

Overcoming the Hurdle:
Addressing Implementation of Ag BMPs
Through a *Social Science* Lens

A Chesapeake Bay Program Scientific & Technical Advisory Committee Workshop

Loretta Collins, University of Maryland

June 2, 2022

Steering Committee

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University of Maryland/Chesapeake Bay Program

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Denice Wardrop
Chesapeake Research Consortium

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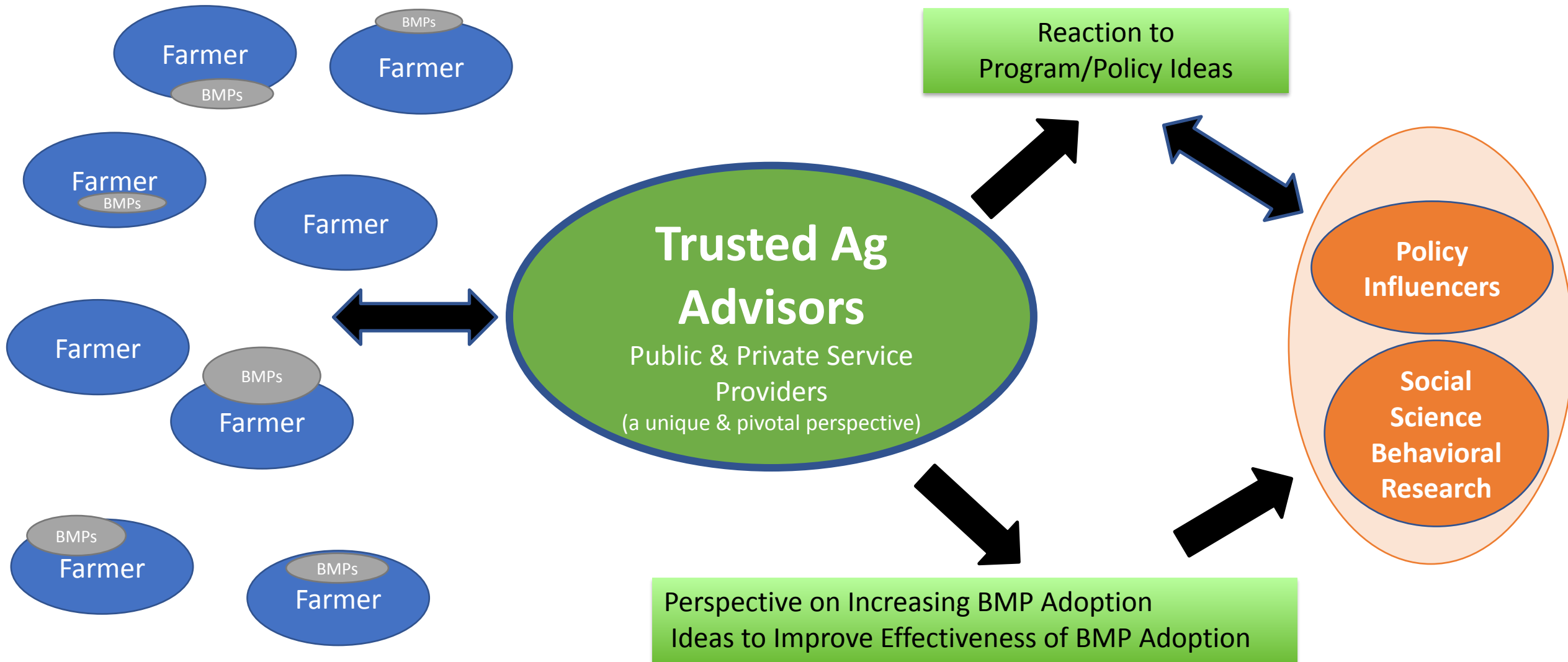
Why the Workshop?

