2007 University of Maryland and University of Maryland - Eastern Shore Combined Research and Extension Plan of Work

Brief Summary about Plan of Work

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.

Estimated number of professional FTEs/SYs to be budgeted for this plan.

Year	Extenion		Research	
	1862	1890	1862	1890
2007	120.0	12.0	73.0	15.0
2008	120.0	12.0	73.0	15.0
2009	120.0	12.0	73.0	15.0
2010	120.0	12.0	73.0	15.0
2011	120.0	12.0	73.0	15.0

Merit Review Process

The merit review process that will be employed during the 5-Year Plan of Work cycle

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

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 Summary.

Research Faculty Reviews:

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

Programmatic Reviews:

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

Project Reviews:

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

Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Extension educators work to address critical issues of strategic importance as identified by Federal and State Extension Program Leaders. On the local level, educators work with Extension Advisory Boards and Councils to assess community needs and in response, design strategic educational programs to meet those needs. Elected county officials, community leaders, and business/industry professionals provide a different perspective to needs of the community. Identified needs by this group of constituents are addressed in collaboration with other agencies and independently by Extension programming. Programs actively engage communities and through continuous evaluations and assessments, these programs will be strengthened and adapted to produce desired results. Our issues were identified in large part by our working directly with stakeholders described above. A brief overview of these critical issues is provided.

The Chesapeake Bay is the largest estuary in the United States. Thus, the quality of the environment, and quantity of crab, oyster, rockfish harvests, and recreational facilities are of concern to Maryland residents. The bay, however, is under siege from the pressures of increasing population, and agricultural, residential, and industrial pollution. Public officials, educators and local citizens are faced with the challenge of attempting to understand, and successfully manage land-use changes resulting from population explosion and pollution. These changes have a major impact on agriculture which is a major Maryland industry. A strong agriculture will continue to be needed to provide the world's food supply as we move into the next millennium. Producers must be prepared to respond to new challenges and take advantage of opportunities for new markets, new relationships and new technological advances.
Conflicting reports about the risks associated with various foods have consumers asking to be reassured about the safety and quality of our food supply. The President's Food Safety Initiative and Hazard Analysis Critical Control Points (HACCP) emphasize the need for improved food safety from farm to table. Agriculture and related discipline scientists and educators, therefore, are faced with the awesome challenge of providing farmers with the income warranted, while ensuring that its food products are safe, and that the state's natural resources do not suffer from practices used to produce the food, fiber, and other necessary products.
Health concerns associated with diet and nutrition are pervasive as the nation assesses its citizens' health. Diet and inactivity are related to the top five leading causes of death in Maryland. Given that cardiovascular disease accounts for 35 percent of the deaths, and cancer 25 percent, both with strong dietary risk factors, it becomes clear that consumers need integrated food and nutrition education. This education must address the interaction of nutrition, diet, fitness, and lifestyle issues to be effective in reducing chronic disease risk. Individual groups affected most by these dietary related problems include elderly, ethnic minorities, youth, and food insecure individuals.
Maryland is a diverse state in many ways including geography, demographics, and size of community. Strategies for strengthening strong communities and revitalizing weaker ones are essential to the quality of life in Maryland. Quality of life requires strong families as well as strong communities. Our youth need both for healthy growth and development. All Maryland residents, rural and urban of all ages, races, ethnicity and economic groups deserve opportunities to build strong families and communities.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

Because Maryland's 1862 and 1890 institutions closely partner, Maryland extension, research, and academic programs are designed to address these challenges. The Maryland Cooperative Extension (MCE) is an integral organization comprised of persons and resources from the University of Maryland in College Park (UMCP) and the University of Maryland on the Eastern Shore (UMES), the 1862 and 1890 land-grant institutions. Research efforts include collaborative projects of scientists from UMCP and UMES including those through the Maryland Agricultural Experiment Station.
Extension programs are often targeted to under-served and under-represented audiences in an effort to improve the quality of life throughout the state. Communities of under- represented citizens are actively involved in the determination of programs they want offered though interest surveys and follow-up interest methods. Extension educators continuously recruit new audiences and promote Extension programs to

attract new audiences in communities not currently involved in Extension programs. Networking with community agencies involved with special audiences are often utilized to attain additional information about needs not readily observable by Extension practitioners. Additionally, community surveys (Health Department, United Way, Community Action, etc.) serve as tools for identifying needs of under-served and under-represented audiences.

Because Maryland is an urban state and the majority of population growth as indicated from the latest census is from under-served populations, we have made specific efforts to address the needs of this population segment. This is particularly true with our efforts in the social science disciplines and targeting specifically small farm development and ethnic vegetable research and education at our research stations.

3. How will the planned programs describe the expected outcomes and impacts?

The programs are directly linked to our expected outcomes as the goals by which success will be evaluated, especially with our Smith-Lever programs. It is not so much that the programs describe the outcomes but that the outcomes are benchmarks for evaluating the success of our programs and provides a "walk-back" capability to refine our program effort to determine if we are on-target to achieve the desired outcome.

More specifically, as part of the program planning process, Extension programs will describe the expected outcomes and impacts by identifying specific evaluation instruments that will show significant attitudinal and behavior change in program participants and the learners. Evaluation tools will be utilized at end of program, as pre/post tests and as longer term (six & twelve month) follow-up methods that measure desired change.

4. How will the planned programs result in improved program effectiveness and/or efficiency?

Because our outcomes are our benchmarks and the inputs and outputs are directly linked to achieving our outcomes we have an inherent capacity to evaluate the effectiveness and efficiency of the program. Efficiency, as a measurement of utilization of resources to achieve a desired goal or objective (e.g., effectiveness), will be evaluated by standard quantifiable metrics that are defined as to whether we are correctly investing the right resources and/or personnel to achieve our goal. Effectiveness will be evaluated by determining if the projected outcome was achieved.

Additionally, planned programs, that are consistently evaluated for quality of information and delivery will result in improved efficiency and effectiveness as suggestions are implemented. By collaborating with community organizations, Extension will reduce repetitiveness of subject matter training and be better able to design, promote and teach more effective programs. Dependent on the subject matter, various teaching methods will be used that will determine increased efficiency and effectiveness.

Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation (Check all that apply)

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

Brief explanation.

We will continually be seeking input from our stakeholder groups by both formal and informal methodologies including focus group sessions, partnering with stakeholder leadership groups through listening sessions, obtaining directed feedback from our college and unit advisory committees, working with our private and public partners in clarifying if our contributions are assisting them in meeting their goals and objectives, and directed planning sessions with key representative stakeholder groups.

In particular, Extension educators will continue to focus on participant-centered learning, which easily translates into actively engaging individuals in feedback and suggestions that prove invaluable to the instructors. Local Extension Advisory Councils provide valuable input that enables the Extension professional to design and conduct essential programs for citizens. Extension educators are involved in various

committees and boards in their communities which enables them to participate in grass roots efforts and learning about the most important community needs.

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

1. Method to identify individuals and groups

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

Brief explanation.

