

**2014-2017 State Program Plan for
University of Maryland**



Project Title: Building Soil Health in Maryland through Agricultural Service
Provider Education

State Coordinator: Nevin Dawson

2014-2017 Northeast SARE State Program Project Plan for University of Maryland

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PROJECT TOPIC AND JUSTIFICATION OF TRAINING NEED

This project will offer comprehensive education to agricultural service providers in soil health to enable them to help farmers understand the value of healthy soil and adopt the best production practices for increasing the health of farm soil.

While the importance of soil for crop production has long been known, there is a new movement to look beyond the basic physical and chemical properties of soil and use a holistic approach that includes biological components and additional physical and chemical factors. Good soil health building practices can increase yields and profitability while also providing water quality benefits. NRCS initiated a national campaign to address this issue, which this project will build upon. There is a special need for a program in Maryland that redefines good soil health practices in the context of Maryland's cover crop incentive program and strict state and county water quality regulations.

The University of Maryland Extension Agriculture Profitability and Sustainability Impact Team identified related goals in its 2014 team extension plan, including nutrient management, water conservation, profitability enhancement, and improving cultural techniques for crop and livestock production which will increase efficiency and quality.

An online survey was conducted of 520 UMD and UMES campus-based ag faculty, UMD Extension ag educators, MD farm association representatives, farm loan providers, food policy directors, MD Dept. of Ag representatives, NRCS and soil conservation district staff, river conservancy farm liaisons, and various other non-profits and ag service providers. Of the 115 responses, soil health received the top ranking when respondents were asked to rank their three top choices for expanded professional development opportunities in sustainable ag production topics.

Field days, demo workshops, and one-day meetings were the highest rated methods for learning new information, and therefore will serve as the base for this project's outreach efforts. UME fact sheets and bulletins were also in the top five learning methods, and so will also play a role in this program.

5. BENEFICIARY AUDIENCE DESCRIPTION and RECRUITMENT EFFORTS

- The broad group of Maryland Ag Service Providers, including UMD Extension ag educators, NRCS and Soil Conservation District staff, MD Dept. of Ag. staff, Certified Crop Advisors, and staff of relevant non-profit organizations will be invited to participate in webinars and large scale workshops through email and newsletter announcements
- The above group will be invited to apply to participate at a higher level, including field trials, demonstrations, and in depth trainings; a group of 30 will be selected; they will be required to commit to documenting their related work and completing follow up surveys
- A team of 10 from the above group of 30 will be chosen to attend a regional cover crop workshop with registration and travel expenses paid for by NE SARE (Buffet Foundation); this team will be responsible for offering a series of workshops to farmers across Maryland
- Farmers will participate in some of the field-based workshops, as recruited by the ag service providers assisting with workshop coordination

3. LEARNING OUTCOMES

Project participants will increase knowledge, skill, and confidence to provide education to farmers in these soil health management topic areas:

- The importance and process of soil quality testing and evaluation (Year 1)
- No Till/Reduced Till (Year 1-2)
- Cover Crops (Year 2-3)
 - The benefits of enrolling in the Maryland Cover Crop Incentive program
 - How to gain the most soil health benefits from cover crops, beyond the minimum requirements of the MD Cover Crop Incentive Program, including multi-species mixes
- Other related topics
 - Nutrient Management
 - Conservation Crop Rotation
 - Mulching
 - Pest Management

4. EDUCATIONAL ACTIVITIES PLANNED

- An introductory webinar will be offered to all Ag Service Providers across the state to introduce basic soil health concepts, explain the train-the-trainer nature of the project, outline this plan, and invite participation in the project.
- A UMD Extension website will serve as a platform for sharing related educational materials, including three facts sheets, a bulletin, and a video developed by the project
- A Google group will serve as a forum for discussion and announcements
- Several series of soil health workshops will be offered to ag service providers, each with a focus on a different aspect of evaluation and management
- A team of 10 will attend the 2015 NE Region cover crops conference coordinated by Delaware State University
- The above team will host a workshop for MD ag service providers and will provide follow-up support for attendees to conduct their own programs
- One set of four field-based workshops in each of the three years
- A soil health session will be offered as part of the annual conferences of MD Association of County Ag Agents and Future Harvest.
- A continuing education class at a community college

SEE ATTACHED MILESTONES FOR YEARS 1, 2 AND 3

VERIFICATION OF LEARNING OUTCOMES

- All project participants will complete a pre-project survey to determine their initial level of knowledge, skills, confidence, and particular learning interests
- Similar surveys will be completed by project participants every year to assess any change in knowledge, skills, and confidence

2a. AG SERVICE PROVIDER ACTIONS PROJECT PERFORMANCE TARGET

30 Ag Service Providers will incorporate soil health concepts into their current programming and advising reaching 500 producers farming 37,500 acres, and of those, 10 will develop and offer in-depth programming in soil health concepts to their clientele, including workshops, webinars, presentations, and/or individual consultations for 150 producers farming 11,250 acres.

