2008 University of Maryland and University of Maryland - Eastern Shore Combined Research and Extension Annual Report of Accomplishments and Results

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I. Report Overview

1. Executive Summary

Building a Stronger Maryland

How We Plan to Get There

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.

In the pursuit of a "Quality of Life" it is necessary for MCE to develop and implement educational programs to help people sustain and improve their quality of life by better achieving their physical, psychological, and materialistic needs.

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.

Total Actual Amount of professional FTEs/SYs for this State

Year:2008	Extension		Research	
	1862	1890	1862	1890
Plan	120.0	12.0	73.0	15.0
Actual	105.0	15.0	71.0	14.0

II. Merit Review Process

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

- Internal University Panel
- External University Panel
- Combined External and Internal University Panel

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 (AD).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 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.

In addition input was obtained from a stakeholder driven process facilitated by the Maryland Agriculture Commission and compiled into a report to the Governor.Within this report there were specific program recommendations for the College and Extension.County stakeholder listening sessions are also held prior to developing a job description for new county faculty.This process provided program direction and needs.

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.

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
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional individuals

Brief Explanation

The College of Agriculture and Natural Resources, following the lead of the University of Maryland, developed a 2006-2011 strategic plan for the college, including both Maryland Cooperative Extension (1862 and 1890) and the Maryland Agricultural Experiment Station. This strategic planning document continues to serve as a guide for Extension programming in Maryland.However, all UM Colleges are in the process of updating strategic plans (at the request of the UM President and Provost). The AGNR College, along with Cooperative Extension, will have a new, updated strategic plan in 2009, which will be reported in the 2009 Accomplishment Report. The strategic plans are available as follows: For the University: http://www.provost.umd.edu/Strategic_Planning/. For the College: http://www.agnr.umd.edu/FacultyStaff/index.

The information from the Key Informant process described below was used as an input in the 2006-2011 plan development process. Administrative Committees and 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 are able to seek specific input from this group as needs arise. Extension Advisory Councils (EAC) meet on a regular basis in most of Maryland's counties and Baltimore City. The EACs provide insight into and support for local extension programming. The Regional Extension Directors meet with the EACs 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. 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 postions in the most appropriate way based upon current clientele needs in a way that aligns with resources and expertise available through MCE.

Home & Garden Information Center: The HGIC has multiple methods for allowing users to ask questions. Users can phone or email the Center with any issue related to gardening and home food production. A database is maintained of the questions and concerns. Master Gardeners: Maryland residents who belong to MG bring forth any concerns related to horticulture, home gardening, vegetable gardening, land use, pesticide applications and regulations, and Chesapeake Bay concerns. Stakeholders involved in the Food Stamp Nutrition & Education Program (FSNE, now SNAP), and stakeholders involved in any program delivered by the Family & Consumer Science area complete written surveys that are aggregated, analyzed, and used in expanding programs.

Governors Agriculture Commission Public Forums: In 2004 the Agriculture Commission held 6 public forums in the state to solicite 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 Councilwas 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 at 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
- Use External 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 postions in the most appropriate way based upon current clientele needs in a way that aligns with resources and expertise available through MCE.

Governor's 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. News releases 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 are being used in formulating a systematic survey approach for all counties in the state for 2009. The preliminary plan is to assess counties every three 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.

The Maryland Stakeholder Input Plan is comprised of several components.It includes input from traditional audiences and from nontraditional audiences that represent the diverse population and interests of the state.

The College of Agriculture and Natural Resources utilizes a Dean's Leadership Council consisting of a broad cross-section of agricultural industry leaders to provide input on major directions for the College's research, teaching and extension agenda. The Advisory Council meets periodically to discuss rising issues in the State. The administrative officers of the Maryland Agricultural Experiment Station and Maryland Cooperative Extension sit on and attend a wide array of committees with the State's agricultural leaders. Such continuous contact with the agricultural leadership including the Maryland Secretaries of Agriculture, Natural Resources and Environment provides additional contact to keep research and education issues examined by the research and extension in the State's two land grant universities current. The groups include the Maryland Agricultural Commission, the Maryland Grain Producers Association, the Delmarva Poultry Industry, the Southern Maryland Agriculture Commission, the Maryland Association of Soil Conservation Districts and many other similar groups.

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 assists 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 was reconstituted to reflect all the disciplines and research areas represented within the School of Agricultural and Natural Sciences and the Experiment Station.

In a joint effort to further identify stakeholder input into the goals of research and extension in the State, the two Maryland Land-grant institutions have sought input from key groups using a process known as the Key Informant process. To provide consistency across the component groups, a standard methodology was used.The community assessment tool of key informant interviews was the core of the methodology.

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

Brief Explanation

Some of the overall methods used to collect this input include customer satisfaction surveys focused at the county level programs, statewide and county listening sessions, program forums and program surveys. 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 listensing 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.

Governor's 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 the Maryland 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 have been used to formulate a systematic survey approach for all counties in the state. In 2009, the preliminary plan is to assess counties every three 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 group meets regularly and assist us in securing various stakeholder audiences and input .

UMES' Agribusiness Advisory Council: UMES' Agribusiness Advisory Council is currently being reconsituted to be able to provide a advice/input that will benefit more areas within the College.

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

This information was used to: Set program priorities for ourstrategic plan 2006-2011;Determining statewide staffing plans for MCE;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.;and to assist in revamping strategic initiatives as neededto deal with current budgetary shortfalls and staffing challenges.

Brief Explanation of what you learned from your Stakeholders

MCE is still vital to the citizens of Maryland. 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;Intergenerational transfer of assests; Niche markets; Home-based businesses; Rural-urban interface issues;and Agricultural awareness.In order to meet this need, there was support for the establishment of a Maryland Rural Enterprise Development Center (MREDC).

In addition, there is a need for enhanced support for the AGNR producers (broadly) 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.

In 2008, more demand was placed on Extension for agricultural literacy, including understanding the national, state, and local food systems.Maryland's citizens want to know where their food comes from and how to prepare it in ways that are healthy and affordable.In addition, customers asked for information on growing home gardens.

Health and family issues:Stakeholders are also concerned about how to control chronic diseases that results from non-healthy lifestyles (for example, diabetes education).Family financial issues have dominated many stakeholders' lives in 2008 and they are seeking financial management education.

