



Essex County, Virginia
Agriculture & Forestry Industries

Current State & Trend Analysis
Report - August 2014

Agriculture and Forestry Industries
Development Fund Advisory Board

Essex County Economic Development Authority

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Introduction

In 2014, the Essex County Economic Development Authority launched an initiative to develop a strategic plan to support and grow the agriculture and forestry industries within Essex County. An Advisory Board comprising several industry leaders in the County was formed to develop the plan.

The purpose of the plan is to capture the challenges and needs of the agriculture and forestry industries and define strategies that will ultimately lead to their overall improvement. The plan will be used by the Essex County Economic Development Authority and stakeholders in the agriculture and forestry industries to attract new industries to the County, develop value-added strategies for existing industries, and present ideas on expanding and improving these industries.

During the planning process, the Advisory Board reviewed data about the agriculture and forestry industries and conducted a SWOT analysis to capture board member perspectives on the strengths and weaknesses of these industries in Essex County as well as external opportunities and threats that could impact the industries.

This report summarizes the results of the data review and SWOT analysis to present information that characterizes the current state, recent trends, and related challenges of the agriculture and forestry industries in Essex County.

Industry Data Analysis

The agriculture and forestry industries are a major component of the economic landscape in Essex County in many quantifiable aspects.

ECONOMIC IMPACT

The total economic impact of the agriculture and forestry industries in Essex County in 2011 was \$89.3 million (*The Economic Impacts of Agriculture and Forest Industries in Virginia - June 2013*). Agriculture contributed \$23.4 million directly with a total impact of \$30.9 million and forestry contributed \$44.8 million directly as part of its total \$58.3 million impact. ¹

Numerous sectors of these two industries make up this total economic impact in Essex County – *production, core processing, extended processing, and distribution*. *Agriculture production* primarily includes grain and cattle farming in the county while *forestry production* includes timber tracts, forest products, logging, and hunting. *Agriculture core processing* includes basic food manufacturing and wineries. *Forestry core processing* includes sawmills and wood product manufacturing. *Agriculture extended processing* would include manufacturing animal feed, other foods, and fiber. *Forestry extended processing* encompasses the manufacturing of prefabricated wood, paperboard containers, paper bags, and furniture. Wholesale trade, warehousing, and storage are components of both *agriculture and forestry distribution* along with landscaping services and biomass electric power generation.

EMPLOYMENT

The same economic impact study (*The Economic Impacts of Agriculture and Forest Industries in Virginia – June 2013*)² quantifies direct and indirect employment in the agriculture and forestry industries for Essex County. In 2011, there were 470 agriculture-related employees and 371 forestry-related employees for a total of 841. Of the 50 largest employers in Essex County, five (10 percent) are agriculture/forestry businesses – O'Malley Timber Products, LLC, Ball Lumber Company, Tidewater Lumber Corporation, Historyland Nursery, and Montague Farms, Inc. (*Virginia Employment Commission 4th quarter 2013*).

NUMBER OF FARMS

The number of farms in Essex County was 98 in 2012 which is a decrease of only four since 2007 but down from 127 in 2002. Of the 29 reduction in the 10-year period, 13 were farms with annual sales less than \$2,500, 17 were farms with sales between \$2,500 and \$99,999, and there was one more farm with sales over \$100,000. Even though there are fewer farms, the number of acres in farmland has not decreased and the value of products sold has steadily increased. As evidenced in the chart below, the farm size in Essex County is varied ranging from 1-9 acres to 1000 or more acres depicting a diversity in farm type. (*USDA Census*)

Farms by Size	2012
1-9 acres	6
10-49 acres	30
50-179 acres	20
180-499 acres	16
500-999 acres	7
1,000 acres or more	19
Total	98

PRODUCTS AND MARKET VALUE

The major agriculture crops harvested in Essex County are corn (15,976 acres), wheat (8,702 acres), barley (2,231 acres), and soybeans (19,254 acres). Forage, vegetables, orchards, and nurseries make up only a nominal percentage of the total cropland. (*USDA Census 2012*)

The market value of agriculture products sold in Essex County has increased from \$8.10 million in 2002 to \$9.87 million in 2007, and \$22.78 million in 2012. At the same time, the number of acres in harvested cropland has remained relatively steady at 33,764 acres in 2002, 36,177 in 2007, and 37,129 in 2012 (*USDA Census*). Improved production practices resulting in increased crop yields and better commodity prices contributed to this positive trend.

