

2.3.4 Agriculture

Introduction

Agriculture is one of the most important industries on the Eastern Shore, constituting approximately 12 percent of the total workforce. This category includes farming, horticulture, forestry, seafood/aquaculture and agricultural services.

The Eastern Shore is largely rural with 93 percent of the land area in Accomack County dedicated to cropland, woodlands and other undeveloped uses. For Northampton County, agricultural use is even more prevalent with only 3 percent of its land area devoted to residential, commercial and industrial use.

The Eastern Shore's agricultural sector contributes to its economic base and provides the inputs needed for food processing at manufacturing operations. According to the 1997 Census of Agriculture, there were over 400 farms on the Eastern Shore, with 279 in Accomack County and 162 in Northampton County. Total market value of agricultural products sold on the Eastern Shore is about \$100 million annually, with field crops accounting for about 75% of total sales and livestock accounting for the remaining 25%.

The fishing, clamming and aquaculture industries are traditional local industries for the Shore. They account for 15% of the total earnings in this sector and 31% of Virginia's total fishing and seafood industry earnings.

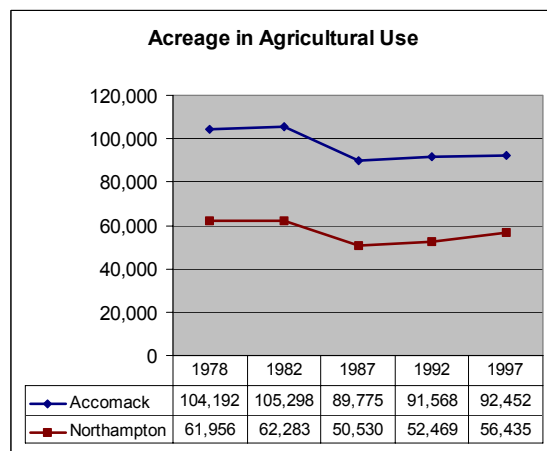
Current Conditions and Trends

Agriculture

Active Farmland

In both Accomack and Northampton Counties, there was a significant drop in the acreage dedicated to agricultural use between 1978 and 1987. In Accomack, acreage in farming dropped by about 11 percent. In both counties, however, acreage in farming has been steadily increasing from lows in 1987. In 1997 there is about 40% percent more land dedicated to agricultural use in Accomack County than in Northampton

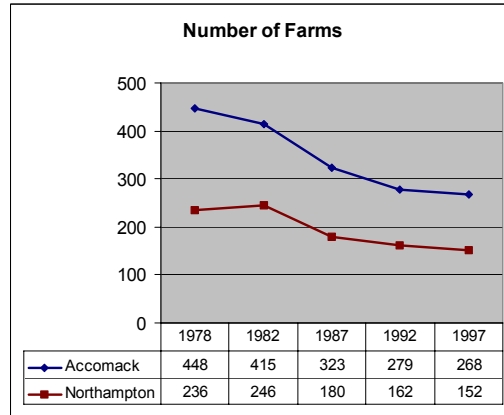
County. (Source: *Regional Economic Information System (REIS)*, Bureau of Economic Analysis, US Department of Commerce, 2000)



Number of Farms

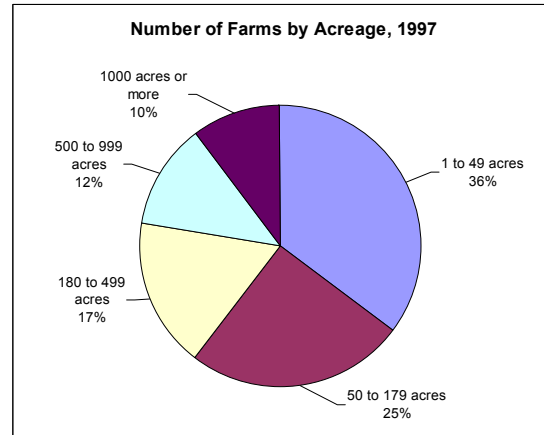
The number of farms has declined in both Accomack and Northampton counties during the period from 1978 to 1997. The number of farms has declined more sharply than the acreage in farming indicating a consolidation of farms and a trend toward larger farms.