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.
The county level Extension Advisory Council (EAC) provide substantial input into the planning of programs at the local level for Maryland Cooperative Extension. Membership is broad-based and diverse. The EAC concept initiated in 1983 required that a diverse set of clients be selected to provide the stakeholder input that is need to effectively direct MCE programs. This diversity is monitored by an Internal Compliance monitoring process and by the MCE administration as required by the CSREES Civil Rights Office. Each county/city unit has developed a local unit plan to provide guidance for program planning. EAC members are major contributors to these unit plans.

Maryland Cooperative Extension engages in conversation with a large number of its faculty and staff. This input sought to determine from their prospective the needs of local clients both in the then current education climate and in the five years that followed.

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.
The groups that were represented by the key informant interviews were family and youth community, agriculture community, Extension Advisory Councils, commodity groups, and other traditional constituency groups. This proved a powerful tool and will be utilized periodically in the future.

2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups 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

By living and working in their communities, Extension professionals work with EAC, youth planning groups/teen clubs, community organizations, civic clubs, houses of worship and government agencies to determine stake holders and to engage them in discussions, facilitated focus groups and community listening sessions.

Most importantly, this is a continuous process. It is easy to slip into the pattern of talking with the same people and ignoring new and important audiences. This is an ongoing request that we make of our educators -- to make sure that their advisory groups, informal or formal, truly represent the communities in which they live.

3. A statement of how the input will be 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.

Constituent input will be utilized in a variety of ways to include budget process, particularly at the local level; identification of emerging issues through understanding the most critical needs that can be addressed by educational programs; re-direct Extension & Research programs by understanding critical needs and defining new priorities; in staff hiring to recruit and employ the best professionals available to affect change in an ever-changing society; in action programs as we work in communities to affect positive change and to set priorities for impacting the future.

1. Name of the Planned Program

Economic Prosperity of Productive and Sustainable Food and Fiber Systems

2. Program knowledge areas

- 601 10% Economics of Agricultural Production and Farm Management
- 216 10% Integrated Pest Management Systems
- 608 10% Community Resource Planning and Development
- 123 10% Management and Sustainability of Forest Resources
- 801 10% Individual and Family Resource Management
- 205 10% Plant Management Systems
- 604 10% Marketing and Distribution Practices
- 102 10% Soil, Plant, Water, Nutrient Relationships
- 602 10% Business Management, Finance, and Taxation
- 311 10% Animal Diseases

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

For farms to survive in a rapidly urbanizing state such as Maryland, farmers must adapt. According to the USDA-NASS 2002 Census of Agriculture the number of Maryland farms has decreased by 8% and land in farming has decreased by 5% since the last census in 1997. In order to slow down potential development and keep Maryland farms solvent, alternative crops and their markets need to be investigated. The average size farm in Maryland cannot generate a sustainable income growing traditional agriculture crops like corn and soybeans.

Maryland Cooperative Extension (MCE) has been actively involved in many agriculture and resource based industry efforts across the state to provide educational and assistance opportunities to clientele. Many county extension educators are involved in local and regional efforts to assist agricultural and natural resource entrepreneurs. About seven counties now have county agricultural marketing specialists but there activities are county based and there is limited regional coordination.

Insect, disease, weed, nematodes, invasive species and cultural plant problem have the potential to cause economic and plant material loss in Maryland. Improvement of diagnostic skills is key to operating an effective IPM program. The alternative crops/enterprises program includes organic crop production and certification, ethnic and specialty crop production, cover crop use, high tunnel crop production, pumpkin production, and small fruit production. Research-based information generated by MCE researchers through this program will play a significant role in training Maryland farmers to become more effective and efficient farmers.

Complex integrated pest management programs are difficult to transfer to growers during meetings. Need a train-the-trainers program, i.e., extension educators, consultants are trained in the new program and then work closely with growers in transferring the pest management technology. Newly introduced disease problems such as soybean rust and downy mildew races as well as new insect pests such as the soybean aphid and the Marmorated stinkbug are a continuing challenge to growers. There is currently a great deal known about the effect that crop management practices have upon both the profitability for farmers and the impact that those practices have on the environment. However, profitable crop production is faced with constantly changing challenges including commodity price fluctuations, rising input costs, changes in crop-threatening pests, introduction of new technologies, and pressures from rapid suburban growth.

Pasture is a well studied topic, but yet still has many unanswered questions. Due to the ever changing clientele base that has livestock, there is the continued need for pasture-base programming. Over 25 percent of the state's land is devoted to forage production, much of which is devoted solely to pasture.

Biosecurity and animal health are critical issues facing the state. Awareness and education of biosecurity management practices are important for the agricultural community. Training priorities are: Extension and Research faculty; Industry personnel; producers; farm employees; allied industry professionals; and state government employees;

Many individuals and families in the United States are experiencing financial challenges. Some are worried about paying monthly bills, others are concerned about making financial ends meet, and many others wonder if they will have a financially

successful retirement. Issues such as low financial literacy, consumer indebtedness, low savings rate, low financial assets, expensive health care and long-term care, and insufficient retirement planning are of great concern.

6. Situation and priorities

Maryland has 1.4 million acres of land that is used for crop production. Each year, farmers producing those crops are faced with an array of weather, pest, nutrient and other production related impacts that can affect their profitability. Profitability is key to keeping Maryland's agricultural land from being converted to housing developments.

The changing economic, demographic, agrarian, and political patterns have affected Maryland agriculture. Housing development pressure, coupled with the downfall of tobacco industry in Southern Maryland, has spurred the development of alternative crops. In addition to traditional farmers, a growing number of non-traditional farmers, including beginning and immigrant farmers are adopting alternative agriculture enterprises. The needs and priorities of organic and sustainable growers are different from traditional vegetable and grain growers.

Many farm and forest properties are now owned by landowners with little farming experience or an interest in nontraditional products and services. Rural economic development has refocused its efforts in recent years on developing entrepreneurs in the community which leads to more sustainable economic development and less reliance on manufacturing industries that come and go with the global economy.

Good nutrient and pest management practices impact all citizens of the state by introducing farmers to practices that not only are financially viable but also are more environmentally friendly. There is currently a great deal known about the effect that crop management practices have upon both the profitability for farmers and the impact that those practices have on the environment. However, profitable crop production is faced with constantly changing challenges including commodity price fluctuations, rising input costs, changes in crop-threatening pests, introduction of new technologies, and pressures from rapid suburban growth.

Over 25 percent of the state's land is devoted to forage production, much of which is devoted solely to pasture. This forage production supports 240,918 cattle and calves, 22,702 sheep, and 87,100 equine. Over the last 10 years, livestock producers have recognized the need to use pastures more effectively to decrease feed expenses, increase farm profits, and improve animal herd health.

Insect, disease, weed, nematodes, invasive species and cultural plant problem have the potential to cause economic and plant material loss in Maryland. The public and the agriculture community is demanding safe effective methods to reduce this economic loss but using methods that have minimal impact on the environment. Many in the agricultural community are adopting IPM methods, but need help expanding their efforts.

The issue of biosecurity is extremely important to Maryland due to the significant animal industries in the State. A disease outbreak of epidemic proportion not only has economic consequences but it also has the potential to disrupt the food supply, cause significant mental duress of animal owners, create animal disposal problems, create doubt in the minds of consumers regarding food safety, halt interstate transport and shipping of animals, and prevent international trade.

