

Chowan County Agricultural Development Plan

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This plan was written by W. Stan Dixon and Ed Emory. Dr. Dixon has an Ed.D. from N.C. State University and served with N.C. Cooperative Extension in Martin, Wake and Greene counties. He retired in 2009 from N.C. Cooperative Extension as County Extension Director. Mr. Emory holds a B.S. and M.Ed. from NC State University and served with the N.C. Cooperative Extension Service in Pamlico and Duplin Counties for more than 28 years. He retired in 2009 after serving 19 years as county extension director in Duplin County.

The following agencies and individuals assisted with the development of this plan:

- North Carolina Cooperative Extension, Chowan County Center
- Chowan County Board of Commissioners
- Chowan County Manager
- North Carolina Forest Service
- Lois G. Britt Agribusiness Center, University of Mount Olive
- The citizens, farmers and agribusinesses of Chowan County





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Executive Summary

Chowan County has a viable agricultural sector that is an important part of the total county fabric of life. The goal of this Agricultural Development Plan is to reflect the importance of agriculture and assess the opportunities, challenges and issues that are currently facing the industry. This plan provides recommendations, based on citizen input on ways to enhance agriculture, forestry, agribusiness and agri-tourism.

Farmland is an irreplaceable natural resource, and the farmers who are stewards of the resource impact the economy and quality of life for all county residents. The economic impact of the agricultural sector in 2012 was 25.5 percent of the county's value added total income. The agriculture sector also accounts for 12.1 percent of Chowan County's total employment¹.

Chowan County has the resources, natural and human to ensure that agriculture can prosper in the future. The impact of agriculture in Chowan County in 2012:

*Agriculture and agribusiness contributed \$113,844,655 in total income²

*Chowan ranked 36th in the soybean production

*Chowan ranked 37rd in wheat production

*Chowan ranked 13th in cotton production

*Chowan ranked 44th in broiler production

*Chowan ranked 48th in hog and pig production

*Chowan ranked 77th in beef cattle production

*Chowan ranked 9th in peanut production

*Chowan ranked 23rd in vegetable production³

In total cash receipts from agriculture, Chowan County ranked 60th in the state⁴

County farmers surveyed, 50 percent, lacked sufficient land to expand or diversify their operations. Chowan County farmers reported facing other critical issues, low commodity prices; land rental rates, competition for land, available labor, affordable labor, regulatory costs and rising production input costs. Other challenges confronted by farmers were an aging farmer population, with the average age of farmers being 55.5 years old and 100 percent not having farm transition plans. These issues present opportunities to enhance agriculture through education and the support of citizens and local government.

Of the non-farm citizens surveyed, 97 percent believe that local government should take action to preserve farmland as a valuable resource. One hundred percent of non-farm citizens believe that farming enhances the scenic beauty and open spaces of the county while providing a positive impact on the environment. All of non-farm respondents support farm and forest preservation efforts in the county.

At the center of the Chowan County Agricultural Development Plan are proposed recommendations based on information provided by farmers, agribusiness leaders and non-farm residents through personal interviews and surveys. The recommendations and action steps were developed to provide a guide for protecting and enhancing agriculture in Chowan County. The success of this plan depends on the collaboration between local government, agricultural organizations, farmers, agribusiness and citizens of Chowan County. The plan needs to be evaluated annually to celebrate accomplishments and add new recommendations as needed. The recommendations are:

- 1. Support Measures To Protect And Promote Forest And Farmland In Chowan County.**
- 2. Promote And Increase Enrollment In Voluntary Agricultural District (VAD) And Adopt And Implement Enhanced Voluntary Agricultural District (EVAD) Programs**
- 3. Develop And Conduct Programs To Assist Chowan County Farm And Forest Landowners With Farm Transition Planning.**

- 4. Promote Appreciation And Awareness Of The Benefits Of Agriculture To Chowan Elected Officials And Citizens.**
- 5. Expand And Support Youth Agricultural Educational Programs.**
- 6. Develop Technical, Business And Marketing Training For The Maintenance And Expansion Of Agriculture In Chowan County.**

The intent of this plan is neither to limit nor restrict landowners' rights and uses. The plan is intended to serve as a guide for actions to provide farmers, landowners and citizens an increased awareness of farmland preservation opportunities. Agriculture is important to Chowan County and its economy and to the well-being of family farms. However, the final decision on farmland preservation rests in the hands of the owners of farm and forests.

A Need for Action

Agriculture, consisting of food, fiber and forestry, is North Carolina's leading industry. In a 2015 report by Mike Walden, professor and extension economist at North Carolina State University, more than 16% of the state's workforce was directly involved with agriculture, an industry that contributes \$83.7 billion, or 17%, to the gross state product in North Carolina⁵. In Chowan County, agriculture accounted for 12.1 percent of the county's employment in 2012. According to Walden, in 2012, agriculture and agribusiness added \$113,844,655 or 25.5 percent of the county's value added total income⁶.

Chowan County's leadership is cognizant of the importance of agriculture to the local economy and is supportive of an Agriculture Development Plan that addresses issues related to farm and agribusiness viability for the future. The goal of the Chowan County Agricultural Development Plan is to provide strategic actions that will guide local leaders in their efforts to preserve farms and forests, as well as market the many benefits of the agricultural industry.

Overview of Chowan County

Established in 1668, Chowan County was once part of the original Albemarle County. The name 'Chowan' comes from the Algonquin Native Americans and means 'people of the south.' The smallest county, area wise, in North Carolina, the first permanent English settlers were from Virginia. Drawn by abundant timber and fertile bottom lands combined with a good climate, the early settlers were farmers. The small streams, creeks and deep rivers of Chowan County made for easy navigation and travel for early settlers.

The county seat of Chowan County is Edenton. Incorporated in 1722, Edenton also served as the capital of the North Carolina colony until 1743. Edenton boasts the oldest courthouse in North Carolina which was constructed in the late 1760's. On October 25, 1774, 51 women organized a protest against the Tea Act. This boycott represented the first political activity organized by women in the colonies⁷.

Chowan County Demographics

According to the US Census 2016 estimates, Chowan County has a population of 14,383 citizens. This figure represents a 2.8 percent decrease in population from 2010. The county is 62 percent white, 34 percent African American and 4 percent Hispanic⁸.

Edenton is the only incorporated area in Chowan County. Other communities include Hancock, Vahalla, Rocky Hock, Tyner, Small's Crossroads, Ryland and Gliden.

Chowan is divided into four townships of Middle, Upper, Yeopin and Edenton.

Economy

The North Carolina Department of Commerce ranks each of the state's 100 counties into three tiers based on economic well-being of each county. Tier 1 is most distressed, and Tier 3 is least distressed. Chowan County is designated as a Tier 1 county. In 2012, the county dropped from a Tier 2 to the present Tier 1 designation. North Carolina uses these designations to encourage economic growth through incentives in distressed counties. Chowan's tier

status provides opportunities for certain grants and other incentives aimed at stimulating the county's economy⁹.

In 2015, the median household income in Chowan County is \$41,156.00 compared to the state figure of \$46,868.00. Nineteen percent of Chowan County's population is considered below the poverty level, this is higher than the state's reported level of 16 percent¹⁰. Six percent or 363 working Chowan County residents work outside North Carolina. Forty-one percent or 2,267 residents work within North Carolina, but outside Chowan County. Fifty-three percent or 2,955 residents work within the county. The unemployment rate is 4.9 percent which is slightly higher than the North Carolina rate of 4.2 percent¹¹.

