

Soil Health Advisory Committee Meeting Notes
June 7, 2021

Attendance

Kevin Antoszewski, Philip Bogdonoff, Dawn Bradley, Alisha Mulkey, Margie Brassil, Thomas Croghan, Deborah Herr Cornwell, Cleo Braver, Hans Schmidt, Tim Rosen, Jordan Glasson, Elizabeth Beggins, Alan Girard, Harry Huntley, Laura Starr, Lori Arguelles, Jason Keppler, Amanda Cather, Elliott Campbell, Sen. Jason Gallion, Katherine Everts, Rachel Lamb, Chris Beck, Elizabeth Hoffman, Lisa Garfield, Jen Nelson, Kim Rush, Michael Calkins, Grace Garst, Jenell Eck

Meeting Minutes

Alisha called the meeting to order at 1 pm. Meeting minutes for three prior facilitated discussions were presented to the group. One member offered revisions to one discussion. The Committee approved the minutes with revisions.

No members of the public submitted comments for consideration by the Committee.

Harry Hughes Center Presentation

Presentation slides can be found here:

<https://docs.google.com/presentation/d/1tjaq1Aghr2kt8a5fsF0NJQI-gPbaUmXx/edit>

The presentation focused on five case studies of other state soil health programs:

1. California Healthy Soils Program

Started in 2015, with increased funding in 2016. Goals are to improve plant health and crop yields, increase water retention and infiltration, prevent erosion and reduced sediment and dust, and sequester carbon. Inter-agency collaboration is integral to the success of the California Healthy Soils Program. The Program is largely funded by cap and trade revenues.

2. Montana Rangeland Improvement Loan Program

Low interest loans for rangeland improvements. Current interest rate is 1.5% (it was just cut this past year, in part due to COVID). 10 year max repayment.

3. Iowa Water Quality Initiative

Cost share funds AND crop insurance discounts for BMP implementation. Iowa State University, DNR and Department of Agriculture are in charge of monitoring.

4. Minnesota Vegetative Buffer Requirements

Legislative mandate for waterway buffers. Compliance rates upwards of 98%.

5. North Carolina Mobile Soils Classroom

Run by the North Carolina Foundation for Soil and Water Conservation.

After the presentation, Harry opened the floor for questions.

Tom Croghan: What are some examples of public private partnerships in California? Can you clarify who runs the cap and trade program and what have the results been?

Harry: Will have to look into the second question. To the first question, Harry described a

partnership between a private composter and public lands to move a composting facility farther away from a residential area.

Tom: It would be interesting to know the outcomes of the Minnesota program.

Cleo: I would imagine one of the reasons they had such high compliance is because it was mandatory. It's interesting that they went beyond federal requirements (35 ft) to 50 ft.

Margie: It would be nice to have a deeper dive on the Minnesota program. They're known for their wilderness areas etc, but it would be interesting to know what kind of buy-in they had from farmers before it became mandatory.

Tom: There could be a lot of variation, depending on what the baseline was for the state it could have been a short lift, or a very heavy lift.

Alan: Would appreciate a deeper dive into the Minnesota program as well. Buffers are part of Maryland's plan for water quality and there are some shortfalls there.

Lori: American Farmland Trust put together a similar list in 2018 of national soil health policies, though things may have changed since then.

Alisha: We can share that list with the Committee as well.

Cleo: It would be great to find funding that doesn't tangle the wires between levels (federal, state, local, etc) as we're thinking about programs.

MDA Presentation

Alisha reviewed the incentive options the Department of Agriculture is currently considering for the Healthy Soils Program. The presentation can be found here:
https://drive.google.com/drive/folders/1yZsW6tQxCqoakD_MJT0DVk7xfW6u_Avr

Dawn Bradley, MDA, gave a short presentation on the Maryland Agricultural Cost Share program updates for 2021 (Slides included in link above).

Harry: What's the benefit of planting multiple species of cereal grains?

Dawn: Depending on conditions, one species may take off in the fall and the other may in the spring.

Philip: Biodiversity of crops also has impacts on the biodiversity of soil biota

Grace: Do all the species have to survive through the winter to get credit for multispecies?

Cleo: Are mixes of more than three species excluded?

Dawn: We give out a guidance document with seeding rates. As long as you meet the three species requirements, you can add more, but they aren't incentivized.