Many American consumers lack basic financial knowledge and have poor financial management practices. Consumers are falling behind with their credit card payments. Personal savings rate has steadily declined and more than half of Americans report that they do not save regularly. Many individuals and families are not preparing for their financial futures such as savings, credit, retirement, long-term care, investment, and/or estate planning.

7. Assumptions made for the Program

1. The MCE crop production program assumes that the traditional model for extension education is not broken and will continue to be one of the most effective mechanisms available to educate farmers. Some of the technologies used to accomplish its goal have changed over the years but the basic premise remains: Extension is an unbiased source of research-based information that all citizens of Maryland can utilize for the betterment of their lives and their livelihoods. MCE employs people with different expertise. Collectively, that expertise has provided solutions to many of Maryland's past crop production problems. And, that diverse expertise will continue to identify solutions for today's and tomorrow's crop production issues.

2. Interest in alternative crops/enterprises will continue. Support from AES will allow research on UMD research farms and technological capacity to host web information will be available.

The organization will continued funding of faculty and forage specialist along with operation monies for programs. There will

be continued funding of cost share practices related to pasture management BMPs, cooperation of public agencies and private organizations, pressure on traditional farming practices – both economically and environmentally and increase entry into agriculture from new and part time farmers with no previous agricultural background.
3. Assume green industry will continue to grow and there will continue to be a growing market for plant materials in Maryland, green industry associations (Maryland Greenhouse Growers Association & Maryland Nursery and Landscape Association) involvement and willingness to incorporate profitability and production efficiencies into their daily activities and support from professional horticulturist, homeowners, Master Gardeners, and legislators will continue in a positive incline.
4. Maryland agricultural land will continue to face development pressures; commodity prices will remain weak relative to production costs; there will be an increasing demand for locally produced products; there will be an increasing demand for organic and other more naturally produced products; producers need marketing assistance; producers are interested in getting more money for the products.
5. The success of American business has been the motivation of persons desiring to produce, manufacture or market a product. Farmers and rural land owners have the same desire to own and profit from the land. The value of an asset must provide a positive return in order for it to be valued by the owner.
The principle that biosecurity is a set of management practices that will benefit both the animal's health and the producer's livelihood. The review of the literature is important for objectively assessing the priority of the subject matter content. The program will operate with minimal financial resources but the ability to develop an excellent outreach program is expected based on previous teaching experiences of the cooperative Extension faculty. The program expects to operate with print, electronic, and traditional group teaching approaches.
6. FCS faculty and staff are available and MCE supports the Financial Security program. Government, university, agency/institution websites will continue to provide updated educational materials.

8. Ultimate goal(s) of this Program

Increase profitability and sustainability of Maryland farms; Maryland farmers will increase profitability by incorporating alternative crops/enterprises into their businesses; Private forestland of all sizes, and the organizations that service the land and owners, will be managed using forest stewardship practices that will ensure a sustainable source of forest products, wildlife, water quality and aesthetics to the quality of life of all citizens; To develop an entrepreneurship development system in rural communities across the state that will create, improve and/or diversify agriculture and natural resource based enterprises that will contribute to economically viable working lands; To protect the animal and plants of the state by implementing proper biosecurity management practices; Increase profitability of green industry operations; Increase diagnostic skills of master gardeners; adoption of non-chemical means of plant protection; Increase financial knowledge of families; Increase their abilities to achieve financial self sufficiency and security; and improve their financial management strategies.

9. Scope of Program

- In-State Extension
- Integrated Research and Extension
- Multistate Extension
- Multistate Integrated Research and Extension

Inputs for the Program

10. Expending formula funds or state-matching funds : Yes

11. Expending other then formula funds or state-matching funds : Yes

12. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	40.0	6.0	20.0	3.0
2008	40.0	6.0	20.0	3.0
2009	40.0	6.0	20.0	3.0
2010	40.0	6.0	20.0	3.0
2011	40.0	6.0	20.0	3.0

Outputs for the Program

13. Activity (What will be done?)

1. IPM

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

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

2. Community Resource Development

Development of a rural entrepreneurship development system; 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. Biosecurity and Animal Health

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

4. Marketing Maryland Agricultural Commodities:

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

5. Alternative Crops

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

6. Pasture Management

Variety trial data annual bulletins; Financial analysis: Annual Dairy Financial Analysis of pasture farms; Fact sheets 2 revised

and 3 new printed fact sheets; Website for Maryland and other researched-based bulletins, fact sheets, presentation, and information; Seminars and workshops; Pasture walks; Individual farm consultations; Ten revised and three new PowerPoint presentations; Three peer reviewed journal articles.

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

14. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • One-on-One Intervention • Demonstrations	• Newsletters • Web sites

15. Description of targeted audience

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

2. Community Resource Development
Southern MD Agricultural Development Commission; MARBIDCO; Chesapeake Fields; Garrett-Preston Rural Development Association; Rural Development Center at UMES; Local Agricultural Development Specialists; Planning and Zoning Boards; Farmers; Forest Landowners; General public.

3. Bio-security and Animal Health
Farmers; youth; MDA; Agricultural industry; Small and Beginning farmers; Backyard livestock owners; Extension faculty.

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

5. 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.

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

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

16. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	14500	1600	750	1
2008	14800	16000	750	1
2009	15000	16500	780	1
2010	15300	16500	780	1
2011	16500	17000	780	1

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 1 2008 : 1 2009 : 1 2010 : 1 2011 : 1

18. Output measures

Output Target

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

2007: 65 2008: 70 2009: 80 2010: 85 2011: 90

Output Target

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

2007: 60 2008: 65 2009: 70 2010: 75 2011: 75

Output Target

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

2007: 63 2008: 65 2009: 65 2010: 70 2011: 75

Output Target

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

2007: 28 2008: 30 2009: 30 2010: 32 2011: 35

Output Target

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

2007: 32 2008: 32 2009: 35 2010: 38 2011: 40

Output Target

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

2007: 60 2008: 65 2009: 65 2010: 70 2011: 75

Output Target

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

2007: 48 2008: 50 2009: 55 2010: 60 2011: 70

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

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.<

Outcome Type: Long

2007: 3000 2008: 3600 2009: 3630 2010: 3800 2011: 4000

Outcome Target

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

Outcome Type: Long

2007: 750 2008: 800 2009: 800 2010: 900 2011: 900

Outcome Target

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

Outcome Type: Long

2007: 75 2008: 80 2009: 90 2010: 100 2011: 200

Outcome Target

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

Outcome Type: Long

2007: 600 2008: 650 2009: 750 2010: 1000 2011: 1050

Outcome Target

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

Outcome Type: Long

2007: 300 2008: 400 2009: 900 2010: 900 2011: 1000

Outcome Target

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

Outcome Type: Long

2007: 1500 2008: 1800 2009: 2000 2010: 2200 2011: 2500

Outcome Target

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

Outcome Type: Long

2007: 400 2008: 450 2009: 500 2010: 550 2011: 600

20. External factors which may affect 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)

Description

External factors have the ability and capacity to influence these future programs. If the economy and organizational appropriations change, the number of contacts could change as well as program delivery methods. Public policy, government regulations and natural disasters could alter planned program direction and focus and require resources be refocused to deal with immediate needs.

