Chesapeake Bay Program (CBP)
2021 Scientific and Technical Advisory Committee (STAC) Workshop

Overcoming the Hurdle: Addressing Implementation of
Agricultural Best Management Practices (BMPs) Through a Social Science Lens

Virtual Workshop; July 13, 14, 20

Briefing Summary in Preparation for July 20th (Workshop, Day 3)

Summary of workshop input to date
Day 1 (July 13) workshop participants (a mix of ag service providers, other ag conservation partners) were invited in small groups to ignore limitations from existing programs or laws and brainstorm what it might look like in the year 2031 to have met agricultural nutrient and sediment goals for the Chesapeake Bay. What did we do in the Chesapeake Bay watershed to achieve those goals? Participants then discussed their thoughts in a full group session.

Day 2 (July 14) participants then explored specific tools (scenarios) to achieve reduction goals in small groups: technical targeting tools; flexible financial incentives; how insights from behavioral science might be applied; and rewarding conservation professionals. The feedback from Day 1-2 is summarized below, along with questions for our discussion on Day 3 (July 20).

Day 1- It's 2031: We've met agricultural nutrient & sediment reduction goals in the Bay Watershed. What does this look like and how did we get here?

Assumptions guiding workshop that were clarified through discussions:
● How do we reach agricultural producers who are reluctant to adopt BMPs?
  ○ Assumption: farmers already implementing BMPs are not our primary audience; our audiences are people we are not reaching: the non- or reluctant adopters
  ○ Those already implementing BMPs want to know if what they are doing is making a difference through local monitoring; however, such monitoring may not drive a reluctant adopter to take action. Other incentives or nudges are needed.

● How do we increase adoption of cost-effective BMPs?
  ○ Assumption: to achieve the goals for nutrient and sediment reduction for agriculture in the Chesapeake Bay, we need to do more, do better, implement BMPs faster, and in the places that will result in the highest pollution reductions. As one participant noted, "NRCS only reaches 12-15% of farmers nationally. If we are relying on these programs to meet our goals, it is not enough scope or outreach."
  ○ How we do this is a critical question with a number of ideas raised below.
  ○ A regular theme raised by participants is that we need to be working with trusted voices and "gateway" projects or programs to bring reluctant adopters along, not waiting for someone to walk in the door and ask for help but going to them.
  ○ This summary concludes with general thematic areas for discussion on Day 3.

Potential view of what it might look like in 2031, as outlined by workshop participants:

- **Farms are sustainable and profitable** with reliable income for ag products, soils are healthy, streams are buffered, nutrient rich food is standard, manure is managed as a resource, and producers have implemented BMPs that are climate (flood, drought) and market resilient while seeing that BMPs are making a difference through local monitoring
- **Funding and effort are targeted effectively**, with critical source areas identified and BMPs focused on critical areas (hot spots) and for critical time periods (hot moments). We're more focused on addressing projects at a watershed/sub-watershed level.
- **"Pay for performance" is accessible and utilized across the Chesapeake Bay watershed** as a market based program with payments for lbs/pollutant reduced and on-going verification at scales appropriate with payments and performance.
- **Farmers consider cover crops as their "crop"** due to conservation incentives, or are competing based on nutrient reduction performance.
- **Agencies have adopted a "farmer" centered approach** versus a "program" centered approach, with more straightforward messaging (streamlined goals, objectives, funding mechanisms, simpler message); easy access to materials or equipment; sufficient staffing; easier participation for farmers (fewer hurdles, less frustration, fewer bottlenecks, quicker turnaround, more time/flexibility); easy paperwork (see MD water quality cost share program); lower barriers to adopting new ideas or technologies; adaptation to conditions like drought; openness to innovation; more funding for larger projects.
- We've **found ways to meet farmers and producers where they are**: whether Plain Sect or others. We are celebrating the diversity of farms (production [dairy], farm type) and working with producers, having cultivated trusted messengers (including liaisons to under-served communities or third parties to streamline projects) and messages that may link to other values, including being good stewards and protecting local water quality for their family and neighbors. We've found a way to work with both land renters/owners to implement BMPs.
- **Robust community support exists at multiple levels**: peer to peer outreach/engagement; for transition planning; and ag/watershed groups or coalitions in local watersheds. We are celebrating success in a variety of ways that meet farmer needs/preferences and showing how ag is "doing its part" to address critical water quality challenges.
- **Technical assistance is robust with a cohort of well-trained people across the watershed who have or can build trust**, including through "gateway" projects like energy audits. Training programs through community colleges/universities are well developed to produce a "pipeline" of expertise. We are connected with the private sector to advance BMPs.
- **Technology used to separate nutrients from livestock in nutrient dense areas is being widely implemented** to address regional nutrient imbalances; such nutrients are then sent to areas that are nutrient poor. Technological advances including precision ag, gasification, etc. are readily approved without redundancies in requirements and funding is possible for large-scale infrastructure technologies because the price/pound for pollution reduction makes that investment worthwhile.
- **There is a uniform BMP tracking and reporting system** that has sensible and reasonable goals with a neutral third party data collector who can provide solid information ("Who you listen to and what information is out there is different from how information is collected and shared." Farmers are given credit for work they are doing.)
- **Financial support and "positive incentives" are available**, with price premiums paid for good stewardship practices, discounts for services (loans, insurance) for those implementing critical BMPs, steady or increasing payments over time, and support for on-going maintenance that appropriately addresses climate- or market-related risks.

