell Universal Advanced Manufacturing Center	Frank Silver	https://www.mcdowelltech.edu/apps/pages/index.jsp?uREC_ID=1022335&type=d&pREC_ID=1328291
Botanipharm, LLC	Randy Beavers	http://botanipharm.com/product/
Appalachian State University-Enology Brewing Lab and Vitaculture	Rusty Kuhfeld	https://wine.appstate.edu/wine-quality-alliance
NC Arboretum US Botanical Safety Laboratory		https://www.ncarboretum.org/impact/germplasm-repository/
Mountain True		https://mountaintrue.org/
NC Community College-Cherokee County Center for Applied Technology	Paul Worley	https://www.tricountycc.edu/community-business/economic-workforce-development/
USDA- National Institute of Food and Agriculture		https://nifa.usda.gov/
USDA- Rural Development Innovation Center	Claudette Fernandez	https://www.rd.usda.gov/about-rd/offices/rural-development-innovation-center
Blue Ridge Food Ventures		http://www.blueridgefoodventures.org/

Table 17: WNC Processing and Wholesale Distribution Growth Resources and Programs

3) End Consumer Distribution- Retail Products and Personal services

(3) End Consumer Distribution Retail and Services to End Consumers			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
93 craft breweries located across WNC	Regional hub of Asheville does not extend to far western counties	Regional branding using the craft breweries as an example to enhance growth for all 14 counties in WNC	The scientific research on benefits cannot be done in WNC due to lack of interest at Universities
The region is known for wellness and healthy eating supporting the culture for NP	Tourist information is localized and the region does not work as a whole	Establish credible business practices with explanations on unknown processes	Products and services need to be embraced by medical community
Tourism has always been a strong industry for WNC economy attracting outdoor enthusiasts, motion pictures, arts, lodging and hospitality, entertainment, and heritage tourism	Some of the NP companies are not professional and turn away customers who lack knowledge	Connection with manufacturers of local medicinal supplements, food and essential oils	Regulations on craft breweries might hamper growth of industry
Spa products and services, breweries and specialty farms support tourism for the region	Too much spirituality mixed with medicinal supplements	Resource assistance for social media and developing a market space on-line for products.	Hard to get awareness and shelf space in large retail organizations for small companies
“Terror”--regional image is changing to create an experience or sense of place	Not enough product produced to supply demand	Blockchain technology to track raw material sourced for products and restaurants	
Large demand for natural products and continue to grow		Team approach needed with higher education, researchers, nonprofits, grower orgs to build connections to markets, brokers, and distribution	
The water quality in the region, especially in Buncombe County, is considered one of the best in the U.S.			
Beer trail, Wine Trail, Cheese Trail, foodies farm to table.			
Restaurants in the region are fully engaged with the farm to table movement			

(3) End Consumer Distribution Retail and Services to End Consumers			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
Region continues to improve mobility for bicyclists and pedestrians and grow roads, bridges, and rail systems.			
Regional initiative to reduce health care costs and improve quality of life for all individuals			
Purchasing power of the region is steadily increasing			

Table 18: WNC Retail and Services to End Consumers Strategic Position Assessment

Recommendations

Overall Recommendation: The Natural Product and Service Economy must have a strong retail and consumer services component. Creating a coalition between the county, city, and state chamber of commerce and economic development entities, a valuable link to market can be strengthened thus addressing the one of the key barriers within the supply chain, which is access to market. This integrative and collaborative effort can also bring many additional benefits that would directly impact the future sustainability and growth of the region.



Exhibit 21: WNC Retail and Services to End Consumers Recommendations Relationship Mapping

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Marketing the Image of the Region	Enhance the regional image as place for healthy living and quality of life, we must start within by	<ul style="list-style-type: none"> Improving the health of regional residents by addressing community issues such as poverty, obesity, and health to create a holistic living environment. This can be accomplished through utilizing vacant government land to establish community gardens; building walking trails; providing public healthy-living educational workshops; and organizing community health assessment events. 	✓	✓
	With coordinated efforts, increase demand for WNC natural products and regional tourism sustainability through	<ul style="list-style-type: none"> Crafting a regional image for Western North Carolina that creates a “sense of place” that is hard to duplicate in other areas. An image that provides a unique bond between the people, products, food and culture of the region, and a place where visitors could unplug from society and enjoy quality life. 	✓	
		<ul style="list-style-type: none"> Developing a regional marketing campaign to promote WNC sense of place, and focus advertising efforts on: <ul style="list-style-type: none"> Wild food foraging tours Beer tours Cheese tours Wine tours Farm-to-table restaurant tours Historical medicinal plant education classes 	✓	

Table 19: WNC Retail and Service to End Consumers Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Coordinating Annual Natural Products Trade Shows and Regional Economic Development Events	The coalition should <i>serve by</i>	<ul style="list-style-type: none"> Compiling a comprehensive and consistent list of all WNC manufactures and natural products retailers and service providers, including all Small and Medium-Sized Enterprises (SMEs) with number of employees ranging from 1 to 500 employees. 	✓	
		<ul style="list-style-type: none"> Connecting and developing partnerships between regional manufactures and natural products retailers and service providers (e.g. spas, farms, natural groceries, health food stores, downtown mercantile stores, breweries, restaurants, pet supply stores) 	✓	
		<ul style="list-style-type: none"> Serving as a catalyst for business and government partnerships to develop consume-friendly and innovative product packaging that captures WNC regional image 		✓
	Utilize annual trade shows and economic development events to not only develop connections <i>but also</i>	<ul style="list-style-type: none"> Educate business owners on latest trends and encourage all businesses to incorporate a consistent regional image in all marketing efforts 	✓	
		<ul style="list-style-type: none"> Showcase and celebrate best practices to encourage and grow together 	✓	

Table 20: WNC Retail and Service to End Consumers Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Economic Development Impact Tracking	Establishing NPSE strategic directions and outcomes <i>by</i>	<ul style="list-style-type: none"> Conducting NPSE regional economic impact study to understand its economic role and impact for the region 	✓	
		<ul style="list-style-type: none"> Developing regional short-term and long-term strategic goals and measurable outcomes for NPSE development 	✓	
	Track and share NPSE regional impact <i>by</i>	<ul style="list-style-type: none"> Creating and regularly updating a database or tracking mechanism of coalition members 	✓	
		<ul style="list-style-type: none"> Coordinating and supporting all agencies across the region to provide most current business information to the public on what is available in WNC 	✓	
		<ul style="list-style-type: none"> Sharing regional NPSE impact with all business communities and public through a quarterly or annual report generated from information extracted from the NC Data Dashboard 	✓	

Table 21: WNC Retail and Service to End Consumers Strategic Priorities and Actions

Resources and Programs

American Herbalist Guild		http://www.americanherbalistsguild.com/
Blue Ridge School of Herbal Medicine	CoreyPine Shane	http://www.blueridgeschool.org/
Daoist Traditions College of Chinese Medical Arts	Jeffrey C. Yuen	https://daoisttraditions.edu/
Chestnut School of Herbal Medicine	Juliet Blankespoor	www.chestnutherbs.com
Violet Owl Wellness		
NC Community Collegel-Southwestern Massage School		https://www.southwesterncc.edu/program/therapeutic-massage-aas
Southeast Wise Women	Corrina Wood	https://www.sewisewomen.com/
Appalachian School of Herbalism	Ceara Foley	http://herbsheal.com/
Eclectic School of Herbal Medicine	Thomas Easley	http://eclecticschoolofherbalmedicine.com/

Table 22: WNC Retail and Service to End Consumers Growth Resources and Programs

Regional Economic Development Resources for All NPSE Businesses

NC Rural Center	Jamilla Hawkins	https://www.ncruralcenter.org/engagement/food-community-development/
Mountain West Partnership		http://gownc.org/
NC Dept of Commerce		www.nccommerce.com
NC Community College Small Business Center-AB-Tech	Duane Adams	https://www.abtech.edu/content/Business-Development/Small-Business-Center/Services-and-Resources
NC Community College -AB-Tech Brew School	Jill Sparks	https://www.abtech.edu/business-incubation
NC Community College Small Business Center-Blue Ridge	B.Kish	http://www.blueridge.edu/sbc
NC Community College Small Business Center-Haywood	Katy Gould	https://www.haywood.edu/small-business-center
NC Community College Small Business Center-Isothermal	Faye Bishop	https://www.isoothermal.edu/academics/small-business/index.html
NC Community College Small Business Center-McDowell	Frank Silver	https://www.mcdowelltech.edu/apps/pages/index.jsp?uREC_ID=1022341&type=d&pREC_ID=1328290
NC Community College Small Business Center-Southwestern	Tiffany Henry	https://www.southwesterncc.edu/workforce-innovations/small-business-center/small-business-center
NC Community College Small Business Center-Tri-County	Kathryn Jenkins	https://www.tricountycc.edu/community-business/small-business-center/
USDA- Rural Business-Cooperative Service		https://www.rd.usda.gov/about-rd/agencies/rural-business-cooperative-service
WCU SBTDC	Sandra Dennison Larry Trout	http://www.sbtde.org/offices/wcu/
Self Help Credit Union	Jane	https://www.self-help.org/business/loans/all-business-loans
Economic Development-Rutherford Co	Tom Johnson	http://www.rutherfordncedc.com/
Economic Development-Polk Co	Brian Griffin	http://www.polknc.org/economic_development/index.php#.Wz5fo8mQw2w

Economic Development-McDowell Co	Chuck Abernathy	https://mcdowellnceda.govoffice3.com/index.asp?SEC=42E1C4C6-F183-4EFE-AD24-064188C9192B&Type=B_DIR
Economic Development-Henderson Co	Brittany K. J. Brady	http://gohendersoncountync.org/
Economic Development-Madison Co	Sara Nichols	http://investinmadison.com/
Economic Development-Buncombe Co	Clark Duncan	https://www.ashevillechamber.org/economic-development/
Economic Development-Asheville City	Sam Powers	http://www.ashevillenc.gov/departments/community/default.htm
Economic Development-Transylvania Co	Josh Hallingse	http://transylvaniaalliance.com/
Economic Development-Haywood Co	CeCe Hipps	http://haywoodedc.org/
Economic Development-Jackson Co	Rich Price	https://www.jacksonthrive.jacksonnc.org/
Economic Development-Swain Co	Ken Mills	http://www.swaincountync.gov/economic-development.html
Economic Development-EBCI	Doug Cole	https://ebci.com/government/economic-development/
Economic Development-Macon Co	Tommy Jenkins	http://maconedc.com/
Economic Development-Clay Co	Paul Worley	https://claycountyedc.com/
Economic Development-Cherokee Co	Paul Worley	http://www.cherokeecountyedc.org/
Economic Development-Graham Co	Sophia Paulos	http://grahamcountyedc.org/
Accelerating Appalachia	Sara Day Evans	https://www.acceleratingappalachia.org/
Chamber of Commerce-Clay Co	Pam Roman	http://www.claychambernc.com/our-chamber/
Chamber of Commerce-Graham Co	Ron & Nancy Johnson	https://grahamchamber.com/
Chamber of Commerce-Cherokee Co	Meridith Jorgensen	http://www.cherokeecountychamber.com/

Chamber of Commerce-Andrews		http://andrewschamber.com/
Chamber of Commerce-Franklin	Linda Harbuck	https://www.franklin-chamber.com/
Chamber of Commerce-Highlands		http://highlandschamber.org/
Chamber of Commerce-Jackson Co	Julie Spiro	http://www.mountainlovers.com/
Chamber of Commerce-Cashiers	Stephanie Edwards	https://www.cashiersareachamber.com/
Chamber of Commerce-Clay Co	Clark Lovelace	http://www.brevardncchamber.org/
Chamber of Commerce-Haywood Co	CeCe Hipps	https://haywoodchamber.com/
Chamber of Commerce-Asheville Area	Kit Cramer	https://www.ashevillechamber.org/
Chamber of Commerce-Black Mountain & Swannanoa		http://exploreblackmountain.com/
Chamber of Commerce-Fletcher Area Business Association (FABA)	Jared Bellmund	http://fletcherbusiness.com/
Chamber of Commerce-Henderson Co	Robert R. Williford	http://www.hendersoncountychamber.org/
Chamber of Commerce-Polk Co	Linda Howard	http://carolinafoothillschamber.com/
Chamber of Commerce-Rutherford Co		http://rutherfordcoc.org/
Chamber of Commerce-McDowell Co	Steve Bush	http://www.mcdowellchamber.com/
Cherokee Preservation Foundation	Bobby Raines	http://cherokeepreservation.org/featured-grantee/featured-grantee-3/
Mountain Bizworks	Patrick Fitzsimmons	https://www.mountainbizworks.org/
Southwestern Commission	Sarah Thompson	http://regiona.org/
Venture Asheville-Elevate program		http://ventureasheville.com/elevate/
Land of Sky Regional Council		http://www.landofsky.org/

Table 23: WNC Regional Economic Development Resources for All Businesses

4) Testing Labs, Research Institutions, and Product Development

(4) Testing Labs, Research Institutes, and Product Development			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
AB Tech has lab specifically designed for testing to enhance product development	Organic definition is mandated but Natural is a real loose term	Research true profitability for growers and manufacturers of products	Economic Development Data for the region is out of date, incorrect or non-existent
NC Biotechnology Center is very interested in funding a project in NP	Educational institutions to contribute to ED strategic plan with resources available	Identify supply chain opportunities	Universities in the area are not R-1 schools and do not have the ability to attract research scientists
Demand for medicinal supplements for both animals and humans are growing rapidly	Professors' lack of interest in research-oriented efforts in natural products	Funding for branding the region as an innovative place with resources needed to do product development	Large investment in resources and funding to put together a true research project Ex: 2 years and 1 million dollars
Farm initiative at Mountain Biz Works	No real support for high-end indoor growing systems using diffused light	Engage the private sector through focusing on start-up businesses	Movement from faith-based acceptance to a science-based acceptance
Gaia Herbs is a leader for a more science and standard based product development	Knowledgeable scientists and doctors interested in developing the industry	WCU new science building, new Chancellor, growing student population might consider medicinal plant research center again	R&D to develop markets, create distribution channels, maintain quality of products
	Currently we have many new crop opportunities without a solid business plan or model for the farmers to make a profit.	Scientific research to prove the medicinal value of alternative solution	

Table 24: WNC Testing labs, Research Institutions, and Product Development Strategic Position Assessment

Recommendations

Overall Recommendation: A dedicated effort to work with individuals and companies to strengthen the perception of natural products is needed, an effort that requires testing, research and product development integration. This will help move its image from a “personal conviction and lifestyle” to a substantiated and proven claim that enhances the quality of life. This is already in motion in other parts of the world where scientific minds are researching how plant-based medicine offers the same benefit but with significantly less side effects. WNC should position itself as the place where similar types of research, testing, and product development can be accomplished.