IV. Expenditure Summary

1. Total Actual Formula dollars Allocated (prepopulated from C-REEMS)

Extension		Research	
Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
2993549	1128381	2534050	1240851

2. Totaled Actual dollars from Planned Programs Inputs

	Extension		Research	
	Smith-Lever 3b & 3c	**1890 Extension**	**Hatch**	**Evans-Allen**
Actual Formula	2993549	1128381	2534050	1279350
Actual Matching	2993549	1128381	2534050	1240851
Actual All Other	0	0	0	643711
Total Actual Expended	5987098	2256762	5068100	3163912

3. Amount of Above Actual Formula Dollars Expended which comes from Carryover funds from previous years

Carryover	0	0	0	0

V. Planned Program Table of Content

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%	10%
123	Management and Sustainability of Forest Resources	10%	10%	10%	10%
205	Plant Management Systems	10%	10%	10%	10%
216	Integrated Pest Management Systems	10%	10%	10%	10%
311	Animal Diseases	5%	10%	10%	10%
601	Economics of Agricultural Production and Farm Management	15%	10%	10%	10%
602	Business Management, Finance, and Taxation	10%	10%	10%	10%
604	Marketing and Distribution Practices	5%	10%	10%	10%
608	Community Resource Planning and Development	10%	10%	10%	10%
801	Individual and Family Resource Management	10%	10%	10%	10%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	**Extension**		**Research**	
	1862	**1890**	**1862**	**1890**
Plan	40.0	6.0	20.0	3.0
Actual	37.0	8.0	25.0	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**
1047742	530339	1013620	506165
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
1047742	530339	1013620	572698
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	325604

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. IPM

An IPM team was developed to deal with both agronomic crops and green industry related topics.This team developed a statewide plan and submitted a competitive grant under the new USDA RFA for IPM. Agronomic Crops: First detector training; Insect & disease diagnostic training; Publications; Twilight tours to shareresearch results from alternative control studies; List were distributed to organic and sustainable grower groupsof the personnel at UMD that are trained in sustainable agriculture; Develop new diagnostic abilities of faculty; and New pest management programs were developedfor 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. CommunityResource Development: Development of a Maryland Rural Enterprise Development Center (MREDC); Establishment of a new web site to act as a portal for resources;Provide opportunities for individuals to explore develop and refine agriculture and natural resource based businesses; Rural enterprise conferences; Business development short course; Development of resources needed by entrepreneurs; Form rural economic development advisory committees or councils.

3. Marketing Maryland Agricultural Commodities

Web sites; Fact sheets; Posters; Tours; county and regional workshops; Grants were obtained to support AGNR marketing efforts; Assisted producers to develop new marketing ventures; New farmers' markets; Media updates.

4. Alternative Crops

Conducted field variety trials to evaluate alternative crops; Twilights tours (4) focusing on alternative crops and new enterprises; Research conducted at R&E Centers on high tunnel crop production, organic and ethnic vegetable production, and pumpkin production; Short course and training seminars for industry personnel;Evaluations for crop varieties, IPM, fertility, other production issues; Market investigation; Collaborate on 2 regional production and marketing conferences (MADMC, Future Harvest's Farming for Profit and Stewardship Conference); Develop 3 organic crop enterprise budgets; Maryland-developed alternative crop/enterprise information made available on anew MCE web site.

5. Pasture Management

Pasture walks (6);Individual farm consultations;Annual bulletins of variety trial data; Financial analysis- Annual Dairy Financial Analysis of pasture farms; Fact sheets 1 revised; Website for Maryland and other researched-based bulletins, fact sheets, presentation, and information; Seminars and workshops; Ten revised and three new PowerPoint presentations; Three peer reviewed journal articles.

6. Biosecurity and Animal Health

Research and Extension programs were conducted in the areas of Avian Influenza, Composting of Animal Carcasses, viral diseases and Infectious Laryngotracheitis (ILT). Work included refereed publications, workshops, conferences, newsletters and fact sheets.

7. Family Financial Management

Basic financial literacy classes; Financial Security for Later Life seminars; active participation in eXtension to support direct contact programming;Conduct train-the-trainer programs such as Maryland Saves trainings,NEFE High School Financial Planning Program; Train and supervise Volunteer Tax preparers; Design and conduct capacity building opportunitiessuch as 20th Personal Finance Seminar for Professionals for partners, educators, agency reps and volunteers; Develop partnerships to implement MD Saves and Walter Reed Financial Literacy Education for Soldiers.

2. Brief description of the target audience

1. IPM

Agronomic 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.

3. Marketing Maryland Agricultural Commodities

Farmers; producers; growers; grain marketing clubs; farmers markets; local economic development offices; mid-Atlantic Direct Marketing Association.

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. Biosecurity and Animal Health

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

7. Family Financial Management

Employees, Families; limited income individuals, volunteers; educators; high school students; community development corporations; financial institutions; State Attorney Generals Office; Department of Social Services reps, public housing residents at risk of eviction; Soldier; Workforce Opportunities Program Clients through DSS.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	**Target**	**Target**	**Target**	**Target**
Plan	14800	16000	750	1
2008	42596	125950	550	510

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	1

Patents listed

Hot water immersion system to control insects and mites in greenhouse plants

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	7	100	107

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Target	Actual
2008	70	72

Output #2

Output Measure

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

Year	Target	Actual
2008	65	95

Output #3

Output Measure

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

Year	Target	Actual
2008	65	31

Output #4

Output Measure

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

Year	Target	Actual
2008	30	48

Output #5

Output Measure

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

Year	Target	Actual
2008	32	57

Output #6

Output Measure

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

Year	Target	Actual
2008	65	49

Output #7

Output Measure

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

Year	Target	Actual
2008	50	283

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
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	8. Enhancing animal nutrition and management: Basic and applied research program
9	9. Research and Extension programs to enhance agricultural crops

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
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3600	3530

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Objective: Encourage commercial greenhouse operations to adopt practices that reduce non-selective, scheduled chemical applications and reduce economic loss from poor management practices. There is a need to teach Total Plant Management / Integrated Pest Management (TPM/IPM) for all of the major greenhouse crops and perform field trials new biological control methods.