Behavioral Change

Improve Engagement Among Hesitant BMP Adopters

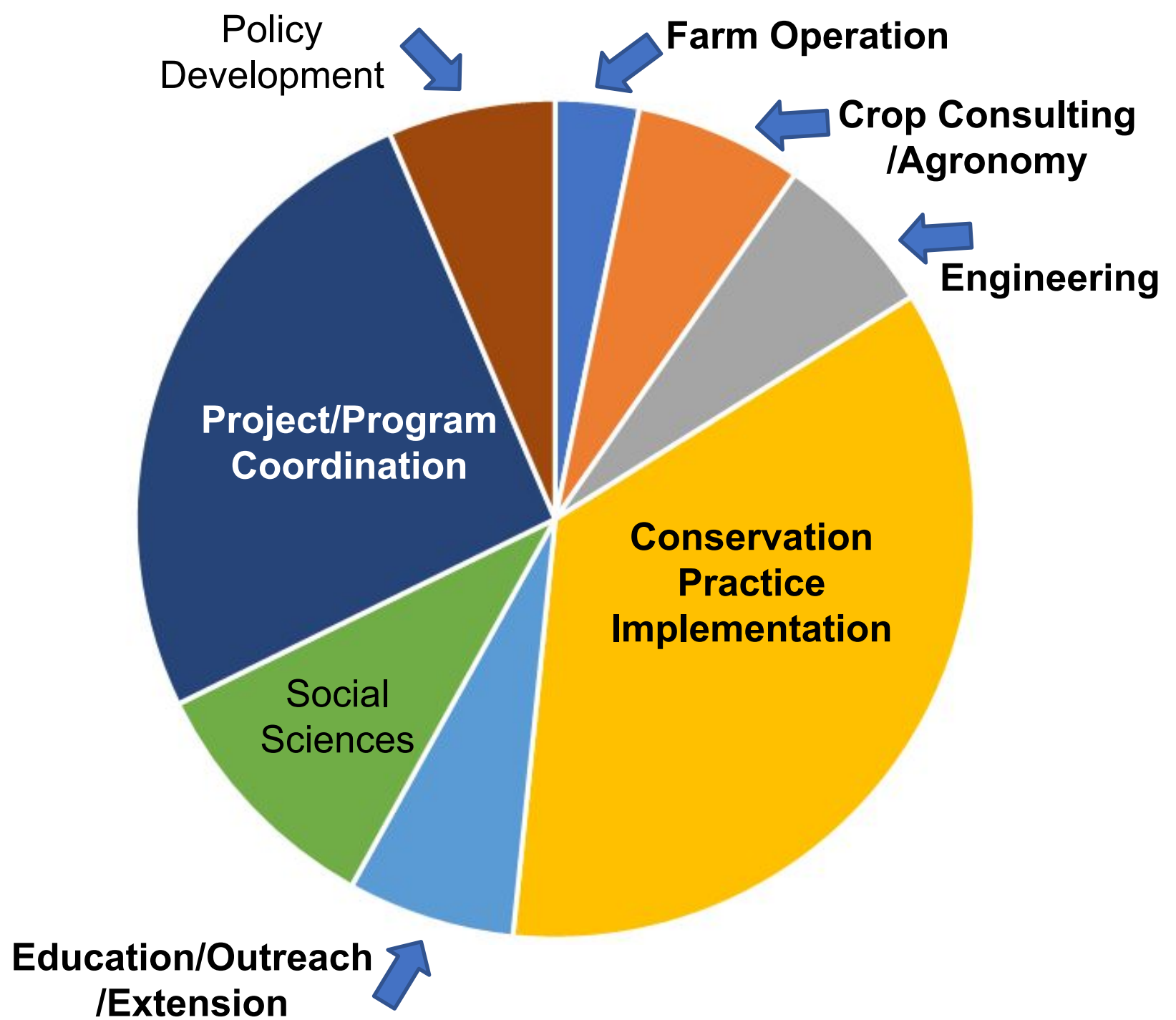
Increase Adoption of Cost-Effective* BMPs