Day 2: How might we accomplish these visions? Finding solutions by exploring scenarios:
During Day 2, participants split into groups to explore potential scenarios in depth (scenarios posted online). With each scenario, facilitators presented a "current reality" then explored alternative approaches with their groups; each group's discussion is summarized below.

Scenario 1: Expanded Use of Spatial Prioritization (Technical Targeting Tools)
- Participants in this group represented a range of perspectives from less familiar and curious to very positive about the use of spatial prioritization. People thought this could be a useful tool, particularly if we could reduce the cost of ground truthing the tools (see below) and potentially create more value-added tools (screening).

- Prioritization uses **landscape-level spatial data (both biophysical and social)** about who might be most prone to adopt; this could be useful as a means to approach people

- Using **tools upfront may help** avoid a lot of paperwork to confirm eligibility (especially early in the process or confirming BMP adoption) and address economic needs (such as match requirements or equipment and funding needs)
  - Less red tape will enable participation
  - Types of tools: aerial photos, satellite imagery, GIS, artificial intelligence (finer scale?)
  - Potential methods to consider :
    - local identification by farmers of streams with high sediment loads
    - volunteers to look for potential opportunities (community science approach?)
    - field days in areas with lower adoption
    - prioritization tools to compare "conservation efficiency factors" of service center visitors to other farmers/landowners in local watersheds (see Virginia)
    - prioritization tools that use both social and biophysical data tools to facilitate public/private sector outreach opportunities

- There are a **number of challenges or barriers** to direct funds/attention to where needed:
  - Livestock producers don't qualify for many programs [editor's note: this is an area that needs more exploration]
  - Critical to engage with both landowners and renters
  - Need to think about messaging: avoid "targeting" people as no one wants to be targeted, engage producer from the beginning, think about how their parcel may be an opportunity
  - Verification needed: need to ensure accuracy through ground truthing (staff time), may not be able to see if cover crop was fertilized
  - Lack of trust in the tools

<u>Scenario 2: More Flexible Financial Incentives</u>
- **Critical to focus** on 1) producers who are reluctant adopters (vs. adopters), 2) technologies (BMPs) that provide high public but low private benefits; 3) incentives that encourage people to treat critical source areas.

- **Pay for performance (P4P) is of interest to workshop participants; there are a number questions about how such programs would be implemented**
  - For example, would P4P compensate producers on water quality services (WQ benefits, $/lb of pollutant removed) provided rather than the cost to install a practice?

  - P4P could be implemented as a primary way to fund conservation or as supplemental system to existing cost share programs

  - P4P could potentially address a number of current challenges to adoption:
    - Target high nutrient loss areas. Overstocking is an important resource challenge, particularly from small, resource limited operations. Under existing crediting/ programs, a farmer with too many cows per acre and one with a few cows per acre get the same payment and credit for a stream fencing project even though the WQ impact would be very different between the two operations.

    - Many farmers are reluctant to adopt BMPs with significant costs and limited private benefits. Many farmers are concerned about stream fencing because of upfront installation costs, potential high maintenance cost (ex. fencing washing out during storms), and opportunity cost of land taken out of production. P4P can address these issues since payments are based on public WQ benefits, not just installation costs

  - Participants discussed a number of design considerations including the following: Consider ranking programs based on $/lb pollution reduction. Consider when payments are received, annual vs. lump sum payments, providing information about prices that agencies are willing to pay for WQ services upfront (ex $/lb that agencies are willing to fund to increase producer certainty in value), and determining the baseline from which to begin counting reductions.