What has been done

From 1987 to 2008, we have developed TPM/IPM programs for poinsettia, impatiens, geraniums, chrysanthemums, bedding plants, herbs, greenhouse tomatoes, interiorscapes and ornamental cabbage and kale. To help support the scouts and growers we have developed a TPM/IPM web page 'IPMNET'. Weekly updates of disease, insect, and fertility problems in greenhouse are posted on this web site. These weekly reports are also posted to the Northeast and Canadian Greenhouse IPM groups list-serve to benefit extension professionals, scouts and growers in our N.E. region.

Results

Sixty two percent of the commercial MD greenhouses are actively participating in TPM/IPM programs with hired professional scouts or using Extension trained in-house personnel to monitor their crops.
Through educational efforts we have convinced 7 greenhouse operations to install microscreening on newly constructed greenhouse, which greatly reduces the outdoor inward migration of insect pests. As a result of participation in TPM/IPM programs we have reduced pesticide applications by 45 -50% compared to years previous to participation in the program.
Our IMPNET is also posted at Penn State and Rutgers for growers in their states. Fact sheets on thrips and whiteflies have been posted electronically to an IPM web page.

4. Associated Knowledge Areas

KA Code	Knowledge Area
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
2008	800	293

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Rural MD is rapidly changing with increased pressure for development and a major influx of new residents. MD 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 barrior to new and innovative business ventures for the AGNR community. Research and education programs need to be developed to assist local policy makers make wise land use decisions that will assist AGNR businesses become profitable in the future.

What has been done

Maryland Cooperative Extension has expanded its role in this area by creating a new center entitled, Maryland Rural Economic Development Center (MREDC). This center pulls upon existing extension and University resources to provide assistance in business and market plan development, intergenerational transfer of assests (Estate Planning) and land use policy education. A land use team called the Coalition of Land Use Educators (CLUE) was developed and several educational programs have been developed and delivered statewide.

Results

The CLUE team, in collaboration with the Harry Hughes Center for Agro-Ecology, developed an educational program targeted at local governments to deal with land use planning and rural entreprenuship. Since 2007, 2 local government exchange programs have been held with 95 local and county officials in attendance. Five people signed up for the planning committee for future programs and almost every participant provided potential topics for future programs. Due to the success of the program and interest by local government officials to see it continue, the Chesapeake Bay Program has funded two extension positions statewide to offer similar programming as Sea Grant Regional Watershed Restoration Specialists.

4. Associated Knowledge Areas

KA Code	Knowledge Area
604	Marketing and Distribution Practices
601	Economics of Agricultural Production and Farm Management
608	Community Resource Planning and Development

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
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	80	71

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Poultry production accounts for approximately 70% of the total economic value of agriculture on Delmarva. A disease outbreak such as Avian Influenza (AI) or exotic Newcastle disease would devistate the poultry industry. In addition to commercial growers, there are a large number of small non-commercial flocks. The non-commercial growers do not have access to biosecurity educational programs that are provided by the poultry companies. A poor biosecurity program by these small flock producers could potentially place all MD poultry farms at risk for a disease outbreak.

What has been done

Fact sheets for small flock owners were created and distributed at various locations statewide; A biosecurity training manual for small flock owners, extension professionals, and NPIP volunteer testers was developed; A program is being designed on biosecurity/flock health training for small flock owners, poultry and non-poultry extension professionals, and volunteers (NPIP testers); Regional biosecurity educational workshops (3) were held; A website was developed targeted toward the issues of small flock owners.

Results

Surveys indicated 91% of small flock owners (SFO) monitor their birds on a daily basis for illness, while 19% maintain health records; 70% of SFO do not wash their hands prior to handling their birds, while 81% wash their hands after handling birds; 50% of SFO that exhibit birds at fairs and shows do not quarantine their birds upon return, and 64% of SFO do quarantine new birds for 29 days or greater prior to introducing them to the flock; 27% of SFO disinfect their equipment on a daily basis and 23% disinfect equipment monthly; and 94% of SFO would like to receive info on bird health and biosecurity. Publications developed: Protect your small flock, Preventing the spread of avian diseases, and Know the most common avian diseases. Two 3-hour workshops held for 20 SFO. An 82 page workshop manual, Small Flock Manual, was developed.

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
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	650	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Rural entrepreneurship is being embraced by communities, agencies, and nonprofits involved with rural development. Low profit margins and capital requirements of traditional crops, combined with small land holdings and different objectives, has resulted in greater interest in entreprenurship and new business ventures. Many landowners initiate new enterprises and fail due to lack of good information and well thought out ideas. Further, there is a lack of understanding of how to develop business and marketing plans.

What has been done

MCE's marketing Program supports farm, food and forestry enterprises through professional assistance in marketing and business development plans and programs. This program strives to enhance 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. This program provides one on one client assistance as well as seminars and networking opportunities designed to enhance the economic viability of all MD AGNR enterprises.

Results

Several new programs developed. 1) Mastering Marketing: Provides educational training and support to improve economic prosperity to MCE educators and AGNR economic development professionals. An in-service training for 35 AGNR and FCS agents was delivered. A Quarterly 'Mastering MarketingÂ,' newsletter was developed along with an Ag Marketing website and list-serve established. 2) Curbside Consulting: Provides one on one consultation for business development and market planning. Facilitates their business assessment and follow up support by allowing them to explore their ideas with a business and marketing development specialist. Thirty-nine consultations have been performed. Three new businesses started and five additional businesses undergoing some stage of transition.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
601	Economics of Agricultural Production and Farm Management
604	Marketing and Distribution Practices

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
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	400	1085

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Farmers are turning to MCE to assist them in develop new profitable farming enterprises. Farmers see organic agriculture as a way to increase profitability, yet there is very little research-based information available about organic farming techniques. Organic farmers have encouraged the University for years to develop an organic educational and research program. Community leaders also need help understanding the nature and consequences of non-traditional agriculture.

What has been done

Surveys were developed to assist in determining organic research & education needs. Six twilight tours were were held at our R & E Centers, with a focus on organic and ethnic crop production. Applied research was also performed to examine different varieties. Competitive grants were awarded, approximately $27,000, to support applied research and demonstrations. Approximately 38 programs were held on the topic of alternative agriculture.