There is a major focus on entrepreneurship nationally and in Maryland. There continues to be pressure on the price of agriculture land for urban development and there is restrictive legislation in counties that impede agriculture enterprises.

Cooperative Extension educators and producers will be motivated based on recent reports in the local and national news regarding the importance of preparedness for potential threats to the animals and food supply. In addition, it is assumed that the educational program offered will provide an objective and concrete way for the target audience to take action under the continued urgency to be vigilant in the area of biosecurity. Working closely with the Maryland Department of Agriculture because they have statutory authority for the regulating any disease outbreak that requires quarantine and restriction of interstate commerce. In addition, the role of Cooperative Extension has in the event of a disease outbreak in communicating the regulatory role that the Maryland Department of Agriculture has will be explored and discussed.

Maryland's farmers face a unique set of challenges. The state is densely populated. New housing developments keep moving further from the population centers into the rural areas of the state. Farmers not only must contend with an array of crop production challenges but, additionally, many of them must also be aware of the concerns of their new neighbors. Maryland is a state that has a much diversified agricultural structure but center to that structure is the large poultry broiler industry. And, Maryland is a state that has a citizenry that has a strong environmental conscience. These external factors have an impact (sometimes strong and sometimes weak) upon the crop production choices that farmers make. Maryland Cooperative Extension is keenly aware of these external factors but also conscious of the production challenges that Maryland's farmers face. Through its educational efforts, MCE plays a major role in getting the acceptance for programs by the external forces while providing sound advice through its commitment for helping the agricultural industry stay on the cutting edge of production management.

21. Evaluation studies planned

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

Description

Pre and post test during teaching events, programs and demonstrations. Direct consultation with participants. Best management practices put in place by agricultural producers based on surveys and programs from Soil and Water Conservation Districts and USDA-NRCS.

Extension faculty will use a sample of farmer participants to survey or interview. Personal observation of practices put in place or other behavioral changes as a result of teaching event.

22. Data Collection Methods

- Sampling
- Mail
- On-Site
- Unstructured
- Observation

Description

Follow-up mail surveys six months after teaching events or activity to measure overall impact. Personal interviews with program participants or personal observations to measure behavioral changes or financial impacts. Pre and post tests will be incorporated into teaching events, demonstrations and tours to measure knowledge prior to event and after event. This information will also be used as a basis for future program development.

1. Name of the Planned Program

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

2. Program knowledge areas

- 133 10% Pollution Prevention and Mitigation
- 205 10% Plant Management Systems
- 111 10% Conservation and Efficient Use of Water
- 608 10% Community Resource Planning and Development
- 403 10% Waste Disposal, Recycling, and Reuse
- 216 10% Integrated Pest Management Systems
- 405 10% Drainage and Irrigation Systems and Facilities
- 101 10% Appraisal of Soil Resources
- 131 10% Alternative Uses of Land
- 112 10% Watershed Protection and Management

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

Maryland, the fifth most densely populated state in the nation, is undergoing rapid changes in population growth, land cover, community character, ecosystem stability, and economic diversity. Census Bureau data predicts MD's population will grow from approximately 5.5 million to 7 million by 2030. While increase in population and migration is inevitable, decisions for where these people live often lie in the hand of local decision makers that determine how development will occur.

Water and nutrient management extension programs are developed for, and delivered to MD nursery and greenhouse growers and interiorscapers. These programs are designed to implement the MD Water Quality Act of 1998 and directly address the state's nutrient management regulations. These programs are delivered in response to the educational needs of growers, applicators and consultants in the Green industry, so that water and nutrient management plans can be written and implemented, and these agricultural operations can better conserve resources and reduce the environmental impact of production practices.

Urban and suburban sprawl has led to the conversion of thousands of acres of the native landscape into home lawns and gardens. These lawns and gardens have been developed using concepts and techniques that were developed centuries ago. New educational strategies are needed that will first change our view of the urban and suburban landscape, and second show how environmental and ecological concepts of the 21st century can be used to transform these landscapes into a healthy ecosystem.

Poultry litter is applied to land surfaces for its nutrient value as well as due to the disposal necessity. Temporary stockpiles are put at the edge of fields, prior to spreading. Agencies such as EPA and MDE are concerned that these stockpiles are a significant source of nutrient pollution.

The Baltimore-Washington metropolitan region of Maryland produces close to 1 million wet tons of biosolids each year. As growth continues, that number will increase and as we shift to more sophisticated waste water treatment, the amount of biosolids that our urban/suburban sector produces will increase.

Regardless of the waste source, once it is exposed to the atmosphere, the potential for ammonia volatilization occurs. This source of air pollution is being examined by researcher's approaches for control are being discussed and possibly formulated for implementation.

With the soaring costs for energy, energy associated with waste disposal, energy associated with waste utilization, and waste-derived energy all require both technology re-evaluation and economic re-evaluation. Waste-derived energy may become a marketable output with a reasonable profit margin.

There are approximately 450,000 septic systems in Maryland and they release a significant percentage of nitrogen. There is little guidance on management of septic systems and some homeowners are completely un-aware that they have a septic system. A similar number of individually owned drinking water wells. The health consequences of mismanaging these wells should be on the minds of the well owners.

Maintaining a forest base that can support a forest products industry is being seriously impacted by parcelization of the land base that results in small land holders and owners that have limited interest in timber harvesting. Forestland ownership is dominated by owners that are retired, white, and more highly educated. Research indicates that much of the forest holdings, especially larger ones, will change hands as the older generation disappears. The intergenerational transfer of forest that will maintain its ability to be considered a working forest is a great concern.

6. Situation and priorities

Communities in Maryland are confronting unprecedented population growth pressures as shifts in residential preferences make way through urban, suburban and rural landscapes. Agricultural and forest land base is being impacted as land is used to accommodate economic and social forces of change.

Recycling of agricultural, horticultural and homeowner green waste products make both economic and environmental sense. Soaring prices for fossil fuels and electrical energy is making solar, wind, and alternative energy sources desirable to nurseries, greenhouses and in home landscapes. To stay competitive horticultural enterprises need to reduce their reliance on non-renewable energy sources and move toward self sustaining systems.

Studies have shown that both ground and surface waters contain high levels of the nutrients nitrogen and phosphorus (N and P), sediments and toxin contaminants, which adversely affect water quality, aquatic organisms, fisheries, and human health. Under the Chesapeake Bay Agreement, there is to be a 40 percent reduction in nutrient loading into the bay by the year 2010.

Passage of the Water Quality Improvement Act requires most agricultural producers to have and implement a nutrient management plan for all crops grown. It also requires crop producers to report annually on actual nutrient usage. In addition, producers who apply nutrients to 10 or more acres are required to attend a nutrient applicator voucher training session every 3 years.

The Chesapeake Bay Program estimates that approximately 17% of the excess nutrients in the Bay water system originate with nutrients from urban or suburban settings. Maryland has an estimated 12,000 farm operators, but there an estimated 1.25 million home lawns, each managed by a different person. The lawn care industry is responsible for applying a significant amount of fertilizer as well.