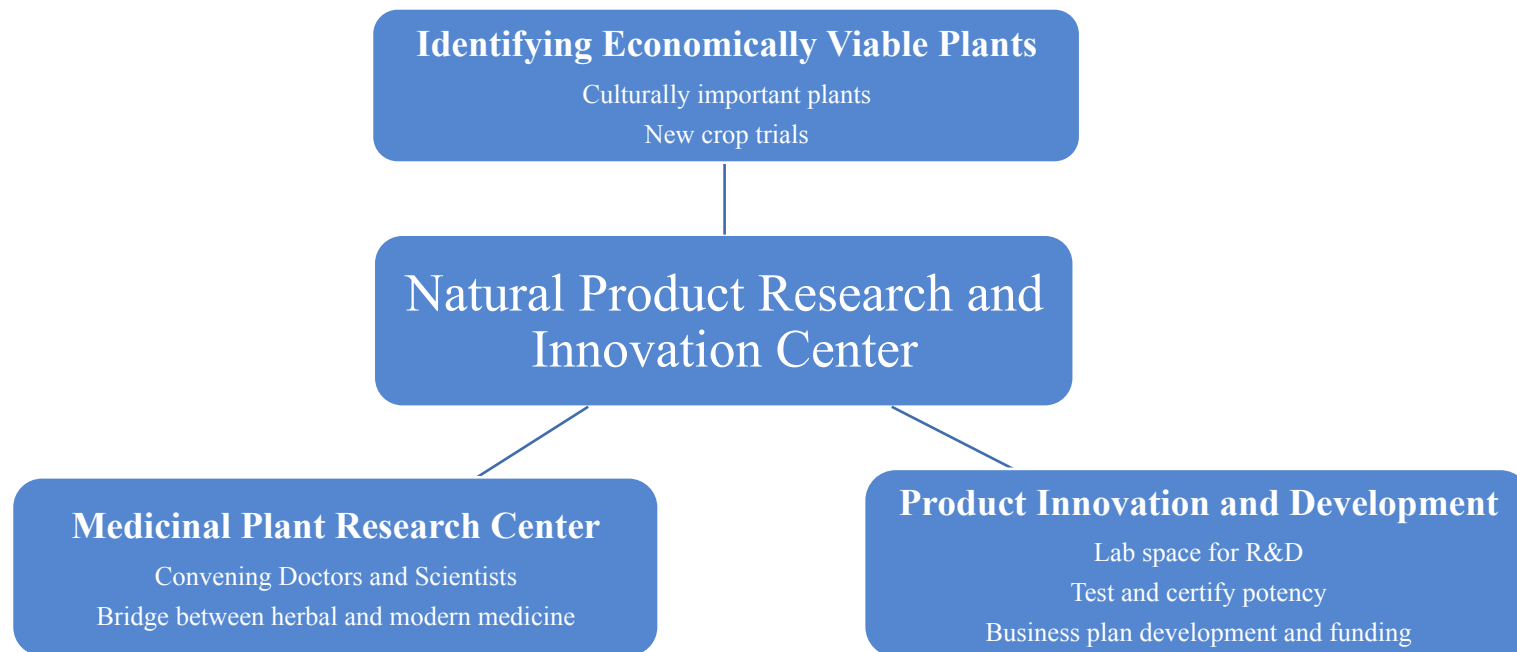


Exhibit 22: WNC Testing labs, Research Institutions, and Product Development Recommendations Relationship Mapping

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Research	Identify and introduce profitable corps to growers through	<ul style="list-style-type: none"> Conducting crop trials both inside and outside the research facility in forest farming and row farming to identify new products that can be grown in the region and establish best practices with planting, fertilizing and harvesting 	✓	
		<ul style="list-style-type: none"> Designing a sound business plan and model for each crop opportunity identified to ensure profit generation and sustainability 	✓	
		<ul style="list-style-type: none"> Developing new techniques to shorten the growing cycle of medicinal herbs by exploring growing conditions such as hydroponics and greenhouses 		✓
		<ul style="list-style-type: none"> Research fertilizer and pest control options for organic and natural crops 		✓
	Conduct collaborative medicinal plant research across educational and research institutions by	<ul style="list-style-type: none"> Finding and convening knowledgeable doctors and scientists across the globe interested in developing a bridge between herbal medicine and modern medicine. 		✓
		<ul style="list-style-type: none"> Conducting scientific research what works within the plant, how to evaluate consistency, and to prove medicinal benefits <i>(Note: This will take a Research University to accomplish and the regional Universities are not capable of this undertaking; however, UNC Chapel Hill has moved a medical division into the Asheville Area and they are a known R-1 University. If this can be done, the profitability of growing these herbs will skyrocket. Doctors could prescribe them as medicine and health insurance companies would pay the cost of the proven and accepted benefit derived.)</i> 		✓

Table 25: WNC Testing labs, Research Institutions, and Product Development Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Testing	Examining the quality and quantity of natural product ingredients and their necessary growing conditions <i>by</i>	<ul style="list-style-type: none"> Testing and certifying plant ingredients of natural products manufactured in the region to support and build credibility of the companies and products, for both consumer confidence and to meet labeling requirements 	✓	
		<ul style="list-style-type: none"> Testing the difference in the level of active ingredients from a propagated medicinal plant vs. wild harvested plants 		✓
		<ul style="list-style-type: none"> Understanding plant growing conditions to examine time to market and commercialization feasibility 	✓	

Table 26: WNC Testing labs, Research Institutions, and Product Development Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Product Development	Enhance regional natural products innovation and commercialization momentum <i>by</i>	<ul style="list-style-type: none"> Providing laboratory space and recruiting qualified personnel to assist with <ul style="list-style-type: none"> New value-added product ideas development Prototyping and market testing Building a feasible business model through market research and qualified investment individuals Investigating funding alternatives for research and new product development 	✓	

Table 27: WNC Testing labs, Research Institutions, and Product Development Strategic Priorities and Actions

5) Technical Assistance, Educational Institutions, and Support Programs

(5) Technical Assistance, Educational Institutes and Support Programs			
What's working (Our skills and abilities & Positive market trends)	What's not working (Things that we have tried or need to be discontinued)	What's needed (What other skills resources or certifications are needed?)	What are the barriers (Known or expected challenges in the market, legal, or competition)
SCC Farmers schools-teaching business techniques	Municipalities are out of the loop in Econ. Dev. Programs	Create tracking process to separate NPI to track employment numbers and wage base	No Economic Development data on the Natural Product Industry because it is a fragmented industry
Support for the craft brewers and all alcohol related manufacturing	Underutilized resources in Econ Dev. that should focus on natural products, the workforce needed, and developing space for small manufacturing	Brand recognition for the region as a social/relational area	Farmers are not treated as businesses and do not know the resources exist for business technical assistance
Forest Farming Program in WNC	Tech providers are in silos--Ag Extension needs to unite with production and distribution industry support	Collaboration between the technical resources to put together special trainings to support industry	Hub for WNC is Asheville and the westernmost counties have very limited resources
Production guidance education available through BRFV	NP has the potential to grow but lacks focus and resources to support ED efforts due to lack of knowledge of true impact	Patient Funding Programs and opportunities for long-term investment needs	Lots of programs but most are in silos and not sharing information or working together-chasing grant money
Natural products is a core theme for regional economic development around sense of place	Special funding programs are required but not well understood. Ex: Natural Capital Investment Fund and the Self-Help Credit Union are designed to assist companies that fit the NP profile	Team approach to build network of natural product suppliers, manufacturers, distributors and businesses together for greater good of WNC	Traditional lenders are interested in micro or small loans less than 1 million
Craft products are in demand and not standard main stream		Our unique collection of NPSE assets gives the Western North Carolina region the liberty of envisioning itself as the "Napa Valley of Natural Products."	

Table 28: WNC Technical Assistance, Educational Institutions, and Support Programs Strategic Position Assessment

Recommendations

Overall Recommendation: Although the region has an abundance of resources to support the development of a regional NPSE, these resources are scattered and often isolated in information gathering and distribution. This resulted in resource overlaps, gaps, and inconsistencies. To ensure a efficient and sustainable development of in NPSE, all resource providers must breakdown silos, come together and collaboratively gather, analysis, and disseminate information; and build value-added programs to provide educational programs, technical and business support.

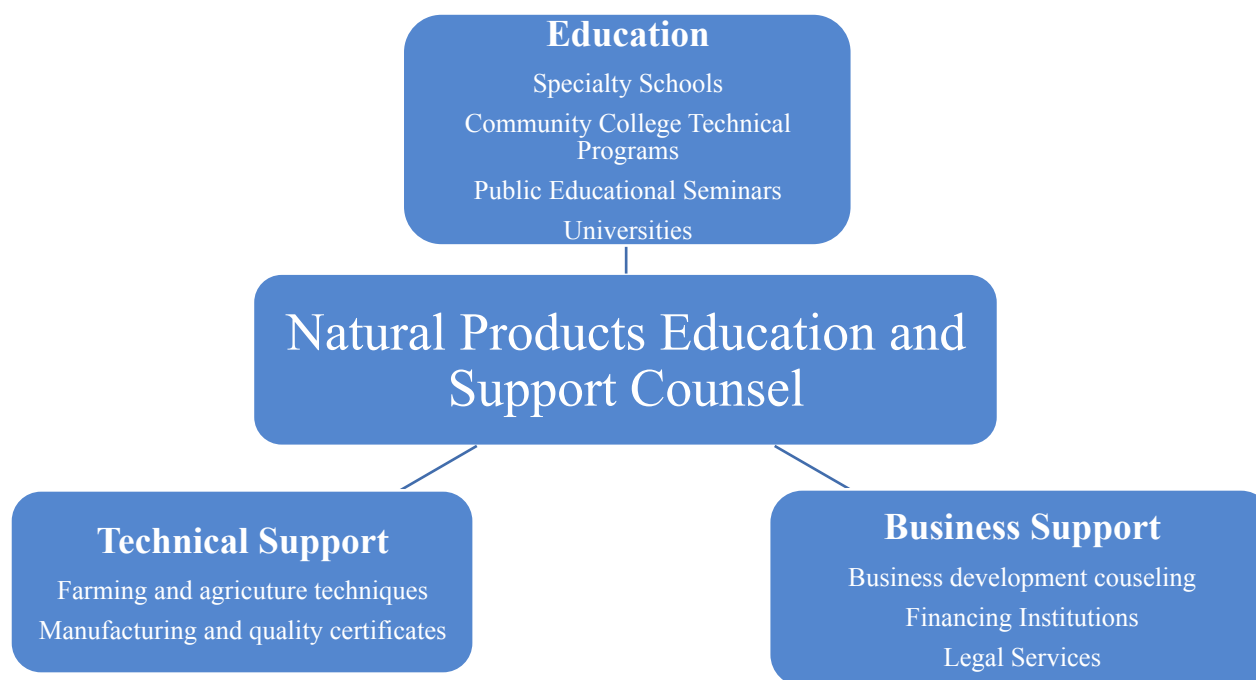


Exhibit 23: WNC Technical Assistance, Educational Institutions, and Support Programs Recommendations Relationship Mapping

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Education	Public and private educational institutions collaboratively build robust certificates, public seminars, and professional development opportunities for individuals, companies and visitors to obtain more knowledge around the natural product and service economy, the wellness mindset and cultural heritage of the region to	• Build confidence in a viable economy to live, work and play within WNC	✓	
		• Develop workforce to support natural products manufacturing, service, and retail businesses in the region		✓
		• Gain consumer confidence in the high quality of natural products and services in WNC	✓	
		• Embrace a wellness mindset and build on the craft-based trends in food, alternative medicine, and quality of life.		✓

Table 29: WNC Technical Assistance, Educational Institutions, and Support Programs Strategic Priorities and Actions

Strategic Direction	Strategic Actions		Short-Term	Long-Term
Technical and Business Support	Resource providers must utilize a team approach to provide regional support to the existing members of WNC NPSE to	<ul style="list-style-type: none"> Identify all current programs and resources available that add value to WNC NPSE 	✓	
		<ul style="list-style-type: none"> Breakdown silos and build collaborations for regional programs that provide resources to companies and county entities within the entire region 	✓	
		<ul style="list-style-type: none"> Define the needs of WNC NPSE and identify gaps in regional resources 	✓	
	Identify underutilized resources in regional economic development and reallocate for small NPSE value-added manufacturing companies to start and grow by	<ul style="list-style-type: none"> Evaluating results from existing programs and outcomes to eliminate unproductive efforts, realigning those resources to other potential programs 	✓	
		<ul style="list-style-type: none"> Establish a master plan with measurable outcomes that support and focus on supporting WNC NPSE, track program regional impact sustainability with credible data, and support future grant funding requests to grow that add value to the NPSE 	✓	
	Establish flexible lending programs and access to capital to offer a NPSE businesses continuum of funding services to support a variety of needs and special circumstances, examples may include	<ul style="list-style-type: none"> Start-up seed capital for new businesses 	✓	
		<ul style="list-style-type: none"> Research and development funding for innovation and new product development 	✓	
		<ul style="list-style-type: none"> Patient investment for long-term growing cycles 	✓	

Table 30: WNC Technical Assistance, Educational Institutions, and Support Programs Strategic Priorities and Actions

Conclusion

Based on the investigation of natural products and services market opportunities, gather experts from various regional stakeholders, and evaluating regional resources and capabilities, it is believed that a healthy NPSE is favorable and much needed not only to demonstrate its own economic impact but also to serve as an economic engine for WNC region.