Results

Developing a decision making tool to optimize cover crop integration for weed suppression in N.E. organic cropping systems. Approximatley 1,834 producers attended educational workshops and twilight tours on alternative crops and 534 on organic crops. Surveys of organic crops events indicated 85% improved their knowledge on weed control options, 100% increased knowledge of tillage effects on weed species populations, 50% increased knowledge on using a commercial source of compost, 62% increased knowledge on using a flamer to control weeds and 62% increased knowledge on using biological control for insect management. Workshops were held to create a Network of Farmers to provide locally grown sustainably produced food to the Delmarva region. Three farmers have been identified that will be able join the Network of Farmers providing produce & eggs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
601	Economics of Agricultural Production and Farm Management
205	Plant Management Systems

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
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1800	279

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Nearly one third of the state's milk supply is from Washington County. Maryland ranks third in beef cattle and sixth in sheep production. Producers strive for high-quality products in a competitive market. Urban sprawl leads to high land values, added pressures for decreasing farmland, increased traffic on county roads and scrutiny of environmental issues. To complete with large farms 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. Established 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 forage/pasture management workshops. Research continues on 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 learning improved management techniques for selecting and implementing alternatives in forage production and feed management systems. Two farms have entered into a program to convert 120 acres of crop land into pasture. Fourteen small and part-time farmers learned new pasture management techniques through an onsite pasture management workshop at our WMREC plots. Evaluations indicated an increase in knowledge of identifying grass species. 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.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
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
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	450	1500

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

In the midst of a national economic crisis, economically disadvantaged families that were already struggling are now barely surviving due to loss of jobs and rising cost of living. MD bankruptcy and foreclosure rates are at record levels. Families are relying on food pantries to feed their families at a time when the pantries and churches are scrambling to fill gaps in services left when other non-profits cannot step up. Middle income families have also been impacted by this financial crisis, often without the necessary skills or resources to ride out the tough times.

What has been done

*Walter Reed Financial Readiness Program for First-Termers-8 hr. training
*Basic Financial Literacy Classes for Public Housing residents at risk for eviction.
*Dollars & Sense-Basic Financial Education: 3-hr course for Workforce Opportunities participants.
*MD SAVES Campaign--Rolling in the Dough effort to increase saving
*Personal Finance Management Conference for Professionals
*Estate and Retirement Planning
Efforts are underway to build collaborative partherships with the Maryland Tresury Department and the MD Department of Housing and Community Development to design and implement educational programs and applied research related to financial literacy and management.

Results

Program participants taking part in financial education said that they plan to do the following: 68%-Pay more than minimum on credit cards (N=347); 59%-Review credit report annually (N=426); 50%-Establish Emergency Fund (N=364); 52%-Develop a spending plan. (N=416); 65%-Track familly income and spending (N=304). Following Dollars & Sense Classes (3 hours) taught to Workforce Opportunities Program Participants, 91% of participants intended to develop a spending plan (n=60), 88%, improve tracking spending (n=58), and 85%, set financial goals. A 2-4 month follow up evaluation revealed that 70% were actively using a spending plan, 75% could identify at least one positive financial behavior change they made since attending class, and 60% had written down at least one SMART goal for their money.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
602	Business Management, Finance, and Taxation
801	Individual and Family Resource Management

Outcome #8

1. Outcome Measures

8. Enhancing animal nutrition and management: Basic and applied research program

2. Associated Institution Types

•1862 Research

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Animal nutrition and management is critical for the agricultural producers of the state to enhance production and profitability.

What has been done

Basic and applied research to enhance animal nutrition and management within the UM Animal & Avian Sciences department

Results

Completed a genome-wide screen for genes regulated by fasting and feeding in the hypothalamus of newly hatched chicks and identified a novel gene network that may control metabolic rate during this critical period. Identified the glucocorticoid-responsive region of the growth hormone gene and the isoforms of Pit-1 that control growth hormone gene expression in the chicken. Identified and confirmed four new genetic markers associated with differences in abdominal fat in broiler chickens. A follow up study on the impact of early phosphorus imprinting as a means to reduce phosphorus requirements later in the life of broiler chickens was completed. Gene expression work was completed on samples of an early lysine imprinting study that showed promise in changing the ability of broilers to maintain breast yields when fed low protein diets.

4. Associated Knowledge Areas

KA Code	Knowledge Area
601	Economics of Agricultural Production and Farm Management
311	Animal Diseases

Outcome #9

1. Outcome Measures

9. Research and Extension programs to enhance agricultural crops

2. Associated Institution Types

•1862 Extension
•1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Effective and efficient agricultural crop production is critical to producers and the overall state economy

What has been done

Basic and applied research and Extension educational outreach.

Results

Winter sheat germplasm improvement for the Mid-Atlantic.
Development of Wheat with Resistance to Scab Adapted to the Mid-Atlantic (USDA-Wheat & Barley Scab Initiative.
Hairy Vetch Cover Cropping as the Basis for Integrated Control of Fusarium Wilt of Watermelon.
Management of small grain diseases: 1) Fusarium head blight integrated management; 2) Evaluation of wheat variety resistance to Wheat Spindle Streak Mosaic Virus.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
216	Integrated Pest Management Systems
102	Soil, Plant, Water, Nutrient Relationships

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
- Populations changes (immigration,new cultural groupings,etc.)
- Other (Urban sprawl)

Brief Explanation

Input costs have increased, such as fuel, oil, seed, fertilizer and electricity.Drop in commodity prices and a downward turn of the State and National economies have made it difficult for the farming community during the second half of the year in 2008.These issues have brought on an interest in alternative energy sources, alternative crops, farm and market plan development and a need to reduce input costs however possible. At the same time, due to a State hiring freeze, we have been uable to fill critical county vacancies, leaving several counties with minimum AGNR coverage. We have also refined our reporting system to more accurately reflect program attendance and impacts.

