

# 2007 University of Maryland and University of Maryland - Eastern Shore Combined Research and Extension Annual Report

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## I. Report Overview

### 1. Executive Summary

## Building a Stronger Maryland

In Outcomes 2002, our previous Plan of Work, we dealt with seven directed initiatives that served as the basis of our programming. While these initiatives were germane, they had a proclivity to be exclusive. Changing demographics of Maryland, the need to be more responsive to all Marylanders, and an increasing mandate to truly partner with other organizations, civic groups, agencies, and institutions mandated that we become more inclusive to all our clientele. Thus we re-examined and redefined our Mission Statement from our 2002 document to emphasize three major areas that impact all of Maryland. In doing so, we identified three areas as focus themes – Quality of Life, Economic Prosperity, and Environmental Stewardship. These three themes direct what we do as an education organization. They also have expected outcomes that transcend each theme and facilitate cross-discipline, self-directed team efforts by our faculty.

### Quality of Life

Quality of Life is defined as "Living and working in an environment that enables individuals and families to attain their basic needs and provides the opportunity for personal and community development."

Situation: Quality of life involves everything impacting our daily lives from our environment and socio-economic position to communication and personal growth in family, work, and social interactions. Although to achieve one's life goals is a continued pursuit by most, not everyone is as fortunate as others and some individuals and their communities still require basic services for their education, health and welfare. Abraham Maslow's motivational theory regarding the hierarchy of needs is most relevant here. It provides the building blocks behind the motivation for achieving personal satisfaction and feeling a sense of worth and accomplishment.

### Economic Prosperity

Economic prosperity encompasses "The financial and related factors leading to improvement in the well being of individuals, families, communities, and businesses."

Situation: Economic prosperity is relative to socioeconomic levels and expectations. For some individuals and families, economic prosperity may mean securing employment and having sufficient resources to meet their basic needs. On the other hand, acquiring business skills, exploring career opportunities, and managing personal finances by reducing debt, increasing savings, and planning for retirement and estate settlement increase economic stability and feelings of prosperity for people at all income levels. Economic prosperity includes collaborative learning with industry that strengthens market positions and profitability in an increasingly global economy. Since many traditional businesses are under economic stress as markets change, future prosperity is likely to depend on innovation, adding value and accurately identifying customers and their needs. Regulatory compliance and quality issues often affect production costs and the marketability of products or services, directly affecting profitability.

### Environmental Stewardship

Environmental stewardship can be defined as "Educating the public regarding the management of our environment (ecosystems and natural resources) for this generation and for those yet to come."

Situation: Ecosystems are a critical component of a sustainable and economically viable land use. Studies have shown that both ground and surface waters contain high levels of the nutrients nitrogen and phosphorus (N and P), sediments and toxic contaminants. These contaminants adversely affect water quality, aquatic organisms, fisheries, and human health. Various regulations, programs and legislation are in place with the goal of reducing these sources of pollution. The Chesapeake Bay Program has a goal of 40% reduction of nutrients into the Bay by 2010. The Water Quality Improvement Act of 1998 mandates that farmers have and implement nutrient management plans. There are now new storm water runoff regulations to help control storm water, create remediation of soil and groundwater, and reduce air pollution. Previous legislation requires that restricted use pesticides may only be used by certified applicators.

Urbanization, development and the subsequent construction and use of wastewater treatment plants contribute significantly to contamination. Urbanization and development also compromise open space. In urban areas, toxins and nutrients enter Maryland's environment through excessive use of pesticides and fertilizers from commercial, public and private applications. Sediment enters Maryland's surface water from erosion originating from exposed soil, mainly from construction sites and home landscapes. There is concern that as much as 30 percent of the nutrients entering the Bay is caused by air deposition (rainfall). Commercial and non-commercial pesticides are used in Maryland in the indoor and outdoor environment.

**Background Statements:**

There are 12,200 farms in Maryland, covering 2.1M acres; 1.5M acres are devoted to crops. Total land area in Maryland is 6.7M acres, with 62,700 employed. Maryland farms are typically small and farmland is expensive. With 169 acres, the average farm in Maryland is the 10th smallest in the nation. The estimated market value of land and buildings per acre is \$2,911, the fifth most expensive in the nation. Even though Maryland has one of the most progressive Land Preservation Programs in the nation, three times more farmland is lost to development every year than is preserved. Between 1950 and 1999, the number of farms and acres of farmland has fallen 66 percent and 48 percent, respectively.

Total annual gross farm income in Maryland averages 1.7B dollars, with \$220M in exports. The important commodities are poultry and eggs, nursery and greenhouse (fastest growing industry), dairy and milk products, feed/food/oil crops, meat animals, and vegetables and fruit. On average, the net income per farm in Maryland is \$33,036, while off-farm income averages \$20,000. Slightly more than half of the farmers describe farming as their principal occupation. A small percentage of agricultural producers are responsible for the majority of agricultural sales. Farms with gross market sales exceeding \$100,000 represent 21 percent of Maryland farms by number, but their sales represent 86 percent of the total sales. Crop damage from deer and geese is estimated at \$17 M annually.

The first inventory of Maryland's "green industry" indicated it has a value in sales of \$1.15 B making it the second largest agriculture industry. This industry employees 15,000 and involves 10,000 acres.

The equine industry's first census indicated 87,000 horses, mules and donkeys are in Maryland. This industry employs 38,000 people and involves 685,000 acres. Maryland's equine inventory is valued at \$680M (\$7,810/animal) and the value of all equine related assets at \$5.2 B, with \$766 M in related expenditures annually.

Maryland's principal agricultural advantage is location to markets. Grain farmers benefit from proximity to the regions poultry industry. Fruit, vegetable, dairy, beef, swine, horticultural products, and other specialty crops are sold to the five million people in the Washington-Baltimore region.

Maryland farmers are older and aging, reflecting a national trend. Maryland farmers average 55.8 years of age, compared to the U.S. average of 53.3. Maryland residents demonstrate a strong tendency to purchase locally grown commodities and value-added products, support local farmers, and preserve open space. These residents want to preserve and protect such natural resources as the Chesapeake Bay, so environmental concerns about agriculture play an increasing and significant role in the operation of Maryland farms. Maryland's poultry industry produces the largest dollar value in production and exports a substantial portion of its production.

Maryland has abundant water resources. Surface water provides more than 80 percent of the state's water supply; however, ground water supplies approximately 85 percent of the total water used in Southern Maryland and the Eastern Shore. Studies have shown that both ground and surface waters contain high levels of the nutrients nitrogen and phosphorus (N and P), which adversely affect water quality, aquatic organisms, fisheries, and human health.

Under the Chesapeake Bay agreement, there is to be a 40 percent reduction in nutrient loading into the Bay by the year 2020. In agriculture areas, there are concerns about the management of inorganic and organic sources of nutrients and chemicals. In urban areas, nutrients and pesticides enter Maryland's water supply through excessive use of pesticides and fertilizers in horticultural landscape applications (commercial, public, and private). According to the 1990 census, one in five residences in Maryland have private septic systems bringing the state's total to 316,000. It is estimated that 60 percent of these systems are failing and that they contribute substantial amounts of nitrate to ground water. Other water-related issues include salt-water intrusion in coastal areas caused by high water demand and competition for finite supplies of water among residential, agricultural, and industrial uses.

Economic and demographic changes have led to a continuing loss of agricultural and forestland. These losses raise concerns about the continuing viability of agricultural and forest industries, green ways, open space for wildlife, recreational areas, amenities, and environmental quality in general. And the losses are likely to continue to the year 2020 at a rate of over 10,000 acres per year.

Maryland's population is expected to reach over 8 million by the year 2010. This population growth and redistribution, as well as commercial and industrial development will consume farm, horticultural, and forestland. At the same time, this growing population will also demand more services and products from agricultural, horticultural, and forest industries. Conflicts between agricultural and urban land uses and their impacts on natural resources occur as development takes place in once-rural areas. As development occurs, farm and forestland is fragmented and/or lost, reducing the open space and biological diversity of the area. This forest and habitat fragmentation reduces our ability to manage and maintain the resources of a healthy state. Currently, land-use planning and management issues are being addressed by a wide variety of public and private organizations, which often lack coordination and consistency among their programs and policies. Integrated resource management and landscape diversity are key components of land-use planning, but are often not considered.

The contamination of surface and subsurface water supplies due to non-point source agricultural runoff is among the most serious environmental problems facing American agriculture today. About 60% of the rivers and lakes in the United States are polluted by agricultural runoff; rivers primarily by sediments, and lakes by nutrients. Additionally, surface and groundwater are contaminated by a variety of pesticides, and nutrient sources such as fertilizers and manure. Non-point load of nutrients to surface waters in different regions of the U.S.A. is among the highest priorities in the country. One of the challenges for developing an economically sustainable agricultural system is to simultaneously reduce non-point source pollution problems and maintain farm and rural industrial incomes at reasonable levels. One solution is watershed-scale planning and management which makes it possible to target Best Management Practices (BMPs) for the greatest improvement in water quality even though watershed planning is much more complicated than field or farm scale planning.

As an 1890 Land Grant institution, UMES is committed to continue the services and applied research we provide area farmers, watermen and resort residents (Eastern Shore tourism industry). We expect to bridge the agricultural, environment, and renewable natural resource programs and find ways that farmers and businessmen can be economically enhanced while not harming the environment and do so with concern and sensitivity.. Presently many of our scientists (and those at College Park) are seeking solutions to resolve a recent Delmarva disaster that placed farmers, watermen and environmentalists at odds, and resulted in what is believed by the poultry industry to be a rush to judgment by politicians. During the summer of 1997, Delmarva made national news because of fish kills and lesionous fish in the Pocomoke River. The river provides a habitat for numerous fish species and other aquatic organisms, and it serves as a source of revenue and recreation for the inhabitants of its watershed. *Pfiesteria piscidia* has been implicated as the cause of the lesions and subsequent death of hundreds of fish. Toxins produced by this microbe are also thought to be deleterious to human health.

Consumers need to choose healthier food behaviors because heart disease, cancer, excess weight and obesity, and osteoporosis lead to increased morbidity, lower quality of life, and, ultimately, premature death. People need to understand food composition and preparation techniques to select and prepare nutritious foods. Otherwise, they may avoid nutritious foods and use more expensive and less nutritious foods or mistake the description "low fat" for "low calorie." Consumers need integrated food and nutrition education programming, which must address the interaction of nutrition, diet, fitness lifestyle issues, and physical fitness, in order to be successful in reducing chronic disease risk, excess weight and obesity.

Maryland youth, families, and communities are the core components in increasing quality of life and economic opportunity. Currently, 13 percent of Maryland children ages 18 and under live in poverty. A single parent heads more than one fifth of families with children.

The current welfare-to-work effort in Maryland requires families to develop the skills and resources needed for independent living by placing a 60-month maximum time limit for welfare benefits. As parents leave welfare to go to work, additional childcare providers are needed.

The process of public decision-making is currently a significant issue for Maryland citizens and policy makers alike. Land use, food safety, and childcare are examples of potential issues involving public decision-making. Because of the inherent difficulty of the situation, it is not uncommon for critical public decisions to be postponed, indefinitely tabled, or solved in uninformed ways.

Societal and governmental needs are growing more complex, fractionated, and global. Increasingly, citizens are asked to share leadership roles in their communities. New and replacement intergenerational leaders must be prepared for these civic

challenges. Youth and adult leaders must have the skills, confidence, and ability to lead diverse groups in difficult situations involving polarization of opinion, civic disengagement, and conflict. Youth civic engagement, youth-adult partnerships, and youth empowerment have become significant issues.

Volunteers provide educational, economic, and social benefits to families, individuals, organizations, and communities. Over 3,500 adults and 1,000 older teen leaders serve as Extension volunteers. Effective selection, training, involvement, and guidance are essential steps in maintaining and strengthening volunteer efforts.

#### Total Actual Amount of professional FTEs/SYs for this State

Year:2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	120.0	12.0	73.0	15.0
<b>Actual</b>	123.0	10.5	75.0	15.0

## II. Merit Review Process

### 1. The Merit Review Process that was Employed for this year

- Internal University Panel
- External University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

### 2. Brief Explanation

**Extension Faculty Reviews:**

The merit review process currently used to evaluate Maryland Cooperative Extension (MCE) faculty has been used successfully for many years with minor changes. The evaluation process occurs annually when the faculty member is formally evaluated by the County Extension Director (CED), Regional Extension Director (RED), and Assistant Director/Program Leader (AD/PL). Emphasis is placed on impacts and the difference made to constituents and the citizens of Maryland during the preceding 12 months. Each faculty member is evaluated on individual merit. Documents used for the merit review are Approved Individual Extension Plan (IEP), Curriculum Vitae, MCERS (Maryland Cooperative Extension Reporting System) reports, and Teaching effectiveness Summaries.

**Research Faculty Reviews:**

All research faculty have a departmental home, and while there are subtle differences between the departments, they all have a peer-review system wherein assigned faculty or a faculty committee review the annual performance criteria of each faculty member and assign a merit ranking. These criteria from a research perspective are evaluated, in general, on grantsmanship, publications, the quality of the journal (based on a citation index), and invited and/or contributed scientific talks and seminars. These are also the same criteria that are used to evaluate promotion and tenure decisions. The peer committee recommendations are reported to the respective department chair who provides his/her input and then provides a final ranking and conducts the annual review. This process is followed for tenured, tenure-track, and research faculty appointments.

**Programmatic Reviews:**

Programmatic reviews are conducted at the departmental level at the request of the dean, associate dean, and/or department chair. They generally range in the five to ten year cycle. These reviews are conducted by a panel of external reviewers from prestigious departments, institutions, or federal agencies that have similar departmental or agency diversity in programmatic issues. Individual programs are rarely reviewed independently but within the context of how they fit in the mission of the college and department.