What We Wanted To Know



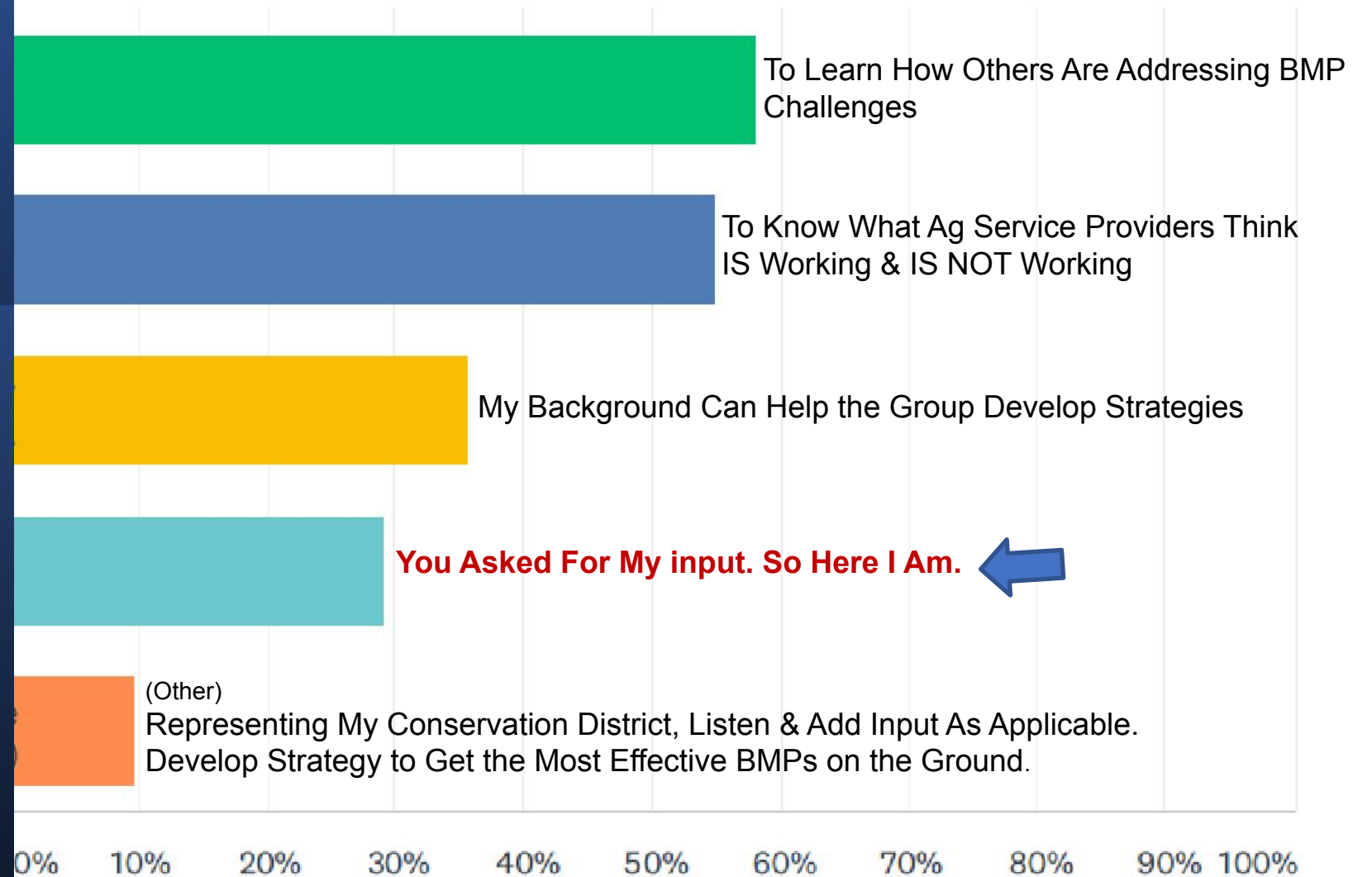
Who Participated?

(pre-workshop survey)



Why Did They Show Up?

(pre-workshop survey)



3-Day Road Map

Day 1: Listen & Learn

Envisioning the Future

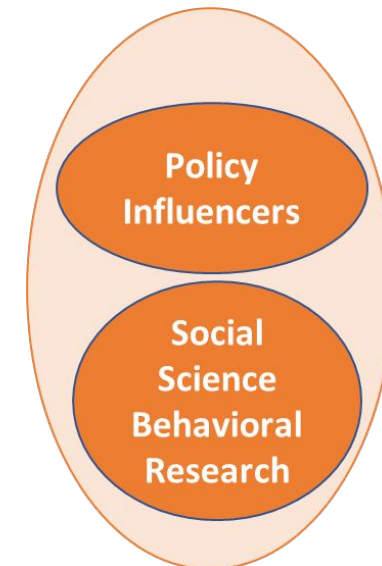
(great water quality, resilient & profitable farms)

Day 2: Listen & Learn

Solutions: How Do We Get There?

Day 3: Okay. Now What?

*Translate Real-World Experience Into Concrete
Policy Recommendations*



Sorting Through it All

50-70 People

3- 3 Hour Sessions

5 Break-Outs per Day

= Almost 20 Hours of Discussion



This Says it All...

“...The incredible complexity of delivering resources to farms creates an unusual amount of waste of public resources and it is frustrating to farmers,

so I think focusing on how to **deliver those resources quicker and with less complexity is crucial.**

There needs to be a sense of urgency about that. There is a lot of talk, but how do we fix it? A sense of urgency would go a long way in getting people to engage and be willing to do things.

I hear all time, ‘We had a farmer hooked and by the time the funding came in they had quit.’ Not surprising. Their energy went somewhere else.

A very basic concept: **Everything has an opportunity cost. If you make being a responsible citizen too difficult or complicated, they’ll go do something else.”**

--Day 3 Workshop Participant

Key Takeaways

BMP Implementation Programs Should be Easy & Flexible.

Outcome-Based BMP Incentives are Needed.

Farmers Want to Know What Works.

Conservationists Want to Know What Works.

Fostering Career Conservationists is Essential.

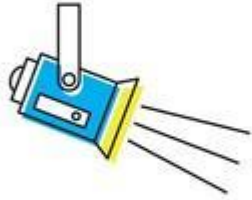
Connecting with Reluctant BMP Adopters is Critical.

Evidence-Based Program Design Can Increase Effectiveness.

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Paradigm Shift in 2031

Water Quality is Local!