The five recommendations proposed work in integration and harmony to formulate centralized and easy to access information, knowledge, and resources to encourage WNC NPSE value network development and regional economic growth (see Exhibit 24).

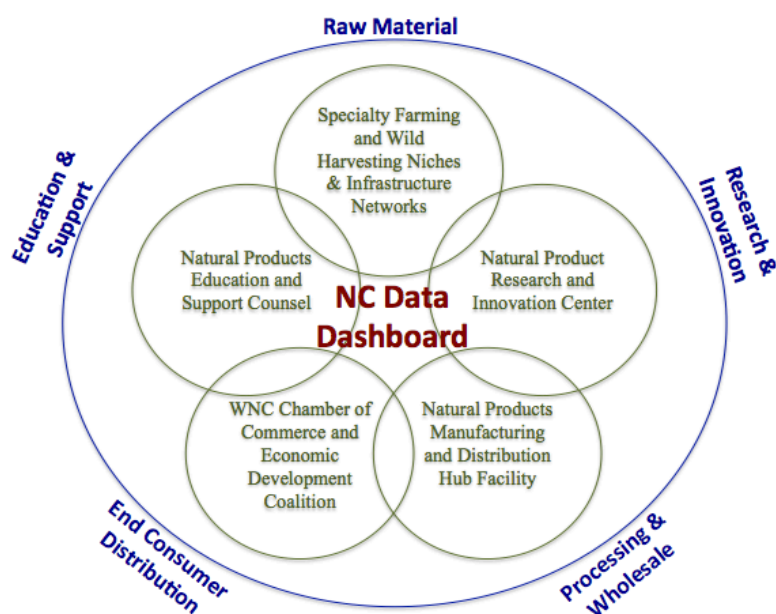


Exhibit 24: Integrative Strategic Actions

An integrative implementation of these recommendations can also address some of the important issues that emerged during the project investigation, which include:

- 1) Difficulties finding up-to-date information,
- 2) Difficulties finding accurate business information,
- 3) Inconsistency of information and databases across multiple resources, and
- 4) Cumbersome websites where information is buried deep.

NC Data Dashboard has been placed at the center of the five interrelated strategic recommendations because a tool like this is necessary in addressing the key barriers mentioned above that are preventing a successful development of WNC NPSE value network. The dashboard compiles complex regional economic, demographic, and industry data and presents them in a map-based interface to help businesses, economic developers and private citizens to easily find and extract information to make decisions. This project is on-going and led by WCU Gimelstob-Landry Distinguished Professor Dr. Angela Dills.

The region is rich in not only natural resources but also intellectual, human, physical, and even some financial resources to nurture NPSE development from the grassroots. Thus, instead of owning a mindset of the need to acquire new resources, we must better utilize what we have and this must be done through breaking down the silos and collaborating across multiple resource providers. Creating a synergy throughout the region will exponentially grow the awareness of the NPSE thus growing and supporting all the industries that are impacted by its success. One of the greatest potential opportunities is its reach throughout the region. It will not only be beneficial for the larger urban areas but also for the more rural counties.

Finally it is important to reemphasize the importance of embracing WNC traditions and resources, and improving community well-being to help bring credibility to and sustain the healthy living and quality of life regional image of a sense of place, and ultimately ensure a successful development of NPSE in WNC.

Appendices

Appendix A: List of Interviewees

Name	Affiliation	Information Theme
Ann Bass	ARC Community Dev. Planner, NC DOC	Growers, retail
Adriane Gordon	JB Media –B-corp	B-corp
Annice Brown	Natural Products Association and Business Counselor—Women’s Business Center	Retail and Service Business Resource Provider
Bill Yarburo	NC Extension Office (Waynesville)	Researchers
Bill Yarburo	NCSU Agriculture Extension Office (Waynesville)	Service Providers
Chris Reedy	BioNetwork Center	Testing, Research and Product Dev
Christine Braden	Jackson/Swain, Ginseng production	Value added manufacturing and distribution
Dawn Jordan	Agricultural Economic Development Director, Polk County	Resource provider
Dr. King	Owner of King Bio	Manufacturer
Ed Swartsman	Tribal Forest Timber Harvesting (medicinal, spiritual, dye)	Environmental mapping of culturally important plants
Erica McGilley	NCIF	Funding
Gabe Norab	Rengia Plants	
Jane Hatley	Self Help Credit Union	Funding
Jeanine Davis	NCSU Exec Dir of Experimental Agriculture Station	Testing, Research and Product Development
Jeannie Dunn	Owner of Red Moon Herbs and past president of NPA	Value added Manufacturing and distribution
Jennifer Flynn	President Natural Products Assoc	Service Provider
JoAnn McCoy	NC Arboretum –forest farming coalition program for Appalachia	Growing and wild harvesting
Joey Owl	EBIC Agriculture Director	Growers
Jon Snover	Director of NC Bio-Tech Center	Research and grant funding
Josh Carpenter	Economic Development Partnership of NC-Regional Industry Manager	Resource providers
Kathy Matthews	WCU Horticultural	Researchers
Margaret Bloomquist	Mountain Horticultural Crops Research and Extension Center	Growing and wild harvesting
Noah Wilson	Part of the natural products movement Advantage west (Mountain Bizworks and private consultant)	
Russ Harris	Southwestern Commission	Service Provider
Sanda Dennison	Owner of Spa and NPA member	NP Services and association
Smithson Mills	Exec Director of the Blue Ridge Food Venture a shared use food manufacturing facility	Value added Manufacturing and Distribution
Sophia Paulos	Econ Dev Graham County	Resource providers
Steve Duckett	Coop Extension	Education and tech support through research
Steve Henson	WCU Marketing Faculty and natural product medicinal research with Botani-pharm	Testing, Research and Product Dev
Tiffany Henry	SCC Small Business Center	Resource providers
Tony Hayes	Ridge Runner Trading	Value Added manufacturing and distribution

Appendix B: WNC Natural Products Interview Outline

1. Background and Overview:

- a. Could you share with me your knowledge of the natural product industries in Western North Carolina? Specifically,
 - i. Its history
 - ii. Key Development milestones
 - iii. Specific products and services
 - iv. Key characteristics
- b. Based on this knowledge/information, what do you think is the current role of the natural product industries in Western North Carolina? (Employment, Economic Development, Education, Research, Tax Base, etc.)
- c. In the past two years, have you or your organization directly worked within or with businesses in the natural product industries?
 - i. If yes, find out detailed how and their story of experience
 - ii. If no, move on.

2. Current and Potential Natural Products Opportunities:

- a. What existing activities should Western North Carolina continue to expand and develop in the next 5 years?
- b. What new opportunities should Western North Carolina pursue in the next 5 years?
- c. What resources are needed to work on these opportunities and challenges (physical, human resources, and financial) – be specific?
- d. What challenges do you think Western North Carolina needs to overcome in the next 5 years?

3. Next Steps:

- a. Who do you think are some of the key collaborators to pursue these opportunities and address the challenges? (Individuals or Organizations)
- b. Now think about your organization and the things you are trying to accomplish over the next 5 years, can you see any overlap or possibilities for working together to grow the natural products industries in Western North Carolina?

Appendix C:

Summary of Potential Industry Drivers within Each WNC NPSE Opportunity Cluster

	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
Outdoor Related Industries	Outdoor Recreation	114	Fishing, Hunting and Trapping	✓
	Food and Beverage	31213	Wineries	✓
		31214	Distilleries	✓
		72233	Mobile Food Services	✓
		OD4302	Craft Beer Production	✓
		31212	Breweries	✓
		72211B	Single Location Full-Service Restaurants	✓

	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
Food Manufacturing and Packaging Related Industries	Pet Consumption	311111	Dog and Cat Food Manufacturing	✓
		311119	Other Animal Food Manufacturing	✓
		32541D	Vitamin & Supplement Manufacturing	✓
	Human Consumption	311	Food Manufacturing	✓
		31151	Diary Product Production	✓

	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
Personal and Health Care Related Industries	Health and Personal Care Products	32562	Cosmetic & Beauty Products Manufacturing	✓
		32541D	Vitamin & Supplement Manufacturing	✓
		OD5061	Essential Oil Manufacturing	✓
	Personal Care Services	OD5460	Nutritionists & Dietitians	✓
		621392B	Alternative Healthcare Providers	✓
		621399	Offices of All Other Miscellaneous Health Practitioners (including herbalists)	✓
		OD4186	Health and Wellness Spas	✓

Education and Research Related Industries	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
	Education	611310	Colleges, Universities, and Professional Schools	✓
		611519	Other Technical and Trade Schools	✓
		611710	Educational Support Services	✓
		8099 (SIC)	Health and Allied Services, not elsewhere classified (such as herbalist schools)	✓
	Research	5417	Scientific Research and Development Services	✓

Agriculture Related Industries	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
	Farming	113	Forestry and Logging	✓
		112	Animal Production and Aquaculture	✓
		11231	Chicken Egg Production	✓
		11235	Chicken and Turkey Meat Production	✓
		11221	Hog and Pig Farming	✓
		11135	Fruit and Nut Farming	✓
		11120	Vegetable Farming	✓
		11212	Dairy Farms	✓
		11142	Plant and Flower Growing	✓
	Farm Related	NN004	Agribusiness (such as agritourism)	✓

Home and Garden Related Industries	Industry Cluster	Industry NAICS	Industry Name and Description	Driving Industry
	Home Product and Services	32111	Sawmills and Wood Production	✓
		32561	Soap and Cleaning Compound Manufacturing	✓
		23611	Residential Building Construction	✓
		236220	Commercial and Institutional Building Construction	✓
	Gardening Related	561730	Landscaping Services	✓
		54132	Landscape Design	✓

Appendix D

Specialty Farming and Wild Harvesting Companies

Business/ Individual Name	Contact Name	Address	Zip Code	Contact Info	County	Value Network	Products
Appalachian School of Herbalism Apothecary	Ceara Foley	2 Westwood Place, Asheville, NC	28806	828-350-1221	Buncombe	Grower/Manufacturer/ Retail	Apothecary store
Barry Farms	Russ Barry	345 Kimzey Rd, Mills River, NC	28759	828.778.5409	Henderson	Grower	Culinary Herbs, Flowers, Fruits, Vegetables
Bearwallow Valley Ginseng	W.A Burch	1200 Bearwallow Rd, Hnedersonville, NC	28792	828-685-3556	Henderson	Wild Harvesting	Ginseng roots
Betsy's Farm	Ed Bowser	Murray Rd, Canton, NC	28716	828-779-1843	Haywood	Grower	Vegetables
Blue Ridge Aromatics	Ian Montgomery	560 Pine Branch Rd, Marshall, NC	28753	828-545-3963	Madison	Grower/Manufacturer/ Retail	Craft Essential Oil Distillery
Blue Ridge Botanicals Inc	Ray Bowkley	978 Laurel Branch Road Vilas NC	28692	828-297-5230	Watauga	Supplier/ Grower	Herb Supplier
Botanics Trading/ Chuck Wanzer	Chuck Wanzer	301 Westgate Drive Wilkesboro, NC	28697	336-973-3090 828-295-3313	Wilkes	Grower	
Broad River Botanicals	David Turbyfill	2805 NC Highway 5, Black Mountain, NC	28711	828-664-9902	Buncombe	Grower	Herbal plant grower
Burntshirt Vineyards		2695 Sugarloaf Rd., Hendersonville, NC	28792	828-685-2402	Henderson	Grower/Manufacturer/ Retail	Craft Wine
BusyBee Farm	Brittany Whitmire	1065 Whitmire Road, Brevard, NC	28712	828-553-9228	Transylvania	Grower	Food Production and Honey
Carolina Bison	Mike Ellington	356 Ridgeview Rd Leicester, NC	28748	877-562-8947	Buncombe	Grower	Food Product
Carolina Organic Growers	Rob Everett	Box 11,570 Brevard Rd Asheville, NC	28806	828-251-1189	Buncombe	Grower	Food Product
Eagle Feather Organic Farm	Robert Edious	300 Indigo Bunting Lane, Marshall, North Carolina	28753	828-649-3536	Madison	Grower/ Retail	Medicinal plant grower/harvester