(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)



Size of Farms

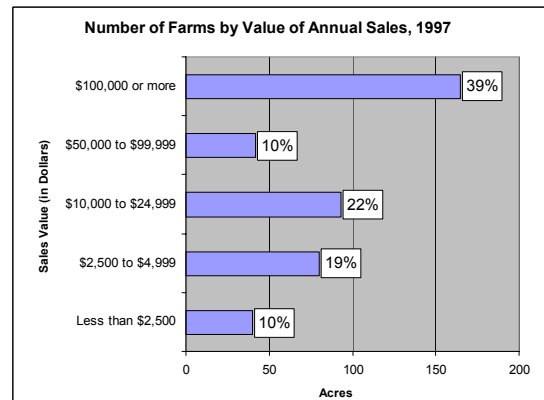
In 1997, the majority of the farms on the Eastern Shore were smaller than 180 acres. Another 30 percent were between 180 and 1000 acres in size. Only 10 percent of the farms on the Eastern Shore are 1000 acres in size or larger. *(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)*



Annual Farm Sales

Close to 40 percent of the farms on the Eastern Shore have an annual sales volume in excess of \$100,000. An additional 30 percent posted annual sales of \$10,000 to \$100,000, while the remaining 30 percent had a sales volume of just \$5,000 or less.

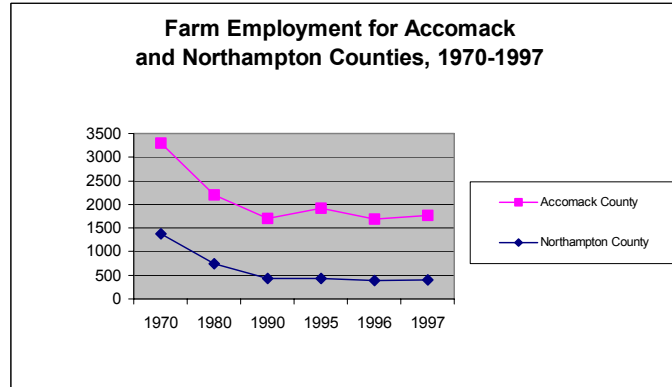
(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)



Farm Employment

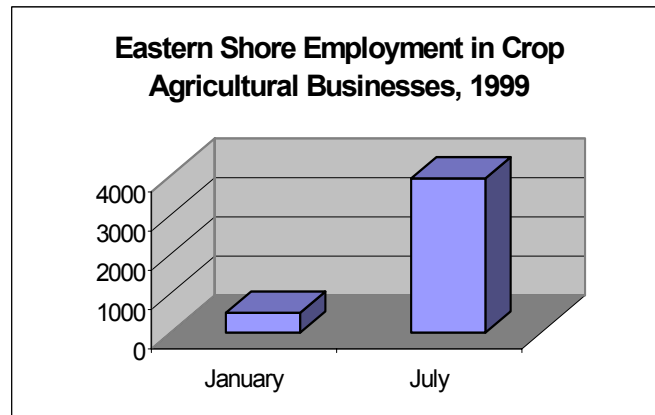
The number of farm employees fell significantly from 1970 to 1997. In Accomack, employment declined nearly 60 percent during that period. In Northampton the decline was slightly steeper at 67 percent. Farm employment remained steady throughout the 1990s on the Eastern Shore.

(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)



Seasonality of Employment

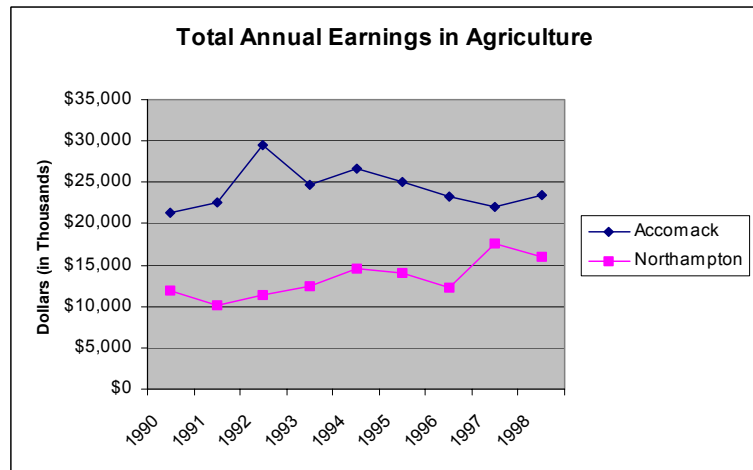
According to the Comprehensive Economic Development Strategy for the Eastern Shore, an example of seasonality of farm employment is the estimation of employment in the crop agricultural business during 1999. During the winter months, over 500 people were employed and nearly 4,000 were employed during the summer peak period.