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
- Other (Listening sessions)

Evaluation Results

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	10%	10%	10%	10%
112	Watershed Protection and Management	10%	10%	10%	20%
131	Alternative Uses of Land	5%	10%	10%	10%
133	Pollution Prevention and Mitigation	15%	10%	10%	10%
205	Plant Management Systems	15%	10%	10%	10%
216	Integrated Pest Management Systems	10%	10%	10%	10%
403	Waste Disposal, Recycling, and Reuse	5%	10%	10%	10%
405	Drainage and Irrigation Systems and Facilities	5%	10%	10%	10%
608	Community Resource Planning and Development	15%	10%	10%	10%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	**Extension**		**Research**	
	1862	**1890**	**1862**	**1890**
Plan	30.0	1.0	20.0	2.0
Actual	20.0	2.0	25.0	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**
598710	225676	1013620	766234
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
598710	225676	1013620	668153
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
0	0	0	251208

V(D). Planned Program (Activity)

1. Brief description of the Activity

1. Energy Efficiency & Composting (Green Industry & Poultry Growers)

Short course and training seminars for industry personnel and growers; Conduct field research in alternative fuel sources, energy saving techniques and recycling of green waste products; Trade and peer-reviewed journal publications.This activity includes both the green and poultry industry.

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.

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 Agronomic)

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; and update NuManPro to reflect new nutrient management recommendations.

5. Waste Management

Biosolids - Four-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 125 producers at a Better Composting School to include both large and small animals; Conduct a one-day poultry mortality composting course (Approx 50/year).

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 with a focus on both forest landowners and MD/DEL loggers; 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. Energy Efficiency & Composting (Green Industry & Poultry Growers): Nursery , greenhouse, poultry owners, growers and managers.

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 Interiorscapes Industry Professionals; General public (e.g. Master Gardeners); Other State and National agencies (MDE, EPA, USDA); Policymakers.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 agronomic): Farmers applying nutrients to soil; private consultants writing nutrient management plans; MCE, NRCS, MDE & Soil conservation district professionals.

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

Year	Direct Contacts Adults Target	Indirect Contacts Adults Target	Direct Contacts Youth Target	Indirect Contacts Youth Target
Plan	17850	119000	0	0
2008	18448	36496	1330	0

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

Patent Applications Submitted

Year	Target
Plan:	1
2008 :	2

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	0	0	
2008	6	51	57

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Target	Actual
2008	38	90

Output #2

Output Measure

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

Year	Target	Actual
2008	35	5

Output #3

Output Measure

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

Year	Target	Actual
2008	130	148

Output #4

Output Measure

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

Year	Target	Actual
2008	80	82

Output #5

Output Measure

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

Year	Target	Actual
2008	400	420

Output #6

Output Measure

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

Year	Target	Actual
2008	32	34

Output #7

Output Measure

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

Year	Target	Actual
2008	20	15

Output #8

Output Measure

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

Year	Target	Actual
2008	22	20

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
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
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	350	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This is also connected to data into Economic Prosperity section of report under Community Resource Development.

What has been done

Applied research related to land use and protection.

Results

Researched the auction mechanism/payment scheme of Maryland's farmland preservation program. Findings are that with this mechanism, Maryland has been able to preserve more land for the same amount of money. Examining the impact of targeting geographical location for land preservation. Researching the impact of preservation programs on farmland loss in the Mid-Atlantic states, finding that counties with a farmland preservation program lose less farmland. Examining the impact of use value taxation on farmland conversion and on state and county tax revenue. It appears that an increase in the tax savings by one percent delays conversion from 1 month to 2 years, depending on the county, and that the biggest impact of use value taxation is on parcels that are considered most likely to convert. Examining the economics of converting farmland to urban uses in China, including the role of economic incentives versus administrative land use controls.

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
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	550	475

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This target was expanded to also include the poultry growers. Energy dependency on foreign nations for oil is a major obstacle that needs to be dealt with to help keep agriculture viable. The green industry relies on fossil fuels for transportation, plastic for pots, fertilizers, and plastic for greenhouse coverings which are based on oil. The poulty growers also rely on fossil fuels and LP gas to heat the poultry houses. These input costs have significantly increased their production costs.

What has been done

In cooperation with the MD Nursery and Landscape Association, MD Greenhouse Growers Association, the MD Arborist Association, Montgomery College and MDA organized a green industry alternative energy conference as part of the sustainability effort. This program was developed from brainstorming with green industry professionals from the nursery, greenhouse, arborist and landscape industry in MD. MCE hosted a series of workshop on energy efficiency techniques for the poultry growers.

Results

Over 100 professional green industry professional registered for this 8 hour seminar. A written survey showed that only 1 was presently using solar panels for energy sources. None were using wind turbines for power sources. Five were using alternative energy sources at their business presently. Seven of the companies responded based on information they obtained from the conference they plan to install solar panels at their operation in the next year. Five said they were investigating use of wind turbines in the next year. Three workshops were held for the poultry growers with 53 learning how to do in house composting, energy efficiency lighting and how to do energy audits.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
403	Waste Disposal, Recycling, and Reuse

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
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	250	5644

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Measure # 5 & 6 are incorporated into this outcome. 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 its tributaries.

What has been done

As a result of the Maryland Water Quality Improvement Act of 1998, MCE has developed numerous approaches to assist the AGNR industries comply with the law through educational programs. A team of MCE faculty joined together to develop a solid educational program for both the green and traditional AGNR industries. MCE trains private consultants and farmers to write nutrient management plans along with writing plans for producers in the traditional AGNR businesses. MCE also maintains a computer program to assist in planning (NuManPro).

Results

The Nutrient and Irrigation Applicators Voucher Program was designed to train those employees in the green industry to apply water and nutrients according to best management practices. Over 50 applicators have been trained, with vouchers issued by the MDA. The MDA requires Nutrient Management Plans for all industries utilizing nutrients. Over the past two years, over 30 green industry growers have been trained.
MCE advisors have written 620 new traditional AGNR plans and updated 4,190 plans along with 74 manure transport plans. Twenty-seven workshops were held and 545 nutrient management consultants were trained and issued continuing ed credits. Forty-three farmers were trained to write their own plans.

4. Associated Knowledge Areas

KA Code	Knowledge Area
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation
403	Waste Disposal, Recycling, and Reuse

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5200	6270

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Measure # 7 incorporated here. Many septic and well systems are old and not maintained, creating nutrient leaching. Urban and suburban sprawl have led to the conversion of thousands of acres of native landscape into home lawns and gardens. Urban landscapes add nutrients into water systems. Both urban ground and surface waters contain high levels of nitrogen and phosphorus, sediments and toxic contaminants, which adversely affect water quality, aquatic organisms, fisheries, and human health.