Land in forests for the period of 2002 to 2013 has not changed significantly – 94,296 acres in 2002, 81,096 in 2007, and 86,940 in 2012. Estimates at the local level indicate approximately two-thirds of the forest acreage in Essex County are grown in pine with the remainder in hardwood (*Forest Inventory and Analysis*). The latest available state-wide forest inventory data can be assumed at the local level in Essex County. For every unit of hardwood removed, 1.42 units have grown to replace it. For softwoods (pine), the ratio is also positive: 1.11 statewide. (*Virginia Statewide Assessment of Forest Resources June 2010*).

Forest volume and values are significant for Essex County as evidenced in the following table for the twelve months from July 1, 2012, to June 30, 2013. However, the figures presented in the table may be low compared to other years. As evidence of the demand for all of the timber grown, the two forest products operations located in Essex County use more saw timber per year than landowners in Essex County harvested. The supply of timber must, therefore, be drawn from a region beyond Essex County. It is essential to maintain or increase the number of forested acres to support even the existing forest products industry.

Essex County – Fiscal Year Ending June 30, 2013			
Board Feet - Pine	Tonnage - Pine	Board Feet - Hardwood	Tonnage - Hardwood
5.11 million	60,575 tons	13.38 million	28,949 tons
Stumpage Value - Pine	Stumpage Value - Hardwood	Stumpage Value - All	Cubic Feet Volume (1000) - All
\$1,380,216	\$2,202,060	\$3,582,276	5,940

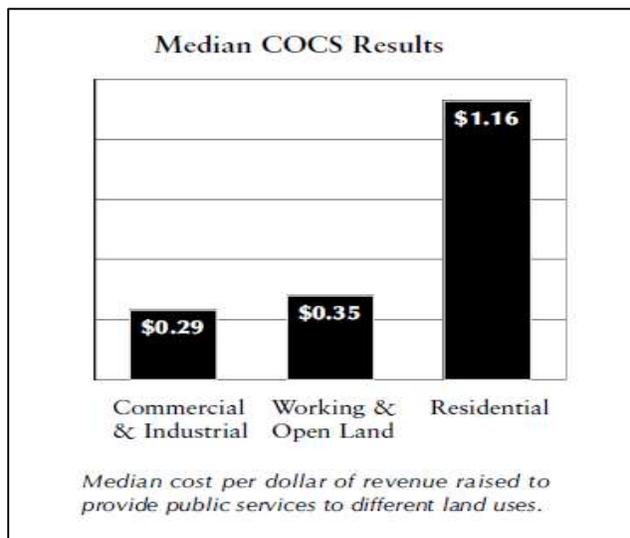
In the same period of time (2002-2013), the annual forest harvest value (what landowners get paid) in Essex County has fluctuated from a low of \$1.0 million in 2004 to a high of \$4.4 million in 2012 (*Virginia Department of Forestry*). The ebb and flow of the home construction market and the economy overall during these years have had a direct impact on the forestry industry. Increased export markets in the past few years have provided new opportunities for growth as well.

USE VALUE TAXATION PROGRAM

Essex County is one of 88 localities in Virginia that has instituted the *Use Value Taxation Program*, which is a local tax policy option intended to foster "the preservation of real estate for agricultural, horticultural, forest and open space use in the public interest." This is to be accomplished through the "classification, special assessment, and taxation of such property in a manner that promotes its preservation to help foster long term public benefits." Virginia law allows for eligible open space, forested, and agricultural land to be taxed based on the land's value in use (use value) as opposed to the land's market value. (*Code of Virginia Section 58.1-3229*)

In 2008, the first year of the program in Essex County, 98,318 acres were enrolled. Enrollment peaked in 2009 at 107,790 acres; current enrollment is 94,462 acres. The decrease is attributable greatly to acreage moving into 65 conservation easements which account for 21,232 acres as of the end of 2013. Deferred real estate revenue averages about 10 percent of the total or approximately \$1 million each year. (*Essex County Commissioner of Revenue*)

The cost of community services in relation to revenue derived from different land uses has been studied by The American Farmland Trust (*August 2010 study*) with the following results:



The cost of public services for working and open land (agriculture and forestry land) is less than one-third of residential land. It is generally recognized that undeveloped land does not increase the demand on schools, fire or police and also keeps houses from being built.

The Commonwealth of Virginia's composite index formula for public education funding includes property values irrespective of any land use tax deferments. Therefore, a consideration given to the

impact of the Use Value Taxation Program on Essex County revenue is the public school enrollment which in the past ten years peaked at 1,621 in 2007-2008 and is currently at 1,500 showing a gradual decline (*Essex County School Budget*). In the same period, Essex County population has grown from 9,989 in 2000 to 11,151 in 2010. A decline in school enrollment and an increase in population may indicate a change in the demographics of the county.