- **Which farmers to approach with a P4P opportunity raised questions** (see Scenario 5 discussion):
  - Would reluctant adopters who have not participated more fully in BMP implementation be willing to participate in a program aimed at WQ results?
  - How would the benefits (funding) be distributed in a P4P program among farmers/producers? Would "big" farmers receive more?

- **Participants focused primarily on P4P, but there are other flexible incentives to explore:**
  - Example: offering farmers/collection of farmers financial rewards for achieving specific measurable outcomes or achieving a specific soil P (phosphorous) index level in high P operations.

<u>Scenario 3: Using Insights from Behavioral Science to Plan Outreach Efforts, Design Conservation Programs</u>

- **Need to move away from a "program-centered" to a "farmer-centered" approach**

- We need to **frame the water quality narrative differently: "farmers are part of the solution**." This will help build trust and develop new social norms, critical for long run impact. Building appreciation can motivate action (as opposed to "farmers are the bad guys")

- **Individual farms, managers, communities are unique**. We need to tap into different values, perceptions, needs, issues to move forward
  - Think about a community-based marketing campaign: social media, focus groups, interviews, field days, community ambassador events, exchange programs (farmers visiting fisheries and vice versa), recognition/awards

- **Working within networks and trusted ambassadors in various communities is key**
  - One-on-one, peer-to-peer, and/or focused engagement combined with other approaches can lead to a snowball effect and more adoption, especially if tailored to meet local needs
  - Outreach professionals, no matter whom they work for, need to coordinate to share consistent message and bigger picture to break down existing siloes
  - A farmer-built network and mentorship program may be important

- It may be helpful to **develop a catalogue of BMP successes**, including success stories, BMPs implemented, costs, and professional contacts
  - Consider a Chesapeake Bay Program goal for "sustainable agriculture" (like for sustainable fisheries" goal)

- Need to think about how to **incentivize consumer demand** for more sustainable products (price premiums, niche markets)

Scenario 4: Rewarding Conservation Professionals
- Participants in this discussion liked the idea of rewarding people for promoting conservation, but concluded that **rewarding effective "conservation professionals" or people who may work for some entities like a conservation district was not a good idea**. Why?:
  - Conservation districts spread their workload for BMP implementation across staff; it is hard to reward individuals versus a team. This is a team effort.
  - Conservation district staff have a number of goals, not only nutrient/sediment reduction
  - A number of staff do outreach and and education and might be left out
  - Numerous challenges may arise: what are the metrics for identifying rewards (between offices, or relative to office performance over time)? Terms of rewards? Bonuses for staff versus needed funding for equipment? Fairness/allocation? Competition? Need to be aware of need for staff retention. Staff are already busy.
  - Might create competition between agencies (need cooperation)

- **Alternative ideas for using incentives and rewards ("If agency staff are already super busy, what if we incentivize progressive ag producers to do the outreach?"):**
  - Districts need more consistent/reliable funding, especially for those within critical source/high impact areas
  - Public recognition of good work done by ag retailers may be more helpful than financial incentives (building relationships, conducting on the ground work) (see Day 1 discussion))
  - Think about rewards or incentives for farmers in the community who could receive compensation or incentives for talking with other producers, making referrals, and doing the necessary groundwork. Producers with trust in community, ear to the ground may make a real difference (see discussion from Day 1 on peer to peer/networking efforts)
  - Would need clear qualifications, training, interview process
  - Could have higher bonuses for bringing in producers from critical source areas

Scenario 5: A mix of the above, including enforcement, other tools
- This final group of participants discussed the potential for a mix of tools. They noted that **each idea may be necessary but any idea alone was not sufficient;** synthesis is needed. In addition, taking advantage of "teachable" moments may be key- such as when a producer wins an award, can they share the BMPs they are implementing?

- **Prioritizing key locations or "hot spots" and temporal "hot moments" in time is critical**:
  - Outreach and collaboration between a number of partners is key to effective targeting
  - Trust in the Chesapeake Bay model (or any model) is insufficient and too complex to incentivize conservation; need to partner targeting efforts with monitoring.
  - Monitoring at the same spatial/temporal scale as the targeting is critical. Effective spatial scale around 10-20 farms in a smaller catchment? See Lancaster (PA) Clean Water Partnership approach as an example.
  - Need to think about what metric or activity is being targeted (streambank erosion?)