According to the Maryland Department of Environment, one in five residences in Maryland have private septic systems – bringing the state's total to more than 450,000 systems. These systems contribute substantial amounts of nitrate to ground water. In the Southern Maryland watersheds, over 26% of the nitrogen entering the bay is coming from onsite disposal systems.

Other water-related issues include salt-water intrusion in coastal areas and serious water table draw down throughout the state, caused by high water demand (and waste!), and competition for finite supplies of water among residential, agricultural, and industrial uses.

Waste, more specifically, the byproduct of digestion, is usually viewed as a disposal problem by operators, as a nutrient pollution source by regulators and the general public, and as an offensive item that has unacceptable odor consequences by neighbors and the encroaching suburbia. As technology has developed, the unintended consequence has been to concentrate more and more production, resulting in larger concentrations of waste. Results of this conflict include technological challenges for operators as they continue to manage and utilize waste as a resource as well as a disposal problem.

There are 130,000 private forest landowners in Maryland that own 78% of the forestland (2 million acres). 75% of these forest landowners own less that 10 acres. With an average forest holding of about 17 acres, landowner's objectives are diverse and usually do not focus solely on timber values. Further, the value of forests to provide ecosystem services continues to be a pressing issue that requires education of decision makers to make them aware of how policies and new regulations affect forest land ownership.

7. Assumptions made for the Program

1. Communities do not have adequate information to make decisions about land use change. Decisions are often made without full knowledge of implications, economic and environmental consequences and costs. With changes in elected officials, overall community climate is changed and new education is needed for these officials. It is therefore very important to educate community citizens as well. By having better access to knowledge, research and trends, communities and decision makers will make better land use decisions by understanding issues, options and impacts of certain types of growth management, land consumption patterns and economic and environmental impacts of growth.

2. Assume green industry will continue to grow and pressure from heavy population will create the need for a green industry; Support from professional horticulturist, homeowners, Master Gardeners, and legislators will continue; The Water Quality Improvement Act will not be repealed, and nutrient management regulations will not change significantly; Incentive and cost-share programs will continue to be funded.

3. Master Gardeners want 40-hours of training; Bay-Wise advanced training, will motivate Master Gardeners to have their own landscapes certified as Bay-Wise and help others to get certified; After residents understand the relationship between the pesticide use and the health of their environment, they will choose to reduce the use of harmful pesticides; Once homeowners understand how septic systems can degrade water quality and water quality can be improved through proper maintenance of existing systems, they will better maintain their existing systems and install new innovative systems; City residents want to convert empty inner city lots into a community gardens; Once homeowners learn the amounts and timing of fertilizer applications, and the benefits of slow release fertilizers they will apply the appropriate type and amount of fertilizers.

4. Biosolids scare both citizens and agencies. Scientific evidence of safe utilization must be compelling to the point of overwhelming; Poultry Litter Stockpiles - Agencies are willing to evaluate scientific literature and make informed decisions; Compost - Legal requirements for composting will continue to necessitate the two compost courses; Energy - The cost of energy will not plummet.

5. Urban Nutrient Management - Voluntary educational programs will have a measurable impact on water quality in the next decade; Mid-Atlantic Water Quality Coordination - Congress will continue to appropriate 406 funds; Tributary Team Process - The governor will continue to support this effort.

6. Forest landownership is very diverse and it will be essential to develop different outputs to serve the respective audiences. Traditional forest stewardship programs that utilize state foresters and consultants will continue to be needed but these resources are not presently available for landowner under 10 acres. With few faculty, the use of volunteer programs will be essential to disseminate information and reach diverse networks.

7. Rapid urbanization from population expansion is a given and we must partner with land conservation organizations to encourage conservation easements and other land protection methods among forest landowners to ensure there is adequate forest acreage to sustain a forest products industry and provide the environmental benefits citizens and governments value. Program efforts must focus more on decision makers and making forest practice an integral part of environmental management. The application of waste (biosolids, animal manure, poultry manure, etc) to engineered and natural forest systems will become more important as the agricultural land base is reduced.

8. Ultimate goal(s) of this Program

Prepare communities to take a proactive approach to manage growth and confront land use issues. This will be done by building internal extension capacity to educate and address local issues related to land use and growth management, while improving access for communities to reach university programs and expertise relate to land use, coastal communities, and resource protection. Six major goals of focus: Communities will learn of CLUE and the various resources available at UMD for use when planning for growth and development in their communities; Integrate CLUE program with similar statewide land use education programs, such as Chesapeake Bay NEMO (Network for Educating Municipal Officials); Improve growth management in coastal and watershed communities in MD; Regional collaboration and cross-jurisdictional cooperation will be evident in MD's community planning; Reintegrate a Community Resource Development agent/program within MCE; Organize resources within MCE, MD Sea Grant, and other centers and program within the University of MD system via the CLUE group.

Horticultural enterprises to stay competitive and be profitable by reducing their reliance on non-renewable energy sources and move toward self sustaining renewable energy systems; Growers will use plan information for long-term change in management and infrastructure (strategic planning); Growers and Industry Associations will actively promote these programs; Increased profitability for individual operations; Reduced runoff to the local environment; reduced nutrient impacts to the Chesapeake bay.

Urban and suburban soils are maintained and improved through the recycling of organic matter and reduced soil erosion; Water quality is maintained and improved because fewer nutrients, sediments and toxic contaminants are entering local surface and ground water; City residents save money, improve nutrition and enjoy a greater sense of community; Residents improve the health of the overall ecosystem, by planning, developing, and maintaining healthier, more diverse rural and suburban landscapes.

Regulations and beneficial utilization techniques will be in place so that biosolids and poultry manure produced it the state will be applied close to their source of production in way that is compatible and sustainable with land use and citizen acceptability; Urban Nutrient Management - The nutrient load to the suburban sector is reduced as measured by fertilizer sales figures. Lawn care companies report fertilizer use data and show reduction from earlier rates. Lawn care companies eliminate P from standard lawn maintenance programs. Water quality nutrient impairment attributed to the urban-suburban sector does not increase; Mid-Atlantic Water Quality Coordination - Composting is adopted by more state agencies and compost markets improve. The MDE will understand the physical, chemical, and biological processes in the "Deep-Row" biosolids approach to tree farming, as it applies to nutrients. MDE will accept the demonstration and experimental biosolids and tree farming operation as safe for the environment; Wells and Septics - Water wells are tested more frequently and well driller maintenance loads increase in response to owners increased awareness and understanding; Tributary Team Process - More extension personnel are involved in the tributary team process.
Private forestland of all sizes, and the organizations that service the land and owners, will be managed using forest stewardship practices that will ensure a sustainable source of forest products, wildlife, water quality and aesthetics that contribute to the quality of life of all citizens.