Agriculture and agribusiness provided jobs for 12.1 percent of Chowan County's working residents according to a study completed by Dr. Mike Walden in 2012¹².

Cost of Services

American Farmland Trust conducted 151 cost-of-community-services studies, including six in North Carolina, to determine the contributions made to the economy by land uses. The studies focus on three main land uses: commercial and industrial, working and open land, and residential. Agricultural and commercial land uses require fewer public services than residential land uses, saving money for the county. For each \$1 of revenue received from each land use, the cost of community services study concluded that:

- Residential land cost \$1.16 in public services.
- Working and open lands (including agriculture and forestry) require \$0.35 for public services.
- Commercial and industrial land cost \$0.29 for public services.

While similar impacts would be expected in Chowan County, a study of this nature can help local leaders and developers understand the impact and importance of planned land-use development on the county's economy¹³.

Infrastructure and Transportation

Chowan County is connected to the northeastern part of North Carolina by US Highway 17 which runs east to west through the southern portion of the county. US Highway 17 is a major north-south highway that provides Chowan County with easy access to Norfolk, Virginia to the north and New Bern and Wilmington to the south. US Highway 32 provides another important access to US Highway 158 and US Highway 64.

Chowan County is served by the Norfolk Southern Railroad. This rail service provides industrial, agricultural, and manufacturing entities with effective and efficient road and rail transportation to national markets.

Chowan County is home of the Northeast Regional Airport. An important hub for FedEx and UPS, the airport also serves private aircraft traffic.

Chowan County's access to the Albemarle Sound provides maritime transportation up and down the east coast via the intra-coastal waterway.

The Chowan County Water Department distributes 31,000,000 gallons of water monthly to 4,100 customers in the county¹⁴.

Education

A majority (84%) of the population over 25 years of age have completed high school, compared to 85.8 percent of all North Carolina citizens over the age of 25. Conversely, 20 percent of Chowan County have a Bachelor's degree or higher, compared to 28.4 in North Carolina¹⁵.

The Edenton/Chowan School System enrolls 2,200 students and employs 165 teachers, counselors and support staff. The system operates two elementary schools, one middle school, and one high school. Twenty-five percent of the teachers in the Edenton/Chowan County School System have a Master's or higher degree¹⁶.

Chowan County is served by the Roanoke-Chowan Community College, which is part of the North Carolina Community College System.

Natural Attributes

In Chowan County, as in all areas, natural resources are paramount in agricultural production. Chowan County consists of 172.47 square miles of land and 60.82 square miles of water¹⁷.

According to the North Carolina Natural Heritage Program, the Chowan River and the land immediately adjacent to it is considered very high quality natural areas in the northern part of Chowan County, and high quality natural areas along the eastern boundary of the county. There are several state-owned managed areas in Chowan County. These areas are the Gallberry Pocosin and the Rocky Hock Swamp Forest Preserve¹⁸.

Both land and water are irreplaceable resources. A combination of best management practices and wise conservation must be employed to keep the resources in good condition.

Soils

Soils are classified into different associations which help determine a soil's suitability for different uses. Soil uses include growing crops, growing trees and resident and commercial construction. The Soils Survey completed by USDA Soil Conservation Service for Perquimans and Chowan Counties has eight major soil associations which are:

1. Roanoke-Tomotley-Perquimans soils are nearly level, poorly drained soils that have a loamy surface layer with loamy or clayey subsoil. Most suited for crop land, this association is poorly suited for urban and recreational uses. Found in broad flats and in depressions, this association accounts for 37 percent of the soils in Perquimans and Chowan Counties.
2. Conetoe-Wando-Seabrook soils are nearly level, gently sloping; well-drained that has a sandy surface layer and a loam or sandy subsoil. Found on ridges and flats among small streams that flow into the Albemarle Sound and Chowan River. This association makes up 7 percent of the survey area. These soils are best suited for woodland and cropland.

3. Tomahawk-Echaw-Valhalla are nearly level and gently sloping, moderately well-drained, somewhat poorly drained and well-drained soils that have sandy surface layer and a loamy or sandy subsoil. Making up 6 percent of the survey area, these soils are best suited for cropland and woodland, with the Valhalla soils suited for most urban uses. This association is found on smooth and slightly rounded ridges along the Suffolk Scarp.
4. Dogue-Augusta-State soils are nearly level and gently sloping, moderately well-drained, somewhat poorly drained, and well-drained soils that have a sandy or loamy surface layer and a loamy or clayey subsoil. Making up 11 percent of the survey area, these soils are best suited for crops and woodlands. This association is found on smooth ridges along small streams that flow into the Albemarle Sound, the Chowan River and the Perquimans River.
5. Portsmouth-Arapahoe-Cape Fear soils are nearly level, very poorly drained soils that have a loamy surface layer and loamy or clayey subsoil. Making up 23 percent of the survey area, this association is used mainly for cropland and woodland. This association is found on broad flats and in depressions.
6. Chapanoke-Yeopin soils are nearly level and gently sloping, somewhat poorly drained and moderately well-drained soils that have a loamy surface layer and loamy subsoil. Making up 4 percent of the survey area, these soils are well suited for croplands and woodlands. This association is found on smooth ridges and flats along small streams that flow into the Albemarle Sound and Perquimans River.
7. Chowan-Dorovan soils are nearly level, very poorly drained soils that are loamy and underlying by muck and soils that are muck throughout. Making up 9 percent of the survey area, these soils are found on the flood plains of the Chowan River, Perquimans River and the Albemarle River. The soils are poorly suited for crops, woodland and most urban uses.
8. Scuppernong soils are nearly level, very poorly drained and they have a surface layer of muck and mucky and loamy underlying material. This association makes up 3 percent of the county and is found in oval-

shaped depressions and in the northern part of Perquimans County in the Dismal Swamp. If drained, the soils are suited to use for crops and woodland¹⁹.

Water and Drainage Issues

Hurricane Matthew and other severe storms have created drainage issues in the rivers and streams of Chowan County. Downed trees and brush have clogged these waterways. Efforts are underway to clear the debris and open up the rivers and streams to allow natural drainage of all Chowan County's land²⁰.

Forestry

Chowan County forestland totals 50,808 acres, with almost all owned by private landowners. According to North Carolina Cooperative Extension Forestry, the value of harvested timber in 2012 was \$2,200,000 in Chowan County. The total forest industry economic impact to Chowan County was \$10.7 million. Ninety-five people are employed in Chowan County's forest industry resulting in a payroll of \$4.7 million²¹.

Chowan County: the State of Agriculture

Agriculture accounted for 12.1% of Chowan County's employment in 2012. According to Walden, in 2012, agriculture and agribusiness added \$113,844,655.00 or 25.5 percent of the county's value added income²².

The number of farms in Chowan County decreased from 173 in 2002 to 141 in 2012. This represents a 26 percent decrease. The amount of land in farmland in Chowan County, 59,890 acres in 2002 to 58,146 acres in 2012, showed a 2.9 percent decrease. The average farm size increased from 346 in 2002 to 412 in 2012 for a 16 percent increase²³.

According to the 2012 US Census of Agriculture, Chowan County had 34 farms that grew fruits and vegetables resulting in \$4,920,000.00 in sales²⁴. Chowan County farmers produce watermelons, sweet corn, potatoes, cucumbers, cabbage, tomatoes and other fruits and vegetables.

Chowan County, in 2012, had 14 poultry farms with a value in product of \$9,182,000, and six hog farms with a value in product of \$3,588,000. Cattle in 2012 had a value of \$383,000²⁵.