2b. INDICATORS OF AG SERVICE PROVIDER ACTIONS

- Number and type of Ag Service Providers who deliver educational programs and/or services
- The number and type of programs or services they deliver (including content or topics)
- The number of farmers they reach/teach
- The total acreage farmed by the farmers they reach/teach

VERIFICATION OF PERFORMANCE TARGET

- Participants will be asked to agree to comply with verification procedure before beginning project participation
- Participants will receive a template for recording information about their educational efforts with farmers, and sample questionnaires for use at workshops or other events to collect farmer contact and demographic information and to verify learning; the benefits to participants and to the project of collecting and maintaining this data will be emphasized
- Participants will respond to follow-up surveys conducted 8 months after last workshop each year
- Phone interviews will be conducted with selected participants at the end of project (individuals selected may be some who have not responded to surveys and some who have been most active)

1a. FARMER ACTIONS DESIRED

Adoption of one or more practices for improving soil health. These include:

- Soil quality testing and evaluation
- New or improved no till/reduced till practices
- New or improved cover crop practices
- Other practice implementation
 - Conservation Crop Rotation
 - Mulching
 - Nutrient Management
 - Pest Management

1b. INDICATORS OF FARMER ACTIONS

- Number of farmers using quality testing for the first time (e.g., Haney or Cornell test)
- Number of farmers implementing one or more practices with acreage
- The practices adopted
- Any available data on increases in yield or profit

VERIFICATION OF FARMER ACTIONS (optional)

The project will not be reaching farmers directly and will not verify farmer actions.

The ag service providers will be instructed to keep track of the farmers they reach, obtain contact information whenever possible, and record any information they learn about farmer follow-up actions.

University of Maryland
Nevin Dawson
SARE PDP
10/01/2014 to 9/30/2015

Milestones

Activities are divided below by two target groups: the larger population of ag. service providers, and the smaller core group that will be identified in Year 1.

- **Year 0 [to take place before start of project with current funding]**
 1. Work with advisory committee to adapt national NRCS soil health practices and recommendations to Maryland environment, regulations, and cover crop incentive program requirements
 2. 25 UMD Extension ag. educators will attend a brief overview of the project during the Maryland Association of County Ag. Agents conference (Jun. 2014)

- **Year 1: Oct. 1, 2014 – Sep. 30, 2015**

Educational opportunities for Year 1 will include an introductory webinar, a session at the Future Harvest/CASA conference, a morning seminar, four field days, and a session at the MD Association of County Ag. Agents conference. The focus will be no till/reduced till practices and their link to improved soil tilth, organic matter, soil moisture, nutrient retention, wildlife habitat, and reduced soil erosion. Soil health web pages on the UMD Extension website and a Google Group will provide opportunities for participants to learn more about the project, obtain soil health resources, and interact with other participants. A fact sheet and bulletin about soil health practices for Maryland will be additional resources developed by the project team and provided to participants.

Ag. Service Providers

1. 300 unique visitors will view new soil health web pages within the UMD Extension website populated with a project description, existing soil health publications, and new project publications as they are developed, as tracked by traffic analysis program (Oct. 2014 – Sep. 2015)
2. 375 ag. service providers and any additional program participants will be invited to join a new Google Group as a forum for discussion, questions, and announcements related to Maryland soil health. (Oct. 2014)
3. 375 agricultural service providers receive advertisements for the introductory webinar, which will feature an overview of the three year project, a description of the opportunity to participate at a higher level by applying to join the “core group,” and basic soil health concepts; will be taught by project coordinator and one or more soil health experts from advisory committee. (Oct. 2014)
4. 50 ag. service providers register for the webinar and take live online polls—one poll pre-webinar to assess baseline level of knowledge and confidence in soil health concepts,

and another poll post-webinar to measure knowledge gained, intent to include soil health concepts in future programs, and interest in attending future in-depth education programs. (Nov. 2014)