Culture of Good Stewardship is Dominant

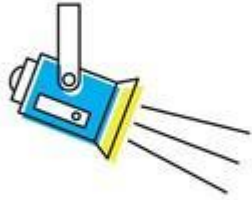
Manure Universally Viewed as Resource, not Waste

Profitability (\$ in pocket) not Productivity (high yield)

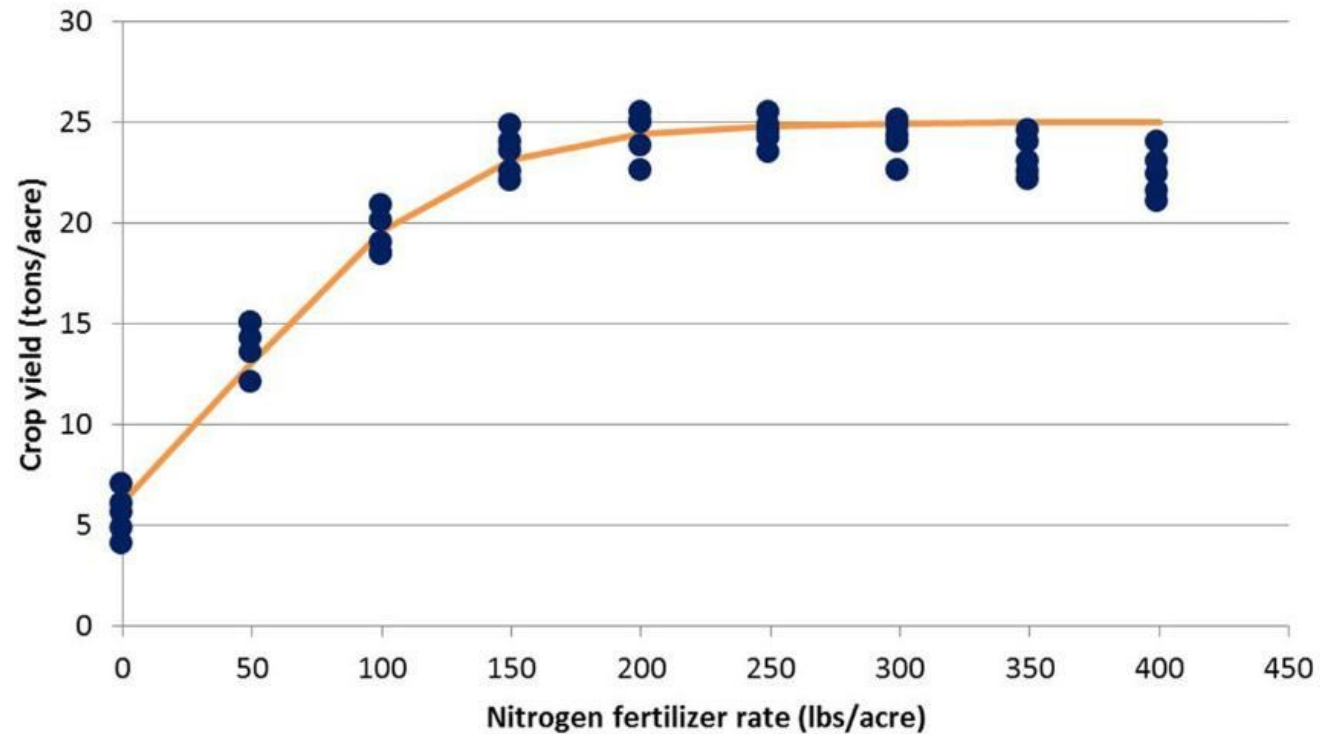
Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Profitability (\$ in pocket) not Productivity (high yield)

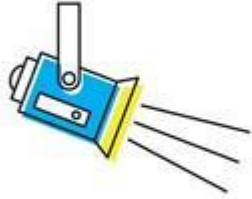


<https://edis.ifas.ufl.edu/publication/SS548>

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



The “Typical Farm” in 2031- 10 Years From Now

Environmentally, Financially Sustainable & Prosperous

Riparian Tree Buffers on Every Stream

Implemented Conservation & Manure Plans

Increased Focus on Organic & Conservation Tillage

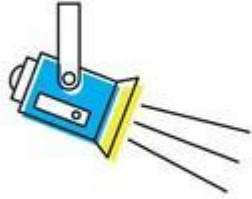
Marginal Land Not Cultivated

Space for Smaller Regional Dairies

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Innovation: Scientific Capacity (FLEXIBILITY is key)

Conservation Impacts on Water Quality are Better Understood

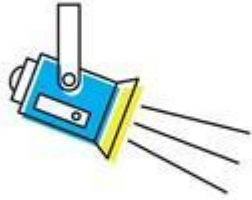
Uniform & Trusted BMP Reporting System

Innovations are Swiftly Identified, Defined & Implemented

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Innovation: Technical Capacity (FLEXIBILITY is key)

On-Farm Field Trials are Common-Place

Targeting BMPs to be Most Effective is the Norm

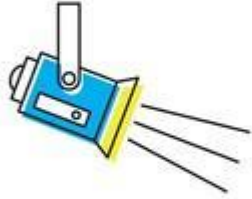
Robust & Dependable Technical Service Provider Networks