Footnotes:

¹ *Explanation of economic impact methodology used in the study:*

“The economic impact measurement tool used, input-output analysis, is also the same as the previous study. Input-output analysis provides a way to estimate the contribution of industry sales and employment on regional economic output, income, and employment. It is based on a transactions table that shows flows of goods and services among industries, households, and government. Economic multipliers are derived from these tables. These multipliers allow one to measure the total impact of changes in agricultural and forestry-related activity on the state economy.

“The total impact of this activity consists of three parts, a “direct effect,” “an indirect effect,” and an “induced effect.”

“The “direct effect” consists of the injection of economic activity or expenditure into the region. For example, the sales of agricultural and forestry-related industries located in Virginia would count as the direct effect.

“This direct expenditure then causes a “ripple effect” on the state economy when money is re-spent. For instance, state businesses provide supplies and services to farms such as seeds, fertilizer, veterinarian services, utilities and insurance. These businesses spend a portion of their sales revenues on their supplies and services from other state firms who, in turn, purchase a portion of their supplies and services from other state firms. This cascading sequence of spending continues until the subsequent rounds of spending dissipate due to leakages in the form of spending outside the state. The cumulative effect of these cascading rounds of inter-industry purchases is referred to as the “indirect effect.”

“The final component of total impact (the “induced effect” or “induced impact”) is attributable to the spending of households and other economic agents. For instance, businesses pay households for their labor services. These households then purchase goods and services from state firms who in turn receive a portion of their labor and material inputs from within the state. Again leakages occur at each round due to purchases of goods and services outside the state. The “induced effect” is the sum of the impacts associated with these household purchases. The sum of these various types of spending are referred to as multiplier effects because the total effect is a multiple of the initial “direct” effect due to the fact that it will include the sum of direct, indirect, and induced impacts.”]

² *“Employment data was obtained from the Virginia Employment Commission (VEC) Quarterly Census of Employment and Wages (QCEW) for the second quarter of 2011, which is representative of annual employment. Industry employment figures are aggregated into IMPLAN categories using North American Industrial Classification System (NAICS) codes. The employment numbers are converted to sales/output equivalent figures by the model for use in generating impact estimates.*

“The major problem with these data is that proprietors and self-employed individuals are not included. The absence of these business owners is particularly problematic for the farming, timber tracts, logging, and hunting industries.

“Therefore, data for these sectors were supplemented or corrected in three ways. For farming sectors (IMPLAN sectors 1-14), U.S. Department of Agriculture commodity cash receipts data from 2011 were used (U.S. Department of Agriculture, Economic Research Service 2012a).⁶ For forest nurseries, forest products, and timber tracts sector (Implan sector 15), data from Virginia Department of Forestry product tax receipts for fiscal year 2011 were substituted. For logging (IMPLAN sector 16) and hunting and trapping (IMPLAN sector 18), estimates of employment were inflated using data from the IMPLAN database to correct for the absence of proprietors in these figures.”

SWOT Analysis

A SWOT analysis was conducted to identify and examine current and potential factors affecting Essex County agriculture and forestry industries. SWOT is an acronym that stands for the following:

- Strengths and Weaknesses – These are factors internal to the agriculture and forestry industries in the county.
- Opportunities and Threats – These are factors external to the agriculture and forestry industries in the County that can have positive or negative impacts on the industries. These factors can come from a variety of sources: customers of the agriculture and forestry businesses in the county, the industries themselves, society, technology, the environment, the economy, and politics.

During the analysis, it was understood that “county” may include other geographic locations tied to Essex County agriculture and forestry industries (e.g., businesses that have branches, regional agribusinesses that may be potential customers, related forest land and farm land elsewhere in the state).

INTERNAL STRENGTHS

The Advisory Board identified areas of strength for the agriculture and forestry industries that are related to the economy, resources, people and location.

From an economic standpoint, the agriculture and forestry industries provide jobs and produce revenue, generating a good return on investment for taxpayers. These industries are diverse, friendly toward other businesses and are strong producers of their products.

The agriculture and forestry industries in Essex County are sustainable due to their rural location, renewable and abundant resources (e.g., water) and good land use. The industries operate in an environmentally friendly manner and the forestry industry, in particular, has multiple uses for forest resources.