9. Scope of Program

- In-State Extension
- Integrated Research and Extension
- Multistate Extension
- Multistate Integrated Research and Extension

Inputs for the Program

10. Expending formula funds or state-matching funds : Yes

11. Expending other then formula funds or state-matching funds : Yes

12. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	30.0	1.0	20.0	2.0
2008	30.0	1.0	20.0	2.0
2009	30.0	1.0	20.0	2.0
2010	30.0	1.0	20.0	2.0
2011	30.0	1.0	20.0	2.0

Outputs for the Program

13. Activity (What will be done?)

1. Land Use
   Create an internal Collaboration for Land Use Education (CLUE) website to provide information on land use, smart

growth, and coastal communities; Develop educational brochures on sprawl reduction planning policies; Conduct four land use conferences to educate on development options such as smart growth, safe growth, neo-traditional development, and new urbanism; Create a local exchange program to allow local officials to exchange dialogue with neighboring jurisdictions and communities.

2. Energy Efficiency & Composting (Green Industry)
Short course and training seminars for industry personnel; Conduct field research in alternative fuel sources, energy saving techniques and recycling of green waste products; Trade and peer-reviewed journal publications

3. 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.

4. 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.

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

6. Waste Management
Biosolids - Three-year report on nutrients from near the trenches. Field day for MDE, DNR, and industry. Thesis on nitrogen fate and transport in the near-trench environment.
Poultry Litter Stockpiles - Journal article and fact sheet; Regional meeting to describe stockpile information; Research project initiated on environmental and economic costs and benefits of utilizing various types of pads beneath stockpiles.
Compost – Train 25 producers at a Better Composting School; Conduct a one-day poultry mortality composting course (Approx 50/year)
Energy – Develop a new set of cost data for ordinary operations associated with waste management; Develop a thorough evaluation of waste-derived energy opportunities.

7. 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.

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

14. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations	• Newsletters • Web sites

15. Description of targeted audience

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

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

4. 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.

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

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

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

16. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	17720	118650	0	0
2008	17850	119000	0	0
2009	24850	164500	0	0
2010	24850	165000	0	0
2011	25000	222000	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 1 2008 : 1 2009 : 1 2010 : 1 2011 : 1

18. Output measures

Output Target

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

2007: 35 2008: 38 2009: 38 2010: 40 2011: 40

Output Target

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

2007: 30 2008: 35 2009: 40 2010: 45 2011: 45

Output Target

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

2007: 125 2008: 130 2009: 130 2010: 150 2011: 150

Output Target

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

2007: 75 2008: 80 2009: 80 2010: 90 2011: 90

Output Target

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

2007: 350 2008: 400 2009: 400 2010: 450 2011: 500

Output Target

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

2007: 30 2008: 32 2009: 32 2010: 35 2011: 35

Output Target

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

2007: 18 2008: 20 2009: 20 2010: 22 2011: 24

Output Target

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

2007: 20 2008: 22 2009: 22 2010: 25 2011: 30

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

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

Outcome Type: Long

2007: 300 2008: 350 2009: 350 2010: 400 2011: 400

Outcome Target

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

Outcome Type: Long

2007: 500 2008: 550 2009: 600 2010: 600 2011: 700

Outcome Target

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

Outcome Type: Long

2007:	200	2008:	250	2009:	250	2010:	260	2011:	275

Outcome Target

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

Outcome Type: Long

2007:	5100	2008:	5200	2009:	5500	2010:	5500	2011:	5700

Outcome Target

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.

Outcome Type: Long

2007:	5000	2008:	5000	2009:	5200	2010:	5200	2011:	5500

Outcome Target

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.

Outcome Type: Long

2007:	50	2008:	55	2009:	60	2010:	60	2011:	65

Outcome Target

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.

Outcome Type: Long

2007:	4200	2008:	4400	2009:	4600	2010:	4800	2011:	5000

Outcome Target

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 Type: Long

2007:	755	2008:	760	2009:	780	2010:	800	2011:	800

20. External factors which may affect 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.)

Description

1. Land use issues often fall prey to political agendas, in which education and implementation is often dependent or hindered by re-election issues. Other factors include the various self interests and opinions resulting from planning processes on growth allocation, land use, and ecosystem management. Population pressures (both in growth and migration) are a key factor influencing this program. Changes in population dynamics, be it demographic changes, housing and transportation preferences, and economic forces all influence the ability of a community to adapt to social and cultural changes.

2. Furthermore, the economic pressures and real estate price are external factors that influence the amount of land needed, available, and up for development, which in turn increases the need for education on these factors.

3. The home horticulture environmental stewardship program does not exist in a vacuum. Some circumstances that affect our programs, which we have no control over include: Many “safer” pesticides cost more that conventional ones. Likewise, most highly water insoluble lawn fertilizers cost much more than water soluble or quick release fertilizers do. Some people cannot afford to purchase “environmentally friendly” fertilizers; Some people do not value the importance of the environment hence see no need to take measures to protect it; Local codes, such as weed ordinances do not support the development of ecologically sound landscapes; If doing the something the traditional or conventional way is cheaper and easier than employing an environmentally sensitive practice (BMP), the easier and cheaper practice wins out with most people.

4. Biosolids- The fate of the research is influenced by the permitting process in MDE. Laws from other states could shut the bridges to biosolids export, tremendously hastening the need for our information; Poultry Litter Stockpiles - Farming and environmental interests are interested in having their opinions used to promulgate regulations; Energy - Government programs have the potential to change the scenery with respect to energy credits and pollution regulations. There is no certainty about government programs and the government does not appear to have a clear vision concerning energy in agricultural situations.

5. Urban Nutrient Management - The DIY market will not change in a way that lends itself to fall fertility sales. Storm water retrofits will not be strongly funded.

6. Pressure from local government to create more permeable surfaces around green businesses; Cost of fuel for vehicles, increasing cost of heating and cooling of greenhouses, increased overhead cost from high energy prices.

8. Society sees forests as a positive but management as a negative. Ways to share our message that demonstrates forest management as a positive way to solve problems needs to reinforce. The environment in which the program exists includes a variety of external factors that interact with and influence the program action. External factors include culture, the climate, economic structure, demographic patterns, political environment, background and experiences of program participants, media influences, changing policies and priorities. These external factors may have a major influence on the achievement of outcomes. They may affect a variety of things including program implementation, participants and recipients, and the speed and degree to which change effects staffing patterns and resources available. A program is affected by and affects these external factors.

21. Evaluation studies planned

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

Description

Pre and post test during teaching events, programs and demonstrations. Direct consultation with participants. Best management practices put in place by agricultural producers (Green Industry) based on surveys and programs from Soil and Water Conservation Districts, USDA-NRCS, MDA and MDE. Extension faculty will use a sample of participants to survey or interview. Personal observation of practices put in place or other behavioral changes as a result of teaching event.

22. Data Collection Methods

- Sampling
- Mail
- On-Site
- Unstructured
- Observation

Description

Follow-up mail surveys six months after teaching events or activity to measure overall impact. Personal interviews with program participants or personal observations to measure behavioral changes or financial impacts. Pre and post tests will be

incorporated into teaching events, demonstrations and tours to measure knowledge prior to event and after event. This information will also be used as a basis for future program development.

1. Name of the Planned Program

Quality of Life

2. Program knowledge areas

- 724 20% Healthy Lifestyle
- 703 20% Nutrition Education and Behavior
- 806 50% Youth Development
- 712 10% Protect Food from Contamination by Pathogenic Microorganisms, Pa

3. Program existence : Mature (More then five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

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." 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.