Pay-for Performance Programs are Operational in the Bay Watershed

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Innovation: Financial Capacity (FLEXIBILITY is key)

Innovative Funding Mechanisms Expand BMP Opportunities

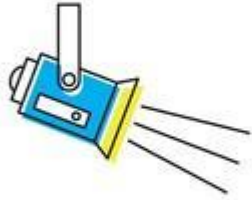
Flexible & Reliable Cost-Share Funding Structures
Accommodate a Spectrum of Needs

Structural Technology Available to All Farmers

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Communication & Knowledge

Venues for Farmer-to-Farmer Knowledge Sharing are Common

We Meet Farmers *Where They Are*

Acknowledgement of Different Circumstances in Different Places

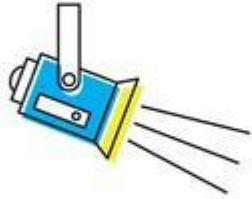
Flexibility in BMP implementation Standards Based on Localized Needs

Farmer Outreach & Education is Expansive & More Effective

Day 1 (emphasis on ag service providers)

Envisioning the Future

(great water quality, resilient & profitable farms)



Community Support/Cohesion

Communities United in Common Goal

Cultural Awareness Opens Opportunities to Underserved Communities

Farmers Paid Equitably for Product

Consumer Demand Drives Conservation Through Markets & Policy

Burden of Highly Effective (but costly) BMPs Lifted Off Farmer

What we learned: Day 2

Key themes: fun vs. stressful conservation work?



Fun?

- Working outside
- Engaging People & Partners
- Building Trust & Making Connections
- Making a Better World
- Hearing Examples That Work

“Helping farmers is rewarding”

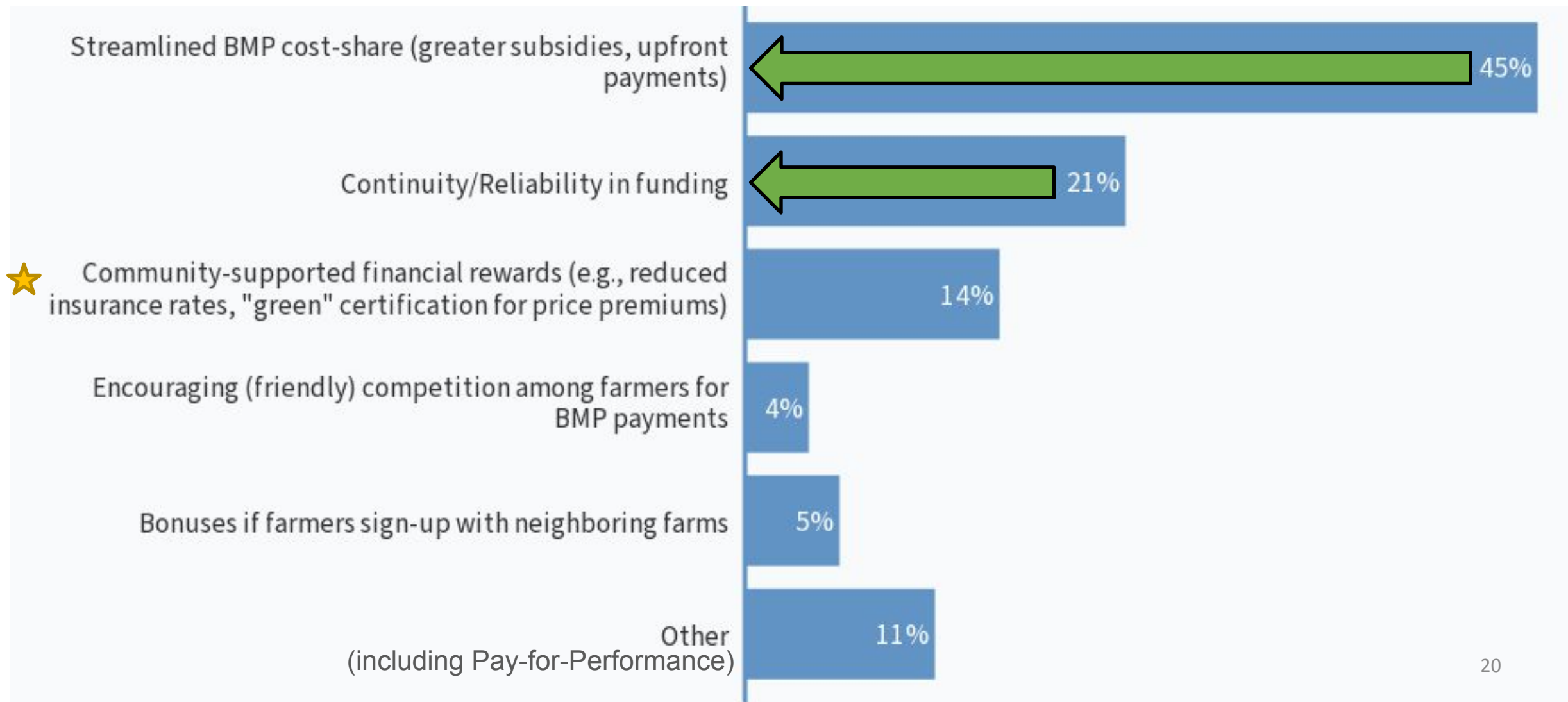


Stressful?