5. 15 farmers and 5 ag. service providers will attend a soil health session at the January CASA/Future Harvest conference to learn basic concepts of soil health with a focus on no till/reduced till practices taught by one or more soil health experts from advisory committee. (Jan. 2015)
6. 50 ag. service providers (including 30 members of core group) will attend a morning workshop on no-till/reduced-till practices taught by one or more soil health experts from advisory committee (followed by afternoon planning session below). (Jan. 2015)
7. 200 unique visitors will view a new fact sheet (2-4 pages) summary of soil health practices adapted for Maryland, written by the project director and members of the advisory committee, published on the UMD Extension website, and advertised through the ag. service provider email list, county ag. newsletters, and other appropriate distribution channels. (Nov. 2014 – Apr. 2015)
8. 100 unique visitors will view a new bulletin (12-14 pages) with details of soil health practices adapted for Maryland, written by the project coordinator and members of the advisory committee, and published on the UMD Extension website, and advertised through the ag. service provider email list, county ag. newsletters, and other appropriate distribution channels. (Jan. 2014 – Jun. 2015)
9. 50 ag. service providers will attend one of four field days taught by the project coordinator and members of the advisory committee and offered in each of the four Maryland regions; participants will gain knowledge and confidence in no till/reduced till practices and soil health evaluation as a part of soil health improvement through witnessing successful adoption of the practice (May – Jul. 2015)
10. 25 UMD Extension ag. educators will attend a one hour soil health session at the Maryland Association of County Ag. Agents conference to learn the importance of soil health testing and techniques for soil health evaluation taught by one or more soil health experts from advisory committee (Jul. 2015)

Core Group

11. 375 ag. service providers will be invited to apply for membership in the “core group”; membership will provide access to limited funding, program support, and demonstration plots, and will require a commitment to attending workshops and incorporating soil health into their own programs. (Nov. 2014)
12. 30 ag. service providers who applied for membership in the “core group” will be selected to join. (Dec. 2014)
13. 30 members of core group will meet in an afternoon session (following educational morning session above) to develop and implement plan for four demonstration sites across Maryland. (Jan. – Sep. 2015)

14. 10 enthusiastic and highly involved Maryland program participants will be identified and invited to attend Northeast SARE cover crops conference, all expenses paid by NE SARE, and to participate in conference development to ensure that program is relevant to Maryland needs (Sep. 2015)

- **Year 2: Oct. 1, 2015 – Sep. 30, 2016**

Educational opportunities for Year 2 will include a regional cover crops conference, four field-based farmer workshops, a session at the Future Harvest/CASA conference, and a follow-up meeting to the conference. The focus will gradually shift from no till/conservation till practices to cover crops and their links to reduced pest pressure, pesticide inputs, nutrient loss, soil compaction, and soil erosion; and increased soil moisture and crop yields. A new fact sheet on tillage practices will also be developed.

Ag. Service Providers

1. 15 farmers and 5 ag. service providers will attend a soil health session at the January CASA/Future Harvest conference to learn basic concepts of soil health with a focus on soil pathogens taught by one or more soil health experts from advisory committee. (Jan. 2016)
2. 200 unique visitors will view a new fact sheet (2-4 pages) on no till/reduced till practices, written by the project coordinator and members of the advisory committee, published on the UMD Extension website, and advertised through the ag. service provider email list, county ag. newsletters, and other appropriate distribution channels. (Nov. 2015 – Apr. 2016)

Core Group

1. 30 members of core group will meet to learn current state of cover crop practices in Maryland and discuss opportunities for improvement. (Nov. – Sep. 2015)
2. 10 core group members identified in Year 1 will attend Northeast SARE cover crops conference to increase knowledge of technical details of cover crop practices and benefits to soil health, and to develop cover crop education action plan for implementation in Maryland with two strategies: promoting the inclusion of soil health-based cover crop principles in existing ag. service provider programs and consultations (led by project coordinator), and increasing rates of cover crop adoption and improving practices of farmers who have already adopted cover crops through farmer programs (led by the team). (Dec. 2015 – Mar. 2016)
3. 10 core group members that attended cover crop conference will implement the plan developed at the conference with assistance from the project coordinator and advisory committee, which will include the implementation of any new cover crop techniques on four existing demonstration sites, and the majority of the coordination for four MD regional field-based workshops for ag. service providers and farmers in Year 3 at four demonstration sites. (Jan. – Sep. 2016)

4. 30 members of the core group will attend a statewide meeting taught by one or more soil health experts from advisory committee to learn about soil health practices with a focus on cover crops in the context of Maryland nutrient management regulations and the cover crop incentive program. (Jun. 2016)
- **Year 3: Oct. 1, 2016 – Sep. 30, 2017**

Education activities include a winter meeting, four field-based workshops, a continuing education class, and a project wrap-up meeting. A fact sheet and video about soil health practices specific to Maryland will serve as resources to farmers and ag. service providers. Evaluation activities will validate project goals.