Eagle Fork Vineyards		225 Dick Jones Rd, Hayesville, NC	28904	828-389-8466	Clay	Grower/Retail	Vineyards
Elk Mountain Nursery	Craig Mailoux	PO Box 3 Alexander, NC	28701	828-683-9330	Buncombe	Grower/ Retail	Plant Starts
FernCrest Winery	Kurt and Jan Olson	1060 Main Street, Andrews, NC	28901	828- 321- 1600	Cherokee	Grower/Manufacturer/ Retail	hand crafted Wine
Forgarty Farms	Nick Fogarty	55 Puritan pt, Alexander	28701	919-389-1366	Buncombe	Grower	Food Products
Frog Hollar Organiks		234 Tommy Boyd Rd, Waynesville, NC	28785	828-627-3363	Haywood	Grower	Organic compost
Gaia Herbs		101 Gaia Herbs Rd, Brevard, NC	28712	(828) 884- 4242	Transylvania	Grower/Manufacturer/ Retail	Nutraceutical drinks/supplements
Glorious Forest Apothecary	Amber Brown	Marshall, NC	28753		Madison	Grower/Manufacturer/ Retail	Apothecary
Green River Farm		10103 Hwy 108 E, Mill Spring, NC	28756	828-894-3431	Polk	Grower/Retail	Farm
Green River Preserve		301 Green River RoadCedar Mountain, NC	28718	828-698-8828	Transylvania	Grower	Food Product
Hap Mountain Herbals		PO Box 783, Hot Springs NC	28743		Madison	Grower/Manufacturer/ Retail	Herbal remedies
Harrell Hill Farms	Doug Harrell	2126 Harrell Hill Road Bakersville NC	28705	828-688-9188	Mitchell	Grower	Food Product
Hickory Nut Gap Farms	Amy and Jamie Ager	57 Sugar Hollow Road Fairview, NC	28730	828-628-1027	Buncombe	Grower/ Retail	Farm and value added food products
High Mountain Meadows Farm & Creamery	Donna Gains	486 Double Knob Dr., Hayesville, NC	28904	828-389-1186	Clay	Grower/Manufacturer/ Retail	Value Added products
Hoopers Creek Botanicals	Wallace Souther	85 Alabama Ave, Asheville, NC	28806	828-545-5048	Buncombe	Grower	medicinal herbs and vegetables
Imladris Farm's Jams and Preserves		Fairview, NC	28730		Buncombe	Grower/Manufacturer/ Retail	Food Product Jams
Jewel of the Blue Ridge Vineyard/ Chuck Blethen	Chuck Blethen	P.O. Box 4 Marshall NC	28753	828-606-3130	Madison	Grower/Manufacturer/ Retail	Wine/value added products/ agritourism

Meadow Cove Farm	Claudine Cremer	260 Dula Springs Road Weaverville, NC	28787	828-658-0294	Buncombe	Grower	Food Product
Meriweather Gardens	Rachel Meriweather	6371 Green River RdZirconia, NC	28790	435-730-6783	Henderson	Grower/Retail	Flowers/Produce
Mills River Creamery	Johnston family	4193 Haywood Road Mills River, NC	28759	828-891-4007	Henderson	Grower/Retail	Food Products
Moonbranch Botanicals	Robin Suggs	5294 Yellow Creek Rd, Robbinsville, NC	28771	828-479-2788	Graham	Grower/ Retail	Medicinal Plant
Mountain Gardens	Joe Hollis	546 Shuford Creek Rd, Burnsville, NC	28714	828-675-5664	Yancey	Grower/Retail	Medicinal Plant
New Sprout Organic Farms, LLC	Alan Rose	1070-1 Tunnel Road Suite 10-225 Asheville, NC	28805	828-357-5501	Buncombe	Grower	Food Product
Nottly River Valley Vineyard		1150 Old Culberson Rd, Murphy, NC	28906	828-837-7822	Cherokee	Grower/Manufacturer/ Retail	Vineyard and Winery
Oliver Organics	Hal Oliver	101 Winsom Trail, Hendersonville, NC,	28739	828-697-1153	Henderson	Grower/ Retail	Herbs, Vegetables
Red Moon Herbs	Jeannie Dunn	433 Weaverville Hwy Asheville, NC	28804	888-929-0777	Buncombe	Grower/Manufacturer/ Retail	Extracts, Dried herbs and Teas, Elixers and Syrups, Salves and Oils, Vinegars
Red Root Native Nursery	Jean Harrison	P.O. Box 550 Weaverville, NC	28787	828-545-0565	Buncombe	Grower	Shrubs, Herbs
Reems Creek Valley Nursery	Susan Reavis	70 Monticello Rd, Weaverville, NC	28787	828-645-3937	Buncombe	Grower/Retail	Plants
Round Mountain Creamery		2203 Old Fort Rd, Black Mountain, NC	28711	828-669-0718	Buncombe	Grower	Food Product
Sanctuary Native Plants	Mary Janis	251 Robinson Lane Hayesville, NC	28904	828-389-1913	Clay	Grower/ Retail	Retail nursery sales
Sandy Mush Herb Nursery	Kate Jayne	316 Surret Cove Rd, Leicester, NC	28748	828-683-2014	Buncombe	Grower/ Retail	Retail of Plant Starts
Shelton Farms	William Shelton	500 Thomas Cove Rd, Whittier, NC	28789	828-497-5323	Jackson	Grower	Produce and value added food products

Sideways Farm & Brewery		62 Eade Road, Etowah, NC	28729	828-595-3445	Haywood	Grower/Manufacturer/ Retail	Farm to Pint craft beer production
Tuckasegee Valley Ginseng		PO Box 236, Tuckasegee, NC	28783		Jackson	Grower/Wild Harvesting	Ginseng broker
Turgua Brewing Company		27 Firefly Hollow Drive, Fairview, NC	28730	828-222-0984	Buncombe	Grower/Manufacturer/ Retail	Craft Beer
Walnut Hollow Ranch		1100 Carter Cove Rd, Hayesville, NC	28904	828-389-8466	Clay	Grower/Retail	All Natural Farm Raised Beef
Wendy Town Farms	Wendy Wright	Marshall NC	28753	817-992-7960	Madison	Grower	Food Product
Wyld Haven Farms		58 Reed Road, Fairview, NC	28730	828-835-2231	Buncombe	Grower/Manufacturer/ Retail	Aroma Therapy essential oils
Zimmerman's Berry Farms	Pam Zimmerman	2260 Revere Road Marshall, NC	28753	828-656-2056	Madison	Grower/ Retail	Berries

Appendix E

Value-Added Manufacturers and Wholesale Distributors

Business/ Individual Name	Contact Name	Address	Zip Code	Contact Info	County	Value Network	Products
12 Bones South Brewery		2350 Hendersonville Road, Asheville NC	28704	828-687-1395	Buncombe	Manufacturer/Retail	Craft Beer
7 Clans Brewing Company		Qualla Boundary, Cherokee, NC	28719	828-246-3005	Jackson	Manufacturer	Craft Beer
Adoratherapy Inc	Adora Windquest	10 Tingle Alley, Asheville, NC	28801	877-840-4242	Buncombe	Manufacturer/Retail	Essential oils/ Classes/ Custom blends
Andrews Brewing Company		565 Aquone Rd, Andrews, NC	28901	828-321-2006	Cherokee	Manufacturer	Craft Beer
Annie's Bakery	Joe Ritota	128 Bingham Road Suite 300	28806	828-505-8350	Buncombe	Manufacturer	Artisan Bread Wholesale
Appalachian School of Herbalism Apothecary	Ceara Foley	2 Westwood Place, Asheville, NC	28806	828-350-1221	Buncombe	Grower/Manufacturer/Retail	Apothecary store
Archetype Brewing		265 Haywood Rd, Asheville, NC	28806	828-505-4177	Buncombe	Manufacturer/Retail	Craft Beer combined with outdoor space
Artisan Aromatics		517 Jim Creek Road, Burnsville, NC	28714	828-338-5155	Yancey	Manufacturer/Retail	Essential oils
Asheville Brewing Company		77 Coxe Ave and 675 Merrimon Ave, Asheville, NC	28801	828-254-1281	Buncombe	Manufacturer/Retail	craft beer
Asheville Distillery	None Found (troy and sons)	12 Old Charlotte Hwy Asheville, NC	28803	828-575-2000	Buncombe	Manufacturer/ Retail	Brewery
Balsam Falls Brewing Co.		506 W. Main Street, Sylva, NC	28779	828-631-1987	Jackson	Manufacturer/Retail	Craft Beer
Bear Waters Brewing Company		101 Park St, Canton, NC	28716	828- 237-4200	Haywood	Manufacturer/Retail	Craft Beer
Beeing Natural		Personal Resedence Hot Springs, NC	28743	828-622-7287	Madison	Manufacturer	Hand and Body Cream
Bhramari Brewing		101 S. Lexington Ave,	28801		Buncombe	Manufacturer/Retail	Craft Beer

Company		Asheville, NC					
Biltmore Brewing Company	Bryan McIntosh	One Lodge St., Asheville, NC	28803	800-411-3812	Buncombe	Manufacturer/Distributor	Craft Beer
Biltmore Estate Wine Company	Jeff Plack	1 N pack Square, Asheville, NC	28801	828-225-6131	Buncombe	Manufacturer/ Retail	Wine
Blue Ghost Brewing Company		125 Underwood Rd, Fletcher, NC	28732	828-376-0159	Buncombe	Manufacturer/ Retail	Craft Beer
Blue Mountain Pizza and Brew Pub		55 N. Main Street, Weaverville, NC	28757	828-658-8778	Buncombe	Manufacturer/Retail	Craft beer
Blue Ridge Aromatics	Ian Montgomery	560 Pine Branch Rd, Marshall, NC	28753	828-545-3963	Madison	Grower/Manufacturer/Retail	Craft Essential Oil Distillery
Boojum Brewing Company		50 N Main St and 357 Dayton Dr., Waynesville, NC	28786	828-944-0888	Haywood	Manufacturer/Retail	Craft Beer
Brevard Brewing Company	Kyle Williams	63 E. Main St, Brevard, NC	28712	828-885-2101	Transylvania	Manufacturer/Retail	Craft Beer
Brewery Cursus Keme		135 Thompson St. Asheville, NC	28803	828-412-5193	Buncombe	Manufacturer/Retail	Craft Beer
Buchi Kombucha	Sarah Schomber Jeannine Buscher	242 Derringer Drive, Marshall, NC	28753	828-484-8229	Madison	Manufacturing	Craft Beverage similar to tea
Burial Beer Co.		40 Collier Ave and Shady Oak Dr., Asheville, NC	28803	828-475-2739	Buncombe	Manufacturer/Retail	Craft Beer
Burntshirt Vineyards		2695 Sugarloaf Rd., Hendersonville, NC	28792	828-685-2402	Henderson	Grower/Manufacturer/Retail	Craft Wine
Catawba Brewing Company	Billy, Jetta and Scott Pyatt	32 banks Ave and 63 Brook St , Asheville, NC	28801	828-430-6883	Buncombe	Manu/Retail/Wholesaler	Craft beer
Cherokee Cellars Winery		23 Hickory St., Murphy, NC	28906	941-286-0555	Cherokee	Manufacturer/Retail	Winery
Copper Pot & Wooden Spoon	Jessica	449 Pigeon St a, Waynesville, NC	28786	828-593-0501	Haywood	Manufacturer	Food Product
Currahee Brewing Company	Brandon Hintz	100 Lakeside Dr., Franklin, NC	28734	828-634-0078	Macon	Manufacturer/Retail	Craft Beer
Dry Falls Brewing Company		425 Kanuga Rd, Hendersonville, NC	28739	828-989-1292	Henderson	Manufacturer/Retail	Craft Beer

Echoview Fiber Mill		76 Jupiter Rd Weaverville, NC	28787	855-693-4237	Buncombe	Manufacturing/ Retail	Clothing
Ecusta Brewing	Bill Zimmer	49 Pisgah Hwy #3, Pisgah Forest, NC	28768		Transylvania	Manufacturing/ Retail	Craft Beer
Eluvium Brewing Company		11 Florida Ave, Weaverville, NC	28787	828-484-1799	Buncombe	Manufacturer/Retail	Craft Beer
Eurisko Beer Company		255 Short Coxe Ave, Asheville, NC	28801	828-774-5055	Buncombe	Manufacturer/Retail	Craft Beer
Ferenheit Pizza and Brewhouse		17 Lee Street, Asheville, NC	28803	828-676-1800	Buncombe	Manufacturer/Retail	Craft Beer and Food Products
FernCrest Winery	Kurt and Jan Olson	1060 Main Street, Andrews, NC	28901	828- 321- 1600	Cherokee	Grower/ Manufacturer/Retail	hand crafted Wine
Firewalker Hot Sauce	Franco and Ali Donohue	PO Box 137, Asheville, NC	28802	828-808-7709	Buncombe	Manufacturer/Retail	Value added food products
Food Matters Market	Board of Directors	1 Market St, Brevard, NC	28712	828-885-3663	Transylvania	Broker	Market
French Broad River Brewery		101 Fairview Rd, Asheville, NC	28803	828-277-0222	Buncombe	Manu/Retail/Touris m	Craft Beer, Live Music Venue
Frog Level Brewing Co.		56 Commerce St., Waynesville, NC	28786		Haywood	Manufacturer/Retail	Craft Beer
Gaia Herbs		101 Gaia Herbs Rd, Brevard, NC	28712	(828) 884- 4242	Transylvania	Grower/Manufactur er/Retail	Nutraceutical drinks/supplements
Gingers Revenge	David Ackley	829 Riverside Dr,Suite 100, Asheville, NC	28805	828-505-2462	Buncombe	Manufacture / Retail	Craft Beer
Gladheart Farms Distribution	Jonathon Flaum	25 Meadow Road Asheville NC	28803	828-225-1900	Buncombe	Manufacturer/Distri butor	Food Products
Glorious Forest Apothecary	Amber Brown	Marshall, NC	28753		Madison	Grower/ Manufacturer/ Retail	Apothecary
Green Man Brewery		23-27 Buxton Avenue, Asheville, NC	28801	828-252-5502	Buncombe	Manufacture/Retail	Craft Beer
Green River Picklers	Beau Martin	1286 Old US 25 Hwy Zirconia NC	28790	828-335-2727	Henderson	Manufacture / Retail	Food Product
Guidon Brewing Company		415 8th Street, Hendersonville, NC	28792		Henderson	Manufacturer/Retail	Craft Beer
Habitat Brewing Tavern and Commons		174 Broadway St. Asheville, NC	28801	828-484-6491	Buncombe	Manufacturer/Retail	Craft beer
Hap Mountain Herbals		PO Box 783, Hot Springs NC	28743		Madison	Grower/Manufactur er/ Retail	Herbal remedies