What has been done

Teach well and septic maintenance for various groups, including master gardeners, homeowners, watershed associations, septic installers, and real estate agents. Educational programs were developed to teach new strategies to view the urban and suburban landscape, and second show how environmental and ecological concepts can be used to transform these landscapes into a healthy ecosystem and improve water quality.

Results

Developed new Bay Wise brochure and chapter for the Master Gardener training manual on water management and updated Bay Wise curriculum to include information on rain gardens. 302 MD residents and Master Gardeners learned Bay-Wise BMPs in 18 classes. Most of the class participants adopted at least one of the BMPs. Six well and septic maintenance classes held with 93 participants. Web sites are maintained to teach well and septic maintenance to homeowners. Homeowners are invited to email questions not answered on the website. The majority of email questions concerned septic systems (85%) and 20% concerned wells or water quality. Surveys indicated 56% receiving all the information needed to solve their problem, 50% claimed saving money ranging from $100 to $15,000 with an average of $ 4,700.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
112	Watershed Protection and Management
111	Conservation and Efficient Use of Water
608	Community Resource Planning and Development

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
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	5000	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

**A number of these target measures are combined with # 3, 'water and nutrient management.'
In addition, this outcome includes reserch efforts related to commercial nutrient management

What has been done

Basic and applied research

Results

Developing an E-Learning Resource for Water and Nutrient Management & Conservation for the Nursery and Greenhouse Industries. This web-based Knowledge Center provides research-based knowledge on soilless substrates, water management, nutrient management and crop health management. From June-Nov. 2008, the Center was accessed 1664 times by 1337 unique visitors from 33 countries and 48 states in the US. More than 10% of those people accessed the site repeatedly, for an average of 8 pages per visit. Extending the support network through initiation of a USDA multistate working group, which has initially attracted interest from a further twenty-five land grant research and extension faculty. Are actively pursuing the integration of this Knowledge Center as a formal COP within eXtension.

4. Associated Knowledge Areas

KA Code	Knowledge Area
133	Pollution Prevention and Mitigation
111	Conservation and Efficient Use of Water
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
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	55	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This outcome is also combined information with water and nutrient management within this section #3

What has been done

Basic and applied research related to the use of poultry manure on agricultural and other lands.

Results

The WQIA imposed new restrictions on the application of poultry litter to cropland as a fertilizer. These restrictions raised questions about the continued feasibility of land application on the Delmarva Peninsula and the extent to which long distance transport of litter off the Peninsula or other methods of poultry litter disposal might become necessary. We investigated the availability of poultry litter for six alternative potential uses (land application as fertilizer, compost, pelletization, electric power generation, cogeneration of steam and electric power, and forest fertilization) and the economic value of poultry litter in each of these uses. Application of poultry litter to cropland as fertilizer is likely the highest value use even in most cases where out-of-county transport would be required.

4. Associated Knowledge Areas

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

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 Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	4400	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Measures are reported in Nutrient and Water Management (residential) section #4.

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
608	Community Resource Planning and Development
133	Pollution Prevention and Mitigation

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
- 1862 Research

3a. Outcome Type:
Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	760	765

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

There are 157,000 private forest owners in MD that own 78% of the forest resource. An estimated 10% of these landowners have a written forest stewardship plan, and fewer than 30% seek the assistance of a forester before harvesting timber. 85% of forest landowners own 1-10 acres and educational programs need to be developed for this audience. The goal of Extension programs is to offer dependable and timely educational opportunities through the use of seminars, volunteer training, website, newsletters, and other media on forest stewardship.

What has been done

Educational programs were developed for both forest landowners and loggers. A series of logger educational programs were developed in a variety of media outlets: tailgate & classroom training and the use of poly com technology. Numerous landowner related programs were developed to include the Master Woodland Stewards volunteer training program (3.5 days), Woods in Your Backyard curriculum and forest stewardship seminars. Websites, curriculum, fact sheets, handbooks and newsletters are used to deliver programs statewide.

Results

Maryland Forest Service provides $25,000 in annual funding for educational programs. The Woods in Your Backyard manual has sold 3,500 copies with 8 train the trainer workshops held. The Master Woodland Stewards program has trained 385 volunteers who own 68,452 acres. Based on annual surveys, 74 % took steps managing their properties, 15% said others sought assistance as a result of a contact they initiated and approximately 1667 acres are now managed as a result of the program. These volunteers spent 3800 hours per year managing their own properties, using a value of $15 per hour, that equals $57,000. Volunteers spent 450 hours per year in outreach-related activities, which equals $6,750. 64 Master Loggers attended 5 three-hour workshops, dealing with safety, BMP's, Sedimant & erosion control,wetlands logging.

4. Associated Knowledge Areas

KA Code	Knowledge Area
205	Plant Management Systems
608	Community Resource Planning and Development

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
- Populations changes (immigration,new cultural groupings,etc.)

Brief Explanation

Input costs have increased, such as fuel, oil,fertilizer and electricity.Drop in timberprices and a downward turn of the State and National economies have made it difficult for the AGNR community during the second half of the year in 2008.These issues have brought on an interest in alternative energy sources, alternative income opportunities, market plan development and a need to reduce input costs however possible.

MDA and MDE have started to enforce state nutrient management laws, thus forcing the AGNR community to comply with the water quality improvement act.This has resulted in an inceased need to develop nutrient management plans.

At the same time, due to a State hiring freeze, we have been uable to fill critical county vacancies, leaving several counties with minimum AGNR coverage. We have also refined our reporting system to more accurately reflect program attendance and impacts.

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

Key Items of Evaluation

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%	30%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%	5%	5%	10%
724	Healthy Lifestyle	20%	20%	15%	20%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%	5%	10%	0%
806	Youth Development	50%	50%	50%	40%
	Total	100%	100%	100%	100%

V(C). Planned Program (Inputs)

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

Year: 2008	Extension		Research	
	1862	1890	1862	1890
Plan	15.0	5.0	10.0	6.0
Actual	48.0	5.0	15.0	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
1347097	372366	506810	6951
1862 Matching	1890 Matching	1862 Matching	1890 Matching
1347097	372366	506810	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	0	66899

V(D). Planned Program (Activity)

1. Brief description of the Activity

Nutrition Education & Behavior: Conducted classes and workshops; Social marketing education efforts. Implemented Food Supplement Nutrition Education Program (FSNE) in 10 Maryland Counties. Implemented EFNEP in nine Maryland Counties year-round; additional summer programs for youth were initiated in six counties. Inservice training for all FCS Educators and Faculty;1 Research Project. Developed new partnerships for program delivery; Train-the-trainer program delivery. FSNE and FCS Program Evaluation Websites. Conducted program on proper hand washing techniques for pre-school childlren. Conducted Safe Drinking Water Clinics for homeowners.