6. Situation and priorities

This planned program involves the following five areas:
1. Nutrition, Wellness and Prevention of Chronic Disease.
The Centers for Disease Control and Prevention informs us that overweight and obesity have reached epidemic proportions in the U.S. and are recognized as the leading health problem facing adults and children. In the U.S. approximately 60 percent of adults are either overweight or obese and 16 percent of children are overweight. This epidemic, which causes about 300,000 premature deaths each year, also accounts for approximately 9 % of national healthcare expenditures. Reduction of the numbers of adults and children at risk or suffering from overweight and its health consequences will require interventions at the state and local levels and in the built environment, communities, worksites and schools, including changes in public policy.
2. Food Safety for the Consumer.
Foodborne illness is a major and continuing public health problem in Maryland, and is also a concern with respect to bioterrorism, food security, and emergency preparedness. Thousands of people become sick every year after eating food contaminated with pathogenic bacteria or their toxins, or through personal contact with people exposed to foodborne pathogens. Most cases of foodborne illness can be prevented through hygienic practices and by routinely following proper food handling and preparation recommendations.
3. Volunteer Development.
Volunteers are persons who perform unpaid activities for Maryland Cooperative Extension who are screened, trained and appointed. The volunteer is authorized to perform services for MCE. There are not enough trained and mentored volunteers to extend the 4-H program into more Maryland local communities.
4. Strengthening and Expanding the 4-H Club Program.
The Maryland 4-H program's core mission is to help youth reach their fullest potential as individuals through the development of life skills. For most 4-H members, these life skills are practiced and developed throughout the year by participating in club and county activities such as record keeping, demonstrations, leadership, and the exhibition of completed 4-H projects.
5. Youth Development Outreach to Underserved Youth and Communities in After-school and Out of School Time.

In 2005, Maryland 4-H reached nearly 50,000 youth with positive youth development programs. The programming efforts focused primarily on 4-H club and school enrichment programs. Many youth throughout the state, particularly youth in need of after-school and out of school time care, those at risk for low academic achievement and/or those whose parents are active duty or reserve military, are not involved in 4-H or connected to the resources of the 4-H youth development program.
Youth, families and communities need access to community resources that offer high quality youth development experiences. Maryland 4-H creates high quality youth development opportunities for culturally diverse audiences that embrace the essential elements of 4-H and contribute to positive youth development for all children and youth.

7. Assumptions made for the Program

1. MCE Educators, specialists and other professionals will be willing to serve as catalysts for positive changes in the community.
2. Individuals and families who participate in programming have the capacity to increase knowledge and change dietary and physical activity-related behavior.
3. Participants will be receptive to receiving training and printed information on how to reduce the risk of foodborne illnesses, and will be willing to change their behavior as appropriate and to share the information they receive. Funding will be available to support the program efforts. Government, university, and agency/institution web sites will continue to provide important and timely educational resources.
4. Appointed and trained volunteers increase the quality of MCE programming in local programs with lower risk to and high satisfaction for participants.
5. Volunteering is still satisfying for adults although it may take different forms such as episodic or virtual, short or long term, or passive or active.
6. Volunteers increase the capacity of the university to be in local communities with research based programs that educate people to help themselves and others.
7. 4-H Educators and volunteers will employ essential elements of 4-H youth development in all programs.
8. MCE faculty, staff, and volunteers receive appropriate training and support to carry out their positions.
9. MCE faculty, staff, and volunteers want the 4-H program to develop and grow.
10. Maryland 4-H can impact the quality of existing after-school programs, to ensure opportunities for positive youth development.
11. Maryland 4-H has the capacity to develop effective community partnerships that enhance the role of 4-H in after-school settings and in active duty and reserve communities.
12. Maryland 4-H Youth Development and Family Consumer Science educators and staff will be involved in after-school and 4-H/military partnership programming.
13. MCE has administrative support and organizational capacity for after-school and military programming efforts.

8. Ultimate goal(s) of this Program

1. Nutrition, Wellness and Prevention of Chronic Disease:

Maryland adults will increase their physical activity to include 30 minutes of moderate or strenuous physical activity on most days of the week; consume fewer calories and epidemic of obesity begins to level off; and, affect public policies that impact health. Nutrition Focus team members will help to enhance the health status of Maryland residents through education programs that address eating balanced and nutritious diets, engaging in sound food management practices, and participating in regular and adequate physical activity, and reducing the risk factors for obesity among individuals in Maryland and within public policies that affect health.

2. Food Safety:

There is a lower incidence of foodborne illness in Maryland, or a reduction in morbidity and mortality from foodborne pathogens that approach or meet the goals described in “Healthy People 2010.”

3. Volunteer Enrollment

Volunteer enrollment will increase throughout targeted communities.

1. Enrollment data will be used to develop action plans for recruitment and training.
2. The local program will be able to maintain volunteers for a minimum of 3 years.
3. Volunteers will actively recruit and train other volunteers.
4. Youth and adult partnerships will plan, implement and evaluate programming
5. Youth are successful, healthy, productive, contributing members of their communities (leadership, citizenship, life skills; academic success; workforce prep.)
6. Volunteer’s responsibilities will be broadened into middle management roles for club, event and program management.
7. Volunteer’s subject matter expertise can be shared through train the trainer models.

4. Strengthening and Expanding the 4-H Club Program:

1. Youth are successful, healthy, productive, contributing members of their communities (leadership, citizenship, life skills; academic success; workforce prep.)
2. Stakeholders (parents/guardians, community members, etc.) recognize the local 4-H club as an environment for positive youth development (member retention rates, funding, parent/guardian involvement, community support)
3. The Maryland 4-H club program is viewed as a model quality youth development delivery method that enables youth to become

competent, caring, and contributing members of today's society.
4. 4-H club alumni return as MCE Volunteers.

5. Youth Development Outreach to Underserved Youth and Communities in After-school and Out of School Time:
1. Adult and teen volunteers will increase participation in 4-H club development in afterschool settings.
2. Youth in afterschool and military programs (clubs and special interest), supported by 4-H, will report increased independence, sense of belonging, generosity, and/or mastery of subject matter skills.

9. Scope of Program

- In-State Extension
- In-State Research
- Integrated Research and Extension
- Multistate Extension
- Multistate Integrated Research and Extension
- Multistate Research

Inputs for the Program

10. Expending formula funds or state-matching funds : Yes

11. Expending other then formula funds or state-matching funds : Yes

12. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	15.0	5.0	10.0	6.0
2008	15.0	5.0	10.0	6.0
2009	15.0	5.0	10.0	6.0
2010	15.0	5.0	10.0	6.0
2011	15.0	5.0	10.0	6.0

Outputs for the Program

13. Activity (What will be done?)

1. Nutrition, Wellness, and Prevention of Chronic Disease
Review existing programs and educational materials addressing nutrition and food safety issues in light of the 2005 Dietary Guidelines and MyPyramid recommendations.
Identify appropriate programs for use by MCE, EFNEP and FSNE.
Plan, implement, and evaluate programs in consultation with focus team members and other partners.
Conduct trainings for county educators and identify educational materials and professional training opportunities in Maryland and state, regional and national workshops, and conferences.
Offer, or support, forums where citizens, including youth and adults, health and education professionals and elected or appointed officials can together explore obesity as a public policy issue using the Sizing Up America materials.
2. Food Safety for the Consumer
Work with DHMH and MDA to identify and implement statewide educational needs.
Identify appropriate materials or programs for use by MCE.
Plan, implement, and evaluate programs in consultation with focus team members and other partners.
Conduct at least 1 statewide inservice training in food safety each year.
Provide web-based information and resources to clientele.