**Project Reviews:**

All research projects funded through MAES undergo both internal and external review. There is an internal review of federal projects by at least two faculty with knowledge of the discipline, a review by the associate dean for research and associate director for MAES, and USDA. The one exception is that MAES offers an internal competitive grant program for faculty within the college and UMES to afford preliminary research findings that increases competitiveness for these faculty to be successful in competing for NRI and/or other funding sources. The panel evaluations are a set of standardized criteria such as clarity of objectives, relationship to college's mission, quality of proposed research, deliverables, etc. Any project receiving less than a score of 85 will not be considered for funding. Currently this process is conducted for Hatch funding only. Plans are being considered for the same internal process for McIntire-Stennis and Animal Health and Disease funding as well.

**III. Stakeholder Input****1. Actions taken to seek stakeholder input that encouraged their participation**

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of selected individuals from the general public

**Brief Explanation**

The College of Agriculture and Natural Resources following the lead of the University of Maryland began the process of developing a strategic plan for the college including both Maryland Cooperative Extension (1862 and 1890) and the Maryland Agricultural Experiment Station. The process was completed and the plan is now available to faculty, staff, students and stakeholders. The information from the Key Informant process described below was used as an input in the plan development process. The strategic plans are available as follows:

For the University: [http://www.provost.umd.edu/Strategic\\_Planning/](http://www.provost.umd.edu/Strategic_Planning/)

For the College: <http://www.agnr.umd.edu/FacultyStaff/index>.

#### Administrative Committees

The Dean's Leadership Council consists of Associate & Assistant Deans, Department Chairs and Center Directors. The Council met quarterly during the reporting period and provided important feedback from the client groups they represent. In addition the Dean and Director is able to seek specific input from this group as needs arises.

#### Extension Advisory Councils

County Extension Advisory Councils (EAC) meet on a regular basis in most of Maryland's counties and Baltimore City. The EAC's provide insight into and support for the local extension programming. The Regional Extension Directors meet with the EAC's for the counties in each region on a regular basis. In addition the Assistant Directors/Program Leaders and Associate Director occasionally meet with these EACs. The Maryland Extension Advisory Council (MEAC) did not meet during the reporting period.

#### MCE Strategic Plan 2006-2011

MCE went through a new strategic planning process in 2005 to provide a compass for the next 5 years. This new strategic planning document drafted in 2005 continues to serve as a guide for extension programming in Maryland. The strategic plan is an on-going and evolving document intended to help MCE plot its course and measure its success. This version of the strategic plan was last revised on September 22, 2006.

#### County Listening Sessions

As new staffing positions are considered at the county level, local listening sessions are held. This input is collected and used in the development of new responsibilities and directions for programs and positions. These listening sessions help to ensure that MCE staffs positions in the most appropriate way based upon current clientele needs in a way that aligns with resources and expertise available through MCE.

#### Governors Agriculture Commission Public Forums

In 2004 the Agriculture Commission held 6 public forums in the state to solicit public input into the future of agriculture. In 2005 a Governor's Agriculture Forum was held to establish priorities for the state as well as provide guidance for state agencies and local municipalities.

##### UMES

##### Stakeholder Advisory Council

The plant and soils, and portions of the animal science research units of the UMES Agricultural Experiment Station have chosen the area of nutrient management and environmental stewardship as a major focus area. As such, the stakeholder input process includes a Stakeholder Advisory Council composed of researchers, educators, poultry producers on the Delmarva Peninsula, The Maryland Department of Agriculture, Chesapeake Bay Foundation, and at least two row crop farmers. This group provides critical feedback, and assists in planning the research efforts to better serve the needs of the community relative to nutrient management. A recent Capacity Building Grant also supports the HACCP roundtable discussions continue to help in the clarification of new and changing regulatory requirements so that the poultry processing companies on the Eastern Shore (5 companies and 11 plants) can be more effective in implementing changes to comply with those requirements.

Somerset County Soil Conservation District (SCSCD)

A partnership has been established with SCSCD to assist UMES in planning and achieving objectives relative to agricultural research. Several members of this association also belong to the above given advisory Council. A joint publication was produced in December, 2003 titled "Managing Drainage Ditches to Reduce Nutrient Loss." This organization has assisted us in securing various stakeholder audiences for us to present our research objectives and secure input and assistance.

UMES' Agribusiness Advisory Council was reconstituted to focus primarily on the new Ph.D. program in Food Science and Technology.

UMES' Experiment Station Strategic Plan aligns with the University's 2004-2009 Plan.

[http://www.umes.edu/about\\_umes/goals.cfm](http://www.umes.edu/about_umes/goals.cfm)

**2(A). A brief statement of the process that was used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**

**1. Method to identify individuals and groups**

- Use Advisory Committees
- Use Internal Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

**Brief Explanation**

County Listening Sessions

As new staffing positions are considered at the county level, local listening sessions are held. This input is collected and used in the development of new responsibilities and directions for programs and positions. These listening sessions help to ensure that MCE staffs positions in the most appropriate way based upon current clientele needs in a way that aligns with resources and expertise available through MCE.

Governors Agriculture Commission Public Forums

In 2004 the Agriculture Commission held 6 public forums in the state to solicit public input into the future of agriculture. In 2005 a Governor's Agriculture Forum was held to establish priorities for the state as well as provide guidance for state agencies and local municipalities.

Local mailing lists were used to identify participants along with notices in county extension newsletters. Newsreleases were sent to local newspapers, radio stations cooperators such as farm bureau, conservation districts and NRCS county offices.

Customer Satisfaction Surveys

In 2008, MCE began a process of conducting Customer Satisfaction Surveys. For 2008, one county was utilized as a pilot county to test the survey instrumentation, methodology and protocol. Results from this pilot county will be used in formulating a systematic survey approach for all counties in the state. The preliminary plan is to assess counties every five years. Data from these surveys will be utilized to assess MCE performance in addressing clientele needs. Adjustments to programming delivery will be made based upon the results obtained through these surveys.

UMES

Stakeholder Advisory Council

The Stakeholder Advisory Council is composed of researchers, educators, poultry producers on the Delmarva Peninsula, The Maryland Department of Agriculture, Chesapeake Bay Foundation, and at least two row crop farmers.

Somerset County Soil Conservation District (SCSCD)

This organization assist us in securing various stakeholder audiences to present our research objectives and secure input and assistance.

UMES' Agribusiness Advisory Council

UMES' Agribusiness Advisory Council was reconstituted in 2004 to focus primarily on the new Ph.D. program in Food Science and Technology. During Spring 2008 the Council is again being reconstituted to reflect all the disciplines and research areas represented within the School of Agricultural and Natural Sciences and the Experiment Station.

**2(B). A brief statement of the process that was used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**

**1. Methods for collecting Stakeholder Input**

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public

**Brief Explanation**



## Extension Advisory Councils

County Extension Advisory Councils (EAC) meet on a regular basis in most of Maryland's counties and Baltimore City. The EAC's provide insight into and support for the local extension programming. The Regional Extension Directors meet with the EAC's for the counties in each region on a regular basis. In addition the Assistant Directors/Program Leaders and Associate Director occasionally meet with these EACs. Maryland Extension Advisory Council (MEAC) did not meet during the reporting period.

## County Listening Sessions

As new positions are considered at the county level, local listening sessions are held. This input is collected and used in the development of new responsibilities and directions for programs and positions based upon this grassroots input.

## Governors Agriculture Commission Public Forums

In 2004 the Agriculture Commission held 6 public forums in the state to solicit public input into the future of agriculture. In 2005 a Governor's Agriculture Forum was held to establish priorities for the state as well as provide guidance for state agencies and local municipalities.

## One on One visits with key stakeholders in community

Networking at statewide annual events, such as MD Farm Bureau Convention, Maryland Association of Soil Conservation District meeting, Future Harvest CASA Conference and Maryland Agriculture Commission, USDA -NRCS technical committee and Chesapeake Bay Commission meetings.

## Customer Satisfaction Surveys

In 2008, MCE began a process of conducting Customer Satisfaction Surveys. For 2008, one county was utilized as a pilot county to test the survey instrumentation, methodology and protocol. Results from this pilot county will be used in formulating a systematic survey approach for all counties in the state. The preliminary plan is to assess counties every five years. Data from these surveys will be utilized to assess MCE performance in addressing clientele needs. Adjustments to programming delivery will be made based upon the results obtained through these surveys.

### UMES

#### Stakeholder Advisory Council

The Stakeholder Advisory Council meets biannually to provide input to the unit.

#### Somerset County Soil Conservation District (SCSCD)

This meets regularly and assist us in securing various stakeholder audiences and input .

#### UMES' Agribusiness Advisory Council

UMES' Agribusiness Advisory Council is currently being reconstituted to be able to provide a advice/input that will benefit more areas within he school.

### 3. A statement of how the input was considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

**Brief Explanation**

Setting program priorities for our new strategic plan 2006-2011.

Determining statewide staffing plans for MCE; and developing new job descriptions for county and regional extension positions.

Developing new initiatives for the College and MCE.

Allocating financial resources, primarily operating expenses for program and curriculum development.

**Brief Explanation of what you learned from your Stakeholders**

MCE is still vital to the AGNR community in the State.

The AGNR community requested MCE spend more time in community resource and economic development. Primarily providing support for the small/beginning and young farmers. Topics included business and market plan development along with intergenerational transfer of assets; niche markets, home-based businesses, rural-urban interface issues, and agricultural awareness.

Enhanced support for the AGNR producers of the State in the way of plant clinics and diagnostics. As a result, MCE developed a plan and developed a new Plant Protection Center to include not only plant clinics and diagnostic support, but to also include academic programs and internships for students.

**IV. Expenditure Summary**

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)			
Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
3093861	1110639	4146936	1230694

2. Totaled Actual dollars from Planned Programs Inputs				
	Extension		Research	
	Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
<b>Actual Formula</b>	3093861	1110640	4146936	1230694
<b>Actual Matching</b>	3093861	1110640	4146936	1230694
<b>Actual All Other</b>	0	0	0	0
<b>Total Actual Expended</b>	6187722	2221280	8293872	2461388

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years				
<b>Carryover</b>	0	0	0	0

**V. Planned Program Table of Content**

<b>S. NO.</b>	<b>PROGRAM NAME</b>
1	Economic Prosperity of Productive and Sustainable Food and Fiber Systems
2	Enhancing Environmental Stewardship and Maintaining a Balance Between Agriculture & the Environment
3	Quality of Life

**Program #1****V(A). Planned Program (Summary)****1. Name of the Planned Program**

Economic Prosperity of Productive and Sustainable Food and Fiber Systems

**V(B). Program Knowledge Area(s)****1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%	10%	10%	20%
123	Management and Sustainability of Forest Resources	10%	10%	10%	20%
205	Plant Management Systems	10%	10%	10%	20%
216	Integrated Pest Management Systems	15%	10%	10%	15%
311	Animal Diseases	5%	10%	10%	10%
601	Economics of Agricultural Production and Farm Management	10%	10%	10%	15%
602	Business Management, Finance, and Taxation	10%	10%	10%	0%
604	Marketing and Distribution Practices	5%	10%	10%	0%
608	Community Resource Planning and Development	10%	10%	10%	0%
801	Individual and Family Resource Management	10%	10%	10%	0%
	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**V(C). Planned Program (Inputs)****1. Actual amount of professional FTE/SYs expended this Program**

Year: 2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	40.0	6.0	20.0	3.0
<b>Actual</b>	35.0	6.0	20.0	3.0

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1392238	499788	1866122	553812
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1392238	499788	1866122	553812
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)****1. Brief description of the Activity**

## 1. IPM

Crops: Diagnostic and training publications; Research results from alternative control studies; List of the personnel at UMD that are trained in sustainable agriculture for distribution to organic and sustainable grower groups; New diagnostic abilities; New pest management programs for mid-Atlantic area and the N.E. United States.

Green industry: Short course and training seminars for industry personnel; Electronic dissemination of IPM information; Conduct field trials to evaluate low risk pesticides, biological control releases and augmentation, and alternative to chemical control methods; Conduct research on methods that reduce use of highly or moderately toxic pesticides; Pesticide safety use certification; Research in weed control strategies and disease control using bio-rational and bio-pesticides; Provide Plant Pest and Pathogen Assay and Diagnostic Facilities; Master Gardeners receive basic and advanced training; Extension faculty develop curriculum, resources and products.

## 2. Community Resource Development

Web sites; Fact sheets; Posters; Tours; County and regional workshops; Grant monies; New marketing ventures; New farmers' markets; Media releases

## 3. Biosecurity and Animal Health

In-service training programs, educational seminars and workshops, and training kits; Three regional in-service training programs for Extension & Research faculty (50-75 people); 50 training kits will be prepared for Extension and Research faculty (50-75 people); 5-10 educational seminars will be held for producers, allied industry personnel, and government workers (200 people).

## 4. Alternative Crops

Short course and training seminars for industry personnel; Conduct field trials to evaluate alternative crops; Evaluations for crop varieties, IPM, fertility, other production issues; Market investigation; 3 crop tours/twilights per year focusing on alternative crops and enterprises; Collaborate on 2 regional production and marketing conferences (MADMC, Future Harvest's Farming for Profit and Stewardship Conference); Develop 5 organic crop enterprise budgets; Research will be conducted in the areas of high tunnel crop production, organic and ethnic vegetable production, and pumpkin production; Maryland-developed alternative crop/enterprise information will be available on the MCE web site;

## 5. Pasture Management

Variety trial data annual bulletins; Financial analysis: Annual Dairy Financial Analysis of pasture farms; Fact sheets 2 revised and 3 new printed fact sheets; Website for Maryland and other researched-based bulletins, fact sheets, presentation, and information; Seminars and workshops; Pasture walks; Individual farm consultations; Ten revised and three new PowerPoint presentations; Three peer reviewed journal articles.

## 6. Family Financial Management

Work with Financial Security for Later Life and eXtension to identify and implement statewide educational needs; Facilitate Financial Security for Later Life and eXtension to partners and audiences; Conduct train-the-trainer programs such as Maryland Saves trainings, High School Financial Planning Program; Provide capacity building opportunities such as Personal Finance Seminar for Professionals for partners, educators, and volunteers.

## 2. Brief description of the target audience

1. IPM

Crops: Crop scouts; Certified Crop Advisors; Chemical reps; Industry personnel; Extension faculty; Master Gardeners; Farmers.