The people involved in these industries have developed a beneficial farm and forestry culture that is ready to guide the next generation of farmers and foresters. They are supported by a good extension agent and cooperation among industry producers who are willing to build coalitions as well as learn and change to strengthen and sustain their businesses. The agriculture producers are recognized as leaders in their industry.

In addition, the agriculture and forestry industries are fortunate to have support resources (e.g., seed and feed suppliers) close by. Agriculture businesses have access to markets and both industries benefit from the infrastructure provided by Essex County.

INTERNAL WEAKNESSES

The Advisory Board identified the distance to markets as a particular challenge. In addition, Board members identified several barriers that make it difficult for people to start businesses in these industries. In forestry, a primary barrier to entry is the long rotations for their crops. Both industries require a high investment that is accompanied by a high risk. In agriculture, additional barriers include inadequate diversification, low production of vegetable products, and a lack of storage facilities. Representatives from both industries felt they need to do more to help the public understand the industries well enough to see them as a viable career or business and worthy of supporting.

EXTERNAL OPPORTUNITIES

Several opportunities were identified for forestry industries including wood use for co-generation of electricity. Virginia Power is converting two plants to use wood chips or wood waste for this purpose. Additional opportunities for forestry businesses include the production of pellets to be shipped to Europe for heating and new products emerging for laminated veneer lumber, where the technology continues to evolve.

Advisory Board members are seeing support for their industries from state government in recent years, including gubernatorial trade missions abroad and domestic marketing efforts. There may be opportunities for industries in the county to qualify for grants to develop new enterprises that create jobs. Economies in other nations may provide opportunities for increased exports.

Several specific business opportunities were highlighted as areas to explore, including aquaculture (e.g., oysters, crabs) and a new and growing market for agriculture residues, which would require a critical mass to make it viable. Other potential business opportunities include niche markets (e.g., ginseng) and vineyards. The local foods movement (e.g., farmers' markets and food banks) provides opportunities primarily for small farms and the food service industry could provide facilities where businesses could rent space to produce products for consumers.

Ongoing examination of research findings about new varieties of crops and methods to achieve higher yields could highlight ways to expand or improve Essex County agriculture and forestry businesses.

In addition, there is an opportunity for agriculture and forestry leaders to communicate the benefits and impacts of their industries to the public to garner their support and to promote additional agriculture and forestry education for youth.

EXTERNAL THREATS

Industry leaders view the primary challenges as being related to politics and public perceptions of the industries. There are concerns over regulations such as the Farm Bill, the elimination of bonus depreciation (Section 179 of the Internal Revenue Code) that affects the ability of businesses to replace equipment, expansion of species on the endangered species list, the EPA Lotus Rule, and the variability among states in truck weight limits on state roads versus interstates. Industry leaders feel there is a general lack of political support and that they lack voting power often resulting in unnecessary and excessive regulation. Additional threats include the potential loss of land use taxation as well as

potentially negative changes in tax breaks and capital gains taxes. Public perceptions of the industries and their contribution to the local economy are sometimes inaccurate or formed from negative press about various issues such as genetically modified organisms (GMO).

Although there are positive aspects to the infrastructure that supports these industries, there are some challenges: no public access to the river, limited land, no deep water or rail, the County's location within the Chesapeake Bay Act area and technology limitations for Internet access.

There are some economic threats as well: competition, low prices for products, loss of land to other uses, and the high investment needed to start or expand a business. Challenges also exist with respect to the available labor force. There is a lack of skilled labor available to support the industries and labor costs are high.

Finally, the industries continually face weather-related threats such as drought that can cause variability in yields.

Appendix – Data Tables

The data tables presented in this appendix support the Industry Data Analysis section of this report.

Economic Impact ¹	2011	2011 Rank ²
Agriculture - Direct	\$23.4 m	3rd
Agriculture Total	\$30.9 m	3rd
Forestry - Direct	\$44.8 m	2nd
Forestry Total	\$58.3 m	2nd
Agriculture & Forestry Direct	\$68.2 m	2nd
Agriculture & Forestry Total	\$89.3 m	2nd

¹ Source: The Economic Impacts of Agriculture and Forest Industries in Virginia – June 2013

² Note: Ranking among Middle Peninsula Planning District Counties (Essex, Gloucester, King & Queen, King William, Mathews, Middlesex)

Revenue in millions	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012 ³	2013
Market value of agriculture products sold ¹	\$8.10					\$9.87					\$22.78	
Annual forest harvest value (what landowners get paid) ²	\$0.96	\$1.22	\$1.00	\$1.23	\$2.76	\$3.12	\$3.19	\$2.0	\$1.35	\$3.84	\$ 4.4	\$3.58
Total	\$9.06					\$12.99					\$27.18	

¹ Source: USDA Census

² Source: Virginia Department of Forestry

³ Note: In 2012, Essex County ranked first in agriculture and forestry revenue among Middle Peninsula Planning District Counties (Essex, Gloucester, King & Queen, King William, Mathews, Middlesex).