Protect Food from Contamination by Pathogenic Microorganisms, etc.: Conducted classes and workshops; Integrated relevant info into nutrition and health educational opportunities where appropriate.Provided updates to faculty; Consumer Alerts to faculty and public.Developed K-12 Drinking Water Curriculum for training with public school teachers and students.

Healthy Lifestyles: Conducted classes and workshops; Social Marketing education efforts.Implemented America on the Move and Walk-Ways Programs to increase physical activity.Introduced Growing Healthy Habits Curriculum focusing on healthy eating and growing your own vegetables for health and exercise.Train the trainer education for agency reps and teachers.Developed curriculum for educating childcare center personnel and parents of children enrolled in the childcare centers, on healthy eating and physical activity (Lower Eastern Shore).

Human Environmental Issues Concerning Residential and Commercial Structures:1 Healthy Homes Training/Workshop for 25 FCS Faculty on "Essentials of a Healthy Home."Social Marketing educational efforts consisting of 1 educational display, Healthy Homes Festival, and Healthy Homes Website activity (100); Mass Media Awareness of issues; New Partnerships.

Youth Development

A) Volunteer Development: 4-H youth development educators and staff in Maryland's 24 units:1) Implemented volunteer recruitment plans to increase the number of adult and teen volunteers working with 4-H clubs and groups.2) Conducted training for adult and teen volunteers at the local, regional, and state level in the following areas to prepare volunteers to work with 4-H clubs and groups:3) Provided recognition for volunteers at the local, state and national level through award programs, opportunities for out of state trips, and nominations of volunteers for state and national awards of excellence.

4) Assessed volunteer effectiveness through interviews, surveys, and personal observations to determine if participation in 4-H clubs, groups, and concomitant educational programs help achieve the long term goals of the 4-H program.

Additionally, Maryland 4-H supported a statewide 4-H Volunteers' Association, a State 4-H Teen Council, and State 50/50 Advisory to ensure adult and teen voice in youth development program design and delivery.A statewide Teen and Adult Volunteer Forum and State 4-H Teen Focus Conference were held to increase opportunities for volunteers to strengthen leadership and 4-H knowledge and skills.Staff development focused on strengthening 4-H clubs and outreach to new audiences.

B) 4-H Curriculum Development for educational programs that support and enhance 4-H clubs. Five statewide curriculum committees were supported to:

1) 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.

2) 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.3) Assess enrollment trends and community club program quality.

C) Outreach to underserved communities and underrepresented youth:

1) Supported 4-H outreach programs targeted to youth who are geographically isolated, living in poverty, participating in problem solving court programs, and otherwise at risk for not achieving positive youth development outcomes.

2) Identified training, resources and support needed by 4-H staff to initiate and sustain after school and 4-H military initiatives in local communities.

2. Brief description of the target audience

MD Families
Employees
Food Stamp Eligible Families
Low Income Mothers/caregivers and their children
Teachers and Professionals'
Agency Representatives
Public Housing Residents
Child Care Providers
Children, youth and families across Maryland
Active duty and reserve children, youth and families on and off base.

V(E). Planned Program (Outputs)

1. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
Plan	150000	250000	10000	60000
2008	200071	4000000	56264	65000

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

Patent Applications Submitted

Year	Target
Plan:	0
2008 :	0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

	Extension	Research	Total
Plan	10	0	
2008	5	4	9

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

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

Year	Target	Actual
2008	1100	3885

Output #2

Output Measure

- Healthy Homes Website developed; Grants funded to support statewide efforts

Year	Target	Actual
2008	{No Data Entered}	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O No.	OUTCOME NAME
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.
6	6. Healthy Homes. Number identifying potentially hazardous that affect indoor air quality; Number carefully reading labels before using hazardous household cleaning products; Number who take steps to control humidity in their homes; number who work to improve health and safety within homes.

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
- 1862 Research
- 1890 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	11000	164860

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The typical American diet is too high in saturated fat, sodium,& sugar and too low in fruits, vegetables, whole grains, calcium, and fiber. Diet plays a role in 4 of the 6 leading causes of death. More than 60 percent of deaths are attributable to lifestyle, including diet and physical activity, and could be prevented. Poor diet increases the risk of other chronic diseases, including hypertension and osteoporosis. Overweight and obesity rates in children and adolescents in the U.S.and MD have been rising steadily over the last 30 years.

What has been done

FSNE programming in 12 counties and Baltimore City (total of 14 projects);Train-the-trainer programming expanded the reach of FSNE by training 1,040 teachers. *Child Welfare Conference Focusing on Childhood Obesity. EFNEP Summer Youth Programs in 6 non-EFNEP counties
'7-3-3-1 Healthy Families Having Fun' Program targeting Hispanic Families to Combat Childhood Obesity in 17 locations. *Diabetes and Weight Management Classes and workshops in multiple counties. *UP For the Challenge Program for Youth implemented in multiple sites.

Results

A statistically significant ($p < 0.01$) difference between behavior prior to FSNE participation and intent to change behavior following participation was indicated in 23 dietary quality, food resource management and physical activity behavior.
Health Literacy Research Project and Food Stamp Nutrition Education Evaluation Project. Collecting qualitative and quantitative data from 330 food stamp eligible adults in Maryland.
- Family Influence on Fruit and Vegetable Consumption Among Rural, Low-Income, Preschool Children: A Preliminary Investigation of Factors Associated with Obesity.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
703	Nutrition Education and Behavior

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
•1862 Research

3a. Outcome Type:
Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	7000	5600

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Maryland experienced 2 serious foodborne illness outbreaks in the last decade. A 1997 Salmonella outbreak, traced to stuffed ham served at a church dinner, sickened 746 people and resulted in one death, for which the responsible organization paid a court awarded $2,000,000 in damages. In 2000, Hepatitis A was contracted by 20 people who had consumed food or beverages from any of 4 local restaurants. In addition, the Hispanic/Latino population in MD continues to climb, and an increasing number of foodservice employees speak only Spanish.