Hayeville Brewing Company		1568 US-64, Hayesville, NC	28904	828-835-6010	Clay	Manufacturer/Retail	Craft Beer
Hendersonville Community Co-op	Board of Directors	60 South Charleston Lane, Hendersonville, NC	28792	828-693-0505	Henderson	Broker	Market
Herbal Ingenuity		151 Herbal Ingenuity Way, Wilkesboro, NC	28697	336-818-2332	Wilkes	Broker	raw material supplier
Hi-Wire Brewing		2A Huntsman place	28803	828-575-9675	Buncombe	Manufacturer/Retail	Craft Beer
Hickory Nut Gorge Brewery		461 Main Street, Chimney Rock, NC	28720	828-436-7047	Rutherford	Manufacturer/Retail	Craft Beer
High Mountain Meadows Farm & Creamery	Donna Gains	486 Double Knob Dr., Hayesville, NC	28904	828-389-1186	Clay	Grower/Manufacturer/ Retail	Value Added products
Highland Brewing Company		12 Old Charlotte Hwy, Asheville, NC	28803	828-299-3370	Buncombe	Manufacturer/Retail	Craft Beer
Hillman Beer		25 Sweeten Creek Rd, Asheville, NC	28803	828-505-1312	Buncombe	Manufacturer/Retail	Craft Beer
Homeplace Beer Co.		6 South Main St., Burnsville, NC	28714	828-536-5147	Madison	Manufacture /Retail	Craft Beer
Hoppy Trout Brewing, Co		911 Main St, Andrews, NC	28901		Cherokee	Manufacturer/Retail	Craft Beer and food products
Imladris Farm's Jams and Preserves		Fairview, NC	28730		Buncombe	Grower/Manufacturer/ Retail	Food Product Jams
Innovation Brewing	Nicole Dexter	414 W Main St, Sylva, NC	28779	941-468-4528	Jackson	Manufacturer/ Retail	Craft Beer
Janay's Herbal Products		P.O Box 1234 Durham, North Carolina	27713		Durham	Manufacturer/Retail	Skin Care Products
Jewel of the Blue Ridge Vineyard/ Chuck Blethen	Chuck Blethen	P.O. Box 4 Marshall NC	28753	828-606-3130	Madison	Grower/Manufacturer/ Retail	Wine/value added products/agritourism
King Bio Pharmeseuticals	Dr.Frank King	3 Westside Dr Asheville, NC	28806	828-255-0940	Buncombe	Manufacture /Retail	natural supplements for humans and animals
Lazy Hiker Brewing Co.	Lenny Jordan	188 W. Main St, Franklin, NC	28734	828-	Macon	Manufacturer/Retail	Craft Beer
Leading Green Distributing Inc	Kathryn Beattie	12 Bright Hope Rd, Black Mountain, NC	28711	828-275-2405	Buncombe	Distribution/ Broker	Food Product

Leigh Valentine Beauty		247 Oak Street Suite 107, Forest City, NC	28043	828-286-4226	Rutherford	Manu/Distributor/Retail	Beauty product
Lexington Avenue Brewing		39 N. Lexington Ave, Asheville, NC	28801	828-252-0212	Buncombe	Manufacturing/Retail	Craft Beer
Lookout Brewing Company		103 s. Ridgeway Ave, Black Mountain	28711	828-357-5169	Buncombe	Manufacturing/Retail	Craft Beer
Lusty Monk Mustard	Kelly Davis	Asheville, NC	28715	828-645-5056	Buncombe	Manufacturing/Retail	Food Product
Mad Company Brewing		45 N. Main Street, Marshall, NC	28753	828-649-8600	Madison	Manufacturer/Retail	Craft Beer
Mica Town Brewing Company		25 Brown Dr., Marion, NC	28752	828-559-8300	McDowell	Manufacturer/Retail	Craft Beer
Mills River Brewery		330 Rockwood Rd, Arden, NC	28704	828-585-2396	Buncombe	Manufacturer/Retail	Craft Beer
Mimi's Mountain Mixes	Linda Johnson	522 Kangua Rd, Hendersonville, Nc	28791	937-380-5600	Henderson	Manufacturer/ Retail	Food Products
MoonMaid Botanicals	Cynthia Johnson	3319 Cosby Hwy, Cosby TN	37722	865-332-0390	Haywood	Maunfacturer/ Retail	Herbal
Mother Earth Produce	Graham and Andrea DuVall	151 Cedar Hill Rd, Asheville, NC	28806	828-475-0125	Buncombe	Distribution/ Broker	Food Product
Mountain food Products	Stacy	570 Brevard Rd # 5, Asheville, NC	28806	828-255-7630	Buncombe	Distribution/ Broker	Food Product
Mountain Layers Brewing Company	Mark Petit	90 Everett St, Bryson City, NC	28713	828-538-0115	Swain	Manufacturer/Retail	Craft Beer
Nantahala Brewing Company		61 Depot St. Bryson City, NC	28714		Swain	Manufacturer/Retail	Craft Beer and Food Products
New Belgium Brewing Company		21 Craven St. Asheville, NC	28806	828-333-6900	Buncombe	Manufacturer/Retail	Craft Beer
Newsun		215 Linda Vista Dr Hendersonville, NC	28792	828-697-4343	Henderson	Retail and private label supplement manufacturer	Essential Oils, Enzymes, Homeopathics
Nottly River Valley Vineyard		1150 Old Culberson Rd, Murphy, NC	28906	828-837-7822	Cherokee	Grower/Manufacturer/Retail	Vineyard and Winery
One World Brewing		10 Patton Ave, Asheville, NC	28801	828-785-5580	Buncombe	Manufacturer/Retail	Craft Beer
Organic Planet Cleaning	David Stewart	12 Daisy Ln, Asheville, NC	28806	828-424-4654	Buncombe	Manufacturer/ Retail	Cleaning Supplies/Services

Oskar Blues Brewery	Aaron Baker	342 Mountain Industrial Dr. Brevard, NC	28712	828-883-2337	Transylvania	Manu/Distributor/Retail	Craft Beer
Owl Bakery	Susannah Gebhart	299 Haywood Rd, Asheville, NC	28806	828-785-1770	Buncombe	Manufacturer/ Retail	Food Products
Oyster House Brewing Company		625 Haywood Rd, Asheville, NC	28806	828-575-9370	Buncombe	Manufacturer/Retail	Craft Beer
Peaks and Creeks Brewing Company		212 King Street, Suite B, Brevard, NC	28712	828-550-4765	Transylvania	Manufacturer/ Retail	Craft Beer
Pick and Preserve	Ashlie Harper	281 Poverty Branch Rd, Barnardsville, NC	28709	828-768-8042	Buncombe	Manufacturing/ Retail	Restaurant
Pisgah Brewing Company		150 Eastside Drive, Black Mountain, NC	28711	828-669-0190	Buncombe	Manufacturing/ Retail	Craft Beer
PRO-Hydro Beverages INC	Kathy Holmes	200 Asheland Ave, Asheville, NC	28801	828-779-0411	Buncombe	Manufacturer/ Retail	Supplements
Pyrwood Dairy		20 Everett Rd, Pisgah Forest, NC	28768	828-884-6245	Transylvania	Manufacturing	cheese, milk
Rare Body-Selina Naturally	Selina Delangre	Hendersonville Rd, Arden, NC	28704	800.867.7258	Buncombe	Manufacturer/Retail	Personal Care Products
Rare Earth Builders	Mark Bondurant	105 Creative Cove, Canton, NC	28716	828-283-1444	Haywood	Manufacturer/Builder	Green Buildings
Red Moon Herbs	Jeannie Dunn	433 Weaverville Hwy Asheville, NC	28804	888-929-0777	Buncombe	Grower/Manufacturer/Retail	Extracts, Dried herbs and Teas, Elixers and Syrups, Salves and Oils, Vinegars
Ridge Runner Trading Company	Tony Hayes	345 Cranberry Springs Road, Fleetwood, NC	28626	828-264-3615	N/A	Broker	purchasing agent for a regional firm
Roots and Branches Specialty Foods		131 South Ave, Swannanoa, NC	28816	828-398-8097	Buncombe	Manufacturer/Retail	Value added food products
Sanesco International Inc	Hector Romero	1010 Merrimon Ave, Asheville, NC	28804	866-670-5705	Buncombe	Manufacturer/ Retail	Bio Tech
Sapphire Mountain Brewing Company		50 Slicers Ave, Sapphire, NC	28774	828-743-0220	Jackson	Manufacturer/ Retail	Craft Beer
Satulah Mountain Brewing Company		454 Carolina Way, Highlands, NC	28741	828-482-9794	Macon	Manufacturer/Retail	Craft Beer
Selina Naturally-Celtic Sea Salt	Selina Delangre	Hendersonville Rd, Arden, NC	28704	800.867.7258	Buncombe	Manufacturing/Retail	Natural Sea Salt products for humans and

							animals
Short Street Cakes	Kayla Cochran	403 Charlotte St, Asheville, NC	28801	681-203-6033	Buncombe	Maunfacturer/ Retail	Food Products
Sideways Farm & Brewery		62 Eade Road, Etowah, NC	28729	828-595-3445	Haywood	Grower/Manufacturer/ Retail	Farm to Pint craft beer production
Sierra Nevada Brewing Company		100 Sierra Nevada Way, Mills River, NC	28732	828-681-5300	Buncombe	Manufactuer/Distrib utor/ Retail	Craft Beer
Smiling Hara	Sarah Yancey & Chad Oliphant	Asheville, NC	28801	828 242 1300	Buncombe	Manufacturer	Food product
Southern Appalachian Brewery		822 Locust St, Hendersonville, NC	28792	828-684-1235	Henderson	Manufacturer/Retail	Craft Beer
Sow True Seed	Carol Koury	243 Haywood St, Asheville, NC	28801	828-254-0708	Buncombe	Distribution/ Broker	Food Product
Sweeten Creek Brewing		1127 Sweeten Creek Rd, Asheville,NC	28803	828-575-2785	Buncombe	Manufacturer/Retail	Craft Beer
Thirsty Monk Brewery		92 Patton Ave, Asheville, NC	28801	828-254-5470	Buncombe	Manufacturer/Retail	Belgian and American Craft Beer
Triple 7 Brewhouse/Westville Pub		777 Haywood Rd, Asheville, NC	28806	828-225-9782	Buncombe	Manufacturer/Retail	Craft Beer, in- house baked bread
Triskelion Brewing Company		669 Maple St., Hendersonville, NC	28792	828-388-7051	Henderson	Manufacturer/Retail	Craft Beer
Troy Distilleries	Troy Ball	41 Hilltop Rd, Asheville, NC	28803	828-337-2364	Buncombe	Maunfacturer/ Retail	Craft liquor
Turgua Brewing Company		27 Firefly Hollow Drive, Fairview, NC	28730	828-222-0984	Buncombe	Grower/Manufacturer/ Retail	Craft Beer
Twin Leaf Brewery		144 Coxe Ave, Asheville, NC	28801	828-774-5000	Buncombe	Maunfacturer/ Retail	Craft Beer
Upcountry Brewing Company/Altamount Brewing Company		1042 Haywood Rd, Asheville, NC	28806	(828) 575- 2400	Buncombe	Maunfacturer/ Retail	Craft Beer, food, music venue
Urban Orchard Cider Company	Lori Miller	210 Haywood Rd, Asheville, NC	28806	828-691-8767	Buncombe	Maunfacturer/ Retail	Beverage
Valley River Brewery and Eatery		71 Tennessee St, Murphy NC	28906	828-837-2337	Cherokee	Manufacturer/Retail	Craft Beer
Valley River Vineyards & Winery		4689 Martins Creek Road, Murphy, NC	28906	828-321-5333	Cherokee	Manufacturer/Retail	Wine