Farm Earnings

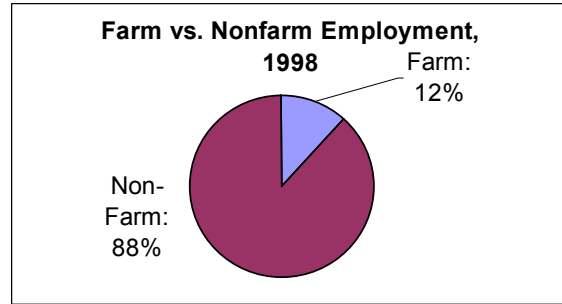
Annual earnings in agriculture for Accomack County reached a peak high in 1992 and then declined slightly, remaining relatively stable through 1998. Northampton County's earnings were significantly lower than that of Accomack County. Its earnings increased steadily between 1990 and 1998, reaching a peak high in 1997 and decreasing slightly in 1998.

(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)



Employment Comparison

Farm Employment accounted for 12 percent of all employment on the Eastern Shore and 12 percent of employment in each county. This proportion of farm employment is a much higher concentration than that of Virginia as a whole where farm employment accounted for just 2 percent of all employment.



Minority Farm Operators in Study Area		
	Farms	Land in Farms
Black		
Accomack County	14	3445
Northampton County	22	1926
Hispanic		
Accomack County	3	n/a
Northampton County	0	0

Source: 1997 Census of Agriculture, County Data

Race and Ethnicity

In 1997, the last year for which data was available, there were a total of 39 minority (black and Hispanic) farm operators on the Eastern Shore farming over 5,000 acres. Most minority operated farms are located in Northampton.

Major Types of Farm Produce

The major crops cultivated include corn, wheat and soybeans, with wheat comprising 19% of the state total. There are 261 soybean farms, slightly higher than the number of wheat and corn farms. The number of bushels is greatest for wheat.

Chickens comprise the greatest number of livestock on the Eastern Shore accounting for 9 percent of the total held in the state.

Major Types of Livestock Agriculture and Crops Cultivated in Accomack and Northampton Counties, 1997			
Livestock	Farms	Inventory (per Head)	% of State Total
Cattle	26	752	0.4%
Hogs and pigs	14	1,180	0.3%
Sheep and lambs	9	133	0.2%
Broilers and other meat-type chicken	61	22,432,410	9%
Crops	Farms	Bushels	
Corn	93	1,738,988	6%
Wheat	207	2,995,188	19%
Soybeans	261	1,340,402	12%

Source: 1997 Census of Agriculture, County Data.

Comparison of Earnings by Industry

Virginia State (\$000s)	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Earnings by industry										
Farm earnings	500,942	620,763	639,274	581,042	605,024	495,813	554,919	461,026	454,648	346,064
Nonfarm earnings	77,529,995	82,901,965	86,682,854	88,724,681	94,136,905	99,123,131	103,754,067	108,762,498	114,339,116	122,232,505
Private earnings	59,127,677	63,106,592	65,354,636	66,266,026	70,609,555	74,838,236	78,743,877	83,243,142	88,304,140	95,438,249
Accomack County										
Earnings by industry										
Farm earnings	18,668	19,659	15,906	14,442	16,081	16,393	14,177	18,770	16,529	14,846
Nonfarm earnings	240,074	245,736	261,127	271,901	279,433	291,470	316,433	310,625	312,128	315,631
Private earnings	182,974	182,883	193,853	198,000	198,965	210,578	230,562	226,475	229,801	231,876
Accomack Farm Earnings (as % of VA Farm Earnings)	4%	3%	2%	2%	3%	3%	3%	4%	4%	4%
Northampton County										
Earnings by industry										
Farm earnings	20,173	18,316	13,843	8,466	10,761	9,096	11,932	9,642	9,341	7,490
Nonfarm earnings	84,570	81,737	83,018	86,632	86,152	92,667	94,919	96,640	100,645	107,978
Private earnings	66,665	61,924	61,230	63,915	63,964	69,666	71,260	71,951	75,257	81,230
Northampton Farm Earnings (as % of VA Farm Earnings)	4%	3%	2%	1%	2%	2%	2%	2%	2%	2%

(Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)

Nonfarm earnings are significantly greater than earnings generated from farms in both Accomack and Northampton Counties as well as for the state as whole. In 1998, both counties accounted for 8% of the state's total farm earning, however that decreased to 6% in 1997. Farm earnings for the state as a whole is drastically lower than earnings from other industries and from private enterprises.