Employment ¹	2011
Agriculture - Direct	406
Agriculture Total	470
Forestry - Direct	251
Forestry Total	371
Agriculture & Forestry Direct	657
Agriculture & Forestry Total	841

¹ Source: The Economic Impacts of Agriculture and Forest Industries in Virginia – June 2013

Land in Acres	2002	2007	2012	2012 % to Total County Acreage
Land in forests ¹	94,296	81,096	86,940	53%
Land in farms (includes double cropping) ²	58,266	53,346	56,705	
Total cropland ²	37,108	38,298	38,720	23%
Harvested cropland ²	33,764	36,177	37,129	
Essex County Total Acres³	165,120	165,120	165,120	76%

¹ Source - Virginia Department of Forestry; Forest Inventory & Analysis Report

² Source - USDA Census

³ Source – Essex County Commissioner of Revenue

Acres of Major Crops ¹	2012	Acres of Forest Type ²	2012
Corn	15,976	Loblolly/shortleaf pine group	45,654
Wheat	8,702	Oak/hickory group	25,078
Barley	2,231	Oak/gum/cypress group	8,534
Soybeans	19,254	Elm/ash/cottonwood group	1,449
Forage	728	Non-stocked	6,225
Vegetables	18		
Orchards	25		
Nursery, etc.	n/a		

¹ Source: USDA Census

² Source: Virginia Department of Forestry; Forest Inventory & Analysis Report (Note: The data used are not very accurate at the county level due to small sample size. Error estimates are 25-101%. Data are useful for trends, etc.)

Number of Farms ¹	2002	2007	2012
Total Number of Farms	127	102	98
Farms by Value of Sales			
Farms with < \$2,500 in sales	54	46	41
Farms with \$2,500-\$99,999 in sales	45	45	28
Farms with \$100,000+ in sales	28	11	29
Farms by Size			
1-9 acres	1	11	6
10-49 acres	28	30	30
50-179 acres	48	20	20
180-499 acres	17	12	16
500-999 acres	15	12	7
1,000 acres or more	18	17	19

¹ Source: USDA Census (Note: For the census of agriculture, the goal is to account for “any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year.”)

Land Use	2008	2009	2010	2011	2012	2013	2014
Number of conservation easements ¹						65	65
Acres in conservation easements ¹	16,517					21,232	21,232
Acres in Use Value Taxation Program ¹	98,318	107,790	106,750	101,566	102,380	94,462	94,462
Additional acres potentially in Use Value Taxation Program ²						25,000	
Acres lost to [in] development ²						25,000	
Total acres in Essex County ¹						165,120	
Acres not eligible for Use Value Taxation Program but still in agriculture or forestry ²						<150	
Essex County tax rate ¹	\$0.523 ⁴	\$0.523	\$0.605	\$0.605	\$0.695	\$0.84 ⁴	\$0.860
Deferred real estate revenue (On average, is about 10% of total.) ¹	\$871,379	\$961,018	\$1,075,787	\$1,049,080	\$1,221,143	\$1,193,256	\$1,165,533
Virginia counties/cities with land use ³							88
Virginia counties/cities without land use ³							38

¹ Source: Essex County Commissioner of Revenue

² Source: Best guess estimate from Essex County Commissioner of Revenue

³ Source: Virginia Tech Department of Agriculture and Applied Economics

⁴ Note: In 2008 and 2013, real estate tax reassessment took place; in 2013, agriculture land values increased.

Public school enrollment ¹	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
	1,580	1,581	1,651	1,621	1,599	1,609	1,602	1,576	1,547	1,500	1,468e

¹ Source: Essex County School Budget – 05/12/14

Career & Technical Education – Agriculture Course Enrollment ¹	2011-12	2012-13	2013-14
Foundations of Agriculture, Food	58	54	70
Agri Business Fundamentals	0	20	0
Agri Business Operations	4	0	0
Horticulture Services	15	13	15
Landscaping	0	6	18

¹ Source: Virginia Department of Education

Essex County Population ¹	2000	2010
	9,989	11,151

¹ Source: U.S. Census

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