Warhorse Solutions LLC	Tawana Weicker	2212 Bill Collins Rd, Columbus NC	28722	828-817-0350	Polk	Maunfacturer/ Wholeseller	Cleaning Supplies
Waynesville Soda Jerks	Chris Allen	144 industrial park dr Ste A3, Waynesville, NC	28786	828-728-8589	Haywood	Maunfacturer/ Retail	Food Product
Wedge Brewing Company		37 Paynes Way & 5 Foundy St. Asheville, NC	28801	828-505-2792	Buncombe	Maunfacturer/ Retail	Craft Beer
Whistle Hop Brewing Company		1288 Charlotte Hwy, Fairview, NC	28730	828-338-9447	Buncombe	Maunfacturer/ Retail	Craft Beer
White Labs Kitchen and Tap		172 S. Charlotte St, Asheville, NC	28801	828-974-3868	Buncombe	Manu/Distributor/Retail	Craft Beer, yeast provider, food products
Whiteside Brewing Co	Bob Dews	128 Hwy 107 North, Cashiers, NC	28717	828-506-4030	Jackson	Manufacturer/Retail	Craft Beer
Wicked Weed Brewing Pub/Wicked Weed Funkatorium/Wicked Weed Funkhouse		91 Biltmore Ave and 147 Coxe Ave, Asheville, NC	28801	828-575-9599	Buncombe	Manu/Distributor/Retail	Craft Beer and Food Products
WNC G.R.U.B.S	Mary Harrill	305 Orchard Ct, Fairview, NC	28730	828-777-1233	Buncombe	Manufacturer	Processor
Wounded Warrior Ointment	Clare Schwartz	1461 Sand Hill Rd, Candler, NC	28715	800-232-7713	Buncombe	Manufacturer/Retail	Personal Products/Pet products
Wyld Haven Farms		58 Reed Road, Fairview, NC	28730	828-835-2231	Buncombe	Grower/Manufacturer/ Retail	Aroma Therapy essential oils
Yellow Branch Cheese and Pottery		1073 Old Yellow Branch Rd, Robbinsville, NC	28771	828-479-6710	Graham	Manufacturer/Retail	Food Product
Yellow Sun Brewing Co.		127 Trade Street, Rutherfordton, NC	28139	828-375-0089	Rutherford	Manufacturer/Retail	Craft Beer
Zebulon Artisan Ales		8 Merchants Alley, Weaverville, NC	28787		Buncombe	Manufacturer/Retail	Craft Beer
Zillacoah Beer Co.		870 Riverside Dr., Woodfin, NC	28804	(828) 484-6502	Buncombe	Manufacturer/Retail	Craft Beer

Appendix F

Retail Stores and Personal Services

Business/ Individual Name	Contact Name	Address	Zip Code	Contact Info	County	Value Network	Products
Adelaide Spa at the Crowne Plaza		27 Resort Dr, Asheville, NC	28806	828-575-2196	Buncombe	Personal Care Services	Spa treatments and products
Alchemy Asheville Apothecay		62 Clayton St., Asheville, NC	28801	828-575-9419	Buncombe	Retail	Apothecary and tea room
Ambrozia Bar & Bistro	Sam Etheridge	1020 Merrimon Ave, Asheville, NC	28804	828-350-3033	Buncombe	Retail	Restaurant
Appalachian Natural Soap	Victor Taylor	21 Wall St, Asheville, NC	28801	828-665-0810	Buncombe	Retail	Personal Products
Appalachian Spa Ventures Mobile Onsite Massage Spa		Biltmore Forest Area, Asheville, NC	28803	828-230-1441	Buncombe	Personal Care Services	Spa treatment and products
Around Town Massage		Serving Asheville and surrounding areas	28801	828-713-8845	Buncombe	Personal Care Services	Spa treatments and products
Artisun Gallery and Marketplace	Sunny Riggs	16 South Andrews Ave Hot Springs North Carolina	28743	828-622-3573	Madison	Retail	Food Product
Ascend Adventure Wellness		797 Haywood Rd, Asheville, NC	28806	828-747-9917	Buncombe	Personal Care Services	Spa treatment combining outdoor hiking adventure
Asheville City Market South		Biltmore Park Town Square Boulevard	28803	828-210-1660	Buncombe	Retail	Farmers Market
Asheville Community Yoga		8 Brookdale Rd, Asheville, NC	28804	828-255-5575	Buncombe	Personal Care Services	Yoga
Asheville Goods		94 Westgate Parkway	28806	828-252-9175	Buncombe	Retail	Small Batch Artisan, Organic Grocery
Asheville Salt Cave and spa		12 Eagle St, Asheville, NC	28801	828-236-5999	Buncombe	Personal Care Services	Therapeutic Salt Cave and spa
Asheville Wellness Tours		78 N Lexington Ave, Asheville, NC	28801	828-407-0711	Buncombe	Personal Care Services	Wellness combined with tour of Asheville

Awaken Skin and Body		1829 Hendersonville Rd. Asheville, NC	28803	828-774-5558	Buncombe	Spa	Massage products
Back to Balance Massage and Bodyworks		10886 Old Hwy 64 W. Brasstown, NC	28902	828-644-8425	Clay	Personal Care Services	Massage service and products
Baxley's Chocolates	Steve Baxley	628 W Main St, Sylva, NC	28779	828-631-3379	Jackson	Retail	Food Product
Beth Huntzinger, Massage Therapy and Reiki Energy Healing		29 Ravenscroft Dr, Asheville, NC	28801	828-279-7042	Buncombe	Treatment	Reiki Energy Healing, hot stone and pre-natal massage
Blue Lotus Ayurveda		440 Montford Ave, Asheville, NC	28801	828-713-4266	Buncombe	Treatment	Ayurvedic therapies and Therapeutic Spa and massage
Blue Moon Elise		26 Valley River Ave, Suite A, Murphy, NC	28906	828-837-2727	Cherokee	Retail/Service	Body lotion, soap making, essential oils, massage, yoga
Blue Ridge Acupunture Clinic		959 Merrimon Avenue, Asheville, NC	28804	828-254-4405	Buncombe	Treatment	Acupuncture
Bright Light Wellness, LLC		Asheville,	28801	828-586-8881	Buncombe	Treatment	onsite wellness: Massage, Acupuncture, Movement
Buxton Hall Barbecue	Elliot Moss	32 Banks Ave, Asheville, NC	28801	828-232-7216	Buncombe	Retail	Restaurant
Calaboose Cellars		565 Aquone Road, Andrews, NC	28991	828-321-2006	Cherokee	Retail	Winery
Cara Mae Naturals, LLC	Cara Nicole Steinbuchel	Asheville,NC	28806	828-280-5659	Buncombe	Personal Care Product	Natural anti-aging cream
Carmel's Kitchen & Bar	Jonathan Johnson	1 Page Ave, Asheville, NC	28801	828-252-8730	Buncombe	Retail	Restaurant
Chai Pani	Meherwan Irani	22 Battery Park Ave, Asheville, NC	28801	828-254-4003	Buncombe	Retail	Restaurant
Chestnut	Kevin Westmoreland	48 Biltmore Ave, Asheville, NC	28801	828-575-2667	Buncombe	Retail	Restaurant
City Lights Cafe	Bernadette Peters	3 E Jackson St, Sylva NC	28779	828-587-2233	Jackson	Retail	Restaurant
CoCoChi, Inc-Skin Fare products	Kara Eriksson	1461 Sand Hill Road, Candler, NC	28715	828-782-5576	Buncombe	Personal Care Product	botanical lotions and skin care products

Coffee Cup Cafe	Heidi	48 Haywood Park Dr, Clyde, NC	28721	828-627-8905	Haywood	Retail	Restaurant
Colorful Plate	Ragan and Tara	3871 Sweeten Creek Rd, Arden, NC	28704	828-684-7470	Buncombe	Retail	Restaurant
Copper Crown Restaurant	Adam Bannasch	1011 Tunnel Rd #100, Asheville, NC	28805	828-505-7531	Buncombe	Retail	Restaurant
Cordyceps Reishi Extracts, LLC		152 Pickens Rd, Weaverville, NC	28787	828-658-1503	Buncombe	Retail	Fungi related products
Corner Kitchen	Kevin Westmoreland	3 Boston Way, Asheville, NC	28803	828-274-2439	Buncombe	Retail	Restaurant
Cucina 24	BRIAN CANIPELLI	24 Wall St, Asheville, NC	28801	828-254-6170	Buncombe	Retail	Restaurant
Curate	Heirloom Hospitality Group	13 Biltmore Ave, Asheville, NC	28801	828-239-2946	Buncombe	Retail	Restaurant
De La Terre Skincare and Holistic Spa		47 Haywood Rd, Asheville, NC	28806	828-252-8400	Buncombe	Treatment	Facials and holistic spa treatments
Dolci Di Maria	Mary Tantillo	410 Eastside Dr, Black Mountain, NC	28711	828-669-8787	Buncombe	Retail	Restaurant
Eagle Fork Vineyards		225 Dick Jones Rd, Hayesville, NC	28904	828-389-8466	Clay	Grower/Retail	Vineyards
Early Girl Eatery	John and Julie Stehling	8 Wall St, Asheville, NC 28801	28801	828-259-9292	Buncombe	Retail	Restaurant
East Asheville Tailgate Market		954 Tunnel Road, Asheville, NC	28805	910-515-9145	Buncombe	Retail	Tailgate Market
Eat More Bakery	Rebekah Abrams	P O Box 207 Asheville NC	28802	828-713-5222	Buncombe	Retail	Restaurant
Eden-Out-Meals	William Najger	148 Weaverville Rd, Woodfin, NC	28804	828-645-3336	Buncombe	Retail	Restaurant
Edible Asheville	Steven Stedillie	46 Haywood St 252, Asheville, NC	28801	720-470-2652	Buncombe	Retail	Tourism
Elements Spa and Shop		29W French Broad St., Brevard, NC	28712	828-884-2701	Transylvania	Retail	Spa and retail shop
Eric's Fresh Fish Market	Eric Hendrix	1545 Highlands Road, Franklin, NC	38734	828-587-3474	Macon	Distributor/Retail	Food Product
Farm Burger	Board of Directors	10 Patton Ave, Asheville, NC	28801	828-348-8540	Buncombe	Retail	Restaurant

Flat Rock Village Bakery	Scott Unfried	2710 Greenville Hwy, Flat Rock, NC	28731	828-693-1313	Henderson	Retail	Restaurant
Fletcher Village Bakery	Scott Unfried	235 St John Rd, Fletcher, NC	28732	828-687-7999	Henderson	Retail	Restaurant
French Broad Chocolate lounge	Dan and Jael Rattigan	10 S Pack Square, Asheville, NC	28801	828-252-4181	Buncombe	Retail	Restaurant
French Broad Food Co-Op	Board of Directors	90 Biltmore Ave. Asheville, NC	28801	828-255-7650	Buncombe	Retail/ Broker	Grocery Store
Fresh Quarter		1 Page Ave, Asheville, NC	28801	828-252-0023	Buncombe	Retail	Produce and value added food products
Frogs Leap Public House		44 Church St, Waynesville, NC	28786	828-456-1930	Haywood	Retail	Restaurant
Gan Shan Station	Patrick O'Cain	143 Charlotte St, Asheville, NC	28801	828-774-5280	Buncombe	Retail	Restaurant
Garden Deli		107 Town Square, Burnsville, NC	28714	828-682-3946	Yancey	Retail	Restaurant
Glass onion		18 N Main St, Weaverville, NC	28787	828-645-8866	Buncombe	Retail	Restaurant
Golden Needle acupuncture, herbal and medical supply		2 Rutledge Circle Fletcher, NC	28732	(828) 676-3829	Buncombe	Retail	medicinal supply for acupunturists
Green River Farm		10103 Hwy 108 E, Mill Spring, NC	28756	828-894-3431	Polk	Grower/Retail	Farm
Greenlife Grocery Asheville	Board of Directors	70 Merrimon Ave Asheville, NC	28801	828-254-5440	Buncombe	Retail/ Broker	Grocery Store
Guadalupe Cafe	Jen Pearson	606 W Main St, Sylva, NC	28779	828-586-9877	Jackson	Retail	Restaurant
Herbiary		29 N. Market St., Asheville, NC	28801	828-552-3334	Buncombe	Retail	Herbal remedies
HomeGrown		371 Merrimon Ave, Asheville, NC	28801	828-232-4340	Buncombe	Retail	Restaurant
Hot Springs Spa		315 Bridge St, Hot Springs, NC	28743	828-622-7676	Madison	Spa	Massage products
Infinity Salon and Spa		308 Hill Street, Murphy, NC	28906	828-837-4767	Cherokee	spa	Massage and organic skin care products
Jayanti Bhakti		Asheville, NC	28801	704-322-7168	Buncombe	Wellness	Healing using Hypnosis, reiki energy healing, yoga, crystals and sound

King Daddy's Chicken and Waffle	John and Julie Stehling	444 Haywood Rd #101, Asheville, NC	28806	828-785-1690	Buncombe	Retail	Restaurant
La Petite Spa		6 Park P. W Bld B, Brevard, NC	28712	828-883-2238	Transylvania	Retail	Personal services
Limones	Hugo Ramirez	13 Eagle St, Asheville, NC	28801	828-252-2327	Buncombe	Retail	Restaurant
Madison Natural Foods		101 N Main St Marshall NC	28753	828-649-2100	Madison	Retail	Grocery Store
Massage Envy Spa-Asheville South		1863 Hendersonville Road, Asheville, NC	28803	828-210-1100	Buncombe	Personal Care Service	Massage Treatment and products
Massey Massage		1142 West US Hwy 64, Suites D&E, Murphy, NC	28906		Cherokee	Personal Care Service	Spa Treatment and Products
Mela Indian		70 N Lexington Ave, Asheville, NC	28801	828-225-8880	Buncombe	Retail	Restaurant
Meriweather Gardens	Rachel Meriweather	6371 Green River RdZirconia, NC	28790	435-730-6783	Henderson	Grower/Retail	Flowers/Produce
Mills River Creamery	Johnston family	4193 Haywood Road Mills River, NC	28759	828-891-4007	Henderson	Grower/Retail	Food Products
Mojo Kitchen and Lounge		55 College St, Asheville, NC	28801	828-255-7767	Buncombe	Retail	Restaurant
Mountain Gardens	Joe Hollis	546 Shuford Creek Rd, Burnsville, NC	28714	828-675-5664	Yancey	Grower/Retail	Medicinal Plant
Nest Organics		51 N Lexington Ave, Asheville, NC	28801	828-258-1901	Buncombe	Retail	Children's clothing, Home Goods
Newsun		215 Linda Vista Dr Hendersonville, NC	28792	828-697-4343	Henderson	Retail and private label supplement manufacturer	Essential Oils, Enzymes, Homeopathics
NightBell	Heirloom Hospitality Group	32 S Lexington Ave, Asheville, NC	28801	828-575-0375	Buncombe	Retail	Restaurant
No Evil Foods Company	Sadrah Schadel	PO Box 47, Asheville, NC	28801	828-367-1536	Buncombe	Retail	Restaurant