Green Industry: Arborist, landscape managers, professional ground managers, greenhouse growers, cut flower growers, homeowners, Master Gardeners; Agency personnel (MDA, MCE, USDA); Certified pesticide applicators in category III, IV, IV; Private pesticide applicators; Technicians; Undergraduate and Graduate students; General public (e.g. Master-gardeners); IPM consultants; Landscape architects; Community Gardeners; Builders and Developers; Municipalities; Federal, state & local agencies

2. Community Resource Development

Southern MD Agricultural Development Commission; MARBIDCO; Chesapeake Fields; Garrett-Preston Rural Development Association; Rural Development Center at UMES; Local Agricultural Development Specialists; Planning and Zoning Boards; Farmers; Forest Landowners; General public. Marketing Maryland Agricultural Commodities- -Farmers; producers; growers; grain marketing clubs; farmers markets; local economic development offices; mid-Atlantic Direct Marketing Association.

3. Bio-security and Animal Health

Farmers; youth; MDA; Agricultural industry; Small and Beginning farmers; Backyard livestock owners; Extension faculty.

4. Alternative Crops

Traditional farmers, people new to agriculture community, small and part time business owners, land owners; Technicians; Undergraduate and Graduate students; General public; Landscape architects; Members of specialty production groups and associations; Markets (the direct consumer or potential buyer of alternative crops); traditional farmers; small, beginning farmers.

5. Pasture Management

Individual landowners; agribusinesses; horse owners; dairy farmers; beef producers; sheep and goat producers; USDA conservationists.

6. Family Financial Management

Families; volunteers; educators; high school students; community development corporations; financial institutions; State Attorney Generals Office; Department of Social Services.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	14500	1600	750	1
2007	54277	1000	0	0

**2. Number of Patent Applications Submitted (Standard Research Output)**

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	1
2007 :	7

**Patents listed**

Sling for growing strawberries in high tunnels.

Methods of Making and Using Nutritional Compostitions.

Genetically Engineered Newcastle Disease Virus as an Oncolytic Agent, and Methods of Using Same.

Genetic Polymorphisms Associated with Body Fat.

Process for Rapid Anaerobic Digestion of Biomass Using Microbes and the Production of Biofuels Therefrom.

Activation of the Ornithine-Urea Cycle in Ruminant Gut Tissues to Detoxify Ammonia and Increase Local Urea Re-Cycling to the Rumen for Microbial Protein Synthesis.

Production of Novel Castledisease Virus Strains from cDNAs and Improved Live Attenuated Newcastle Disease Vaccines.

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>			
2007	25	105	130

**V(F). State Defined Outputs**

**Output Target**

**Output #1****Output Measure**

- 1. IPM: Fact sheets; short courses, field trials, curriculum, websites linked, grants awarded.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	65	69

**Output #2****Output Measure**

- 2. Community Resource Development: Publications; advisory committees, enterprises, relationships, laws, programs, curriculum

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	60	172

**Output #3****Output Measure**

- 3. Biosecurity and Animal Health: In-service training, training kits, seminars, publications, grants, presentations, websites linked.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	63	140

**Output #4****Output Measure**

- 4. Marketing Maryland Agriculture Commodities: Short courses, workshops, websites, fact sheets, grants, farmers markets, marketing plans

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	28	0

**Output #5****Output Measure**

- 5. Alternative Crops: Grants, in-service training, workshops, publications, field trials, new crops, enterprise budgets

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	32	35

**Output #6****Output Measure**

- 6. Pasture Management: Pasture walks, variety trials, in-service training, grants, publications, budgets, practices implemented, websites

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	60	57

**Output #7****Output Measure**

- 7. Family Financial Management: Workshops, seminars, publications, in-service training, volunteers, partnerships, new enterprises, grants.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	48	118



**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O No.</b>	<b>OUTCOME NAME</b>
1	1. IPM :Number of: IPM scouts and producers that can identify threshold level; pest management programs; implementing research based recommendations; certification in Pesticide Safety; field trails.<
2	2. Community Resource Development: Number of: business people, advisory groups, development agencies, rural leaders interested in developing ANR businesses and having access to knowledge.
3	3. Bio-security and Animal Health: Number of: educational seminars held for producers, allied industry personnel and government workers; training kits developed and distributed.
4	4. Marketing Maryland Agricultural Commodities: Number of: farm markets established; marketing plans developed; new cooperatives formed.
5	5. Alternative Crops: Number of: farmers showing an increased knowledge of alternative crops and enterprises; alternative crops being implemented; new businesses established.
6	6. Pasture Management: Number of: farmers adopting best management practices and increasing profitability; new variety trails; NRCS and SWCD personnel trained.
7	7. Family Financial Management: Number of: volunteers trained; new partnerships developed; new enterprises; people improving financial security.
8	Western Maryland Pasture-Based Meat Goat Performance Test: Number of programs, field trails and consultations.

**Outcome #1****1. Outcome Measures**

1. IPM :Number of: IPM scouts and producers that can identify threshold level; pest management programs; implementing research based recommendations; certification in Pesticide Safety; field trails.<

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	3000	1436

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

The greenhouse industry in Maryland is one of the fastest growing sections of the horticulture field. We have seen an increase of over 10 per cent over the last 2 years in the number of new greenhouse operations open in the state. Growers have expressed a strong need for current information on insect, disease and fertility problems with greenhouse crops.

**What has been done**

We developed a weekly IPM electronic IPM report that weekly goes out to 185 Maryland growers and growers from several east coast states. Growers activity participate providing input each week on what disease and insects problems are occur in their greenhouses. We publish diagnostic pictures and suggest IPM methods of control. The currently operating electronic IPM Alert System is based on integrating stakeholder participation using e-mail, electronic pictures, and the web to rapidly transfer information on pest activity and IPM information. This system provides an electronic means for sharing immediate alerts on insect and disease outbreaks, near real-time, precise lifecycle information, forecast, and other timely information between growers, IPM scouts, Extension professionals and researchers. Here is the breakdown of which states have growers receiving the electronic IPM report

Delaware 3  
 Pennsylvania 76  
 West Virginia - 1  
 Virginia 5  
 DC 2  
 New Jersey 4  
 New York 4  
 Vermont 2  
 Connecticut 2  
 Maine 2  
 New Hampshire 2  
 Rhode Island 2

**Results**

An electronic survey was conducted in December of 2007 of all of the participants in the IPM Alert program. Here are some of the questions and impacts

Questions and responses

1. Do the greenhouse reports help you to effectively identify pest insects, diseases, and or major weeds? 26 responded very much or much.
2. Do the greenhouse reports help you to diagnose plant problems? 25 responded very much or much importance.
3. As a result of the greenhouse reports are you selecting pesticides that are less toxic (ex. Caution vs. Warning or Danger label products) 10 responded moderately modifying, 6 responded very much importance.
4. As a result of the greenhouse reports are you more likely to use alternative control measures (such as oils, soaps, bio-rationals, biologicals, or cultural practices) compared to conventional pesticides? 3 responded moderately modified, 10 responded very much modified.
5. Are the color photos helping you recognize plant damaging insects and diseases and major weeds? 26 responded much or very much important.
6. Do the weekly greenhouse reports help you when selecting materials to use for pest control? 12 responded much to very much, 7 reported moderately important.
7. If you are using the greenhouse reports in some special way let us know.

responses

They help us to keep alert for problems other growers are currently experiencing. There may be issues we do not normally see and would not normally look specifically for. It is a constant learning tool that we really appreciate!

I photocopy and distribute to staff impacted by a certain report.

Plant clinic

Pass it through the newspaper.

I often use the information in the reports as part of the GMPRO weekly e-mail newsletter to make growers aware of insect/disease problems other growers are having.

Useful for teaching

Try to train employees in identification of pests and the damage they can cause.

Tech support for customers

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

#### Outcome #2

##### 1. Outcome Measures

2. Community Resource Development: Number of: business people, advisory groups, development agencies, rural leaders interested in developing ANR businesses and having access to knowledge.

##### 2. Associated Institution Types

- 1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	750	1572

##### 3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

**\*\*Note-**The Marketing measures are consolidated into this measure for this year.

Rural Maryland is rapidly changing with increase pressure for development and a major influx of new residents. Maryland AGNR businesses are under pressure to diversify and explore alternative income options to assist their businesses become more competitive and profitable.

Local land use ordinances, at times create a barrier to new and innovative business ventures for the AGNR community. Research and educational programs need to be developed to assist local policy makers make wise land use decisions that will assist AGNR businesses become more profitable in the future.

#### **What has been done**

Maryland Cooperative Extension has expanded its role in this area, by hiring a new AGNR Marketing Specialist and creating the 'Framework' for a new center entitled, Maryland Rural Economic Development Center. This center pulls upon existing extension and University resources to provide assistance in business and market plan development along with intergenerational transfer of assets (Estate Planning). In the future, functions will expand into policy related analysis and community resource development topics such as leadership development for local communities.

For now, The Maryland Cooperative Extension Marketing Program supports for farm, food and forestry enterprises through professional assistance in marketing and business development plans and programs. The Regional Extension Specialist for Agriculture and Natural Resource (AGNR) Marketing is charged with enhancing the economic prosperity of producers and businesses by encouraging entrepreneurship, developing new AGNR value-added enterprises, and identifying markets, with a focus on local markets, including but not limited to: Farmers markets, farm stores, road side stands, pick-your-own, local produce sections of big box stores, consumer supported agriculture, restaurant sales, internet sales, small retail stores and home deliveries.

The Regional Extension Specialist for AGNR- Maryland Cooperative Extension Marketing services a state-wide audience of agricultural and natural resources based entrepreneurs ranging from 'new farmers' to the needs of maturing agricultural businesses. This Specialist also provides one-on-one client assistance as well as seminars and networking opportunities designed to enhance the economic viability of all Maryland agriculture and natural resources-based enterprises.

The Marketing Specialist will seek to develop strong working relationships with other county agriculture economic development specialist, the Department of Business and Economic Development (DBED), the Maryland & Resource Based Industry Corporation (MARBIDCO), the Maryland Department of Agriculture (MDA), and USDA-Rural Development.

#### **Results**

As a result of the establishment of the MD Rural Economic Development Center, several new programs have been developed.

1)Curbside Consulting

This program provides one-on-one consultation for business development and market planning in an open-discussion, non-threatening situation. People are often hesitant to discuss their business ideas or ask questions about business development in front of a crowd. This program facilitate their business assessment and resulting follow-up support by allowing them to explore their ideas with a business and marketing development specialist.

This program is delivered by a variety of outlets:

1. Clients calling the Specialist with questions or to request information
- 2.. One day a month, determined by the county educator, with sign-up times within a county for scheduled meetings with interested clients. This county visit might also include a group marketing presentation and educational program.
3. The use of the Centra system to deliver consultation and support to counties that organize a sign-up day and schedule the consultation and/or marketing presentation electronically. Virtual office hours.

The Specialist has already provided one-on-one consultation on business assessment, business plan development, and marketing.

Phone support	4 clients	3 counties
Farm visits	5 clients	3 counties
Assistance to Agents	7 Agents	7 counties

Also provided one-one consultation and follow-up with three clients for the Maryland Agriculture and Resource-based Industries Development Corporation (MARBIDCO).

As a result, one specialty meat business has launched their initial marketing program. Another specialty foods producer has secured a line of credit to begin marketing their product.

Provided assistance in developing, writing and submitting two SARE Farmer-Grower grants for grant for \$10,000 each.

Participated in two agricultural economic development project- (1) Baltimore County Future of Agriculture and Policy Initiative and (2) Frederick County Dairy farmers initiative with Dairy Maid Processor to bottle local brand of milk.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
608	Community Resource Planning and Development
604	Marketing and Distribution Practices
602	Business Management, Finance, and Taxation
123	Management and Sustainability of Forest Resources

**Outcome #3**

**1. Outcome Measures**

3. Bio-security and Animal Health: Number of: educational seminars held for producers, allied industry personnel and government workers; training kits developed and distributed.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2007	75	109

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Recent events, including terrorist attacks and natural disasters (tornados), have heightened awareness of the need for effective emergency prevention, management and recovery strategies. Maryland Cooperative Extension is recognized by Emergency Management, and other, agencies as an organization with capabilities that are needed in this effort. Extension has access to diagnostic lab capacity and personnel to identify potential threats, local agricultural experts in the field and the ability to assist youth and families in the aftermath of disaster. Funding is becoming available for projects that address these issues.

Poultry production accounts for approximately 70% of the total economic value of agriculture in the Delmarva area. A disease outbreak such as Avian Influenza (AI) or exotic Newcastle disease in Delmarva's poultry would economically impact poultry growers and processors, and in the case of H5 or H7 AI, would present potential human health risks. In addition to commercial poultry production, there are a large number small non-commercial flocks raised in Maryland. Unlike commercial poultry growers, these individuals do not have access to biosecurity education programs that are provided by the poultry companies to their contract growers. A poor biosecurity program by these small flock producers could potentially place all Maryland poultry farms at risk for a disease outbreak.

**What has been done**

Program Activities: One of the key roles of the Center for Agrosecurity and Emergency Management is to bring together faculty, staff and partners in a collaborative environment to work together on issues including biosecurity, all-hazards emergency preparedness, mitigation, response and recovery for the agricultural community and the community as a whole. Outreach, education and communication are some of the most challenging aspects of emergency management and are areas in which Cooperative Extension excels. Funding is available to make this work possible, but our organization must have the contacts and relationships required to access them. The Center has helped to create an environment for Extension to demonstrate it's capacity and create, as well as compete for, new resources.

**Results**

The Center worked with the Governor's Office of Homeland Security in the previous Administration and competed with other agencies to obtain 100,000 dollars in law enforcement funding for agricultural outreach. The Department of Agriculture has decided to use these funds for other purposes, but they would not have been available for agriculture without the work of the Center.

A Poultry subcommittee of the Disaster Focus Team has come together to work on several projects.

--They obtained 15,000 dollars in Enhancement funds from the College to begin an eXtension Community of Practice on Avian Influenza. These funds have been leveraged to obtain 16,500 dollars in funding and 10,000 dollars in in-kind support from the Extension Disaster Education Network (EDEN) to continue this work. Sustainable funding for the project, in collaboration with eXtension, will be sought in the coming year.