- **Financial incentives such as pay for performance (P4P) is of interest**
  - Need to think about design criteria- focus on those already implementing BMPs?
  - Again, monitoring is critical: monitor at the same spatial scale as the P4P payments
  - Need holistic/collective approach to performance, beyond one BMP at a time

- Other considerations:
  - **Think about negative incentives/enforcement:** support the agricultural community with increased enforcement of existing regulations

Day 2, Open Discussion:
After each scenario group reported back, participants engaged in a general discussion. A few major points from the overall discussion:

- **Interest in the Pay for Performance idea was high but a number of questions on how to implement arose.**
  - How to utilize P4P to increase reluctant adopters to implement BMPs vs. reward and incentivize even higher level conservation by early adopters raised a number of questions.
  - Who should qualify was the subject of discussion (see notes above from scenarios 2, 5) and a critical design question.

- **Monitoring as a subject came up in many ways** and is a topic to explore more:
  - While participants agreed on the importance of monitoring, some did not think that this would be a tool for encouraging reluctant adopters to engage in BMP implementation.
  - For some, monitoring is more than water quality monitoring, but includes data tracking (plans written, BMPs implemented, nutrient application records kept).
  - Questions of monitoring versus tracking and verification were frequent discussions linked with the question of how do we know if we are making progress?

- Participants had much to say when asked **what made conservation work "fun" versus stressful**:
  - **Fun**: working outside, engaging with people and partners, building trust/connections, making a better world, hearing examples that work. "Helping farmers is rewarding."
  - **Stressful**: deadlines, paperwork, over documentation, tight turnarounds, delays, time from idea to implementation, restrictions, programmatic BS, conflict, competing priorities

- **Meeting farmers and producers where they are** is a repeated theme from the breakout sessions and the general discussion.

- At the end of the discussion, the **opportunity to leverage other drivers arose**; for example, can MS4 requirements be met through ag practices?

A number of key themes overall:
During Day 1-2, a number of key themes emerged.
1) There seemed to be relatively high levels of agreement that **implementation could be improved with more flexibility in prioritizing and incentivizing high impact producers, technologies, and locations**

2) There were a **number of ideas on how additional flexibility can be structured** to get a prioritizing place, practice, and people including:
   a) P4P: paying for the amount of WQ services provided, rather than costs incurred (with many questions and discussions about the program design).
   b) Reward programs: farmers assisting with education/networking; achieving benchmark indicators.
   c) Creating revenue streams for farmers though commodity supply chain/environmental stewardship

3) **Incentive programs need more administrative streamlining** (this goes from paperwork to complete cost share agreement to approval of innovative BMPs).

4) **Questions of trust arose in several contexts**: who might be good messengers, how information they are sharing might be used, how actions on the ground are linked to the Bay model, and so forth.

5) As noted in the final discussion, **questions related to monitoring arose in a variety of discussions**. The discussion often came up in that "farmers want to know if they are making a difference." What this means and how to accomplish this, particularly linking to social science, may be a conversation to have further

6) To improve BMP adoption success, **more needs to be done with direct engagement with farmers** through a variety of mechanisms

Questions to consider for Day 3:
Day 3 (July 20th) is a critical and final day for the workshop, with previous participants welcome to participate and additional policy and decision makers specifically invited.

Following this final day, the Workshop Committee will be compiling all of this information into a Workshop Report, including specific recommendations. Recommendations are supposed to follow the "**SPURR" format**:

        S- specific and granular
        P- programmatic partner
        U- urgency
        R- risk of not taking action
        R- resources and timing

Given the workshop participants' ideas, our questions for the last day include the following:
- What are the most important obstacles currently holding us back on doing more and doing better with respect to improving BMP adoption (both more and better adoption)?
- What specific opportunities do you see as ways to
    1. improve the acceleration of BMP adoption and
    2. to improve adoption (getting better WQ outcomes (more reductions) for any given level of staffing/funding?
- What specific factors for implementation should be considered?
- What barriers exist to implementing these opportunities and how can we overcome them?
- What specific recommendations can we make to the Chesapeake Bay Program or others?

To allow for easier conversation, we will split into breakout groups loosely on the following topics
- Group #1: Technical targeting tools- where do we go from here?
- Group #2: Flexible financial incentives- what are the design and potential contribution for performance programs?
- Group #3: Actualizing recommendations based on insights from behavioral science
- Group #4: Creating incentives for engagement: peer to peer networks?
- Group #5: A Mix of Incentives: how do we move forward with a mix of these programs?

Each group will have a facilitator to guide the conversation, asking more in depth question for each breakout group. In addition, a notetaker will capture the ideas shared (but will not be attributing them to any person).