North Asheville Tailgate Market		UNC Asheville Campus	28801		Buncombe	Retail	Produce and value added food products
Oakley Farmers Market		12 Old Charlotte Hwy, Asheville, NC	28803	828-407-0188	Buncombe	Retail	Produce and value added food products
Old Edwards Inn and Spa		445 Main St, Highlands, NC	28741	866-526-8008	Macon	Retail	Personal Service
One Center Yoga	Cindy Dollar	120 Coxe Ave, Asheville, NC	28801	828-255-9401	Buncombe	Retail	Yoga
One Willow Apothacaries	Asia Suler	Marshall, NC	28753		Madison	Retail/Education	Apothecary
Overeasy Cafe		32 Broadway St, Asheville, NC	28801	828-236-3533	Buncombe	Retail	Restaurant
Patton Avenue Pet Company		109 Patton Ave Asheville, NC	28801	828-255-7737	Buncombe	Retail	Dog food, cat food, small animal
Plant Restaurant Inc	Jason Sellers	165 Merrimon Ave, Asheville, NC	28801	828-258-7500	Buncombe	Retail	Restaurant
Premium Organics	Andrew Stepp	70 Clinton Ave, Asheville, NC	28806	828-243-2781	Buncombe	Retail	Pest Removal
Ra Ma Kaur		Various locations Asheville, NC	28806	828-242-9114	Buncombe	Retail	Kundalini Yoga and Meditation, Gong Resound Healer Herbalist and stone whisperer
Reems Creek Valley Nursery	Susan Reavis	70 Monticello Rd, Weaverville, NC	28787	828-645-3937	Buncombe	Grower/Retail	Plants
Relax and Rejuvenate of Asheville, Inc		5 Regent Park Boulevard, Suite 105, Asheville, NC	28806	828-250-9077	Buncombe	Retail	Massage Treatments
River Arts District Farmers market		175 Clingman Avenue, Asheville, NC	28801	N/A	Buncombe	Retail	Produce and value added food products
Riverbend Malt House	Brent Manning	12-C Gerber Rd, Asheville, NC	28803	828-450-1081	Buncombe	Retail	Beverage
Sacred Roots Wellness	Anna Ferguson	9B All Souls Cres, Asheville, NC	28803	828-771-6403	Buncombe	Retail	Yoga
Salon and Skin Spa of Hazelwood		1086 Brown Avenue, Waynesville, NC	28786	828-456-2050	Haywood	Retail	Skin Care Products
Sanctuary Brewing Company		147 First Ave East, Hendersonville, NC	28792	828-595-9956	Henderson	Brewery	Craft Beer

Seaons at Highland Lake	Peter Fassbender	86 Lily Pad Ln, Flat Rock, NC	28731	828-696-9094	Henderson	Retail	Restaurant
Shoji Spa		96 Avondale Heights Rd, Asheville, NC	28803	828-299-0999	Buncombe	Personal Care Service	spa
Sole Haven: Foot Reflexology Lounge		1636 Hendersonville Rd, Asheville, NC	28803	828-785-1887	Buncombe	Personal Care Service	Foot Reflexology
Spa at Biltmore Village		18 Brook Street, Asheville, NC	28801	828-277-2639	Buncombe	Personal Care Service	Spa
Spa Theology		53 College St., Asheville, NC	28801	828-255-4171	Buncombe	Personal Care Service	Spa
Still Point Wellness		81-B Central Ave Asheville, NC	28801	828-348-5372	Buncombe	Personal Care Service	Spa
Sunrise Yoga Studio		18 Herbert Street, Hayesville, NC	28904	828-557-5731	Clay	Personal Care Service	Yoga
The Copper Door	Dennis Barber	2 Sullivan St, Hayesville, NC	28904	828-389-8460	Clay	Retail	Restaurant
The Market Place	William Disson	20 Wall St, Asheville, NC	28801	828-252-4162	Buncombe	Retail	Restaurant
The Purple Onion	Susan Casey	16 E Main St, Saluda, NC	28773	828-749-1179	Polk	Retail	Restaurant
The Salt Spa of Asheville and Himalayan Salt Cave Sanctuary		473 Hendersonville Rd, Asheville, NC	28803	828-505-1838	Buncombe	Personal Care Service	Spa Treatment and products
The Spa at Theh Omni Grove Park Inn		290 Macon Ave, Asheville, NC	28804	828-252-2711	Buncombe	spa/hotel	Spa and Hotel
The Still Place		136 Crossover Lane, Hayesville, NC	28904	352-316-2963	Clay	Personal Care Service	Spa Treatment and products
Trout Lily Market		1297 Charlotte Hwy, Fairview, NC	28730	828-628-0402	Buncombe	Retail	Grocery Store
Valentine Spa/Leigh Valentine Beaty	Ray Nenow	141 Laurel Hill Dr, Rutherfordton, NC	28139	828-286-4226	Rutherford	Retail	Personal Products/Wellness
Villagers: Urban Homestead Supply		278 Haywood Road, Asheville, NC	28806	828-215-9569	Buncombe	Retail	Homestead supplies
Violet Owl Wellness		62 Wall Street, Asheville, NC	28801	828-785-3041	Buncombe	Wellness/ Education	Healing sanctuary using yoga, massage, bodyworks, events and workshops

Waggers Dog Depot	"Natalie"	1020 Merrimon Ave Ste 102, Asheville, NC	28804	828-271-4741	Buncombe	Retail	Shampoo, Treats
Wake- The Foot Sanctuary and Shop		1 Page Ave, Asheville, NC	28801	828-575-9799	Buncombe	Retail	Foot Sanctuary
Walnut Hollow Ranch		1100 Carter Cove Rd, Hayesville, NC	28904	828-389-8466	Clay	Grower/Retail	All Natural Farm Raised Beef
Wellspring Wellness Center		966 Tunnel Road, Asheville, NC	28805	828-298-2488	Buncombe	Treatment	Transformation education through wellness
West Asheville Tailgate Market		718 Haywood Road	28806	828-545-4516	Buncombe	Retail	Produce and value added food products
Whole Store		3090 West US Hwy 64#105, Murphy, NC	28906	828-837-5408	Cherokee	Retail	Natural food, supplements, pet care and beauty products, bulk herbs and more
Wolf Gang Bakery	Sandra Brown	33 Town Square Blvd	28803	828-650-9950	Buncombe	Retail	High end Pet Products
Zen Spa		4144 Cashiers Rd, Highlands, NC	28741	919-413-7411	Macon	Retail	Spa Treatment and products

Appendix G

Testing Labs, Research Institutes, and Product Development

Business/ Individual Name	Contact Name	Address	Zip Code	Contact Info	County	Value Network	Products
Appalachian State University-Enology Brewing Lab and Vitaculture	Rusty Kuhfeld	949 Blowing Rock Rd, Boone, NC	28608	828-406-6014	Watauga	Testing, Research & Product Development	Testing, Research, and Product Development
Apple Pharms Ingredients	Ryan Fearon	133 Thompson St, Asheville, NC	28803	828-772-6087	Buncombe	Research	Biotech
Botanipharm, LLC	Randy Beavers	1421 Boyles Mill Road Dalton, GA	30721	855-227-3090	N/A	Testing, Research & Product Development	Agriculture scientist/Product development
NC Arboretum Bent Creek Germplasm Repository formerly Bent Creek Institute		100 Frederick Law Olmsted Way, Asheville, NC	28806	828-665-2492	Buncombe	Testing, Research & Product Development	Germplasm Repository
NC Arboretum US Botanical Safety Laboratory		100 Frederick Law Olmsted Way, Asheville, NC	28806	828-665-2492	Buncombe	Testing, Research & Product Development/Education	Botanical Safety
NC Community College Business Incubator-AB-Tech	Jill Sparks	1465 Sand Hill Road, Suite 1060, Candler, NC	28715	828.398.7949	Buncombe	Testing, Research & Product Development	Business Research and Innovation Center
NC Community College-BioNetwork-Natural Products Lab	Chris Reedy	1465 Sand Hill Road, Suite 1060, Candler, NC	28715	828-782-2323	Buncombe	Testing, Research & Product Development	Analytical testing and product development with a test kitchen
NC Community College-McDowell Universal Advanced Manufacturing Center	Frank Silver	634 College Drive Marion, NC	28752	828-652-0634	McDowell	Testing, Research & Product Development	Business Research and Innovation Center
NC Herb Association	Camille F. Edwards	455 Research Drive, Mills River, NC	28759		Henderson	Testing, Research & Product Development	membership org

NC State Univ Agriculture Extension		NC State University, Campus Box 7602, Raleigh, NC	27695	919-515-2813	Wake	Testing, Research & Product Development	Government program
NCSU Ag Extension- Buncombe County	Steve Duckett	49 Mt. Carmel Rd, Suite 102, Asheville, NC	28806	828-255-5522	Buncombe	Testing, Research & Product Development	Government program
NCSU AG Extension- Cherokee County	Doug Clement	40 Peachtree St., Murphy, NC	28906	828-837-2210	Cherokee	Testing, Research & Product Development	Government program
NCSU AG Extension- Clay County	Doug Clement	25 Riverside Cir, Hayesville, NC	28904	828-389-6305	Clay	Testing, Research & Product Development	Government program
NCSU AG Extension- EBCI Center	Chumper Walder, Jr.	876 Acquoni Road, Cherokee, NC	28719	828-359-6939	Jackson	Testing, Research & Product Development	Government program
NCSU AG Extension- Graham County	Randy Collins	39 S Main St Smith Howell Building, Robbinsville, NC	28771	828-479-7979	Graham	Testing, Research & Product Development	Government program
NCSU AG Extension- Haywood County	Dr. Bill Skelton	589 Raccoon Rd, Suite 118, Waynesville, NC	28789	828-456-3575	Haywood	Testing, Research & Product Development	Government program
NCSU AG Extension- Henderson County	Dr. Terry Kelley	100 Jackson Park Rd, Hendersonville, NC	28792	828-697-4581	Henderson	Testing, Research & Product Development	Government program
NCSU AG Extension- Jackson County	Rob Hawk, II	876 Skyland Dr, Suite 6, Sylva, NC	28779	828-586-4009	Jackson	Testing, Research & Product Development	Government program
NCSU AG Extension- Macon County	Alan Durden	193 Thomas Heights Rd, Franklin, NC	28734	828-349-2046	Macon	Testing, Research & Product Development	Government program
NCSU AG Extension- Madison County	Ross Young	258 Carolina Ln, Marshall, NC	28753	828-649-2411	Madison	Testing, Research & Product Development	Government program
NCSU AG Extension- McDowell County	Molly Sandfoss	60 E Court St, Marion, NC	28752	828-652-8104	McDowell	Testing, Research & Product Development	Government program
NCSU AG Extension- Mountain Horticulture Crops Research	Jeanine Davis	455 Research Dr., Mills River, NC	28759	828-684-3562	Henderson	Testing, Research & Product Development	Government program

NCSU AG Extension-Polk County	Scott Welborn	79 Carmel Lane, Columbus, NC	28722	828-894-8218	Polk	Testing, Research & Product Development	Government program
NCSU AG Extension-Rutherford County	Jeff Bradley	193 Callahan-Koon Rd, Spindale, NC	28160	828-288-4036	Rutherford	Testing, Research & Product Development	Government program
NCSU AG Extension-Swain County	Rob Hawk, II	60 Almond School Rd, Bryson City, NC	28713	828-488-3848	Swain	Testing, Research & Product Development	Government program
NCSU AG Extension-Transylvania County	Bart Renner	106 East Morgan St, Suite 109, Brevard, NC	28712	828-884-3109	Transylvania	Testing, Research & Product Development	Government program
Pheonix Research Products	Niki Metcalf	73 Ridgeway Rd, Candler, NC	28715	828-418-1080	Buncombe	Research	Biotech
Warren Wilson College- Farm		701 Warren Wilson Rd, Swannanoa, NC	28778	800-934-3536	Buncombe	Testing, Research and Product Development	Applied Research
Yellow Creek Botanical Institute	Robin Suggs	P.O. Box 761, Robbinsville, NC	28771		Graham	Research	research and demonstration Farm