Committee Roundtable Discussion

Cleo: A threshold question. Everything besides the conservation cover and cover crop were concepts that could apply to any practices. Why are the two actual practices listed?

Alisha: Based on conversations within the subcommittee, some members suggested focused programs on specific practices for soil health outcomes.

Cleo: Conservation buffers extend beyond salt water intrusion areas and beyond. I wouldn't want farmers to be left out of the program just because they aren't located near water.

Philip: It would be useful if any updates to this memo/table have a rating of how they improve soil health.

Cleo: We should be looking at the outcome rather than the acres. The most important incentive concept in my mind is what have you achieved in terms of organic matter increase or carbon stored.

Alisha: We would have to distinguish that from existing state programs. Something like the competitive grant program or the creation of a new program could focus on outcomes.

Jen: Out of the considerations presented, developing incentives for small operations should be the priority because the state doesn't have that much experience with it. Where did the red dot for the bundled practices come from?

Alisha: We thought that was closely aligned with the CSP program and there is less participation in the state.

Tom: I share the confusion that Cleo had. There are three categories of things, some particular practices, changes to existing programs, and new programs. The "bang of the buck" metric is missing from the presentation. That comes from the perspective of the individual farmer and from wider society. We also need to have some measure of technical success. My take is that we're proceeding down the road of doing a lot more of what we're already doing instead of making transformational changes needed to address climate change.

Kate Everts: We're likely going to need to pursue multiple incentive options to incentivize different practices.

Cleo: I don't think cover crops and riparian buffers are the practices that we should be talking about. I would love to know what efforts MDA has made to get federal infrastructure funding. Funding for things like animal processing facilities, shared infrastructure etc.

Alisha: We'll have to look into that to get an answer.

Hans: A couple years ago, the department did some strategic planning on the state of agriculture. There are discussions around infrastructure funding and some potential things coming out of the CAREs Act.

Cleo: I have been approached about aggregating soil carbon storage for small farmers by a carbon market maker.

Alan: Appreciates the department's analysis so far. I'm not feeling the concern about outcomes and performance because what I'm seeing tee-d up right now is about structure and capacity. The committee is talking about outcomes and performance. I like bundled practice cost share, and competitive grant funding. I would like to see an analysis of performance as a result of structure at some point though.

Tom: Agrees with Alan. Would advocate for a hybrid approach to incentive programs – between outcomes based reporting, cost share, and market based incentives.

Margie: Is the goal to try and prioritize these nine concepts to choose one or two of them?

Alisha: I think it is selecting among the nine, what is the "Healthy Soils Program"? Is that creating a new program or adjusting existing programs to address healthy soils.

Margie: Is there a way to know what listed options are new?

Alisha: TSP expansion, small farm conservation, competitive grant program, and the certification program would all be new elements.

Laura: One of the things I'm having trouble with is what is possible with existing programs. Can we tweak some programs AND do something new? What is the capacity currently?

Alisha: It depends on the combination that's proposed. Some of them are financial, some of them are more technical, and the list has a combination of options. Many of them could be inclusive of all of the conservation practices that we've been talking about.

Tom: The memo for this meeting was a little bit confusing. To Margie's point, there are other new things. We should figure out a way to fund the new programs proposed. We can make new elements of existing programs. A shift to soil health requires a shift in program framework and these incentives can be additive.

Alan: Would have a hard time choosing one over the other without including details about included practices and expected outcomes.

Next Steps

MDA staff will be meeting with small groups of the Advisory Committee to get some more directed feedback. Meeting times will be determined at a later date.

Post-meeting email received from Tom Croghan (June 9, 2021):

Dear Alisha et al.

I enjoyed the discussion during Monday's meeting. Lots of good information. I've put together some *post-hoc* thoughts that I would like to share.

1. Harry's discussion of programs in other states was helpful. However, as we mentioned, it would be helpful to have more information about the outcomes.

Regarding the Minnesota buffer program, Bob Hildebrand at UMCES has shown that stream restoration can reduce sediment and nutrient runoff, but it does not restore ecosystem function. The implication is that restoring habitat may not be sufficient and that more extensive effort may be needed. Professor Hildebrand's conclusion is vital for us to consider since soil health is defined by ecosystem function. I am sorry that I did not think about this until after the meeting.