--The group assisted the new Poultry Specialist in obtaining a 52,150 dollars CSREES Special Needs Grant to work on a Small Flock Biosecurity Education project and will be assisting her in carrying out this work. Small flocks have been identified as a serious threat, that could harbor disease that could affect the commercial industry.

--Collaboration with the Center (and the Poultry subcommittee) enabled South Dakota State University to obtain 57,000 dollars in CSREES funding for an EDEN Avian Influenza Preparedness and Response System project. Maryland is a partner and is contributing to this project.

The Center collaborated with Penn State to obtain 25,000 dollars in CSREES grant funding to co-sponsor the EDEN Animal Agrosecurity Conference, to explore in role of Extension and other agencies in emergency management.

--At the Conference the Center Co-Coordinator floated the concept of working together as a Northeast region on a grant projects and discussed developing Continuity of Operations educational materials and workbooks for agricultural producers. Penn State collaborated with Maryland, New Jersey, New York and Vermont and received 74,917 dollars in CSREES Special Needs Funding to develop the Ready Ag Disaster and Defense Preparedness Project. Maryland will be contributing to the Core program and will develop the Poultry section (in collaboration with the Poultry subcommittee).

The Center for Agrosecurity and Emergency Management was instrumental in obtaining 340,567 dollars in grant funding and 10,000 dollars in in-kind services for Agrosecurity work for the state of Maryland and beyond. MCE has also developed a Biosecurity Educational Program for Small Poultry Flock Owners. Some impacts have already been accomplished, while others will be accomplished in early 2008.

\* A grant to support this program was funded by USDA CSREES.

\* A minimum of 3 regional workshops for approximately 100-150 small flock producers, poultry and non-poultry extension professionals and volunteers will be conducted.

\* A biosecurity/flock health and management fact sheet and manual will be distributed in conjunction with regional workshops.

\* A biosecurity resource website targeted toward the issues of small flock owners will be designed.

\* A portion of this program can be implemented into the eXtension Community of Practice for Avian Influenza.

#### 4. Associated Knowledge Areas

KA Code	Knowledge Area
311	Animal Diseases

#### Outcome #4

##### 1. Outcome Measures

4. Marketing Maryland Agricultural Commodities: Number of: farm markets established; marketing plans developed; new cooperatives formed.

##### 2. Associated Institution Types

•1862 Extension

##### 3a. Outcome Type:

Change in Knowledge Outcome Measure

##### 3b. Quantitative Outcome

Year	Quantitative Target	Actual
2007	600	0

##### 3c. Qualitative Outcome or Impact Statement

**Issue (Who cares and Why)**

\*\*\*Note, this measure is consolidated into the CRD program as noted in earlier part of report\*\*\*

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
608	Community Resource Planning and Development

**Outcome #5**

**1. Outcome Measures**

5. Alternative Crops: Number of: farmers showing an increased knowledge of alternative crops and enterprises; alternative crops being implemented; new businesses established.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	300	857

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The majority of farms in St. Mary's County County, Maryland are considered small farms, with the average farm size of 62 acres and gross income of \$33,906.00. The majority of these farmers relied on tobacco as their chief source of income. In the year 2000, the state of Maryland initiated a tobacco buyout program which resulted in 86% of eligible Maryland producers exiting the tobacco industry. In addition, the general population base has increased by 37% in the last 15 years. The rural landscape is irrevocably changing, leaving new, beginning and transitioning small farmers searching for enterprises to sustain their small farms. Due to the increased demand for locally produced wine and wine grapes in Maryland, transitioning farmers expressed interest in raising grapes; however numerous questions arose as to the feasibility of the crop including growing techniques, profitability, risk assessment, labor requirements, and cash flow projections. An extension program was created to educate small farmers regarding the potential for grape production. A research vineyard was established to evaluate varieties and as a teaching tool. Numerous education events were conducted including twilight tours, workshops, on-farm demonstrations and individual site consultations. The extension program collaborated with the regional Agricultural Development Commission to develop a matching grant program for purchase of grape vines. Over 600 new or transitioning small farmers received information on grape growing. A grape growing association has been formed and 29 operators participated in the grape grant program with 12 new vineyards planted or planned for 2007-08. When asked to evaluate the overall quality of a 1 day Beginning Grower Workshop attended by 85 small farmers on a scale of 1-10 (1=not worth my time, 10-excellent meeting), participants responded with an average rating of 9.33. In addition, 98.3% of the respondents indicated a 4 or 5 rating using a 1-5 Likert scale when asked to rate the specific topics presented. Comments reported included 'the entire program was extremely helpful and educational,,' and, 'growing grapes is a very intensive process and involves many issues that I didn't even think of.'

**What has been done**



A wine grape research vineyard was established at the Upper Marlboro Experiment Station. The vineyard was comprised of 27 varieties. A volunteer vineyard team consisting of interested area producers, extension educators and specialists, and other interested organizations was formed to aid the care and management of the vineyard. The research vineyard also served as an excellent teaching and outreach tool as volunteers became involved in viticultural practices in the vineyard.

A joint collaboration was formed with the Southern Maryland Agricultural Commission to offer a matching grant program for purchase of vines. Extension developed a set of criterion for evaluation of each applicant, evaluated each applicant, conducted site visits, organized the vine order and provided the educational training component. The program helped to initiate and continues to support a regional Southern Maryland Grape Growers and Winery Association. This association works to promote the grape and wine industry in the region and serves as a networking and teaching opportunity.

Hosted and taught educational activities:

Twilight Tour (3), 1 day Beginning Grape Growers Workshop, Farm Walking Tours (5), 2 vineyard tours for policy makers,

Field visits and individual on-site consultations, and local/regional conferences.

Teaching Methods:

Numerous teaching methods were employed including conferences, workshops, twilight tours, demonstration tours, individual consultations, and field visits. New growers first received a 'getting started' list of with suggested references and literature to review. New growers were invited to participate in the work at the research vineyard as part of the volunteer vineyard team, where they received hands-on training and experience for the amount and type of worked involved. Program offerings are advertised through newsletters, newspapers, flyers and an email list. Farm walking tours of new area vineyards enabled growers to discuss issues regarding grape growing and to view techniques and varieties being used by other growers. New growers also received a site visit if requested to determine their site suitability.

## Results

The Extension program resulted on over 600 new or potential small growers receiving information regarding this new crop. Attendees not only received information but also hands-on training that is essential to beginning a vineyard. The matching grant program attracted 28 applicants over 2 years, of which 15 were approved. 12 of the 15 chose to plant vines. Many of the program participants were able to more effectively evaluate the work and dedication required to grow grapes after attending the MCE programs and decided against planting new vineyards. The growers were able to select appropriate varieties and rootstocks with the Extension assistance. The research vineyard provided essential information to grower's on which variety to select (or not select) and growing techniques to use. The program also was successful in dispelling any 'romanticized' notion of grape growing and ensured new growers understood the labor requirements and financial risks involved. As a result of workshops and on-farm tours, local policy makers are more informed of the needs of new grape growers and have dedicated \$500,000.00 in funds for the development of a new local winery cooperative.

Impact Statement:

The Beginning grape growing program resulted in 26 acres of new grape production in the region, with interest in more in future years. Over 600 new or potential growers received information on grape production through a variety of formal and non-formal teaching methods. New growers have the information need to start a vineyard including for variety selection, vineyard establishment, and pest management. The Southern Maryland Grape Growers and Winery Association is actively meeting and is in the process of creating a winery cooperative for members.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
123	Management and Sustainability of Forest Resources

## Outcome #6

### 1. Outcome Measures

6. Pasture Management: Number of: farmers adopting best management practices and increasing profitability; new variety trails; NRCS and SWCD personnel trained.

### 2. Associated Institution Types

•1862 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	1500	1223

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Nearly one third of the state's milk supply is from Washington County in addition we rank third in beef cattle and sixth in sheep. Our producers strive to produce a high-quality product in an ever increasing competitive market. Urban sprawl leads to high land values placing added pressures for a decreasing farmland base, increase traffic on county roads, and increased scrutiny on environmental issues such as water and air quality. To compete with the large farms being constructed in the mid-west and west, our farmers must become efficient in other ways - reduced labor cost, reduced feed cost and increased revenues from value-added products

**What has been done**

Organized and taught three county dairy and livestock pasture walks. Cooperated with S. Fultz to establish a MD Pasture Walk schedule to distribute to Educators in MD, WV and PA and as well as post on county website. Organized and taught six management workshops where forage/pasture management was the sole topic or an integrated topic. Utilized results of applied research and farm demonstrations to prepare teaching materials for seminars, pasture walks, farm consultations, newsletter articles, and personal column.

Continued work on the cool season perennial grass, annual ryegrass, and Italian ryegrass variety plots that were established September 2006 at WMREC to compare yields, persistence, sward density, disease resistance and potential livestock preferences of grass species and varieties

**Results**

Eighty dairy and livestock producers from the Tri-State area participated in pasture walks through which they learned improved management techniques for selecting and implementing alternatives in forage production and feed management systems. Two farms have entered into the grant funded program to convert a total of 120 acres of crop land into pasture. Each farm was provided with seeding recommendations and both have planted their acreage and anticipate pasturing it in the spring of 2008. I have consulted with each in reference to paddock layout and will continue to do so as the management system evolves. I will also work with each producer to host a pasture walk in 2008 in order to extend our efforts.

In addition fourteen small and part-time farmers learned new pasture management techniques through an onsite pasture management workshop at the WMREC grass variety plots. Evaluations indicated an increase in knowledge of identifying different grass species. I also have made three farm consultation visit as a result of attending the seminar. These resulted in producers renovating their pastures which will provide additional forage and reduce impact on the environment by mitigating run off.

Additionally, seventy-six small and part-time farmers from four states learned new forage/pasture management techniques as a part of five small ruminant workshops. Evaluations indicated an increase in knowledge of integrating pasture management into their feeding programs.

Finally, fourteen operations requested on site visits where their pastures were evaluated and recommendations for improvement made. Upon follow up, all producers indicated renovating their pastures based on the outcome of the site visit.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
205	Plant Management Systems
102	Soil, Plant, Water, Nutrient Relationships
601	Economics of Agricultural Production and Farm Management

**Outcome #7**

**1. Outcome Measures**

7. Family Financial Management: Number of: volunteers trained; new partnerships developed; new enterprises; people improving financial security.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	400	748

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Many individuals and families in the United States are experiencing financial challenges. Evidence includes low financial literacy, consumer indebtedness such as high credit card debts (\$9,312 in 2004), negative savings rate (-0.5% in 2005), low financial assets (only 23% of households have 3 months of household income for emergency funds), inappropriate health insurance coverage (40 millions are uninsured), insufficient retirement preparation, and high bankruptcy filings (1.2 to 2.1 millions in the past 5 years).

**What has been done**

In 2007, The Maryland Saves 'Roll in the Dough' Saving Campaign, which ran from February 25 through March 10 to promote saving habits with a lucky drawing for participating savers, announced its results today. More than 190 locations and branches of the eight local financial institutions across Maryland participated in the campaign. Eight Maryland financial institutions including 1st Mariner Bank, Aberdeen Proving Ground Federal Credit Union, BB&T, The Columbia Bank, The Harbor Bank of Maryland, M&T Bank and Municipal Employees Credit Union joined together to promote the 'Roll in the Dough' program.

**Results**

Total number of participants: 748; Total number of people joining Maryland Saves during the campaign: 334; Total number of new saving-type account opened: 176; Total amount saved (added deposit): \$2,075,449.45

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
801	Individual and Family Resource Management

**Outcome #8****1. Outcome Measures**

Western Maryland Pasture-Based Meat Goat Performance Test: Number of programs, field trails and consultations.

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	{No Data Entered}	384

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Genetic improvement is vital to the success of any agricultural industry, yet the meat goat industry lags behind other animal industries in the use of performance data and other genetic technologies. A central performance test is where animals from different herds are brought to one central location where performance is recorded. The rationale is that observed differences are more likely due to genetic differences, which will be passed onto offspring, rather than environmental differences, which will not be passed onto offspring. The goal of a central performance test is to identify genetic differences among animals.

**What has been done**

Each year, up to 50 male goats are consigned to the Western Maryland Meat Goat Pasture-Based Performance Test. While on the test, the goats are evaluated for growth performance, carcass merit, and parasite resistance. The FAMACHA system is used to monitor and control internal parasites in the goats. The top performing goats are sold via private treaty.

**Results**

The Western Maryland Pasture-Based Meat Goat Performance Test is only one of three pastured-based performance tests for small ruminants in the U.S. It is one of three tests sanctioned by the American Kiko Goat Association, which emphasizes performance to its members. As a result of the Maryland test, a pasture-based meat goat test was started by Oklahoma State University in 2007. Each year, 35-50 goats complete the test. Consigners have represented 7 states. The FAMACHA system has proven to be an effective method for monitoring and controlling internal parasites in goats. The results of the test are shared at scientific meetings.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
205	Plant Management Systems
601	Economics of Agricultural Production and Farm Management
311	Animal Diseases

**V(H). Planned Program (External Factors)****External factors which affected outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Urban sprawl)

**Brief Explanation**

Most goals were met or exceeded. However, due to the newly established MD Rural Economic Development Center within MCE, it was decided to consolidate the CRD and Marketing reporting functions within this annual report.

**V(I). Planned Program (Evaluation Studies and Data Collection)****1. Evaluation Studies Planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Other (Listening sessions)

**Evaluation Results**

MCE is in the process of hiring a new evaluation specialist to assist in evaluating overall program impacts statewide. For now individual program impacts are captured via evaluations during programs or as follow-up to program events. Basically pre and post tests and 1-2 year follow-up surveys to measure behavioral changes.

#### Family Financial Management:

The annual Personal Finance Seminar took place over a 3-day period in May 2007 for over 100 financial professionals.

An end-of-seminar evaluation was conducted at the end of training. Participants found the training was worth attending (N=4.93) on a Likert scale of 5= yes, very much; 1= no, not at all. All respondents (100%) felt that the training dealt with important needs for them personally, 100% for them professionally, and 100 % for their clientele. Most of participants (88%) responded that they would personally use the information from training and 83% responded that they will use the information to make changes in the way to counsel and educate their customers/clients. Behavioral changes include set financial goals, develop a net worth statement, develop a budget, organize records, reduce debt, increase savings, improve insurance coverage, and others.