Appendix H

Technical Assistance, Educational Institutions, and Supporting Programs

Business/ Individual Name	Contact Name	Address	Zip Code	Contact Info	County	Value Network	Products
Accelerating Appalachia	Sara Day Evans	Regional resource online	28801	828-216-9416	N/A	Education and Support	Nature based business growth and development
American Herbalist Guild		125 S Lexington Ave, #101A, Asheville, NC	28801		Buncombe	Education and Support	Herbalist Guild-association of herbal practitioners
Appalachian Beginning Forest Farmer Coalition	Margaret Bloomquist Jeanine Davis	455 Research Dr., Mills River, NC	28759	828-684-3562	Henderson	Education and support	Education and support services
Appalachian Botanical Association	Amy Hamilton	on-line resource				Education and support	Cooperative of growers to broker high quality herbs
Appalachian School of Herbalism	Ceara Foley	2 Westwood Place, Asheville, NC	28806	828-350-1221	Buncombe	Education and support	Herbalist training
Appalachian Sustainable Agriculture Program (ASAP)		306 West Haywood Street, Asheville, NC	28801	828-236-1282	Buncombe	Education and Support	Agriculture education and market support
Blue Ridge Food Ventures		1461 Sand Hill Rd, Candler, NC	28715	828-348-0130	Buncombe	Education and Support	Natural Products Packaging facility
Blue Ridge School of Herbal Medicine	Corey Pine Shane	606 New Leicester Highway, Suite F, Asheville NC	28806	828-505-0032	Buncombe	Education and Support	Award winning holistic training
Carolina Farm Credit		2549 Chimney Rock Highway Hendersonville, NC	28792	828-693-0272	Henderson	Education and Support	Financing
Carolina Farm Credit	Sherry Palmer	105 Hiwassee Street Murphy, NC	28906	828-837-7436	Cherokee	Education and Support	Financing
Carolina Farm Credit	Randy Rogers	1510 Asheville Road Waynesville, NC	28786	828-452-1418	Haywood	Education and Support	Financing
Chamber of Commerce-Andrews		345 Locust St, Andrews, NC	29801	828-321-3584	Cherokee	Education and support	Business promotion

Chamber of Commerce-Asheville Area	Kit Cramer	36 Montford Ave, Asheville	28801	828-258-6123	Buncombe	Education and support	Business promotion
Chamber of Commerce-Black Mountain & Swannanoa		201 E. State Street, Black Mountain, NC	28711	828-669-2300	Buncombe	Education and support	Business promotion
Chamber of Commerce-Cashiers	Stephanie Edwards	202 Highway 64W, Cashiers, NC	28717	828-743-5191	Jackson	Education and support	Business promotion
Chamber of Commerce-Cherokee Co	Meridith Jorgensen	805 W US Highway 64, Murphy, NC	28906	828-837-2242	Cherokee	Education and support	Business promotion
Chamber of Commerce-Clay Co	Pam Roman	388 Highway 64 Business, Hayesville, NC	28904	877-839-3704	Clay	Education and support	Business promotion
Chamber of Commerce-Clay Co	Clark Lovelace	175 E Main St, Brevard, NC	28712	828-883-3700	Transylvania	Education and support	Business promotion
Chamber of Commerce-Fletcher Area Business Association (FABA)	Jared Bellmund	PO Box 321, Fletcher, NC	28732	828-260-2222	Buncombe	Education and support	Business promotion
Chamber of Commerce-Franklin	Linda Harbuck	98 Hyatt Rd, Franklin, NC	38734	828-524-3161	Macon	Education and support	Business promotion
Chamber of Commerce-Graham Co	Ron & Nancy Johnson	Robbinsville, NC	28771	800-768-7129	Graham	Education and support	Business promotion
Chamber of Commerce-Haywood Co	CeCe Hipps	28 Walnut St, #1, Waynesville, NC	28786	828-456-3021	Haywood	Education and support	Business promotion
Chamber of Commerce-Henderson Co	Robert R. Williford	204 Kanuga Rd., Hendersonville, NC	28739	828-692-1413	Henderson	Education and support	Business promotion
Chamber of Commerce-Highlands		108 Main St, Highlands, NC	28741	828-526-2112	Macon	Education and support	Business promotion
Chamber of Commerce-Jackson Co	Julie Spiro	773 W Main St, Sylva, NC	28779	828-586-2155	Jackson	Education and support	Business promotion
Chamber of Commerce-McDowell Co	Steve Bush	1170 W Tate St, Marion, NC	28752	828-652-4240	McDowell	Education and support	Business promotion

Chamber of Commerce-Polk Co	Linda Howard	2753 Lynn Rd, #A, Tryon, NC	28782	828-859-6236	Polk	Education and support	Business promotion
Chamber of Commerce-Rutherford Co		162 N Main St, Rutherfordton, NC	28139	828-287-3090	Rutherford	Education and support	Business promotion
Cherokee Preservation Foundation	Bobby Raines	71 John Crowe Hill Road, Cherokee, NC	28719	828.497.5550	Swain	Education and Support	Foundation to Preserve heritage
Chestnut School of Herbal Medicine	Juliet Blankespoor	73 Sanford Way, Weaverville, NC	28787	N/A	Buncombe	Education	Medicinal plant Education
Daoist Traditions College of Chinese Medical Arts	Jeffrey C. Yuen	382 Montford Ave, Asheville, NC	28801	828-225-3993	Buncombe	Education and Support	School to teach Chinese medicine
Eclectic School of Herbal Medicine	Thomas Easley	671 Ramey Orchard Rd., Lowgap, NC	27024	336-804-0903	Surry	Education and Support	herbal school of medicine
Economic Develoment-Asheville City	Sam Powers	29 Haywood St, Asheville, NC	28802	822-232-4505	Buncombe	Education and Support	Industry recruit and retain
Economic Develoment-Buncombe Co	Clark Duncan	36 Montford Avenue, Asheville, NC	28801	828-258-6134	Buncombe	Education and Support	Industry recruit and retain
Economic Develoment-Cherokee Co	Paul Worley	2415 Airport Road, Marble, NC 28905	28905	828-835-9564	Cherokee	Education and Support	Industry recruit and retain
Economic Develoment-Clay Co	Paul Worley	2415 Airport Road, Marble, NC 28905	28905	828-835-9564	Clay	Education and Support	Industry recruit and retain
Economic Develoment-EBCI	Doug Cole	88 Council House Loop, Cherokee, NC	38719	828-359-6709	Jackson	Education and Support	Industry recruit and retain
Economic Develoment-Graham Co	Sophia Paulos	12 North Main St., Robbinsville, NC	28771	828-479-7984	Graham	Education and Support	Industry recruit and retain
Economic Develoment-Haywood Co	CeCe Hipps	28 Walnut Street, Suite 3, Waynesville NC	28786	828-456-3021	Haywood	Education and Support	Industry recruit and retain
Economic Develoment-Henderson Co	Brittany K. J. Brady	330 North King Street, Hendersonville, NC	28792	828-692-6373	Henderson	Education and Support	Industry recruit and retain
Economic Develoment-Jackson Co	Rich Price	401 Grindstaff Cove Rd, Suite A231 Sylva	28779	828-631-2240	Jackson	Education and Support	Industry recruit and retain

Economic Development-Macon Co	Tommy Jenkins	135 E Main St, Franklin, NC	28734	828-369-2306	Macon	Education and Support	Industry recruit and retain
Economic Development-Madison Co	Sara Nichols	5707 U.S. Highway 25/70, Room 21, Marshall, NC	28753	828-649-1377	Madison	Education and Support	Industry recruit and retain
Economic Development-McDowell Co	Chuck Abernathy	634 College Drive, Marion, NC	28752	828-652-9391	McDowell	Education and Support	Industry recruit and retain
Economic Development-Polk Co	Brian Griffin	20 East Mills Street, Columbus, NC	28722	828-894-2895	Polk	Education and Support	Industry recruit and retain
Economic Development-Rutherford Co	Tom Johnson	142 East Main Street, Suite 100, Forest City, NC	28043	828-287-6200	Rutherford	Education and Support	Industry recruit and retain
Economic Development-Swain Co	Ken Mills	101 Mitchell Street, Bryson City, NC	28713	828-488-7838	Swain	Education and Support	Industry recruit and retain
Economic Development-Transylvania Co	Josh Hallingse	147 East Main Street, Suite 301, Brevard, NC	28712	828-393-4130	Transylvania	Education and Support	Industry recruit and retain
Living Systems Design Consulting	Zev Friedman	Sylva, NC	28779	828-669-1792	Jackson	Education and support	Forest Farming Consulting
Mountain Bizworks	Patrick Fitzsimmons	153 S Lexington Avenue, Asheville, NC	28801	828-253-2834	Buncombe	Education and support	Regional Business support
NC Arboretum US Botanical Safety Laboratory		100 Frederick Law Olmsted Way, Asheville, NC	28806	828-665-2492	Buncombe	Testing, Research & Product Development/Education	Botanical Safety
NC Beer Guys, LLC		N/A				Non-profit	Education and Support
NC Community College -AB-Tech Brew School	Jill Sparks	1465 Sand Hill Road, Suite 1060, Candler, NC	28715	828.398.7949	Buncombe	Education and Support	Business Research and Innovation Center
NC Community College Small Business Center-AB-Tech	Duane Adams	1465 Sand Hill Road, Suite 1060, Candler, NC	28715	828.398.7951	Buncombe	Education and Support	Business training and Counseling

NC Community College Small Business Center-Blue Ridge	B.Kish	180 West Campus Dr, Flat Rock, NC	28731	828-694-1779	Henderson	Education and Support	Business training and Counseling
NC Community College Small Business Center-Haywood	Katy Gould	144 Industrial Park Drive, Waynesville, NC	28786	828-627-4512	Haywood	Education and Support	Business training and Counseling
NC Community College Small Business Center-Isothermal	Faye Bishop	1255 W. Mill Street Columbus, NC	28722	828-395-1667	Polk	Education and Support	Business training and Counseling
NC Community College Small Business Center-McDowell	Frank Silver	54 College Drive Harold Smith Building Marion, NC	28752	828-652-0634	McDowell	Education and Support	Business training and Counseling
NC Community College Small Business Center-Southwestern	Tiffany Henry	447 College Drive Sylva, NC 28779	28779	828-339-4211	Jackson	Education and Support	Business training and Counseling
NC Community College Small Business Center-Tri-County	Kathryn Jenkins	2145 Airport Road Marble, NC	28905	828-835-9564	Cherokee	Education and Support	Business training and Counseling
NC Community College-Cherokee County Center for Applied Technology	Paul Worley	2145 Airport Road Marble, NC	28905	828-835-9564 ext. 204	Cherokee	Education and Support	Workforce Development Education Center
NC Community Collegel-Southwestern Appalachian Farm School	Tiffany Henry	447 College Drive Sylva, NC 28779	28779	828-339-4211	Jackson	Education and Support	Farmer Business Training
NC Community Collegel-Southwestern Massage School		447 College Drive Sylva, NC 28779	28779	828-339-4211	Jackson	Education and Support	Medical and therapeutic massage
NC Craft Brewers Guild		Raleigh NC	27601		Wake	Non-profit	Education and Support
NC Dept of Agriculture		1001 Mail Service Center, Raleigh, NC	27699	919-707-3000	Wake	Education and Support	Government program

NC Dept of Commerce		301 North Wilmington Street, Raleigh, NC	27601	919-814-4600	Wake	Education and Support	Government program
NC Rural Center	Jamilla Hawkins	4021 Carya Drive, Raleigh, NC	27610	919.250.4314	Wake	Education and Support	Food Business Assistance Program, Lending, Econ Dev
NC Wine Growers Association	Patti Friszolowski	PO Box 3, Welcome, NC	27374	336-972-4228	Davidson	Education and Support	Growers association
One Willow Apothacaries	Asia Suler	Marshall, NC	28753		Madison	Retail/Education	Apothecary
Organic Growers School	Lee Warren	PO Box 17804, Asheville, NC	28716	828-214-7833		Education and Support	
Self Help Credit Union	Jane	34 Wall Street, Suite 704, Asheville, NC	28801	(828) 239-9231	Buncombe	Education and Support	Food systems and environmental special loan programs
Smoky Mountain Native Plats Association		P.O. Box 761, Robbinsville, NC	28771	828-479-8788	Graham	Education and Support	Support people earn income through growing, collecting, processing and marketing native plants and to preserving them for future generations.
Southeast Wise Women	Corrina Wood	1039 Camp Elliot Rd Black Mountain, NC	28711	828-669-3655	Buncombe	Education and support	Conference/ Medicinal
USDA- Agriculture Dept-Farm Services		193 Thomas Heights Rd, Franklin, NC	28734	828-349-2000	Macon	Education and Support	support farming and regional ED
USDA- Agriculture Dept-Farm Services		200 WT Weaver Blvd, Asheville, NC	28804	828-257-4320	Buncombe	Education and Support	support farming and regional ED
USDA- Agriculture Dept-Farm Services		4388 US 25/70 Hwy, Marshall, NC	28753	828-649-2712	Madison	Education and Support	support farming and regional ED
USDA- Farm service agency-business development		589 Raccoon Rd, Suite 226, Waynesville, NC	28786	828-456-6341	Haywood	Education and Support	support farming and regional ED
USDA- National Institute of Food and Agriculture		589 Raccoon Rd, Suite 226, Waynesville, NC	28786	828-456-6341	Haywood	Education and Support	support farming and regional ED
USDA- Rural		589 Raccoon Rd,	28786	828-456-6341	Haywood	Education and	grow ag business and

Business-Cooperative Service		Suite 226, Waynesville, NC				Support	rural ED
USDA- Rural Development Innovation Center	Claudette Fernandez	N/A	28786	202-245-1175	Washington DC	Education and Support	Regional Rural Economic Dev
WCU SBTDC	Sandra Dennison	46 Haywood St., Suite 212, Asheville,NC	28801	828-251-6025	Buncombe	Education and Support	Counseling, training
WCU SBTDC	Larry Trout	226C Forsyth Bld, Cullowhee, NC	28723	828-227-3504	Jackson	Education and Support	Counseling, training
WNC Farm Links	Suzanna Denison	372 Merrimon Avenue, Asheville, NC	28801	828-785-4284	Buncombe	Education and Support	Networking, Education and regional coaching support