The horse industry is a vital part of Chowan County's agricultural economy and cultural heritage. In 2009, Chowan was home to 830 horses with a value of \$5,035,000²⁶.

Chowan County has one crawfish farm. This aquaculture enterprise resulted in \$1,700 income in 2017. The producer plans to double his production in 2018, according to Steve Gabel, Area Specialized Agent, Agriculture-Aquaculture, with NC Cooperative Extension.

Agriculture is an important element of Chowan County's economy and also impacts the state's economy and agricultural production. In 2015, Chowan County was ranked in North Carolina as follows:

- 9th in peanut production
- 13th in cotton production
- 36th in soybean production

- 37th in wheat production
- 23rd in vegetable production
- 44th in broiler production
- 48th in hog and pig production
- 77th in cattle production²⁷

Crops

During 2012, Chowan County, reported one hundred forty one farms harvested crops from 58,146 acres. Receipts from crop sales totaled \$35,911,977.00 in 2015²⁸. Production of major crops in Chowan County in 2015 includes:

- Peanuts, 3,300 acres
- Cotton, 11,100 acres
- Soybeans, 14,800 acres
- Wheat, 3,800 acres
- Vegetables, 2,265 acres²⁹

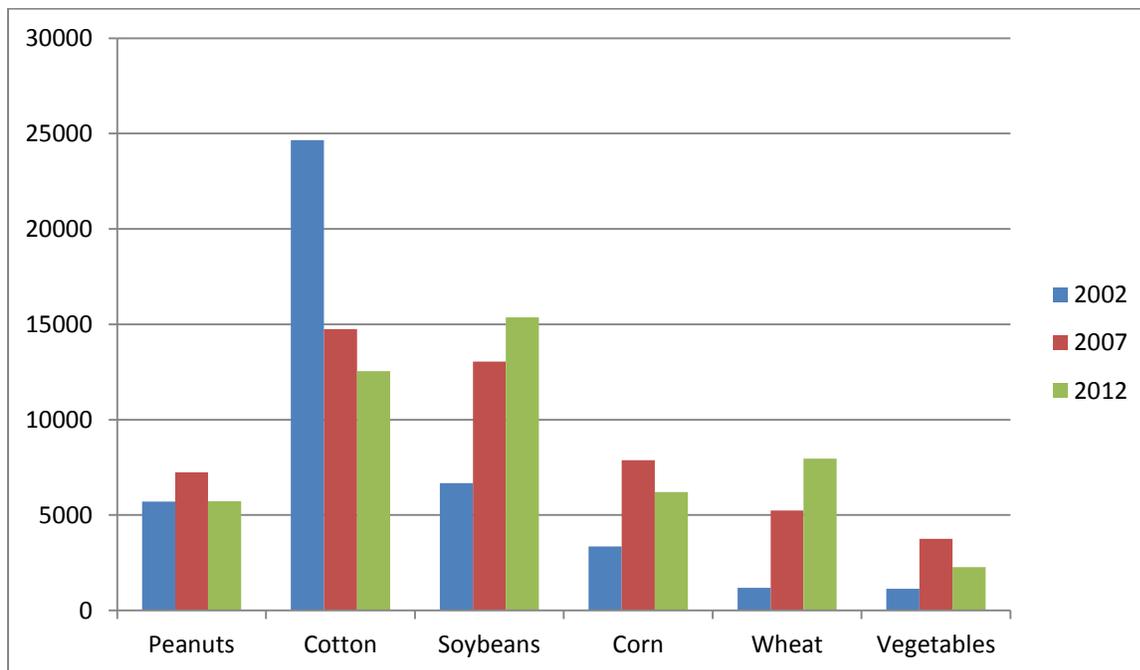


Figure 1. Major Crops in Chowan County by acres. Source: US Census of Agriculture, 2002, 2007, 2012.

Livestock and Poultry

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Forestry

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Farmer Demographics

The number of full-time farmers from 2002 to 2012 showed a decrease of 13.4 percent. The number of part-time farmers showed a decrease of 29.6 percent. The average age of farmers in Chowan County was 55.5 years of age in 2012. Principal operators by gender were 134 males and 7 females. Farmers by race in Chowan County are 197 white and 8 African-American.

The Figure 2 represents principal farm operators' primary occupation—full-time or part-time. Data is shown for 2002, 2007 and 2012³².

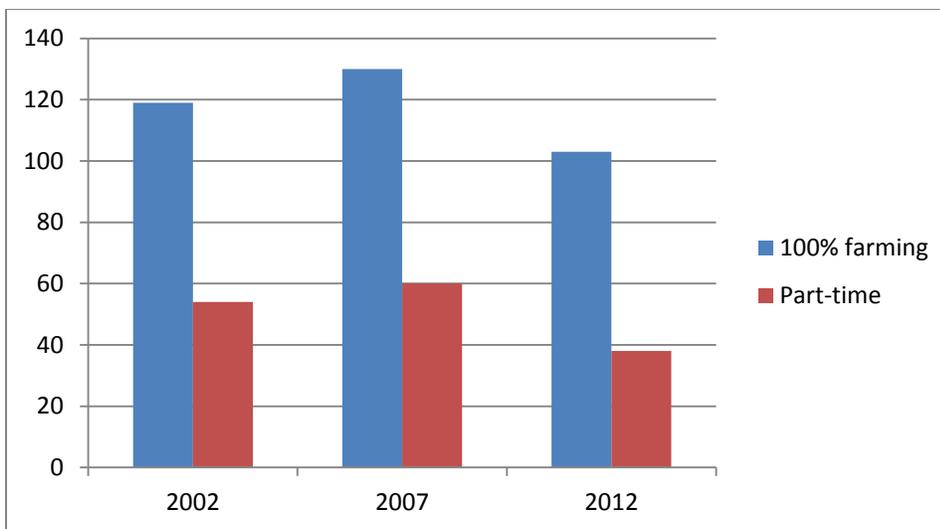


Figure 2. Primary Occupation of Chowan Farmers. Source: US Census of Agriculture, 2012

Farm and Forest Protection Programs

(Compiled by John Bonham, 2009)

Present-Use Value Tax Program

Present-Use Value, or PUV, is a program established by N.C.G.S. §§ 105-277.2 to .7 and administered by the county assessor through which qualifying property can be assessed, for property tax purposes, based on its use as agricultural, horticultural or forest land. The present use value is the value of the land based solely on its ability to produce income. Qualifying property is assessed at its present-use value rather than its market value. The tax office also maintains a market value for the land, and the difference between the market value and the present-use value is maintained in the tax records as deferred taxes. When land becomes disqualified from the program, the deferred taxes for the current and three previous years, with interest, will usually become payable and due.

Basic Requirements

Minimum acreage of production land:

- 10 acres for agricultural use
- Five acres for horticulture use
- 20 acres for forest use

Production must follow a sound management plan.

Agricultural and horticultural land must have at least one qualifying tract that has produced an average gross income of at least \$1,000 for the three years preceding the application year.

Forest land must be following a forest management plan.

Benefits

Protection from increasing land values that are based on development potential and the potential increase in property taxes

More information can be found at
<http://www.dor.state.nc.us/publications/property.html>.

Voluntary Agricultural Districts (VAD)

Established by N.C.G.S. §§ 106-737 to 743 and administered at the county level, Voluntary Agricultural Districts are designated areas where commercial agriculture will be encouraged and protected. The purposes of the districts are to increase identity and pride in the agricultural community and to increase protection from nuisance suits and other negative impacts on properly managed farms.