#### **Key Items of Evaluation**

**Program #2**

**V(A). Planned Program (Summary)**

**1. Name of the Planned Program**

Enhancing Environmental Stewardship and Maintaining a Balance Between Agriculture & the Environment

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	10%	10%	10%	0%
111	Conservation and Efficient Use of Water	15%	10%	10%	10%
112	Watershed Protection and Management	15%	10%	10%	20%
131	Alternative Uses of Land	10%	10%	10%	15%
133	Pollution Prevention and Mitigation	15%	10%	10%	10%
205	Plant Management Systems	15%	10%	10%	25%
216	Integrated Pest Management Systems	5%	10%	10%	20%
403	Waste Disposal, Recycling, and Reuse	5%	10%	10%	0%
405	Drainage and Irrigation Systems and Facilities	5%	10%	10%	0%
608	Community Resource Planning and Development	5%	10%	10%	0%
	<b>Total</b>	100%	100%	100%	100%

**V(C). Planned Program (Inputs)**

**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	30.0	1.0	20.0	2.0
<b>Actual</b>	39.0	2.0	11.0	2.0

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
464079	166596	622040	184604
1862 Matching	1890 Matching	1862 Matching	1890 Matching
464079	166596	622040	184604
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

### 1. Land Use

Create an internal Collaboration for Land Use Education (CLUE) website to provide information on land use, smart growth, and coastal communities; Develop educational brochures on sprawl reduction planning policies; Conduct four land use conferences to educate on development options such as smart growth, safe growth, neo-traditional development, and new urbanism; Create a local exchange program to allow local officials to exchange dialogue with neighboring jurisdictions and communities.

### 2. Water and Nutrient Management (Green Industry)

Grower certification training, to write NM plans; Applicator (voucher) training for growers; Web-based and face-to-face courses for professionals and undergraduate students; Fact sheets, trade and peer-reviewed journal publications. Energy Efficiency & Composting (Green Industry)-

Short course and training seminars for industry personnel; Conduct field research in alternative fuel sources, energy saving techniques and recycling of green waste products; Trade and peer-reviewed journal publications

### 3. Nutrient and Water Management (Residential)

Develop curriculum and resources (fact sheets – printed & on-line, self diagnostic web pages); Conduct workshops, meetings, seminars, and classes such as: Weekly plant clinics, Master Gardener training, Bay-Wise training for Master Gardeners and Level II training,; Train volunteers and HGIC Phone Consultants; Partner with public agencies.

### 4. Nutrient Management (Commercial)

Conduct training sessions: Farmer Training and Certification, Fundamentals of Nutrient Management, and continuing education sessions; Publications on soils, soil fertility, nutrient management planning, record keeping, and annual compliance reporting.

### 5. Waste Management

Biosolids - Three-year report on nutrients from near the trenches. Field day for MDE, DNR, and industry. Thesis on nitrogen fate and transport in the near-trench environment.

Poultry Litter Stockpiles - Journal article and fact sheet; Regional meeting to describe stockpile information; Research project initiated on environmental and economic costs and benefits of utilizing various types of pads beneath stockpiles.

Compost – Train 25 producers at a Better Composting School; Conduct a one-day poultry mortality composting course (Approx 50/year)

Energy – Develop a new set of cost data for ordinary operations associated with waste management; Develop a thorough evaluation of waste-derived energy opportunities.

### 6. Coastal, Chesapeake Bay & Water Resources

Urban Nutrient Management - Annual one-day course for lawn care companies and grounds managers; Two half-day courses for lawn care technicians-one section taught in Spanish;

Wells and Septics – Develop a Master Well Owners Network program that produces a network of trained volunteers to promoting the proper construction and maintenance of private water systems.

### 7. Management & Sustainability of Forest Resources

Workshops, short courses, correspondence courses, and seminars, as well as field days to share research results; Volunteer training opportunities will be a critical part of certain programs; Curriculum, publications, notebooks, media releases, CD's, websites, and videos will be developed.

## 2. Brief description of the target audience

1.Land Use: Extension faculty; elected officials; planning and zoning officials; homeowners; MD Department of Planning; MD Department of Agriculture; MD Department of Environment; Tributary Strategy Teams; NGO's; landowners; farmers

2.Water and Nutrient Management (Green Industry): Field, container-nursery, greenhouse and field producers; Agency personnel (MDA, MCE, NRCS and SCD); Certified nutrient management professionals and growers throughout the NE region; Irrigation, IPM and Interiorscape Industry Professionals; General public (e.g. Master-gardeners); Other State and National agencies (MDE, EPA, USDA); Policy-makers.Energy Efficiency & Composting (Green Industry): Arborist, landscape managers, professional ground managers, greenhouse growers,homeowners, Master Gardeners; Agency personnel (MDA, MDE, USDA); Technicians; General public (e.g. Master-gardeners)

3.Nutrient and Water Management (Residential): Master Gardeners, Residents, Gardeners, Community Gardeners, Builders and Developers, Real Estate Agents, Municipalities, Federal, state & local agencies, Private and non-profit organizations, Green Industry, Outdoor Education Centers.

4.Nutrient Management (Commercial):Farmers trained to write their own plans, private industry consultants trained to write plans, and state agencies professional updated on progress of plans and computer programs to support program.

5.Waste Management: MD Department of Environment; MD Department of Agriculture; government officials; EPA; MD Department of Natural Resources; Extension faculty; Agricultureproducers; Poultry industry.

6.Coastal, Chesapeake Bay and Water Resources:Homeowners; Master Gardeners; Elected officials; Extension faculty; MD Department of Environment; Farmers; EPA; MDA; Tributary Strategy Teams.

7.Management & Sustainability of Forest Resources: Foresters, wildlife biologists, forest landowners, farmers, forest industry, forestry associations, master gardeners, extension faculty.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	17720	118650	0	0
2007	18077	14580	0	0

**2. Number of Patent Applications Submitted (Standard Research Output)**

**Patent Applications Submitted**

<b>Year</b>	<b>Target</b>
<b>Plan:</b>	1
2007 :	5

**Patents listed**

- Synthetic Iron Oxides and Their Use As An Indicator of Reduction in Soils (IRIS).
- Recovering Metals from Soil.
- Methods for Modulating Apical Bud Development in a Plant.
- Bacterial Effects on Metal Accumulation by Plants.
- Recovering Metals from Soil.



**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>			
2007	7	75	82

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- 5. Nutrient Management (Commercial)-Programs, grants, in-service training

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	35	85

**Output #2**

**Output Measure**

- 6. Waste Management-Grants; Programs, publications, in-service training

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	30	0

**Output #3**

**Output Measure**

- 7. Coastal, Chesapeake Bay & Water Resources-Short courses, in-service, volunteers, relationships, policy.

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	125	0

**Output #4**

**Output Measure**

- 8. Management & Sustainability of Forest Resources-Publications, workshops, grants, plans

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	75	66

**Output #5**

**Output Measure**

- 4. Nutrient and Water Management (Residential)-Programs, publications, volunteers; grants, partners, technology

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	350	472

**Output #6**

**Output Measure**

- 3. Water and Nutrient Management (Green Industry)-Publications, short courses, in-service

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	30	38

**Output #7**

**Output Measure**

- 2. Energy Efficiency & Composting (Green Industry)-Short courses, training, grants, publications

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	18	0

**Output #8**

**Output Measure**

- 1. Land Use: Publications; Partnerships, advisory committees, laws, Curriculum, Websites, Programs

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	20	20

**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O No.</b>	<b>OUTCOME NAME</b>
1	1. Land Use: Number of: Communities integrating MCE information for land use decisions and improved growth management concepts; Publications developed and used to make land use decisions; Regional collaborations
2	2. Energy Efficiency: Number of: Horticulturists who understand energy saving and composting techniques; Homeowners and greenhouses adopting energy saving & green methods; Businesses using energy efficient equipment
3	3. Water and Nutrient Management: Number of: Growers incorporating BMP's into management plans; Programs to improve water quality and nutrient management; Growers using information for changes
4	4. Nutrient & Water Management (Residential): Number of: Citizens adopt practices of landscape ecology and understand the relationship among pesticides, poor septic systems, & environmental health.
5	5. Nutrient Management (commercial): Number of: producers implement nutrient management plans; plans written; producers relate nutrient management to water quality; advisors trained in plan writing.
6	6. Waste Management: Number of: Policy makers & farmers understand the scientific issues of land applied poultry litter and poultry stockpiles; Policy makers access MCE information.
7	7. Coastal, Chesapeake Bay: Number of: Lawn care companies report fertilizer use and eliminate P from maintenance: Adoption of composting; water wells tested; septic tanks improved.
8	8. Forest Resources: Number of forest landowners gain knowledge of forest stewardship and practices, join forests associations, understand wildlife damage control measures and implement in plans.

**Outcome #1****1. Outcome Measures**

1. Land Use: Number of: Communities integrating MCE information for land use decisions and improved growth management concepts; Publications developed and used to make land use decisions; Regional collaborations

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	300	225

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

As communities throughout Maryland and the Chesapeake region face rapid growth and land development pressures, they must address issues such as water management (supply, quality, stormwater), development patterns (sprawl, traditional neighborhoods, Low Impact Development (LID), working lands preservation), climate change, land cover change, community character, and economic diversity. The University of Maryland and Maryland Cooperative Extension collectively possess expertise in all these areas, and it is important to make this expertise available to communities in Maryland that want and need assistance in addressing these complex but interrelated environmental and land use challenges.

To place the University of Maryland and Maryland Cooperative Extension at the forefront of 21st Century education and outreach programs for community needs, our capacity must include a focus on land use issues and natural resources management, as well as a diverse and innovative partnership. Maryland Sea Grant's Coastal Communities and Economies program, working with the University's Collaborative for Land Use Education (CLUE) network, has focused on addressing water quality issues, land use, and planning. The CLUE network, comprised of an interdisciplinary group of faculty within various UMD colleges and centers, offers a variety of expertise and serves an important role in bringing together university resources and interests to assist local and state governments and to provide science-based information to local decision makers and staff. At the same time, Extension can play a role in 'educational organizing that develops civic leadership skills and capacities, and builds respectful, reciprocal relationships between universities and communities through concrete public work initiatives and projects.'

**What has been done**

As state agencies strive to provide information and resources on planning issues for local governments, the demand for education and assistance services on the range of topics outlined above often exceeds the state's capacity to provide it. This project will create a process to enhance and develop partnerships among various state agencies and a diverse group of University of Maryland schools, centers, and programs (See Project Team figure). The process will shape a coordinated and strategic approach to the challenges that now face local communities and would clarify specific roles and projects for Extension and/or the CLUE network. This partnership-building process will actively identify mutually beneficial and tangible areas for collaboration. The process proposed here will include the following components: Partnership knowledge and program development-envisioned partnerships

**Results**

MCE's Land Use Focus Team has morphed into the CLUE: Collaborative for Land Use Education network, which is an initiative facilitated through Maryland Sea Grant Extension since 2005 and includes a variety of University of Maryland faculty and centers. [www.arec.umd.edu/clue](http://www.arec.umd.edu/clue)

Since this is a relatively new program for MCE we have had limited results, however we did hold a regional workshop for county administrators and planners in the Western part of the state, where approximately 50 attended.

During the upcoming years, the following are our proposed outcomes:

- Improve agency performance and effective outreach to communities by enhancing collaboration among CLUE partners, state agencies and other outreach providers
- Make the CLUE Network and individual partners part of a visible Extension program for communities in need of assistance on planning and natural resource protection.
- Change the policy framework in which decisions at the local level are made. Provide a more inclusive and better informed citizenry to positively impact local land use decision making processes.
- Share project success and lesson learned with university colleagues through case studies, publications, and conference presentations. (By late 2008, at least two case studies involving the CLUE Network and state agency collaboration in specific projects would be developed for academic review.)

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
608	Community Resource Planning and Development
131	Alternative Uses of Land

**Outcome #2**

**1. Outcome Measures**

2. Energy Efficiency: Number of: Horticulturists who understand energy saving and composting techniques; Homeowners and greenhouses adopting energy saving & green methods; Businesses using energy efficient equipment

**2. Associated Institution Types**

- 1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	500	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

Not a reported program accomplishment as listed. Program results are consolidated in with nutrient management and water conservation of the green industry.

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water

**Outcome #3**

**1. Outcome Measures**

3. Water and Nutrient Management: Number of: Growers incorporating BMP's into management plans; Programs to improve water quality and nutrient management; Growers using information for changes

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	200	240

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

The MD Water Quality Improvement Act of 1998 requires MD farmers as well as green industry businesses develop and follow nutrient management plans that are approved by the State of MD. The intent of these nutrient management plans are to improve water quality of the Chesapeake Bay and it's tributaries.

**What has been done**

As a result of the MD. Water Quality Improvement Act of 1998, MCE has developed numerous approaches to assist the green industry comply with the law through educational programs. A team of MCE faculty joined together to develop a solid educational program. This team consists of an Agricultural engineer, a departmental horticultural specialists and an AGNR regional horticulture specialist.

**Results**

**Nutrient Management Programming**

The Nutrient and Irrigation Applicators Voucher Program was designed to train those employees in the industry to apply water and nutrients according to best management practices. Those nurseries with over 10 acres of growing bed area without a certified planning consultant or operator were required to have at least one staff attend this voucher program and be credited. This three-hour program covers the essentials of soils and substrates, irrigation and nutrient best practices, and has been critically acclaimed by industry leaders. Over 50 applicators have been trained in three workshops in 2007, with vouchers issued by the MDA.

**Nutrient Management Plan Writing Certification**

The Maryland Department of Agriculture requires Nutrient Management Plans for all industries utilizing nutrients. Plans must be signed off by a certified consultant. The process and testing for consultant certification is largely agronomic based. This leaves the nursery industry little to go by when writing plans for nursery systems. Since 2005, several face-to-face workshop series were, to train small (underserved) growers to become certified to write their own plans. Over the past two years, over 30 growers have been successfully trained by the team, certified by the MDA.