- Deadlines
- Paperwork
- Over-documentation
- Time from Idea to Implementation
 - Tight Turnarounds & Delays
- Restrictions
- Programmatic *Manure*
- Conflict
- Competing Priorities

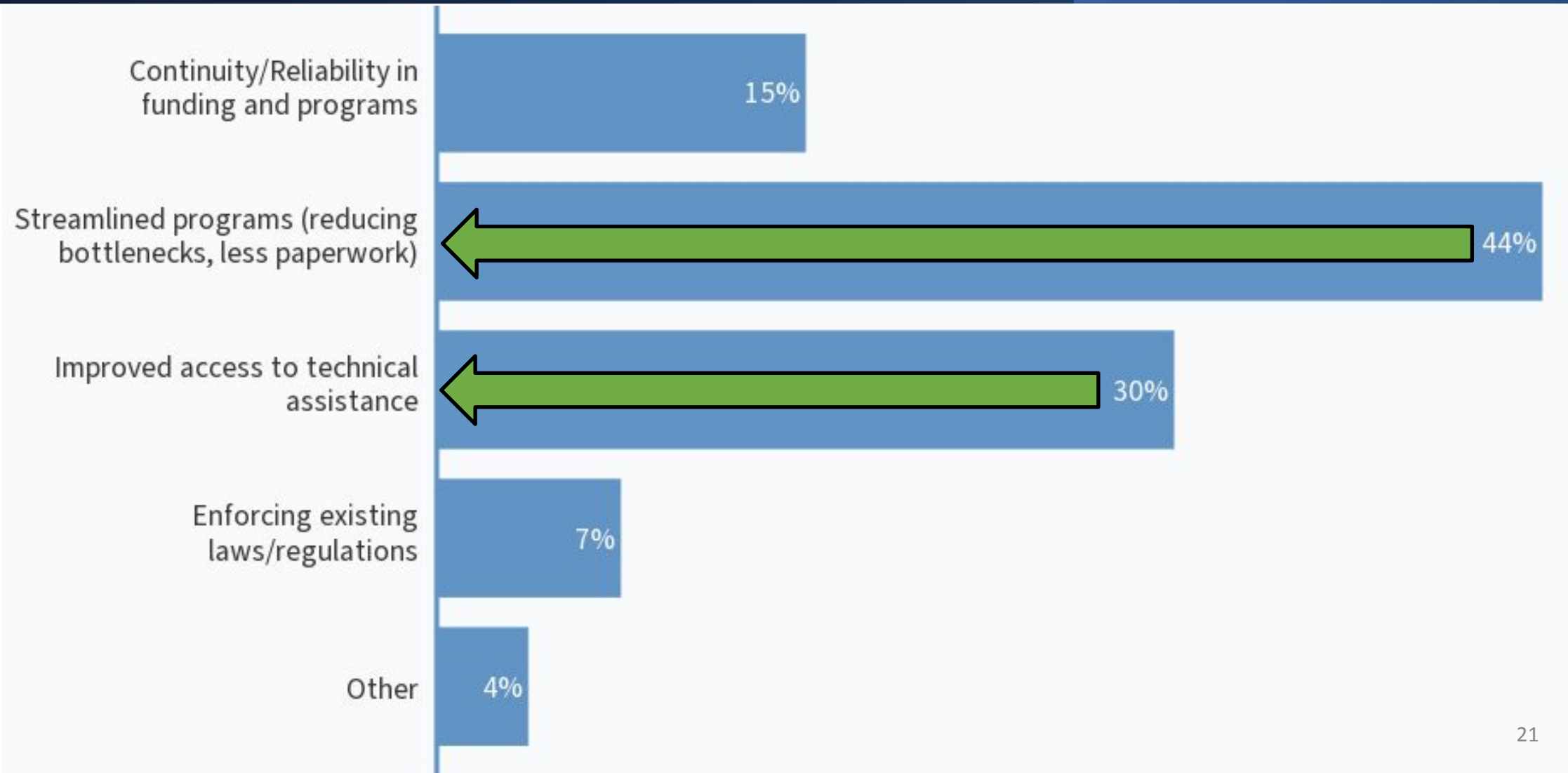
Most Important Financial Incentives for Reluctant Adopters

(Choose 2)