Requirements

Land must be enrolled in the Present-Use Value program or otherwise be determined to meet the qualifications of the program.

The landowner must enter into a revocable agreement to limit development for a 10-year period.

Benefits

- Notification to buyers of nearby property that they're moving into an agricultural area
- Abeyance of water and sewer assessments
- Public hearings on the condemnation of farmland
- Stronger protection from nuisance suits
- Representation by an appointed board regarding concerns on threats to the agricultural sector

Enhanced Voluntary Agricultural Districts (EVAD)

Established by N.C.G.S §§ 106-743.1 to .5, an Enhanced Voluntary Agricultural District is a VAD formed of one or more farms that are subject to an IRREVOCABLE 10-year agreement to limit development. In return for the condition of irrevocability, the landowner receives the added benefits of being able to receive 25 percent of gross revenue from the sale of non-farm

products and still qualify as a bona fide farm, and being eligible to receive up to 90 percent cost-share assistance from the Agricultural Cost-Share Program.

Conservation Easements

A conservation easement is a written agreement between a landowner and a qualified conservation organization or public agency under which the landowner agrees to keep the land available for agriculture and to restrict subdivision, non-farm development and other uses that are incompatible with commercial agriculture.

Basic Requirements

Permanently foregoing the right to subdivide or develop the land being conserved. There will be other limitations on activities to preserve the land's productivity, environmental values and rural character. Cash payments in the range of \$20,000 to \$40,000 are needed to cover the costs of the transaction. These costs are for legal services, a survey, an appraisal, long-term stewardship services provided by the conservation partner and other miscellaneous activities. In some cases, grant funds will cover these costs.

Other Information

A portion of the property can be left out of the easement, thereby providing an area for future homes and other non-farm activities.

Agricultural activities, including forestry, are allowed under the agreement.

Despite the term "easement," access to the public is not provided by the agreement.

The value of a conservation easement is determined by a licensed land appraiser and is typically between 25 percent and 75 percent of the land's market value.

A periodic inspection of the property is required to ensure that development does not occur. This provision will be included in the agreement.

The agreement is recorded on the county's land records and runs with the title. All future landowners must comply with the terms and conditions of the agreement.

Financial Benefits

If the conservation easement is donated, then the landowner will likely qualify for a federal income tax deduction and a state income tax credit. The value of these benefits depends on the appraised value of the easement and the income tax situation of the landowner.

A conservation easement also can be sold by the landowner through a transaction commonly referred to as a Purchase of Development Rights (PDR) or Purchase of Agricultural Conservation Easement (PACE). Funds to purchase a conservation easement can be raised from private and government sources. North Carolina and the federal government have programs to purchase agricultural conservation easements. Funding through these programs is very competitive and will generally amount to a percentage of the easement's value. The tax benefits described above can be claimed for any of the easement's value above the purchase price.

Term Conservation Easements

Also called Agricultural Agreements, these agreements are similar to conservation easements but apply for a finite period of time agreed to by the landowner and conservation partner.

Transfer of Development Rights

A program set up by local units of government that utilizes conservation easements to preserve farmland by providing incentives to increase development density in a designated area. The program identifies the "sending area" where conservation is being encouraged and the "receiving area" where development is preferred. A landowner in the receiving area can purchase a conservation easement on a property in the sending area and receive additional density allowances. In North Carolina, counties must receive authorization from the General Assembly to develop and implement a TDR program.

Farm Transition Planning

Making careful plans for the transfer of ownership of farm property and assets from the current owner to the next can be enough to preserve a farm for decades. Many options are available when planning an estate or land transfer. Farm owners can increase the likelihood of a successful transition that maintains the viability of the farm by obtaining professional assistance early in the process.

Right-to-Farm Law

North Carolina has a state right-to-farm law (N.C.G.S. §§ 106-700 to 701(2006)) that protects farm and forestry operations from being declared a nuisance as long as they have been in operation for at least one year and are operated properly and without negligence.

N.C. Agricultural Development and Farmland Preservation Trust Fund

N.C.G.S. § 106-744(c) established a trust fund to be administered by the Commissioner of Agriculture. The purpose of the trust fund is to provide monies to purchase agricultural conservation easements and to fund programs that promote the development and sustainability of farming, and the transition of existing farms to new farm families. Counties and nonprofit conservation organizations can apply for grants for these purposes.

Challenges, Opportunities and Trends: Survey and Interview Results

The methodology employed to access information, perceptions and attitudes related to agriculture and agribusiness in Chowan County consisted of written surveys and interviews with three target audiences—agriculture producers, agribusiness owners and non-farm residents of Chowan County. Surveys were distributed by the Chowan County Center of the North Carolina Cooperative Extension Service.

In addition, key leaders in Chowan County from all three targeted groups were interviewed to better identify challenges and opportunities that exist in the county's agricultural segment. All descriptive statistics presented in this document were calculated using data obtained from these processes. Survey and interview information revealed pertinent information on the state of agriculture in Chowan County from the perspectives of farmers, agribusinesses, and non-farm residents as well as from data sources such as USDA and NCDA.

The results identify specific challenges and opportunities affecting the future of agriculture in the county.

Agricultural Producer Analysis

A review of the 2012 Census of Agriculture revealed that there were 141 farms in the county being cultivated by 134 male and 7 female operators. Chowan County farmers are predominately white with 197 white and 8 African American operators. The average age of Chowan farmers was reported as 55.5 years of age in 2012³³. Farmers providing information for the Chowan County Agricultural Development Plan represented operations from across the county. The average age of survey respondents was 50 years old.

According to the survey, 50 percent of the respondents operations were defined as farm production only, and 50 percent as primarily farm production with some timber production.

One-hundred percent of Chowan County farmers surveyed indicated that they had been in operation more than 20 years.

All responding farmers indicated that their operations provided the majority of their household income. Of the farmers responding, none have expanded their operations during the last five years. Those that indicated a desire to expand, but did not listed the following reasons:

- Lack of available land to rent
- Lack of available land to purchase
- Market volatility
- Personal or other reasons

Fifty percent of Chowan County respondents indicated that they were satisfied with the current size of their operations.

Farmers who participated in the surveys identified the most critical issues expected to influence future farming operations as commodity prices, competition for available land, regulatory costs, available labor, affordable labor, land rental rates, and production input costs noted in Figure 3.