What has been done

Feeding the Community Safely Program targeting food service workers and occassional food handlers; Food Safety for Child Care Providers offered to 350 Providers; Online Food Safety Course for Child Care Providers developed and implemented; Fact Sheet on 'Cooking Safely with Venison' developed to address use/acceptance of venison in large area Food Pantries, since Latino audiences and others were not familiar with recommended procedures for safe handling, storage, and preparation.

Results

Following participation in Food Safety education, participants indicated the following: 84% plan to improve their food safety habits -increase from 38%; 74% plan to follow key recommendations to clean, separate, cook, & chill-increase from 39%; 83% plan to thaw foods in the refrigerator rather than on the kitchen counter-increase from 37%;
94% plan to serve foods that are safe/appropriate for elderly, young children, and other vulnerable populations-increase from 65%; 68% Use food thermometer to moniter temperature of potentially hazardous foods-increase from 27%.

4. Associated Knowledge Areas

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

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

3a. Outcome Type:
Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	3150	3291

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. In order to provide opportunities for more youth to participate in high quality youth development programs that meet the needs of children and youth MCE is dependent on increasing the number of volunteers and ensuring that the volunteers are well trained, prepared and supported to work with youth.

What has been done

Volunteers were recruited, trained, supported, and recognized to support positive youth development for children and youth in community clubs, on military installations, and in after school and out of school settings. An updated volunteer policy training was held for all 4-H educators and staff to increase their ability to adequately prepare volunteers for service. A statewide 4-H teen and adult volunteer forum, and statewide in-services provided opportunities for training to enhance 4-H clubs and 4-H educational programs offered by volunteers.

Results

The number of volunteers recruited and trained remained steady in 2008. There was an increase in the number of volunteers who attended the Statewide 4-H Volunteer Forum.

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

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1200	0

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. Studies indicated that participation in 4-H Clubs contributes to positive youth development and 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.'

What has been done

Essential elements of 4-H youth development have been incorporated into the training programs for volunteers. 4-H educators have been provided with a tool for self assessment of 4-H clubs to determine how well the essential elements of 4-H are incorporated into 4-H club programs.

Results

To date we have not collected any statewide data to determine how many 4-H clubs are using the self assessment. However, the number of youth in 4-H clubs has increased in 2008 which may be an indication of the increased quality of the 4-H club experience. Additionally the number of youth who have submitted records of 4-H life skill development (reflecting the essential element of mastery) and the number of youth who have completed a program to demonstrate their inovolvement in community service (reflecting the essential element of generosity) has increased in the past year.

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

3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	1800	2008

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Maryland 4-H Youth Development needs to increase and strengthen after school programming efforts, in partnership with other youth serving agencies, including military youth and family programs, to provide education, training, curricula resources, and 4-H club experiences that result in positive youth development outcomes for youth in afterschool settings across the state in local communities and on military posts and bases.

What has been done

With funding from the Mott Foundation, Maryland 4-H youth development and Family Consumer Sciences programs provided training for 473 afterschool staff, and childcare providers who care for more than 7000 elementary and middle school-aged youth in the after school hours. Additionally Maryland 4-H conducted 20 4-H trainings at all Army, Air Force and Navy military installation youth centers in Maryland, reaching over 100 front line staff across Maryland.

Results

4-H educators report and increase in the number of youth enrolled in 4-H afterschool programs and in the number of community partnterships developed to deliver 4-H programs to new audiences.
Front line staff in military child and youth programs understand 4-H youth development and are better prepared to deliver 4-H programs, using the essential elements of 4-H and experiential learning.

4. Associated Knowledge Areas

KA Code	Knowledge Area
806	Youth Development

Outcome #6

1. Outcome Measures

6. Healthy Homes. Number identifying potentially hazardous that affect indoor air quality; Number carefully reading labels before using hazardous household cleaning products; Number who take steps to control humidity in their homes; number who work to improve health and safety within homes.

2. Associated Institution Types

•1862 Extension
•1890 Extension
•1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2008	{No Data Entered}	60

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Environmental health hazards in housing affect quality of life and add billions to health care costs nationally. MD's rate of child asthma prevalence is 9.8% of the population higher than the 8.1% national average. Asthma's effects on children and adolescents include: 14 million lost days of school missed annually; estimated cost of treating asthma in those younger than 18 years of age is $3.2 billion per year.

What has been done

Healthy Homes for Practitioners Training for 25 Extension Educators and Program Partners; Healthy Homes Festival to increase awareness; Healthy Homes Classes; 1-Aging in Place Class focusing on indoor environmental health and safety issues; Healthy Homes website developed for public; New partnership developed with Johns Hopkins University; Training conducted by Extension team for Healthy Home Practitioners; Grants secured to fund Healthy Homes programs across state; 1 research project funded and implementation begun.

Results

100 hits on Healthy Homes website; 25 Trained Educators and program partners. After participating in a Healthy Homes program/activity:
94% Plan to carefully read labels before using hazardous household cleaning products; 89% could identify potentially hazardous products that affect indoor air quality; 80% plan to take steps to control humidity in their homes; 97% plan to make efforts to improve health and safety within their homes.
The Baltimore City Healthy Homes Transition, funded by CDC's Lead Poisoning Prevention Branch. Healthy Homes, Healthy Kids: educates teachers and school staff, students and their families, and community members about health threats in the built environment and increases their awareness about indoor air quality (IAQ).

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

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.)

Brief Explanation

The economic crisis has resulted in a climate of hiring freezes, leaving us short-staffed for FCS Program areas.At the same time, the number of food stamp recipients continues to rise in MD. Additional staff are not available to implement additional programs that are needed in multiple counties without an FCS presence.

While the number of 4-H educators in the state remained relatively constant in 2008, increased financial pressures on families may have impacted the number of hours that adults could volunteer to support 4-H programs.

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 (Post Program and 2-4 month follow up)

Evaluation Results

Key Items of Evaluation