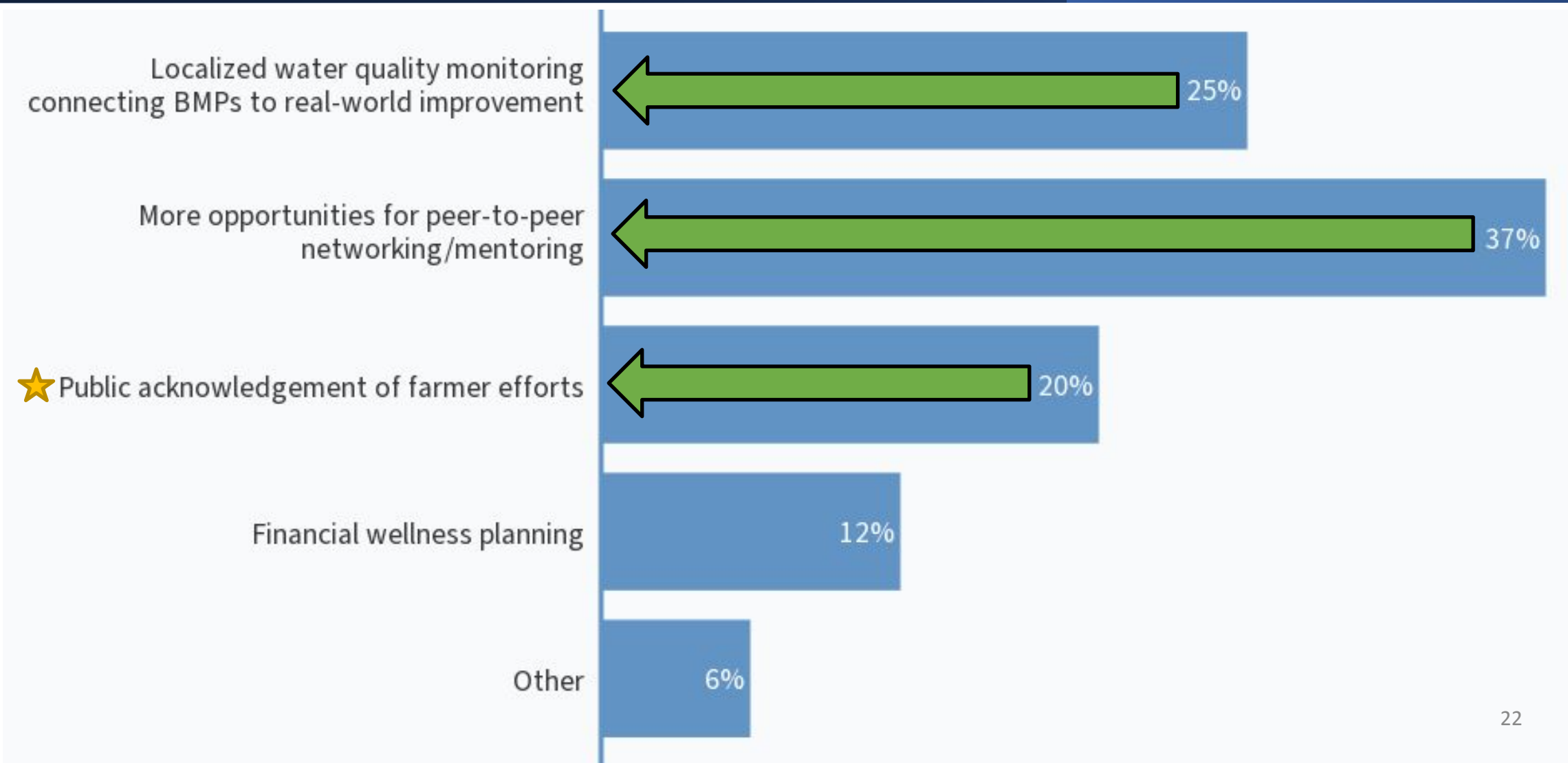
Most Important Programs/Policy for Reluctant Adopters

(Choose 2)



Most Important Education/Outreach for Reluctant Adopters

(Choose 2)



Day 2 (emphasis on ag service providers) Solutions: How Do We Get There?

Engaging farmers who have not previously prioritized BMPs (i.e., **reluctant adopters**).

Improving adoption of BMPs with high public (WQ) benefits, but low private (on-farm) benefits.

Implementing BMPs *in* landscapes and *by* farmers that can generate cost-effective reductions with limited budgets (i.e., "Bang-for-the-Buck").

Day 2 (emphasis on ag service providers)

Solutions: How Do We Get There?

Scenario 1: Expanded use of spatial prioritization (Technical Targeting Tools)

Scenario 2: More flexible financial incentives

Scenario 3: Using insights from behavioral science to plan outreach efforts & design conservation programs

Scenario 4: Rewarding conservation professionals for reducing nutrient & sediment loss from ag land

Scenario 5: A mix of actions

What we learned: Day 2

Developing Solutions through Exploring Scenarios

Scenario 1: Spatial Prioritization/ Technical Targeting

- Potential to use biophysical & social data to prioritize key areas, producers
- Lots of questions/ideas about tools, ground-truthing

Increasing Effectiveness and Reducing the Cost of Nonpoint Source Best Management Practice (BMP) Implementation: Is Targeting the Answer?