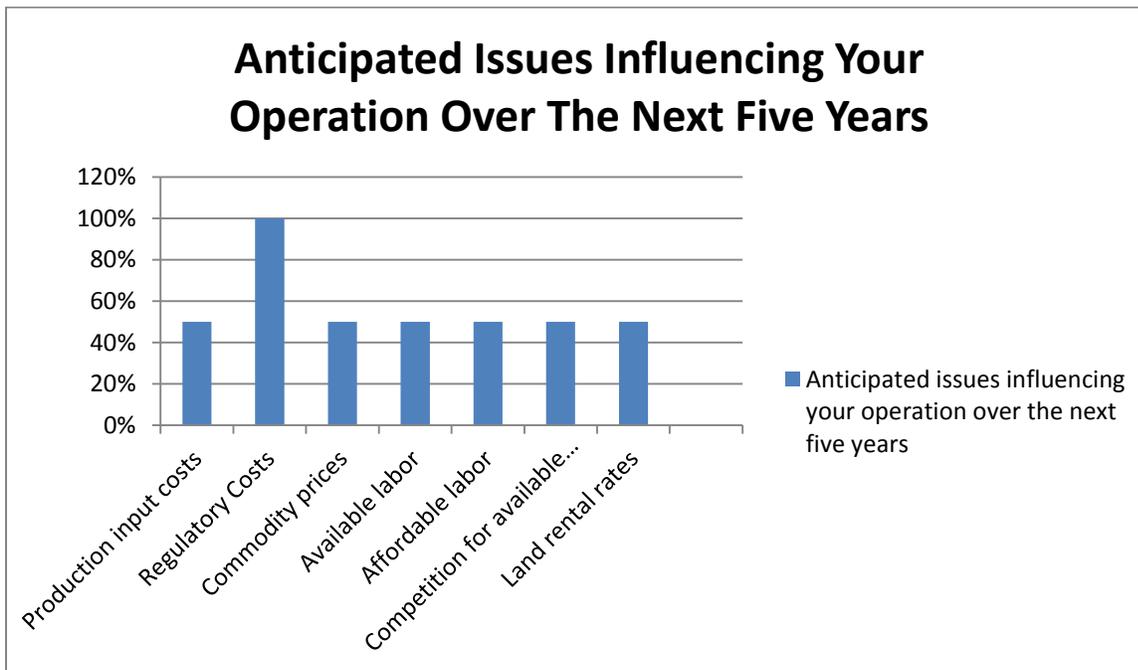


Figure 3. Source: Chowan Producer Survey 2017

Of the farmers surveyed, all want to pass their farms to family for farming. However, none have farm transition plans. This indicates the need for training for farm owners on developing effective farm transition plans. Family farms are the backbone of agriculture in North Carolina, educating farmers on how to pass their farms on to heirs or another generation of farmers is essential to the future of agriculture.

Chowan County offers a deferred tax program beneficial to farmers and landowners designated as the Present Use Value Taxation program (PUV). This program offers owners of forest land and those operating legitimate farms a deferred tax program based upon their present use in agriculture, horticulture, or forest land. One hundred percent of survey respondents answered that they were enrolled in the PUV program. However, not all farmland is enrolled in the PUV program. While an increased knowledge of this program could result in additional land enrolled in the program and, in turn, reduce tax revenues, the cost of community services for agricultural land versus residential land shows that the revenue outcome still provides a net gain to the county coffers.

When Chowan County farmers were asked to identify taxes that were impediments to their profitability, 100 percent listed federal self-employment taxes, 100 percent listed local property tax on buildings and equipment, 50 percent noted Federal Social Security and Medicaid taxes for employees and 50 percent cited estate tax illustrated in Figure 4.

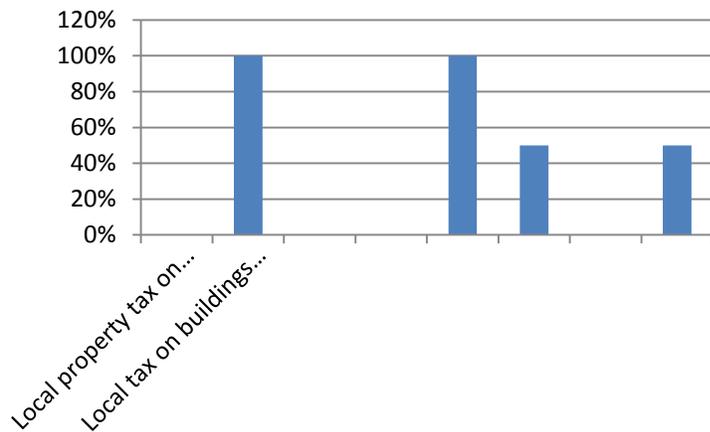


Figure 4. Source: Chowan Producer Survey 2017

In 2012, almost all of forestland in Chowan County was privately owned³⁴. Fifty percent of survey respondents had a forest management plans while the other 50 percent responded that they had no such plans. A forest management plan is a valuable tool for farmers and landowners to use this resource for greater sustainability and profitability. Management plans are required for forest landowners to enroll properties in the county’s Present Use Value program. The survey data indicates the need for the development of an educational program to inform and train landowners on the benefits of a formal forest management plan.

None of the survey respondents reported problems with neighbors in regard to their farming operations.

Chowan County leaders enacted a Voluntary Agricultural District Program in 2009. To date, 26 farms have enrolled in the VAD program representing 8,539 acres³⁵. One hundred percent of farmers responding to the survey were aware of the Voluntary Agricultural District program. All respondents had acreage in

the VAD program. The county has not adopted an Enhanced Voluntary Agricultural District program.

Additionally, farmers expressed a need for management, technical and marketing training on the following topics to enhance their operations:

- Forward pricing and hedging 50%
- Direct to consumer marketing of products 50%
- Identifying and managing risks 100%
- Timber management 50%
- Development of forest management plan 50%
- Pine straw sales 50%
- Estate planning/Farm transition 100%
- Diversifying through agri-tourism 50%

There are multiple opportunities for training and education. This information should serve as a continuing guide for agencies and institutions involved in education within the county to develop plans for short-term and long-term training to serve the agricultural community.

Chowan County farmers who were surveyed and interviewed recognized the value of educating the non-farm public to the benefits of agriculture to the county. One-hundred percent of farmers were in favor of a program to increase non-farm residents' knowledge of the social and economic benefits of agriculture.

Chowan County farmers and operators who responded to the survey stated that there is a definite need for agricultural education in public schools, 4-H and youth development, community colleges and other colleges and universities. Figure 5 shows the strong support for such programs, which illustrates the need to train youth in the importance of agriculture and the diverse agricultural career opportunities.

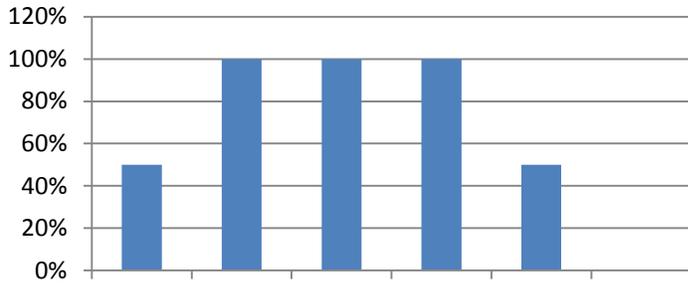


Figure 5. Source: Chowan County Producer Survey 2017

Surveyed farmers (100%) in Chowan County were in favor of government funds to support agriculture and agricultural economic development in the county.

Interviews were conducted with a cross-section of farmers to obtain their opinions on the issues, challenges and opportunities impacting agriculture in Chowan County. The following were stated as issues that impacted family farms as well as the perpetuity and profitability of these operations:

- Over-Regulation From Federal Government Agencies
- Depressed Commodity Prices
- High Input Costs
- Expensive New Technology
- Lack Of Estate Planning And Farm Transition
- Lack Of Understanding Among Non-Farm Residents About The Importance Of Agriculture And Agribusiness

- Need For Continued Education of Local Officials On The Complexity Of Today's Agricultural Production
- Drainage Issues Caused By Hurricane Matthew

Agribusiness Survey and Interview Analysis

Agribusinesses provide essential resources and services vital to the success and profitability of agriculture production services. Agribusinesses, just as any other business, provide jobs and employment, which stimulate the local economy. Examples of agribusinesses include feed dealers, seed processors, agricultural lenders, agricultural and crop consultants, produce marketers, and agritourism servi

Agribusinesses surveyed (100%) recognized that 75-100 percent of their business was generated from the farm community. Though these agribusinesses offer agricultural services, many also provide services and products that meet the needs of non-farm residents and industries. In the last five years, 100 percent of agribusinesses surveyed have increased the size of their operations. One-hundred percent reported an increase of agricultural inventories and sales. As non-farm populations continue to grow, agribusinesses will continue to seek ways to service non-farm residents, which will provide additional support for these agribusinesses.