**PSLC 489 Principles of Water and Nutrient Management**

As an outcome of the distance learning course developed in 2001, the team developed a new course in 2005, specifically for students and new growers in the industry. This 16-week, 4-credit course is entitled 'Principles of Water and Nutrient Management' and provides learners with a comprehensive, science-based 400-level course. By allowing growers to take this college class (originally delivered using WebCT and now Moodle) for certification purposes, growers have the opportunity to refresh or learn up-to-date information, by accessing the class materials at home over the internet. Classes then meet face-to-face at the end of each module for 3-4 hours, to conduct hands-on assignments, ask questions and discuss the content provided with the instructors.

Each program has satisfied CEU or Voucher credits required by MDA for regulations under the Maryland Water Quality Initiative Act. The Best Management Practices taught are typically well received and implemented by most growers. While no empirical data has been collected because of lack of funding, it is theorized that these methods can potentially save hundreds of tons of N and P entering the Chesapeake Bay watersheds.

**4. Associated Knowledge Areas**

<b>KA Code</b>	<b>Knowledge Area</b>
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water
405	Drainage and Irrigation Systems and Facilities

**Outcome #4****1. Outcome Measures**

4. Nutrient & Water Management (Residential): Number of: Citizens adopt practices of landscape ecology and understand the relationship among pesticides, poor septic systems, & environmental health.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

<b>Year</b>	<b>Quantitative Target</b>	<b>Actual</b>
2007	5100	3359

**3c. Qualitative Outcome or Impact Statement**

### Issue (Who cares and Why)

Urban and suburban sprawl has led to the conversion of thousands of acres of native landscape into home lawns and gardens. These lawns and gardens have been developed using sometimes antiquated concepts and techniques that were developed two or more centuries ago. Most residents, planners, and developers do not recognize the urban and suburban landscape as part of the greater ecosystem, and they have generally failed to incorporate environmental and ecological concepts into their landscape plans. This failure has led to the continued degradation of soil and water quality. Also, landscape plantings continue to contribute exotic and sometimes invasive plant species to the ecosystem. Because these plantings generally lack diversity and rely too heavily on mowed turf as a ground cover, they fail to attract desirable wildlife that can add balance to a damaged ecosystem. All told, we have been left with a very unhealthy and unsustainable landscape. Also, studies have shown that both ground and surface waters contain high levels of the nutrients nitrogen and phosphorus (N and P), sediments and toxic contaminants, which adversely affect water quality, aquatic organisms, fisheries, and human health. New educational strategies are needed that will first change our view of the urban and suburban landscape, and second show how the environmental and ecological concepts of the late 20th and early 21st century can practically be used to transform these landscapes into a healthy ecosystem.

### What has been done

In 2007, MCE educators developed a new Bay-Wise brochure for county programs; developed and wrote a new chapter for the Master Gardener training manual on water management; updated Bay-Wise curriculum to include information on rain gardens; updated 6 newly developed web pages onto the University's server; conducted 45 workshops, meetings, seminars, and/or classes; served on the state urban and community forestry council to award \$24,240 in grants to community groups; maintained on-site native woody plant demonstration site; trained 271 volunteers; facilitated groups in decision making efforts; partnered with appropriate agencies like MDA, MDE, DNR, and EPA to promote environmental stewardship and assess effects of programming.

### Results

One hundred and forty-six new and returning Master Gardeners learned the importance of water quality and how it can be maintained and improved during eight separate Bay-Wise Advanced Trainings in 2007. In end of class evaluations, 88% of Bay-Wise Master Gardeners said they would incorporate IPM, rain gardens, water-insoluble fertilizers and/or other environmentally sound horticultural practices into their landscape maintenance plans. Many of those who said they do not plan to change practices as a result of the class explained that they were already using those practices. Twenty-eight Bay-Wise Master Gardeners had their home landscapes certified as ecologically sound demonstration sites in their own neighborhoods, and pledged to encourage others to do the same, as a result of their training this year.

In addition to the Bay-Wise program, 49 Master Gardeners learned how to key out woody plants or learned the care and identification of over 60 shade trees during one of two nine-hour advanced training sessions. Seventy-six Master Gardener interns learned about native plants, botany, lawn care and an intro to Bay-Wise landscape management during part of their Master Gardener intern training.

Three hundred and forty-seven Maryland citizens learned how to integrate IPM and other environmentally sound horticultural practices into their lawn and garden maintenance plans. They also learned the concept of landscape ecology. In post-class evaluations, 93% respondents said they would plan, develop and maintain ecologically sound landscapes that increase plant diversity, improve water and soil quality, and provide habitat for desirable wildlife as a result of what they learned.

Forty-six hundred and twenty-eight Montgomery County fourth graders discovered the connections between water quality, agriculture and their environment during their field day at Close Encounters with Agriculture. One hundred youth enrolled in Montgomery County's adventures in science program and Baltimore City's Mary Our Queen Cathedral School also learned similar facts and promised to reduce the pollution load within their homes.

Twenty-eight community groups around the state received \$ 24,240 in Maryland Urban & Community Forestry grants to promote and plant trees on public lands.

Educators teamed with the Chesapeake Conservation Landscaping Council to host the 'Turning a New Leaf' conference in Annandale in November. The conference promoted cutting edge sustainable landscaping practices for the 260 landscape professionals and others that attended. One of the participants commented that they appreciated the 'new energy and information not available at other conferences.'

Leaders from a MCE administration met to discuss the pros and cons of instituting a Master Naturalist program in Maryland. The group decided that it would be a worthwhile resource for the state. The next step in this process is to decide the details of how to organize such a program and hire a Master Naturalist coordinator.

The Bay-Wise brochure and chapter in the new Master Gardener Manual will be printed in 2008.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
112	Watershed Protection and Management
403	Waste Disposal, Recycling, and Reuse

**Outcome #5****1. Outcome Measures**

5. Nutrient Management (commercial): Number of: producers implement nutrient management plans; plans written; producers relate nutrient management to water quality; advisors trained in plan writing.

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	5000	3760

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Maryland's Nutrient Management Program was developed by the MCE in cooperation with the Maryland Department of Agriculture. This program was a result of Maryland's 1998 Water Quality Improvement Act. This act requires farmers to have an 'N' and 'P' based nutrient management plan on their farm. MCE trains people how to write a nutrient management plan as well as training recently certified Nutrient Management Consultants on program and research updates on components of a nutrient management plan. The majority of recently certified consultants have little or no experience in nutrient management planning. This is the only program of its kind in the State of Maryland.

**What has been done**

Consultants are instructed in the entire nutrient management planning process. They are given instructions and written information on required plan content established by MDA: potential cost-share resources, data collection, soil and manure sampling and analyses, PSI, nutrient recommendations and the development of recommendations using computer software, plan delivery, and follow-up. Technical information material is provided for manure spreader calibration, the pre-sidedress soil nitrate test (PSNT), manure quantity generation, and record-keeping. Consultants are provided with information material that they can give to their clients to help them better understand nutrient management and the planning process. Sources of equipment and supplies that may be needed to develop plans are provided. Finally, consultants are introduced to NuManMD nutrient management software and guided through its functions by presentation of an instructional scenario.

**Results**



Work continued in enrolling new agricultural businesses in the Nutrient Management program during 2007, with a 2007 total number of over 500 nutrient management plans written by MCE advisors on over 32,000 acres and over 4,000 updated plans were written for 296,000 acres. All of the agricultural businesses were provided a written nutrient management plan with one-on-one technical service provided by MCE Nutrient Management Advisors.

Thirty-five clientele, representing agricultural business, nutrient management consultants & advisors, and government agencies, received six hours of classroom instruction in advanced Phosphorous nutrient management. In addition, 717 farmers, agricultural business consultants and government advisors were instructed in basic soil sciences, animal waste and sludge management, and the implications of the 1998 Maryland Water Quality Act at 31 continuing education workshops. MCE state & regional specialists and county agents provided basic and advanced training programs.

County agents taught 48 nutrient management voucher programs to 1,348 farmers.

Pre-sidedress nitrate testing (PSNT) is an in-season soil nitrate evaluation performed on corn crops to determine if additional nitrogen applications are needed during the growing season. The PSNT consistently prevents over application of nitrogen to Maryland fields, helping to prevent eutrophication of waterways while conserving producers' financial resources. In 2007 Maryland Cooperative Extension nutrient management advisors performed the PSNT on over 18,200 acres for 114 producers. Because of participation in the PSNT program, the estimated reduction of nitrogen applied to Maryland cornfields amounted to over 498,000 pounds or 27 pounds per acre. In addition, Maryland Cooperative Extension advisors performed 97 yield checks and 47 manure spreader calibrations.

In 2003, MCE developed a 'Pilot Program' to certify farmers to write their plans. Currently for farm operators to become certified to compile their own nutrient management plans, they must complete a challenging course designed to validate and certify consultants. Currently, many farmers are not able to obtain the services of MCE-NMP Advisors due to excessive workloads of those advisors. Farmers must themselves become certified or hire a private sector consultant in order to comply with Maryland's Nutrient Management regulations. Farmers who complete this program will have a certified nutrient management plan. Farmers who pass the certification exam (given as part of this program), and who complete their nutrient management plan, will be certified. Three initial programs and two follow-up classes were held in 2007, with 28 farmers completing the training and certified to write their own plans. To date, 220 farmers have become certified under this program.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
101	Appraisal of Soil Resources
205	Plant Management Systems
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management

**Outcome #6**

**1. Outcome Measures**

6. Waste Management: Number of: Policy makers & farmers understand the scientific issues of land applied poultry litter and poultry stockpiles; Policy makers access MCE information.

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	50	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

This program is consolidated into the nutrient management measure for commercial applicators

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
101	Appraisal of Soil Resources
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse

**Outcome #7**

**1. Outcome Measures**

7. Coastal, Chesapeake Bay: Number of: Lawn care companies report fertilizer use and eliminate P from maintenance: Adoption of composting; water wells tested; septic tanks improved.

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	4200	0

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

These impacts are consolidated with the Nutrient and Water Management in Residential Areas.

**What has been done**

**Results**

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
205	Plant Management Systems
403	Waste Disposal, Recycling, and Reuse

**Outcome #8**

**1. Outcome Measures**

8. Forest Resources: Number of forest landowners gain knowledge of forest stewardship and practices, join forests associations, understand wildlife damage control measures and implement in plans.

**2. Associated Institution Types**

•1862 Extension

**3a. Outcome Type:**

Change in Knowledge Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	755	660

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)****EAB Training:**

The Emerald Ash Borer (EAB) outbreak in Prince George's County, MD is contained, but the future is uncertain. As ash trees have a 100% mortality rate once infested with EAB, our ash resource is in a perilous position. This insect pest threatens to decimate the ash population across the entire state and change the landscape forever. Although this situation is relatively new to Maryland, Midwestern states like Ohio and Michigan have been battling this bug for years, and have gained some expertise in its management. Federal researchers have also been working on the problem and have information valuable to local professionals. Maryland officials have been heavily involved in the control of this pest locally, and have lessons and updates to share with citizens. A forum is needed for exchange of information from these various sources, and for synthesis of new strategies in the fight against EAB.

**GPS Training:**

The potential use of handheld GPS receivers for fieldwork in forestry, wildlife management, surveying, and recreation has greatly increased in recent years due to great advances in the accuracy of the units, lower cost, and more user friendly and available software. Many natural resource professionals are unfamiliar with the basic use and applications of GPS units and related software, however, they could be much more efficient if they had opportunities for training.

**What has been done****EAB Training:**

This conference provided professionals an opportunity to learn from national and state experts about EAB, and how their knowledge and experience can be used to control or prevent future outbreaks in Maryland. It also provided a forum for discussion between and amongst professionals and experts in the field. The program consisted of 12 educational sessions on a wide variety of topics relating to the Emerald Ash Borer. The day-long event concluded with a facilitated discussion by a panel of the day's speakers.

Arborists, foresters, landscape architects, landscapers, and policy makers were invited to attend.

The extension educator facilitated planning committee conference calls, provided minutes, coordinated speaker contacts, created marketing materials and program handouts, provided general oversight, coordinated and emceed events during the program, facilitated the final discussion, summarized evaluation results, and distributed follow-up materials to participants.

**GPS Training:****Program Objectives:**

1. Develop two curricula that can be used by a variety of instructors and available for download from the forestry extension website for use by others. The two curricula are: 1) beginner GPS, and 2) advanced GPS (using Terrain Navigator software with your GPS).
2. Develop and deliver a one-day course for beginners using GPS handheld receivers to acquaint them with the functions of GPS, field applications, and software to integrate the GPS unit with a computer.
3. Develop and deliver a one-day advanced course for those who have taken the beginner course to instruct them on using Terrain Navigator software and how to integrate it with the GPS.
4. Provide instruction on the advantages and disadvantages of different GPS units to aid users in making purchasing decisions. Purchase 20 units for use with training and setup training computers.
5. Offer the educational program to other extension organizations, professional associations, and other organizations. Be available to deliver the program as opportunities exist.

**Program Design:**

In 2006, Jonathan Kays collaborated with Elli Hammond, faculty extension assistant, to collect research different GPS units and collect other available curricula to develop our own hands-on course. Two curricula were developed for a beginner GPS and advanced GPS class, using screen shots and other resources, powerpoints, etc. Once completed, all materials were made available free of charge from the forestry extension website, [www.naturalresources.umd.edu](http://www.naturalresources.umd.edu). Since July 2006 20 Garmin GPSMAP76Csx units have been purchased and laptop computers set up for class use. Nevin Dawson starting delivering workshop in fall 2007.

## Results

### EAB Training:

Eighty-four people attended the program and represented a wide variety of professions, including municipalities, private consulting firms, arboricultural services, utility companies, state agencies from Maryland and Delaware, the National Park Service, non-profit organizations, teachers, and extension educators.

A post-program evaluation was conducted and received 39 responses. Selected data follow.

\* The average knowledge gain (the difference between knowledge level before the program and after the program) over 7 categories was 2.8 on a 10 point Likert scale.

\* 95% said that the information presented during the program would help them provide better advice to clients.

\* 83% said that they would discuss the creation of a management plan for EAB with their organization as a result of the program.