Write or update at least 1 MCE publication each year.
Conduct programs emphasizing proper handwashing techniques using various techniques and resources.
Conduct programs emphasizing the prevention of foodborne illness using existing MCE materials, including "Feeding the Community Safely" and "Feeding the Children Safely."

3. Volunteer Development

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

4. Strengthening and Expanding the 4-H Club

Conduct an assessment to determine the need for resource materials and training to support club development/management; this includes a review of existing materials from 4-H programs across the nation.
Conduct interviews with leaders, review survey results, and personal observations by the educator to determine if that participation in the 4-H club program and concomitant activities such as the county fair help prepare youth for meaningful and constructive lives.
Establish priorities for creating and/or updating materials that will assist volunteers in developing club programs that will retain our current members and recruit new members.
Develop a self-assessment tool for measuring effectiveness of 4-H clubs.
Assess enrollment trends and community club program quality.

5. Identify underserved communities and underrepresented youth

Identify current effective 4-H afterschool practices in city/county programs statewide
Identify training, resources and support needed by 4-H staff to initiate and sustain afterschool and 4-H/military initiatives in local communities.

14. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	**Indirect Methods**
• Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations	• Newsletters • Web sites

15. Description of targeted audience

Children, youth and families across Maryland.

16. Standard output measures

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	150000	250000	10000	60000
2008	150000	250000	10000	60000
2009	150000	250000	12000	70000
2010	150000	250000	12000	70000
2011	175000	275000	12500	75000

17. (Standard Research Target) Number of Patents

Expected Patents

2007 : 1 2008 : 1 2009 : 1 2010 : 1 2011 : 1

18. Output measures

Output Target

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

2007: 1000 2008: 1100 2009: 1200 2010: 1300 2011: 1400

Output Target

2007: 0 2008: 0 2009: 0 2010: 0 2011: 0

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

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.

Outcome Type: Long

2007: 10000 2008: 11000 2009: 12000 2010: 13000 2011: 15000

Outcome Target

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

Outcome Type: Long

2007: 6000 2008: 7000 2009: 10000 2010: 11000 2011: 12500

Outcome Target

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

Outcome Type: Long

2007: 3000 2008: 3150 2009: 3300 2010: 3465 2011: 3640

Outcome Target

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.

Outcome Type: Long

2007: 1000 2008: 1200 2009: 1400 2010: 1600 2011: 2000

Outcome Target

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

Outcome Type: Long

2007: 1600 2008: 1800 2009: 2000 2010: 2200 2011: 2400

20. External factors which may affect outcomes

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

Description

Availability of funding to provide salaries, benefits, and other operating expenses.
Availability of community partners to collaborate on planning, implementing and evaluating nutrition programming.
Changes in federal, state and local policies.
Revenue sources such as grants and contracts will be available to fund the program, and programs will be supported by administrators and stakeholders.
Personnel and support staff will be available to design, implement, and evaluate the programs.
A terrorist attack on the nation's food supply or food system will heighten the urgency of programmatic efforts.
Stereotypes of the 4-H Youth Development Program
Competitive vs. educational perception of the 4-H Youth Development Program
Limited time of volunteers
Limited time and number of staff
Desire to improve the 4-H Youth Development Program
Willingness to attend training sessions and use the knowledge and skills learned
Adult perceptions of youth as resources
Other youth development opportunities for youth in the State of Maryland
Availability of funding
Greater demands from schools
Increase in number of youth being Home Schooled
Teens entering the workforce
Two income families
Demographic shifts
Lack of perceived value in traditional programs by administrators/stakeholders

21. Evaluation studies planned

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

Description

1. Nutrition, Wellness and Prevention of Chronic Disease:
% of (x) individuals who demonstrate adoption of healthy eating practices based on the MyPyramid and 2005 Dietary Guidelines for Americans, such as
Improved consumption of food group servings
Improved intake of selected nutrients
Improved behavior change related to decreased saturated and trans fat, sugar, and calories, or increased consumption/variety of fruits, vegetables, whole grains
Increased frequency of eating breakfast
% of (x) individuals who demonstrate adoption of increased time spent in physical activity practices by
Implementation of a personal plan to increase physical activity, such as increased time/frequency engaged in walking or other activities
Increased participation of individuals /family in games or recreation that involve exercise
Reduction in time spent in sedentary activities, such as watching TV or playing video games
% of participants that report a change in their diet behaviors over the course of a series of nutrition lessons (end-of-session evaluation)
Number of participants who increased their physical activity

2. Food Safety:
% of (x) individuals that indicate change in knowledge or awareness related to recognizing perishable foods, practicing good personal hygiene including proper handwashing, cooking foods adequately, avoiding cross-contamination, keeping foods at safe temperatures, or avoiding foods from unsafe sources.
% of (x) individuals that indicate an intent to adopt one or more safe food handling practices.
% of (x) individuals that indicate change in behavior related to practicing good personal hygiene including proper handwashing, cooking foods adequately, avoiding cross-contamination, keeping foods at safe temperatures, and avoiding foods from unsafe sources.
3. Volunteer Development:
Track increase of 4-H club, special interest, and school enrichment through training volunteers to deliver and manage programs.
4. Strengthening and expanding the 4-H Club Program:
Develop and implement a self-assessment tool for measuring effectiveness of clubs.
Assess enrollment trends and community club quality.
5. Youth Development Outreach to Undeserved Youth and Communities in After school and Out of School Time:
Information from needs assessment will identify assets, gaps and needs of current program efforts.
4-H educators and staff will report an increase in the number of afterschool programs supported and number of youth involved.
4-H educators and staff will report an increase in the number of active duty and reserve military youth involved and enrolled in 4-H programs.
Number of afterschool and military partnerships initiated and sustained.
Assess role of 4-H in statewide afterschool arena.
Degree to which adult and teen volunteers understand the eight essential elements of 4-H.
Change in knowledge and/or attitudes of community members about issues that face military youth.
Number of adult and teen volunteers providing 4-H programming in afterschool and military settings.
Youth self report of change knowledge, aspirations, skills, and attitudes.

22. Data Collection Methods

- Sampling
- On-Site
- Unstructured
- Observation
- Portfolio Reviews
- Other (Focus groups, email surveys)

Description

Follow-up mail surveys six months after teaching events or activity to measure overall impact. Personal interviews with program participants or personal observations to measure behavioral changes or financial impacts. Pre and post tests will be incorporated into teaching events, demonstrations and tours to measure knowledge prior to event and after event. This information will also be used as a basis for future program development.