Agribusiness owners also noted trends in agricultural production that could have impacts on their operations including, but not limited to, a shift to more sophisticated farm operations, fewer small farms, more specialty and direct market operations, and more farm diversification.

Following is a list of challenges and opportunities expressed by the respondents that are perceived to have an effect on agriculture in the future.

- One hundred percent of agribusiness respondents identified farm transition and estate planning as a major issue in Chowan County. They also expressed the need for professional assistance and training in transition and estate planning.

- One hundred percent of agribusiness respondents noted the importance of education of Chowan County citizens as to the impact of agriculture and agribusiness on the county’s economic viability.
- One hundred percent of agribusiness respondents have problems with labor issues, especially lack of qualified, trained labor.
- All of those questioned said that youth education in the field of agriculture is of great importance, and continued support of these programs in secondary and post-secondary schools is essential to the future of agriculture.

When asked what would provide additional assurance of success in their business, 100 percent needed succession planning training and education on new technologies in farming as illustrated in Figure 6.

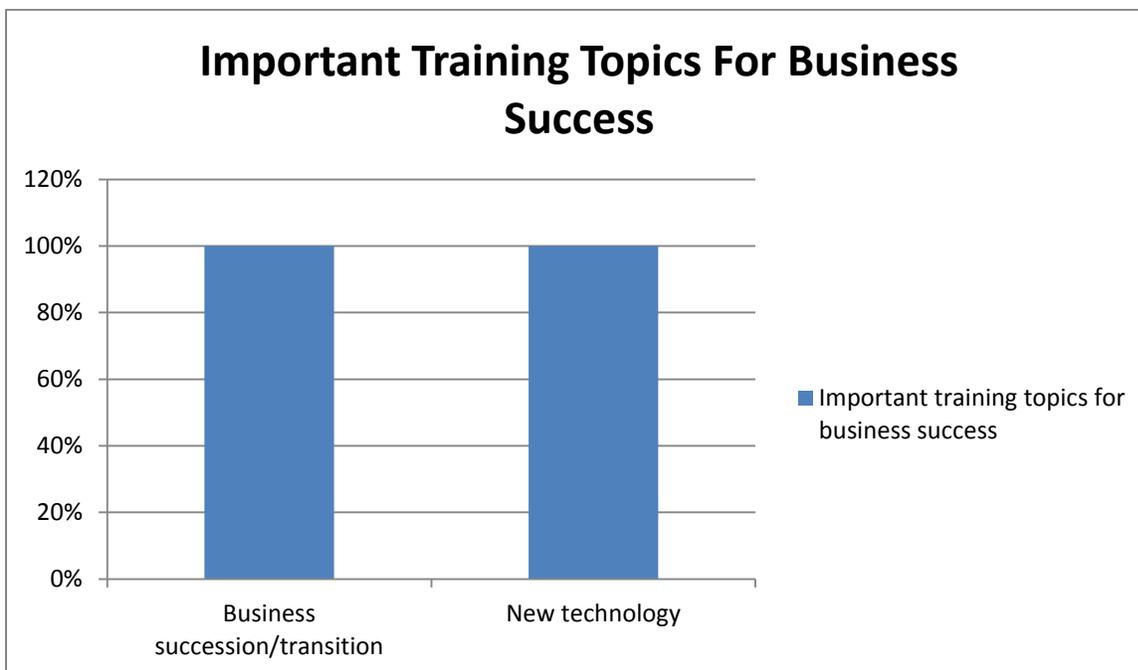


Figure 6. Source: Chowan Agribusiness Survey 2017

Chowan County agribusiness leaders also identified several threats and opportunities for farms and forests:

- Increased Food Safety Regulations

- Low Commodity Prices
- Lack Of Qualified Labor To Operate And Maintain New Technology
- Value-Added Food Processing Jobs

Non-Farm Residents Survey and Interview Analysis

Chowan County is home to people of diverse backgrounds. Some have lived in the county their whole lives, others have chosen to relocate or retire to the rural county, and some have been drawn to the history of Edenton and the lure of being close to the water. Still others have moved to Chowan County from urban areas, choosing to commute from a rural area with lower taxes. The majority of survey respondents (81%) have lived in Chowan County for 20 years or more. Seventy-two percent of the respondents have lived near a farm or forest operation, with 75% living within one-quarter mile of a farm or timber operation. A positive result of this close relationship with agriculture is that 85% percent stated that farmers are good neighbors.

When asked about the state of agriculture as a viable industry in Chowan County, 67 percent of the respondents felt that farming is holding its own and has some potential for future growth. Six percent said that agriculture has no potential for future growth, while another 27 percent felt that agriculture is an expanding industry with significant future growth potential. (Figure 7)

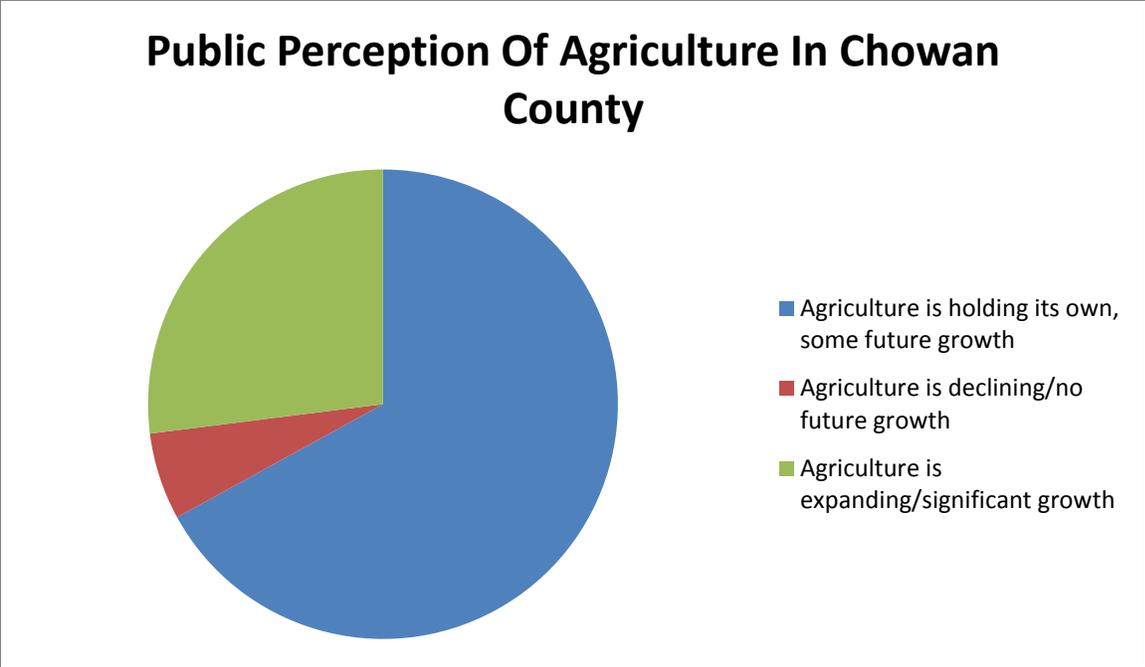


Figure 7. Source: Chowan Non-Farm Resident Survey

Chowan County non-farm residents have a good understanding of the economic impact of the entire agricultural sector on the county’s economy. The value of agricultural industry in 2012 provided a total economic impact of \$113,844,655 to Chowan County³⁶.