\* 97% said they would share the information from the program with others.

\* 92% said that they better understand the implications of EAB for Maryland's forests as a result of the program.

Personal feedback was also very positive, and attendance exceeded the goal set in the planning process.

### GPS Training:

\* Since October 2006, 10 beginner GPS workshops, and 4 advanced GPS workshops have been completed for more than 180 natural resource professionals.

\* In September 2007 a 3-hour training was provided for nutrient management consultants at their request. In October 2007 two 30-minute trainings were provided for arborists at the Mid-Atlantic ISA Meeting.

\* Exit surveys found participants increased their knowledge of various aspects of GPS by 2.8 to 4.2 points, on a scale of 1 to 10, with 1 having no knowledge and 10 having much knowledge. About 50% of participants did not own a GPS unit, but 50% who did not own one planned on purchasing one. 85% planned on sharing the information learned with others and almost 100% found the manual and CD provided helpful or very helpful.

\* A 6-12 months follow-up survey of 103 past participants was completed in December 2007 with a 34% response rate. 63% had usef a GPS receiver to perform some functions. 57% did not own a GPS unit at the time of the workshop but 17% have purchased one and another 20% will do so soon. 43% use GPS for recreational uses away from the job and another 37% plan to in the future. 69% have shared the information learned at the workshop with others and 51% have referred to the manual or CD for help or assistance. Respondents estimated they think the GPS technology will save them \$33,400 over the next year. 20% of those who took the advanced GPS course have since purchased a copy of the Terrain Navigator software.

## 4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems

## V(H). Planned Program (External Factors)

### External factors which affected outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (Federal Quarantine by USDA-APHIS New employee hires in critical program area.)

### Brief Explanation

Major infestation of Emerald Ash Borer and a Federal Quarantine by USDA-APHIS.

Composting training is offered every year, but this was an off year for attendance due to the fact that very few producers needed continuing education in this area in 2007.

A new forester was hired in the beginning of the CY. Expected targets will not be met until FY 2008 due to professional training and familiarity with over all program requirements of new faculty member.

## V(I). Planned Program (Evaluation Studies and Data Collection)

### 1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

### Evaluation Results

As noted in previous planned program, MCE is in the process of hiring a new evaluation specialist to assist in the overall evaluation of programs. To this point we have captured individual program results as follows:

A new land use web site developed [www.arec.umd.edu/clue](http://www.arec.umd.edu/clue).

50 commercial applicators from the "Green Industry" received training in nutrient management planning and received their vouchers to apply nutrients.

Work continued in enrolling new agricultural businesses in the Nutrient Management program during 2007, with a 2007 total number of over 500 nutrient management plans written by MCE advisors on over 32,000 acres and over 4,000 updated plans were written for 296,000 acres. All of the agricultural businesses were provided a written nutrient management plan with one-on-one technical service provided by MCE Nutrient Management Advisors.

Thirty-five clientele, representing agricultural business, nutrient management consultants & advisors, and government agencies, received six hours of classroom instruction in advanced Phosphorous nutrient management. In addition, 717 farmers, agricultural business consultants and government advisors were instructed in basic soil sciences, animal waste and sludge management, and the implications of the 1998 Maryland Water Quality Act at 31 continuing education workshops. MCE state & regional specialists and county agents provided basic and advanced training programs.

County agents taught 48 nutrient management voucher programs to 1,348 farmers.

Pre-sidedress nitrate testing (PSNT) is an in-season soil nitrate evaluation performed on corn crops to determine if additional nitrogen applications are needed during the growing season. The PSNT consistently prevents over application of nitrogen to Maryland fields, helping to prevent eutrophication of waterways while conserving producers' financial resources. In 2007 Maryland Cooperative Extension nutrient management advisors performed the PSNT on over 18,200 acres for 114 producers. Because of participation in the PSNT program, the estimated reduction of nitrogen applied to Maryland cornfields amounted to over 498,000 pounds or 27 pounds per acre. In addition, Maryland Cooperative Extension advisors performed 97 yield checks and 47 manure spreader calibrations.

In 2003, MCE developed a "Pilot Program" to certify farmers to write their plans. Currently for farm operators to become certified to compile their own nutrient management plans, they must complete a challenging course designed to validate and certify consultants. Currently, many farmers are not able to obtain the services of MCE-NMP Advisors due to excessive workloads of those advisors. Farmers must themselves become certified or hire a private sector consultant in order to comply with Maryland's Nutrient Management regulations. Farmers who complete this program will have a certified nutrient management plan. Farmers who pass the certification exam (given as part of this program), and who complete their nutrient management plan, will be certified. Three initial programs and two follow-up classes were held in 2007, with 28 farmers completing the training and certified to write their own plans. To date, 220 farmers have become certified under this program.

### Key Items of Evaluation

Because of participation in the PSNT program, the estimated reduction of nitrogen applied to Maryland cornfields amounted to over 498,000 pounds or 27 pounds per acre.

**Program #3**

**V(A). Planned Program (Summary)**

**1. Name of the Planned Program**

Quality of Life

**V(B). Program Knowledge Area(s)**

**1. Program Knowledge Areas and Percentage**

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	20%	20%	20%	20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	10%	10%	10%	70%
724	Healthy Lifestyle	20%	20%	20%	10%
806	Youth Development	50%	50%	50%	0%
<b>Total</b>		<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**V(C). Planned Program (Inputs)**

**1. Actual amount of professional FTE/SYs expended this Program**

Year: 2007	Extension		Research	
	1862	1890	1862	1890
<b>Plan</b>	15.0	5.0	10.0	6.0
<b>Actual</b>	20.0	4.0	15.0	6.0

**2. Actual dollars expended in this Program (includes Carryover Funds from previous years)**

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
1237544	444256	1658774	492278
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1237544	444256	1658774	492278
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	0

**V(D). Planned Program (Activity)**

**1. Brief description of the Activity**

### 1. Nutrition, Wellness, and Prevention of Chronic Disease

- Review existing programs and educational materials addressing nutrition and food safety issues in light of the 2005 Dietary Guidelines and MyPyramid recommendations.
- Identify appropriate programs for use by MCE, EFNEP and FSNE.
- Plan, implement, and evaluate programs in consultation with focus team members and other partners.
- Conduct trainings for county educators and identify educational materials and professional training opportunities in Maryland and state, regional and national workshops, and conferences.
- Offer, or support, forums where citizens, including youth and adults, health and education professionals and elected or appointed officials can together explore obesity as a public policy issue using the Sizing Up America materials.

### 2. Food Safety for the Consumer

- Work with DHMH and MDA to identify and implement statewide educational needs.
- Identify appropriate materials or programs for use by MCE.
- Plan, implement, and evaluate programs in consultation with focus team members and other partners.
- Conduct at least 1 statewide inservice training in food safety each year.
- Provide web-based information and resources to clientele.
- Write or update at least 1 MCE publication each year.
- Conduct programs emphasizing proper handwashing techniques using various techniques and resources.  
UMES
- Conduct programs emphasizing the prevention of foodborne illness using existing MCE materials, including "Feeding the Community Safely" and "Feeding the Children Safely."
- Developed and taught a graduate level course focused on HACCP.
- Developed and taught a short courses in Food Safety/HACCP for local food producers and food handlers.
- Supported an industry-regulator HACCP roundtable for discussion of current issues and practices in HACCP implementation.

### 3. Volunteer Development

- 4-H Educators and staff will contribute 50% time to volunteer development and management:
- For recruiting, training, mgmt, evaluation, documentation
- To set standards, policies and procedures
- To training and authorizing volunteers to deliver curriculum and activity training to other volunteers and youth
- To develop educational volunteer programs to assess, teach, inform and evaluate volunteers
- To recognize and appreciate volunteers

### 4. Strengthening and Expanding the 4-H Club

-

Conduct an assessment to determine the need for resource materials and training to support club development/management; this includes a review of existing materials from 4-H programs across the nation.

- Conduct interviews with leaders, review survey results, and personal observations by the educator to determine if that participation in the 4-H club program and concomitant activities such as the county fair help prepare youth for meaningful and constructive lives.

- Establish priorities for creating and/or updating materials that will assist volunteers in developing club programs that will retain our current members and recruit new members.

- Develop a self-assessment tool for measuring effectiveness of 4-H clubs.

- Assess enrollment trends and community club program quality.

- Identify underserved communities and underrepresented youth

- Identify current effective 4-H afterschool practices in city/county programs statewide

- Identify training, resources and support needed by 4-H staff to initiate and sustain afterschool and 4-H/military initiatives in local communities.

**2. Brief description of the target audience**

Children, youth and families across Maryland.

Local food processors/handlers, individuals and families.

**V(E). Planned Program (Outputs)**

**1. Standard output measures**

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

	<b>Direct Contacts Adults</b>	<b>Indirect Contacts Adults</b>	<b>Direct Contacts Youth</b>	<b>Indirect Contacts Youth</b>
<b>Year</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>	<b>Target</b>
<b>Plan</b>	150000	250000	10000	60000
2007	96000	240000	70000	50000

**2. Number of Patent Applications Submitted (Standard Research Output)**

**Patent Applications Submitted**

**Year Target**

**Plan: 1**

2007 : 0

**Patents listed**

**3. Publications (Standard General Output Measure)**

**Number of Peer Reviewed Publications**

	<b>Extension</b>	<b>Research</b>	<b>Total</b>
<b>Plan</b>			
2007	2	35	37

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

- Factsheets & publications, curricula, meeting with partners, in-services, workshops

<b>Year</b>	<b>Target</b>	<b>Actual</b>
2007	1000	11000



**V(G). State Defined Outcomes****V. State Defined Outcomes Table of Content**

<b>O No.</b>	<b>OUTCOME NAME</b>
1	1. Nutrition: The number of individuals who demonstrate adoption of healthy eating practices based on the 2005 MyPyramid and the 2005 Dietary Guidelines for Americans.
2	2. Food Safety: The number of individuals that indicate change in behavior related to good personal hygiene including hand washing, cooking foods adequately, avoiding cross contamination, keeping foods at safe temperature
3	3. Volunteers: The number of MCE trained 4-H volunteers who provide leadership and guidance for 4-H youth development programs.
4	4. 4-H Clubs: The number of 4-H club leaders and volunteers who demonstrate an application of the essential elements of youth development and model experiential learning.
5	5. Youth Outreach: Teen and adult enrollment in after school and military partnership programs.

**Outcome #1****1. Outcome Measures**

1. Nutrition: The number of individuals who demonstrate adoption of healthy eating practices based on the 2005 MyPyramid and the 2005 Dietary Guidelines for Americans.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	10000	37000

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

County example (Allegany County): When prioritizing the needs for extension education, it is apparent that nutrition and health education are vital since the rates of chronic disease are higher than the state rates. Specifically, Allegany County has the sixth highest diabetes rate in the state. Combating this epidemic through education is essential since annual medical costs for people with diabetes averages \$13,243 versus \$2,560 for people without diabetes.

The prevalence of obesity is also evidenced by residents' median BMI's (Body Mass Index) in the overweight range for most counties. It is vital that education focus on obesity since annual medical costs for obese adults are 37% higher than costs for those at a healthy weight; and obesity costs Maryland \$2.5 billion per year in health care expenses and lost productivity.

**What has been done**

In one county, Allegany, over 150 individuals were reached by the educator via trainings focused on heart health, weight management, holiday eating, food safety, and physical activity. The target audience for the programs included clientele at weight loss groups, senior centers, civic clubs, universities, as well as the general public.

**Results**

In Allegany County, following participation in the trainings, 58% of participants reported they planned to choose high fiber foods and whole grain foods more often. After taking the classes, 54% intend to choose smaller portions of food more often and 58% of claimed that they would make small changes to increase physical activity such as taking the stairs.

In another example, the MD EFNEP and the Primary Care Coalition's (PCC)--Care for Kids Program (CFK) are leading the way in reducing childhood obesity in limited-income, traditionally underserved populations. Over the past year, they have worked together to develop, implement, and evaluate a family-centered healthy lifestyle program in Montgomery County for children who are overweight or at risk for overweight and their families. This bilingual program has reached a total of 180 Latino participants. This highly effective program has been extensively evaluated and plans are underway to expand the program to African/African American/Caribbean families who are CFK participants in Montgomery County, with a goal of providing access to all low-income overweight children within the next 3-5 years.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
724	Healthy Lifestyle
703	Nutrition Education and Behavior
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #2**

**1. Outcome Measures**

2. Food Safety: The number of individuals that indicate change in behavior related to good personal hygiene including hand washing, cooking foods adequately, avoiding cross contamination, keeping foods at safe temperature

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension
- 1890 Research

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	6000	40000

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Public awareness of food safety has been increasing recently due to several large outbreaks of bacterial foodborne illnesses associated with beef, peanut butter, and other products, and widespread publicity about the contamination of certain imported food products. The threat of bioterrorism on the safety of the food supply is also a growing concern. Consequently, food safety continues to be a major public health issue in the United States. Millions of people become sick every year after eating food contaminated with pathogenic bacteria or their toxins, or through personal contact with people exposed to foodborne pathogens. Most cases of foodborne illness can be prevented through hygienic practices such as handwashing and by routinely following proper food handling and preparation recommendations.

**What has been done**

In 2007 one Educator in an urban county taught six classes for 195 individuals with topics including handling and preparing food safely, food safety during the holidays and a food safety update for Department of Social Services Project Home/CARE providers as a certification requirement for licensing and renewal.

**Results**

When random sample of class participants (n =61 ) were asked their intentions regarding food safety practices 100% responded they intend to follow the key recommendations of food safety - clean, separate, cook and chill more often; 100% intend to improve their food safety habits more often. 100% of participants intend to more often use a food thermometer to monitor the temperature of potentially hazardous foods and 100% intend to more often wash fruits and vegetables before eating and/or preparing them. 100% of participants also intend to more often wash their hands before working with food. In addition Project Home/CARE providers indicated they intend to more often serve foods that are safe and appropriate for the elderly.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

**Outcome #3****1. Outcome Measures**

3. Volunteers: The number of MCE trained 4-H volunteers who provide leadership and guidance for 4-H youth development programs.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	3000	3160

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

Volunteers are persons who perform unpaid activities for Maryland Cooperative Extension who are screened, trained and appointed. The volunteer is authorized to perform services for MCE. In 2006 the value of a volunteer hour was \$18.77. In 2000, 44% of adults over 21 volunteered on a regular basis. There are not enough trained and mentored volunteers to extend the 4-H program into more Maryland local communities. In 2002, there were 4-H 3,565 4-H adult volunteers and only 3,048 in 2005 (MCE and short term). Current volunteers do not represent the diversity of MD communities and families. Families do not live where they work and lack a sense of commitment to community.