Soil Types Suitable for Agriculture and Forestry

Loamy soils are best suited for crop production as they are of medium porosity and they can hold enough water to support crop growth. In Accomack County, bojac and munden soils are best suited for crop production and forestry. Bojac soils are also the prime soils for residential and commercial development since they are most suitable for septic systems.

Insert Map: Soils Suitable for Agriculture

Agricultural and Forestal Districts

Accomack County, in 1997, has 82,851 acres of land in 22 Agricultural and Forestal Districts created in 1983 by the Accomack County Board of Supervisors. These districts were created for their economic, ecological and aesthetic value. Land within these districts are protected from local regulations that would interfere with farm operation through the Right to Farm Legislation. (Source: *Accomack County Comprehensive Plan, 1997*).

To be included in these districts the Board would determine the significance of land within the district based on soils, farm improvements, status of farming and forestry, trends in economic conditions and technology, and other areas. The land in these districts requires conservation and protection for the production of food and other agricultural uses. They would also be considered an ecological resource, providing open spaces and clean air. They also qualify for land use taxation based on the land's current use.

According to the USDA-Forest Services, there are about 94,000 acres of forest in Accomack County. About 48% of the forest land consists of pines. The forest industry owns about 9,000 acres of forest land and over 1,800 acres are publicly owned. Currently, Northampton County does not provide for the establishment of Agricultural or Forestal Districts.

Land Use Regulations for Agriculture

Accomack County's zoning ordinance allows single-family housing, schools, churches and post offices in an Agricultural District. Many of the uses are not compatible with the use of land for agricultural production and therefore conflicting land uses occur.

Agricultural Use Value Taxation

Accomack County offers land use taxation for property in agriculture or forestry use. Property is assessed at its agricultural value and not the current market value, resulting in significant savings to agricultural land owners, since real estate taxes are based on fair market value and increased property taxes would hurt agricultural land owners if the land is in an area with development potential. This option relieves pressures to remove land from agriculture and develop it to its best use. When land is developed for more intensive use, then roll back taxes must be paid by the property owner. Currently, Northampton County does not provide for land use taxation.

Right-to-Farm Regulations

As stated earlier, the land in districts zoned for agricultural use are protected by state "right-to-farm" legislation which prohibits local government from restricting agricultural uses within the district.

Fishing/Aquaculture

Overview

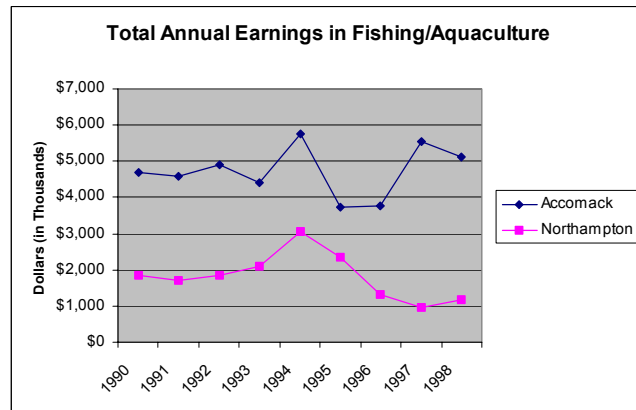
Seafood production on the Eastern Shore has been thriving for years. Watermen have made their living by harvesting fish, crabs, oyster, and clams. Currently, however, crab, oysters and clam quantities have declined and most of the seafood processing plants have gone out of business. Instead, aquaculture is the new seafood industry, which is the farming of fish and shellfish.

Due to declining seafood harvest and Virginia's more stringent water quality standards, many of the Shore's seafood processing plants have closed. There is a concern regarding water access for aquaculture. Watermen community have easy access to the Bay and Ocean, however, as waterfront development increases, access could become scarce.

The fin and shellfish populations are declining while the demand for seafood increases. While the traditional seafood industry declines, the Eastern Shore remains an ideal location for major shellfish and finfish aquaculture.