Ninety-seven percent of surveyed non-farm residents felt that Chowan County should take steps to help preserve farms and forests. One hundred percent of respondents reported that they supported local farming by purchasing local produce from farmers markets; pick-your- own operations, and road side stands. Eighty-one percent of non-farm residents say that they purchase plants from local greenhouses and nurseries. Twenty-two percent have participated in agritourism activities such as corn mazes, pumpkin patches and hayrides. Six percent of respondents lease land for hunting.

Figure 8 illustrates how Chowan County residents look for local food options with 80% indicating that they know the farmer that has produced the product they are purchasing. Fifty percent indicated they would ask where the product

was produced. This data indicates an interest for consumers to know where there food comes from and a desire to create a relationship with the producer.

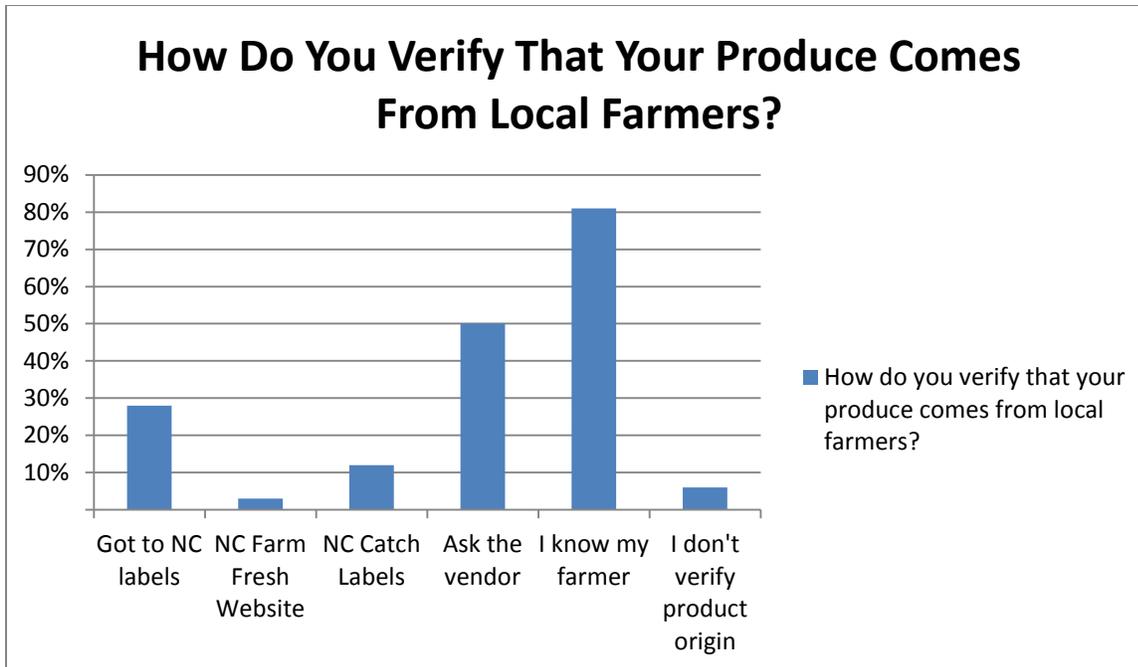


Figure 8. Source: Chowan Non-Farm Resident Survey 2017

The statistics below reveal non-farm residents agreement or disagreement with statements about agriculture in Chowan County:

- 100 percent agreed farms and forests enhance scenic beauty and open space
- 97 percent agreed farmers are good neighbors
- 100 percent agreed that local farmers deliver high quality products
- 90 percent agreed that farming has a positive impact on the environment
- 74 percent stated that farming and agribusiness are high technology businesses
- 60 percent agreed farming presents a good career for enterprising people
- 89 percent agreed that agriculture and forestry are viable career opportunities

- 90 percent stated that tax breaks for farmers are important
- 100 percent would support farm and forest preservation efforts in the county
- 75 percent would support the use of government funds for farm and forest development
-

These statements clearly illustrate that non-farm residents surveyed have a positive image of agriculture in the county.

When asked if they had experienced problems with neighboring farms, respondents noted the following:

- Noise
- Odors
- Smoke/Dust
- Manure application
- Slow moving vehicles
- Drainage issues
- Pesticide use
- Boundary/ trespass
- Cotton defoliation
- Soil erosion

Sixty-two percent of respondents reported that after they discussed complaints with farmers, they gained a better understanding of the purpose of the practice.

The following statement from non-farm respondents in Chowan County revealed the following threats:

- Solar Farms And Wind Turbines Take Up Valuable Farmland
- Housing Developments Threaten Farmland
- Farmers Don't Have Heirs Interested In Continuing Family Farms

- Small Farms Are Disappearing, While Big Farms Are Getting Bigger
- Corporate Farms Are Unsustainable In Chowan County
- Overuse Of Pesticides And Chemicals
- Lack Of Price Supports For Small Farmers
- Industrial Farms Threaten Small Farmers
- Taxes
- Cost Of Regulations
- Over Harvest Of Forests, Trees Not Replanted
- Limited Interest In Farming
- Unable To Hire And Keep Good Workers
- Algae Bloom And Flooding
- Global Warming And Adverse Weather
- High Cost Of Start-Up Prevents Young People From Entering Farming Profession

Potential opportunities as seen by non-farm residents:

- Unique Crops/Orchards
- Promote Farm To Table Environment
- Environmental Resources—Bees And Birds
- Small Niche Crops
- Appreciation Of Locally Grown Organic Produce For Taste And Health Benefits
- Efficiencies From Technology
- New Uses For Crops
- Organic Produce
- Grapes For Wine Production
- Farmers Markets/Seafood Market
- Hunting Businesses
- Consulting Opportunities
- Reasonable Cost Of Land
- Progressive Thinking Farmers
- Voluntary Ag Districts And Enhanced Voluntary Ag Districts

Non-farm citizens value Chowan County agriculture, but education is needed to help citizens understand the true picture of today's agriculture. The non-farm residents surveyed however did want to embrace agriculture and see it expand as noted in the opportunities listed by this target audience.

One respondent stated that 'farming is an essential way of life in Chowan County, and part of our culture and heritage.'

Recommendations

The major result of the Chowan County Agricultural Development Plan is a set of recommendations with actions steps that, when implemented, will bring about desired change. These steps are based on input from the citizens affected by the plan as well as from other agricultural sources. The following recommendations are extrapolated from the data obtained through interviews and surveys of Chowan County farmers, agribusinesses and citizens and data from USDA and NCDA&CS.

For this plan to be effective, Chowan County citizen leaders, agencies and organizations must follow through with support and collaboration of these recommendations. This plan needs to be evaluated annually to keep it up to date and viable. The annual update will ensure that recommendations are being accomplished and new ones added as needed. Following are recommendations that can be used to maintain and enhance agriculture in Chowan County.

Recommendation One:

Support Measures To Protect And Promote Forest And Farmland In Chowan County.

Endorsement, certification and advocacy of the Chowan County Agricultural Development Plan are critical to protecting and enhancing agriculture in the county. Once the plan is endorsed by the Chowan County Board of Commissioners and certified by the North Carolina Department of Agriculture and Consumer Services, the county will receive priority status for funding from the NCDA&CS's Agricultural Development and Farmland Preservation Trust Fund for agricultural projects. Though residents largely support agriculture, added education and understanding is needed. County officials should be informed of agricultural information affecting Chowan County.