**What has been done**

To support the county/city 4-H program and to provide positive youth development opportunities, all volunteers receive on-going training to increase skills in club management, youth/adult partnerships, project-specific materials, and risk management. Workshops, one-on-one sessions, and small group meetings have been conducted by MCE 4-H Youth Development Educators. State-wide, a total of 139 volunteer development programs were held. All Maryland Cooperative Extension volunteers undergo six hours of training, complete an application, and undergo an interview and screening process to become a MCE volunteer. Finally, the educators develop volunteer appointment agreements detailing individualized job assignment for each volunteer.

**Results**

In one county, for example (similar to most Maryland counties/city), volunteers in the 4-H program report donating 12,578 hours of volunteer time annually. According to the Independent Sector 2006, the value of donated time by volunteers is \$18.39 per hour. Using this rate, the value of the volunteer hours provided by MCE volunteers in this county is \$231,309.42 annually. Volunteers serve as representatives of the University and provide the following assistance to the 4-H program 1) teaching and sharing information with 4-H members and their families, (2) teaching and sharing information with other 4-H volunteers, (3) providing logistical support such as organizing events and activities, conducting meetings, providing transportation, etc., (4) providing clerical support such as answering telephones, responding to questions and requests for information, etc., (5) developing new resources by identifying and cultivating potential 4-H sponsors and donors, (6) allocating existing resources by administering activity budgets, recommending spending priorities, etc. (7) assisting with administrative responsibilities by completing reports, making promotional presentations, etc. (8) helping to develop programs by identifying needs, establishing objectives, identifying strategies, securing resources and conducting evaluations, (9) assisting with strategic planning by identifying future needs, recognizing emerging trends, and establishing long-range goals.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #4****1. Outcome Measures**

4. 4-H Clubs: The number of 4-H club leaders and volunteers who demonstrate an application of the essential elements of youth development and model experiential learning.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Condition Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	1000	600

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

The Maryland 4-H program's core mission is to help youth reach their fullest potential as individuals through the development of life skills. For most 4-H members, these life skills are practiced and developed throughout the year by participating in club and local activities such as record keeping, demonstrations, leadership, and the exhibition of completed 4-H projects. A major study of 4-H Clubs (state of NY) indicated that participation in 4-H Clubs contributes to positive youth development. The results indicated that youth who belong to 4-H clubs 'do better in school, are more motivated to help others, and are developing skills in leadership, public speaking, self-esteem, communication and planning, and are making lasting friendships.' Thus, the 4-H Club has been proven to be an outstanding delivery method for the development of youth.

**What has been done**

The 4-H Club program is part of an educational program designed to improve techniques of animal/agriculture, environmental, and human sciences; promote high ideals of civic responsibility, provide training for community leadership, and foster international understanding. The club must have at least six regularly scheduled meetings with a planned and written educational program that provides a variety of learning experiences. Parents and community members expect the local 4-H club to be a high-quality educational experience conducted in a safe and healthy environment.

Maryland 4-H has worked to identify resource materials and training to support club development/management. Develop promotional materials.

Identify tools to measure effectiveness of 4-H club program, desired educational outcomes, life skill assessment, and essential elements incorporation.

Reward and recognize Faculty, Staff, and Volunteers for Effective Club Programming Practices.

**Results**

Maryland 4-H has developed an assessment tool for counties/city to employ to measure the strength of the entire 4-H Youth Development Program. The 4-H assessment process is designed to provide counties/city you with both the tools and the assistance to assess and evaluate their 4-H program and determine strategies to improve and strengthen the program, especially in the three core areas of Maryland 4-H Youth Development: 1) strengthening and expanding the 4-H club program, 2) volunteer development, and 3) outreach to under reached and under served audiences.

The assessment process has been conducted in 6 counties in 2007. The plan is to conduct 6-9 per year. In addition, MD 4-H has developed and hosted a 4-H Professional Development series designed to build skills and capacity to develop effective strategies for assessing 4-H programs and measuring program outcomes and impacts. MD 4-H has developed a three part series. The topics covered include: A structured, easy to use strategy for organizations to conduct a rigorous assessment of their programs; Process of using the results of the assessment for program planning and improvement; Ways that organizations can use the findings to help gain support from key constituencies; and Resources for evaluating the impact of your 4-H Youth Development Programs.

**4. Associated Knowledge Areas**

KA Code	Knowledge Area
806	Youth Development

**Outcome #5****1. Outcome Measures**

5. Youth Outreach: Teen and adult enrollment in after school and military partnership programs.

**2. Associated Institution Types**

- 1862 Extension
- 1890 Extension

**3a. Outcome Type:**

Change in Action Outcome Measure

**3b. Quantitative Outcome**

Year	Quantitative Target	Actual
2007	1600	34986

**3c. Qualitative Outcome or Impact Statement****Issue (Who cares and Why)**

While most Maryland children, 62%, spend some portion of the hours after school in the care of a parent or guardian, 25% of Maryland's K-12 youth are responsible for taking care of themselves. These children spend an average of 7 hours per week unsupervised after school. More than 25% of the K-12 youth in self-care would be likely to participate in an afterschool program if one were available in the community. Similarly, 27% of all children not in afterschool would be likely to participate if an afterschool program were available in the community, regardless of their current care arrangement. Maryland 4-H youth development's 4-H Afterschool initiative is a part of a national 4-H effort to provide extraordinary learning opportunities to school age youth in urban, suburban, and rural communities.

In terms of outreach to the families of Army Reserve and National Guard soldiers - these soldiers (Army Reserve and National Guard) serve the military on a part time basis, often with a fulltime occupation as a teacher, doctor, or sales clerk. They are not considered a military family because 'these' families live in civilian communities. Deployment, change in income, and staying away from home longer can result in a transformation of family life for Army Reserve and National Guard soldiers. This transformation in family structure can result in a change in the lives of military youth, because one or more of the parents are being deployed for Guard or Reserve service. Youth can often feel isolated, alone, or afraid if they do not understand the 'nature' of the soldiers work, and also if there is a lack of 'outside' support systems.

**What has been done**

4-H, Operation: Military Kids Program worked in 2007 to develop community networks and build infrastructure for identified programs in communities of military youth and families. One of the major components of Operation: Military Kids is the Speak Out for Military Kids, Speaker's Bureau. The 'SOMK' Speaker's Bureau invites military and non-military youth between ages 14 and up to become community advocates for military families. Through interview, research, and simulations youth learn about the unique lives of military families before, during, and after deployment. To conclude their research, youth groups develop an area of focus (writing for publications, creating a video, interactive theater, creating a presentation) for their individual community. Thus, participants develop a statewide speaker's bureau.

Afterschool: Maryland and Delaware 4-H programs provided training to extension educators, afterschool staff, and childcare providers who care for elementary and middle school youth in the after school hours. A total of 590 afterschool providers received training as a result of this project. In Maryland, a train the trainer approach was used by thirteen faculty and staff from 9 counties and Baltimore City who, in turn, trained 190 providers in local, regional and statewide settings. Most of the training sessions were conducted locally by the extension staff and partners in that county or city. Sites selected the training methods that were best suited to the audience. Some programs were presented in a full day session, while others were provided as series of training sessions over a period of several weeks. All sessions included hands on, experiential learning opportunities and documentation of training was provided through use of the Tools of the Trade Certificates and approved child care training credits. A full day training was planned for child care and afterschool providers in partnership with Chesapeake College in Talbot County. The curricula used during the various training sessions included those that supported better design and management of afterschool programs. 1. Tools of the Trade Training Guide 2. Emergency Preparedness 3. First Aid and CPR 4. Youth Obesity Prevention 5. Keeping Children Healthy and Safe Educators also included curriculum training on topics such as Nutrition and Healthy Meal Planning, Literacy Development, Team Play, Using the Outdoors as a Classroom, Recycling Crafts, Using Puppets as a Learning Tool, Health Rocks (a tobacco and drug prevention life skills program), Science of Energy, Making Math and Science Fun, and Health and Fitness Equipment to name a few. These curricula assist afterschool and child care providers in supporting state Department of Education standards and, in some cases, also met state child care licensing requirements. Collaborating partners included faculty from the Department of Family Science, College of Health and Human Performance (UMCP), Army Child and Youth Services, Maryland Child and Youth Services, Maryland Office of Child Care Licensing, YMCA of Central Maryland, 21st Century Community Learning Centers, Chesapeake College, and local childcare resource centers.

## Results

Maryland 4-H reached 1,600 military youth through this outreach effort. In addition, MD 4-H reached 33,386 youth through afterschool programs.

In the state of Maryland a total number of 41 teens were trained in the Speakout for Military Youth Program, from the Maryland National Guard (creating a presentation), DC National Guard (creating a video), 4-H State Teen Council (writing for publication), and Hereford High For Our Troops Club (creating a video). Individual groups came together for the 4-H Teen Focus Leadership Conference to present their projects to community volunteers, partners, and members of the 4-H youth development program. Additional 'SOMK' presentations were made during the MD National Guard Family Readiness Program Workshop; DC National Guard Spring Break event; Maryland State Fair 2007; and MCE Annual Conference.

Afterschool: Evaluations were conducted at the end of most of the sessions to determine, information gained, future training interests and strategies for improvement. Evaluations showed that all of the participants learned at least one strategy or skill that they will implement in their child care setting. As reported by the providers who received training, a total of 3,711 youth participants were impacted in Maryland and 8,230 youth were impacted in Delaware. The partnership between Maryland and Delaware made it possible for the grantees to meet the project goal of reaching 500 providers. It also provided opportunities for cross-training and opened the door for future collaborative efforts in 4-H afterschool and child care work.

### 4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

## V(H). Planned Program (External Factors)

### External factors which affected outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

### Brief Explanation

1. Vacant Educator positions
2. Limited time of volunteers
3. Other priorities and unplanned opportunities
4. Other demands for youth time out of school
5. Grant funds limited

## V(I). Planned Program (Evaluation Studies and Data Collection)

### 1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)

### Evaluation Results

MCE is in the process of hiring a new evaluation specialist to assist in evaluating overall program impacts statewide. For now, individual program impacts are captured via evaluations during the programs or as follow up to program events. Basically pre and post tests and 1-2 year follow up surveys to measure behavioral changes.

We launched a new website Obesity As a Public & Family Health Issue. With graduate student assistants the site, intended for professional development and access by Extension professionals and interested others, is updated:  
<http://www.extension.umd.edu/nutrition/obesity/>

Evaluation data from the Food Stamp Nutrition Education Program:

914 post/pre evaluation surveys were submitted for analysis:

• The percent of participants indicating a statistically significant ( $p < .0001$ ) difference between behavior prior to FSNE participation and intent to change behavior include:

- 75% Look for ways to eat more fruits and vegetables
- 72% Choose lower fat dairy products
- 74% Choose lower fat meats
- 69% Choose lower fat snacks
- 56% Choose fruits and vegetables for snacks
- 78% Choose high fiber foods
- 69% Try to balance calories with food and activity
- 85% Use MyPyramid to plan meals or snacks
- 79% Choose lower fat foods when eating out
- 78% Choose smaller portions of food
- 55% Make small changes to increase physical activity
- 59% Include 30 minutes of physical activity in your day
- 75% Plan meals before making a list, before shopping
- 84% Use a grocery list when shopping
- 85% Manage money and resources to have enough food until the end of the month
- 81% Try new low cost foods and recipes
- 85% Prepare food instead of buying convenience foods
- 76% Choose a variety of colors of fruits and vegetables
- 70% Try new fruits and vegetables
- 93% Compare prices before buying food
- 75% Read grocery ads before making a list
- 87% Track money spent on food each month
- 96% Use written budget or spending plan to meet family needs
- 87% Track family income and expenses
- 57% Use community resources to help meet food needs
- 56% Wash fruits and vegetables before eating and/or preparing
- 67% Read the food label
- 76% Buy generic brands instead of national brands
- 84% Choose foods based on needs and wants

Impact data indicate improvements in dietary fat consumption, fiber intake, label reading, and consumption of fruits and vegetables as a consequence of participation in EFNEP's series of lessons. In 2006-2007 one thousand, nine hundred seventy-one (1,971) EFNEP participants improved their diets with 95.3% of participants showing positive changes in every food group from entry to exit. Each dollar invested in EFNEP leads to \$10.64 savings in future health care costs.

In 2007, Maryland EFNEP's Youth Program (7-3-3-1) delivered its educational program series to six thousand eight hundred and twenty four (6874) Maryland youth in multiple counties. Pre and post surveys, qualitative data (including exit interviews, follow-up interviews at 6 months and 12 months after intervention) and follow-up surveys of clinical providers carried out by our programming partners, Primary Care Coalition, Before and After School Extended Learning Program indicate a high level of interest and satisfaction with the family-based and school based interventions.



### **Key Items of Evaluation**

The Maryland FCS Program has developed a state-wide evaluation system in the three core program areas: Nutrition & Wellness; Food Safety; and an emerging new area of Healthy Homes. In 2007, Maryland FCS continued to develop and implement a new statewide, multi-faceted FCS Evaluation Project aimed at streamlining and enhancing FCS program impacts. Much effort was devoted to the development of the data entry and analysis tools using SPSS. In 2007, educators across Maryland submitted 2,051 evaluations for 166 classes. This equated to 20,605 pieces of data having to be entered and analyzed. These data were then sorted so that customized reports could be generated for individual educators to view their program participants' improvements on each particular behavioral outcome. Statewide analysis of the data was conducted for utilization by FCS leaders and administrators. This evaluation project idea was shared at two national professional conferences by the lead FCS Educator, which resulted in commitments to replicate the work in other states.