Earnings

Accomack County's earnings in fishing/aquaculture from 1990 through 1993 remained relatively stable and then increased substantially in 1994. This increase was then accompanied by a substantial decrease the following year through 1996. After 1996, earnings increased again and seem to remain constant through 1998.



Based on earnings data, in 1994, it is estimated that over 1,100 people are employed in the fishing and aquaculture industries on the Shore. In Accomack County, the average wage earnings per worker was \$19,154 where the major species is the blue crab and the landed value is over \$6.8 million. In Northampton County, the average earnings per worker is lower, at \$18,470 where the blue crab is also the major species in terms of value, and the landed value is close to \$2.7 million. Earnings increased substantially in 1994 and then decreased again from 1995-1998, however remaining relatively stable. (Source: Regional Economic Information System (REIS), Bureau of Economic Analysis, US Department of Commerce, 2000)

Comparison to Other Industries, Region, and State

Fishing, clamming, and aquaculture earnings on the Eastern Shore amounted to over 30 percent of the earnings for the industry in the state as a whole. The industry accounted for over 1 percent of all earnings on the Eastern Shore, a concentration 50 times higher than that for the aquaculture industry in Virginia as a whole.

Related Industries (Jobs, Earnings, Major Employers)

As with agriculture, the seafood harvesting industry employs more people in related processing industries than it does directly. Although there has been a significant decline in seafood processing due to supply considerations and environmental regulations, over 500 people are employed in the remaining seafood processing firms on the Shore. Together, the primary and processing industries account for approximately 3 percent of all employment in the region.

Water Quality

Water quality is extremely important to the viability of the shellfish aquaculture industry. Seawater from tidal creeks is used to raise shellfish that are very sensitive to water conditions. Water quality problems have occurred due to large scale runoff in the Chesapeake Bay basin which reduced salinities. Conflicts have occurred between aquaculture operators and farmers who were accused of creating water pollution. The water quality issues were occurring in creeks downstream from agricultural fields. In addition, problems seems to have been due to heavy metals and organic toxic contamination. After several water quality tests were conducted by the Virginia Institute of Marine Science, it was determined that agricultural practices in the immediate watershed were impacting living resources at the site.

Condemned Shellfish Areas

As of 1997, the Bureau of Shellfish Sanitation condemned over 8,700 acres of productive shellfish grounds in Accomack County, an increase of 9% since 1992. These areas were condemned due to hazards and when water quality standards were not met. In condemned areas it is illegal to remove shellfish except by permit granted by the Virginia Marine Resources Commission.

Accomack County - Condemned Shellfish Areas

Creek	Acres	Creek	Acres
Pocomoke Sound and Pocomoke River	1,843	Butcher Creek	52
Starling Creek	48	Nandua Creek	202
Messongo Creek	130	Back Creek	18
Young Creek	43	Craddock Creek	93
Guilford Creek	70	Ocohanock Creek	148
Deep Creek	355	Folly Creek	236
Doe Creek	106	Parker Creek	59
Hunting Creek	142	Gargathy Creek	75
Bagwell Creek	112	Assawoman Creek and Womans Bay	235
Tangier Island	1,098	Cockle Creek	165
Chesconessex Creek	120	Little Mosquito Creek	102
Onancock Creek	441	Swans Gut Creek	91
Matchotank	50	Greenbackville Harbor	13
Pungoteague Creek	414	Chincoteague Island and Adjacent Areas	596

Source: Accomack County Comprehensive Plan, 1997.

Special Issues

Irrigation

The Eastern Shore accounts for 62% of the statewide total for irrigation water use. The acreage irrigated and the amount of water supplied is based on the weather, crops, and economics. There is a concern that if groundwater withdrawals exceed the permitted level for industrial use, increased problems of well interference and saltwater intrusion would occur.

Industry

Water withdrawal for industry is highly concentrated. The two poultry processing plants account for 42% of the total permitted industrial withdrawals on the Eastern Shore.

Conservation Easements

Following a growing trend in many rural, environmental sensitive areas in the nation, a growing number of farm owners on the Eastern Shore are entering into agreements to sell development rights in their property allowing continued agricultural use while permanently preserving the land from development. Limited development on a portion of the parcel able to support it is sometimes a feature of the agreements, allowing for sustainable levels of growth. On the Eastern Shore the Nature Conservancy has sought to expand its efforts in local conservation easements so as to protect marshlands within the Virginia Coast Preserve from non-point source pollution and other consequences of the conversion of upland farms to residential property.