Action Steps

- Present the Chowan County Agricultural Development Plan to the Board of Commissioners for endorsement and submit to NCDA&CS for certification.
- Appoint a Chowan County Agriculture Advisory Board to oversee and manage the plan for the benefit of agriculture in the county.
- Annually review the plan for progress and addition of any needed new recommendations.
- Utilize all available media outlets to inform county leadership and the public about the plan's progress and success.
- Develop and implement an educational program for farmers and landowners regarding available farmland preservation tools and incentives suited for Chowan County.
- Educate landowners and farmers of the benefits of Present Value Taxation that will encourage enrollment.
- Encourage local government, economic developers, land developers, planners, the North Carolina Division of Coastal Management and the North Carolina Department of Transportation to work with the Chowan County Agricultural Advisory Board to informing and engaging them in county projects that will impact agricultural production.

Timeline:

County Commissioners should endorse the Chowan County Agricultural Development Plan by March 2018. Efforts to increase agricultural awareness and representation should begin in mid-2018.

Responsible Parties:

Chowan County Agricultural Advisory Board, Chowan County Cooperative Extension, Albemarle Soil and Water Conservation District, North Carolina Forest Service, Chowan County Economic Development, Chowan County Planning and Inspections Department, and Chowan County Board of Commissioners.

Recommendation Two:

Promote And Increase Enrollment In Voluntary Agricultural District (VAD) And Adopt And Implement Enhanced Voluntary Agricultural District (EVAD) Programs

Chowan County has Voluntary Agricultural District ordinance that was adopted in 2009. To date, 26 farms have enrolled 8,539 acres. However, more farmers need to be aware of the benefits of enrollment in VAD and EVAD.

Action Steps:

- The Chowan County Agricultural Advisory Board will provide leadership in promoting the Chowan VAD ordinance.
- The Chowan County Commissioners will investigate the benefits of adopting an Enhanced VAD ordinance.
- Design and implement a marketing plan using all available media to educate farmers, land owners, developers and realtors on the benefits of VAD ordinance.
- Have appropriate agency staff encourage and assist landowners with understanding and enrollment in VAD.

Timeline:

Targeted promotion of VAD and the investigation of the benefits of EVAD should begin during the second quarter of 2018.

Responsible Parties:

Chowan Agricultural Development Advisory Board, in conjunction with Chowan County Cooperative Extension, will lead the process of creating the EVAD ordinance. The following agencies will cooperate: Chowan Farm Bureau Board, Albemarle Soil and Water Conservation District, USDA Farm Service Agency and Natural Resource Conservation Service, Chowan County Tax Office, Chowan County Register of Deeds, Chowan County Economic Development, Chowan County Planning and Inspections Department and Chowan County Board of Commissioners.

Recommendation Three:

Develop And Conduct Programs To Assist Chowan County Farm And Forest Landowners With Farm Transition Planning.

The average age of farmers in Chowan County was 55.5 years in 2012. According to surveyed farmers, none have formal farm transition plans. Additionally, interviews with farm lending authorities showed lack of farm transition planning as a leading concern about the future of agriculture in the area.

Action Steps:

- Plan and conduct a series of workshops that uses a variety of specialists and agencies to provide information on farm transition and estate planning.
- Develop an apprenticeship program in which young farmers work with experienced producers to learn more about agricultural production and gain more knowledge about transition opportunities.
- Identify farmers willing to investigate innovative strategies for farm transition with beginning farmers.

Timeline:

Farm transition workshops should start in the fall of 2018 and repeated yearly. In the spring of 2019, a study should be conducted on the feasibility and interest in a farm apprenticeship/mentoring program.

Responsible Parties:

Chowan County Agricultural Advisory Board, Chowan County Cooperative Extension, Chowan County Farm Bureau, Ag Carolina/Farm Credit, University of Mount Olive Lois G. Britt Agribusiness Center, local attorneys and agricultural economic specialists.

Recommendation Four:

Promote Appreciation And Awareness Of The Benefits Of Agriculture To Perquimans Elected Officials And Citizens.

Today, the majority of the general population is removed from farming and agribusiness. The public needs to understand the importance of agriculture to the local economy. Additionally, non-farm residents need to appreciate where food and fiber is produced. Understanding agriculture will provide stronger relationships between producers and consumers as well as additional support local farms.

Action Steps:

- Develop a comprehensive agriculture awareness plan and determine all feasible delivery presence such as social media, speakers' bureau, print and broadcast media.
- Conduct annual farm tour to promote Chowan diverse agricultural operations including forestry, row crop farming, road side markets, specialty crops and agri-tourism.
- Develop presentations that show the role of agriculture in Chowan County to be shared with civic, school and religious organizations.
- Expand and promote events that highlight the local foods movement.
- Involve 4-H and FFA members in the promotion of agriculture.

Timeline:

Efforts should begin after the adoption of the Chowan County Agricultural Development Plan in 2018.

Responsible Parties:

Chowan County Agricultural Advisory Board, Chowan County Cooperative Extension, Chowan County Farm Bureau Board of Directors, North Carolina Department of Agriculture and Consumer Services, University of Mount Olive Lois G. Britt Agribusiness Center, USDA Farm Service Agency, Albemarle Soil and Water Conservation District, and Edenton-Chowan Public Schools.

Recommendation Five:

Expand and Support Youth Agricultural Educational Programs.

Agribusiness leaders, farmers and non-farm residents were all in favor of youth agricultural education as an important to the future of agriculture in Chowan County.

Action Steps:

- Encourage youth to actively participate in all agricultural organizations such as FFA and 4-H in order to develop leadership skills and agricultural experiences.
- Support teacher training for the expansion of the NC Farm Bureau's Ag in the Classroom curriculum for primary and elementary students.
- Work with funders, both public and private, to provide needed resources for 4-H and FFA programs.
- Promote agriculture as part of the STEM (Science, Technology, Engineering and Math) initiative in the public school system.
- Coordinate and promote summer high school and college internships with agricultural enterprises.

Timeline:

Coordinated programming efforts will begin in the spring of 2018 and continue as planned throughout the year.

Responsible Parties:

Chowan County Cooperative Extension, Edenton-Chowan Public Schools, regional colleges and universities, Chowan County Farm Bureau, Chowan County farmers and agribusiness owners.

Recommendation Six:

Develop Technical, Business and Marketing Training for the Maintenance and Expansion of Agriculture in Chowan County.

Chowan County farmers expressed a need for training in numerous areas relating to changes, growth and opportunities in agriculture.

Action Steps:

- Develop an information network of support agencies and people who can assist new and existing farmers with training and knowledge as they plan and begin new enterprises.
- Conduct training on business planning that will enhance farmer knowledge about forward pricing and hedging, identifying and managing risks, and direct to consumer marketing of products
- Offer training experiences in timber management, development of a forestry management plan, and pine straw sales.
- Educate farmers on the new revenue opportunities for food product sales and agricultural services to the growing population centers near Chowan County.

Timeline:

Programming efforts will begin in late 2018. Schedules for trainings, workshops and conferences will be developed by members of the implementation team.

Responsible parties:

Chowan County Cooperative Extension, University of Mount Olive Lois G. Britt Agribusiness Center, NC Forest Service, NCDA&CS, USDA Natural Resources Conservation District, and the Chowan County Farm Bureau Board of Directors.

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Appendixes

Chowan County Voluntary Agricultural District Ordinance

Chowan County Producer Survey

Chowan County Agribusiness Survey

Chowan County Non-farm Resident Survey