2. We should be careful about conflating *what* practices and other activities we recommend, *how* we recommend paying for them, and *who* should receive the payments. The conservation practice memos, the "incentives concepts" memo prepared for our meeting, and the incentives concepts presentation blend these into choices among alternatives. They are not.
3. I suggest this typology.
 - a. What the program will fund.
 1. Practices. All eight practices from the subcommittee discussions, plus agroforestry, are still on the table—more on this to follow
 2. Programmatic activities. Technical assistance, education, shared equipment infrastructure, administration, audit functions, etc. Public/private partnerships will be desirable to carry out these activities.
 3. The purpose of programmatic funds is to facilitate high-quality implementation of the practices. Without new, unique practices, programmatic funds would be wasteful
 - b. How the payments or incentives will be made. There are several options, many not yet considered.
 1. Direct payments and subsidies
 2. Indirect payments and subsidies via procurement programs and programmatic activities
 3. Markets (e.g., public-private partnerships with NORI or Indigo).
 4. Certification programs
 5. Tax incentives, both credits and
 6. Penalties, fines, and fees
 7. Mandates and bans
 - c. Who should participate?
 1. Cropping system
 2. All size farms need to be eligible. This conclusion is a value judgment, not an economic judgment. Fairness and racial justice considerations demand it.
4. We should distinguish practices that are part of existing federal and state programs from those practices or practice enhancements that will be part of MDA's soil health program. The conservation practice memos conflate these resulting in questions like, "What's new here?" The current versions should be revised to address this problem. They should specifically consider the magnitude of the problem (for example, 50-60% of Maryland farms are not using cover crops, and according to the data presented at our May meeting, there is an opportunity to significantly improve soil health on farms that have participated in MACS for many years), and the options to address the opportunities for improvement.

The conservation practice memos also lack perspective. They do not identify either author or the audience. Presenting options implies that a decision is to be made, but the memos do not identify who will make the decision. The lack of perspective and a problem statement means that any offered solutions seek an audience with a problem to solve.

5. Because they all lack a concise problem statement, the conservation practice memos do not offer compelling reasons to adopt any of the practices they describe. This is more a problem of exposition than reality since the testimony at the subcommittee meetings presented convincing evidence that several practices (cover crops, renaturalizing/CRP, grazing, agroforestry demonstration projects, and organic amendments/composting as described by the cover crop group) offer significant opportunities to improve soil health if they are done well.
6. There are several options for payment structures that the Committee should consider.
 - a. Incentive payments can be structured according to some metric, such as
 1. Attestation that a practice has been undertaken
 2. Reporting a result, e.g., SOM
 3. Implementing a practice
 4. Completing a practice
 5. The outcome of the practice
 - b. Incentive payments can be structured based on achieving a fixed metric or improvement/progress toward a goal.
 - c. Hybrid models, while more complex to develop and communicate, offer the best prospect for maximizing the program's impact.
7. The cost-minimization analysis in the incentives concepts memo and presentation presents only one of several factors needed to determine the practice and programmatic activities that the soil health program will pursue. At least two, and maybe three, additional dimensions should be considered. Here is a typology adapted from work in the pharmaceutical industry that I have shared in the past.
 - a. Opportunity describes the "bang-for-the-buck" that we might expect per unit of implementation (e.g., per acre) if a practice or program is implemented well.
 - b. The probability of success describes the likelihood that the opportunity will be achieved based on some realistic implementation expectations.
 - c. Overall impact describes the opportunity multiplied by the units of implementation. I am reluctant to formalize this as a criterion for reasons related to racial justice, food justice, and food sovereignty, but I think we should consider it.
 - d. Experts in portfolio analysis would advise selecting multiple practices and programmatic activities to achieve the best overall result. Some should be high risk, high return (e.g., agroforestry). In contrast, others might be at lower risk but lower return (composting, grazing). Finally, low risk, high return options (enhanced cover crops, renaturalizing) are obvious selections, while high risk, low reward options are almost always rejected.
8. The best recent evidence from the Potsdam Institute suggests that global agriculture will need to sequester about 20% of global greenhouse gas emissions to meet the Paris Agreement goals. (This is in addition to zeroing out current agriculture-related emissions, some of which are also addressed by the soil health program.) I propose that we use the equivalent state metric to design a robust program. It will cost more than the currently available funds. (Anything other than doing nothing will cost more than is currently available!) Still, the information will provide MDA, the legislature, and other potential funders a clear and hopefully convincing roadmap to help solve the climate and food challenges faced by Marylanders.

All the best,
Tom