Ag. Service Providers

1. 200 unique site visitors will view a new fact sheet written by the project coordinator and members of the advisory committee detailing demonstration site farming practices, data on costs, benefits, and predicted future benefits published on the UMD Extension website and advertised through the ag. service provider email list, county ag. newsletters, and other appropriate distribution channels. (Oct. 2016 – Jul. 2017)
2. 10 ag. service providers and 10 farmers will take a continuing education soil health class offered at Chesapeake College taught by one or more soil health experts from advisory committee. (Jan. – Mar. 2017)
3. 200 people will view a new five minute video with footage from representative stages of the growing year and detailing demonstration site farming practices, data on costs, benefits, and predicted future benefits published on the UMD Extension website and advertised through the ag. service provider email list, county ag. newsletters, and other appropriate distribution channels. (Oct. 2016 – May 2017)
4. 40 ag. service providers and 40 farmers will attend one of four MD regional field-based workshops coordinated by the project coordinator and the core group highlighting new or improved cover crop techniques at the four demonstration sites. (Apr. 2017)
5. 150 program participants will be invited to participate in project evaluation and performance verification, including an online survey focusing on the rate of adoption of soil health concepts and management practices into existing ag. service provider programs and consultations, new education programs with a soil health focus, number of participants attending each program type, farmed acreage represented by attendees, and reported intent to adopt new practice by attendees; respondents will also be asked to report any farmer level data they may have on the adoption of soil health evaluation and management practices. (Jun. – Jul. 2017)
6. 10 phone interviews will be conducted to collect anecdotes and keys to success from highly involved project participants, and to evaluate non-response bias in project participants that did not respond to surveys. (Sep. 2017)

Core Group

7. 30 members of the core group will attend a winter meeting to discuss results of demonstration sites and plans for continuing education and outreach through project completion and afterwards. (Feb. 2017)
8. 10 core group members that attended cover crop conference will coordinate and offer four MD regional field-based workshops for ag. service providers and farmers at four demonstration sites. (Apr. 2017)
9. 30 core group members will attend a project wrap-up meeting to evaluate project successes and challenges, answer any remaining questions, and develop/confirm a plan for implementing soil health practices into their continued work with farmers, including the possible continued use of demonstration sites. (Aug. 2017)

Key Individuals/Partners

Advisory Committee

- Lynne Hoot, Executive Director, Maryland Agricultural Associates (Maryland Pork Producers Association, Maryland Grain Producers Association, Maryland Association of Soil Conservation Districts, Mid-Atlantic Certified Crop Advisors)
- Raymond Weil, University of Maryland (cover crops, soil quality)
- Louise Lawrence, Chief, Office of Resource Conservation, MD Department of Agriculture
- Dave Myers, Agriculture Program Leader, University of Maryland Extension
- Robert Kratochvil, University of Maryland Extension (agronomic crop productivity and profitability, nutrient management, value-added and specialty crops)
- Dean Cowherd, Maryland Assistant State Soil Scientist, Natural Resources Conservation Service
- Rob Schnabel, MD Grazers Network & Restoration Scientist, Chesapeake Bay Foundation; 2nd Vice President, Future Harvest/CASA

Other partners

- Jason Challandes, Regional SARE Educator, Delaware State University
 1. Will coordinate 2015 NE regional cover crop conference
 2. Will collaborate on MD/DE Delmarva Peninsula cover crop programs
- Potential demo site hosts
 1. Central Region: Tammy & Kevin Radonovich, Twin Hills Farm, Frederick County
 2. Southern Region: Joanne Morvay-Weant, Ag. Development Specialist, Carroll County Department of Economic Development (in partnership with Carroll County Soil Conservation District)

Outreach Plan

The state coordinator will conduct these activities to share information about SARE grant programs and information resources.

- Conduct SARE Grant Opportunity Seminar in College Park in March or April on University of MD campus for campus-based faculty to raise awareness of SARE grant programs and mitigate misperceptions about SARE programs.
- Staff outreach table at Pennsylvania Association of Sustainable Agriculture conference in State College, PA, in coordination with PA SARE State Coordinator; display table paid for by PA SARE PDP program.
- Staff outreach table at Future Harvest/Chesapeake Association of Sustainable Agriculture conference in coordination with DE (and possibly VA) SARE State Coordinator.
- Provide relevant SARE materials at all state programs and other appropriate events throughout the year.
- Answer questions and providing advice to SARE grant applicants as appropriate with respect to conflict of interest policies.
- Distribute SARE grant RFPs to appropriate email lists and newsletters.