Conflicts with Other Uses

Permits were issued for 67 poultry houses in Accomack County from 1992 through 1996, and these growers supply the largest employers on the Eastern Shore, the poultry processing plants of Tyson Foods and Perdue Farms. These poultry houses are an intensive form of livestock production causing odors, excessive noise, dust, light, chemical usage, and intensive hours of operation which may conflict and be a nuisance to surrounding land uses/homeowners.

Environmental Practices

The control of agricultural runoff continues to be a concern, however, some areas have applied the responsible use of chemical and fertilizers. To prevent pollution, the Virginia Legislature passed the Agricultural Stewardship Act in 1996 to hold those not implementing environmentally sound practices and not controlling pollution runoff, accountable for their actions.

EcoTourism

The promotion of EcoTourism would be beneficial and would help to preserve lands that are suitable for agriculture as well as preserve water quality and decrease pollution and damage to sensitive shellfish areas. EcoTourism would increase awareness and the understanding of the fragile ecological and natural resources that are unique to the Eastern Shore and promote the conservation of these valuable resources.

Assets/Resources

- ***Prime Agricultural Lands*** - Agriculture and forestry are important parts of the Eastern Shore's identity and quality of life. The aquaculture and agricultural economy is a way of living characterized by strong family ties and community involvement. It symbolizes a heritage to be protected and is part of its strong sense of tradition. Prime farmlands exist throughout the Eastern Shore, and the agricultural sector contributes significantly to the economic base and provides the inputs needed for the food processing components of the manufacturing operations.
- ***Access to Fish and Shellfish Areas/Prime Aquaculture Areas*** -Aquaculture, the farming of fish and shellfish, has taken over as the primary seafood industry vital to quality of life. Growing clams is the basis of a million-dollar aquaculture industry on the Shore. Even though the traditional seafood industry has declined, the Shore is an ideal location for major shellfish and finfish aquaculture. The local seafood industry is supported by the mild climate and the surrounding waters of the Atlantic Ocean and the Chesapeake Bay.
- ***Labor Force*** – The Eastern Shore has a labor force adequate to support the agriculture, seafood, and related manufacturing industries.
- ***Access to Processors and Other Markets and The Farmers Market*** – The Eastern Shore's proximity to major markets and its indigenous processing industry makes the area suitable for production of market crops and poultry. The State of Virginia invested \$2.3 million in the construction of the Eastern Shore Farmers Market to promote the distribution of Eastern Shore produce.
- ***Initiatives Promoting Sustainability and Preservation*** - To prevent pollution, the Virginia Legislature passed the Agricultural Stewardship Act in 1996 to hold those not implementing environmentally sound practices and not controlling pollution runoff, accountable for their actions. In addition, the promotion of EcoTourism will increase awareness of the sensitive ecological and natural resources unique to the Eastern Shore. Continued use of conservation easements will work to protect farmland and sensitive habitat nearby.

Needs/Deficiencies

- ***Reduction in permitted uses and densities*** -The spread of residential and commercial development would lead to loss of prime farm land and forest land, degrading scenic vistas and have adverse impacts on the environment. Directing growth to designated growth areas, based on certain parameters, such as soil suitability and location of fragile sources will result in efficient development and protecting resources. To ensure the effective use of the area outside of development clusters for agriculture, development outside the designated growth areas should be low density with minimum lot sizes, and with open space requirements for subdivision and conservation area zoning.

- **Regulations regarding mobile and manufactured homes** – Eastern Shore residents and officials have expressed concern regarding regulations for the placement of manufactured homes. For example, the Senate bill passed in 1995 limits the ability to regulate the placement of manufactured housing. This reduces the safe and orderly development of the counties and allows all manufactured homes built to a certain building code to be allowed by right in areas zoned as agricultural.
- **Initiatives to Promote Local Product Use and Demand** - The Eastern Shore Farmers Market opened in 1993 and has been successful, brokering almost \$20 million in agricultural produce from farmers. The market has become a lead in the state for enhancing competitiveness of local resource-based business, however there is a need for central marketing, handling, storing and freezing infrastructure for both the agricultural and aquaculture industries to stay competitive. The Eastern Shore Marketing Cooperative is currently working on a project with other organizations to develop a wholesale seafood market and successfully market this new concept to increase competitiveness along the Eastern Shore.
- **Irrigation** - The Eastern Shore accounts for 62% of the statewide total for irrigation water use. The acreage irrigated and the amount of water supplied is based on the weather, crops, and economics. The two poultry processing plants account for 42% of the total permitted industrial withdrawals on the Eastern Shore. There is a concern that if groundwater withdrawals exceed the permitted level for industrial use, increased problems of well interference and salt water intrusion would occur.
- **Seafood Processing Practices** - Many of the seafood processing plants were closed due to declining seafood harvests and the necessity for more stringent water quality standards. Some of the plants may still be allowed to operate by obtaining a permit, but there is still a concern that they will impact the water quality and harm shellfish population.

Issues of Concern

- **Farmland/Forest/Fisheries Preservation and Preservation of Open Space/Natural Resources** - There is a concern regarding the increase in second home development and the migration of retirees to the Eastern Shore. Waterfront development has occurred over the past ten years and there is a concern that this increased development will impact the environment. High-density waterfront development poses a threat to farmland property and the environment. In addition, waterfront access for aquaculture will become more scarce. Concerns regarding increased residential development on prime farmlands is prevalent and may reduce the number of prime farmlands as well as the number of areas suitable for agriculture as they become used for septic systems to increase residential development.
- **Water Pollution** - Water pollution may increase with increased runoff from agricultural lands impacting the aquacultural industry.

- **Preservation of Jobs** - With increase residential and other development along the Eastern Shore, there is a concern that there will be a drop in the number of agricultural lands resulting in a loss of jobs for farm operators.
- **Impact on Related Industries** - The agricultural and seafood industries support over 3,000 jobs in related food processing industries. Enhancement and preservation of current levels of farming/seafood production is important for maintaining jobs in other sectors directly dependent on agricultural and fishing output.
- **Rural/Coastal Lifestyle** - There is a concern that with the potential increases in high density development along the Eastern Shore and especially along the waterfront, access to both agricultural practices and aquaculture will become severely limited. In addition, the rural, coastal lifestyle, unique to the shore and vital to the quality of life for farmers and watermen may be impacted with increased development.
- **Promotion of Agricultural Products** - There is a need to promote agricultural products in order for the Eastern Shore to remain competitive in this industry. To increase competitiveness, a wholesale seafood market needs to be developed by creating a location to centrally market, handle, store and freeze agricultural produce and seafood.
- **Conflict with Other Uses** - Some of the most productive soils are also the most suitable for septic systems for residential development. Farm lands are lands that would be desirable locations for waterfront homes. Certain amounts of farm land are subdivided, causing residential development areas located on prime agricultural land. This may lead to conflicts between farm operators and homeowners, especially over issues such as odors, noise, dust, chemical usage and hours of operation. In addition, fragmentation of farm land affects its productivity and viability leaving tracts of land too small or segmented to be efficient.
- **Rights of Farm Owners and Tenants** - As stated earlier, Accomack County offers land use taxation which bases taxes on actual use and not on the highest and best use. This removes pressure of farm owners to develop land for agricultural use however, some of the land is subdivided causing areas of residential development on agricultural and. In addition, even though forestal agricultural land are protected by right to farm legislation within the 22 districts, they offer no protection from conversion of other uses or conflicts with surrounding uses.
- **Property Speculation** -Due to increased interest in migrating to the Eastern Shore resulting in second home development and retirement communities, market forces may dictate the conversion of prime farm land to residential and other type of development. Even if development never occurs, land bought in speculation of development may be taken out of active agricultural use and is more likely to be developed when market conditions allow.

Issues of Special Concern to Low Income Residents

- **Job Preservation/ Rural/Coastal Lifestyle** -Low-income residents may not be able to preserve their jobs working in agriculture, or at the poultry processing plants with increased residential and commercial development along the Eastern Shore. This development may harm prime agricultural lands and lands for livestock development causing a decrease in jobs. In addition their rural coastal lifestyle may be impacted with increase development on agricultural lands and along the waterfront.

Transportation and Agriculture

The agriculture industry and industries related to it are dependent upon transportation for access to markets, suppliers, and labor and for the movement of machinery between agricultural lands. An improvement in accessibility attributable to a transportation improvement or a reduction in cost can also make agricultural land more attractive for residential and commercial development resulting in conversion of farmland to other uses. The potential for positive and negative impacts on agriculture related to a potential change in the CBBT commuter toll will be examined in the public participation and impact phases of this study, utilizing the information presented in this topic report.