1. Improve the spatial prediction capability of the CBP TMDL accounting system by:
 - a. *Develop finer scale modeling capacity to guide and inform targeting*
 - b. *Continue to improve spatial resolution of datasets that drive the CBP models and increase sharing and development of remote sensing and high resolution data that can inform the location of NPS loads and BMP removal effectiveness.*
 - c. *Allow for differential crediting of NPS BMPs*
2. Develop and test alternative incentive systems for targeting programs:
 - a. *Develop and support small testbed watersheds to pilot and test targeting incentive designs and assessment of outcomes*
 - b. *Support development and testing of nonfinancial approaches to encourage wider program participation and improved land manager identification of NPS hotspots through behavioral “nudges”, communication strategies, and feedback on NPS management performance.*

STAC Workshop Report
November 12-13, 2019
Fairfax, Virginia



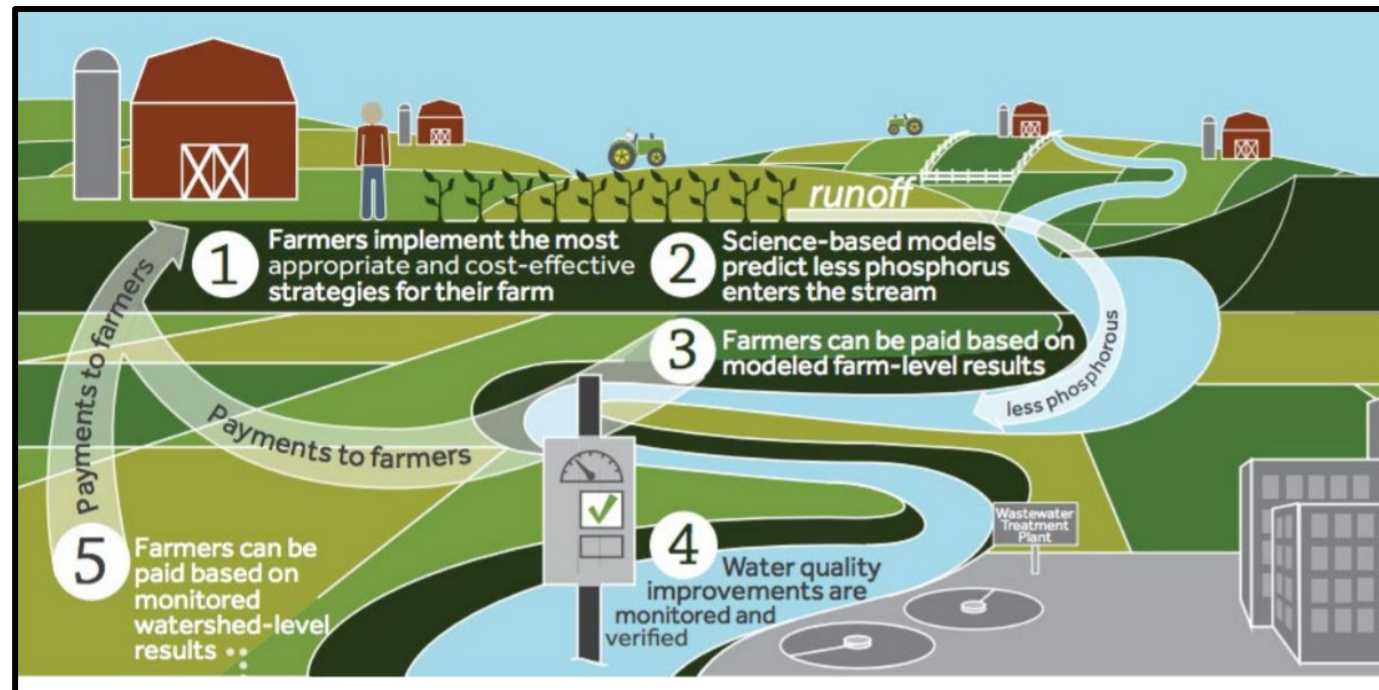
STAC Publication 20-002

What we learned: Day 2

Developing Solutions through Exploring Scenarios

Scenario 2: More Flexible Financial Tools

- Interest in Pay for Performance high, but lots of questions on how to implement & who would benefit
- Potential for other financial tools as well?



One schematic for Pay for Performance:
<https://winrock.org/wp-content/uploads/2016/02/PfP-How-To-Guide-Final.pdf>

What we learned: Day 2

Developing Solutions through Exploring Scenarios

Scenario 3: Using Insights from Behavioral Science

- Need to think about framing: farmer centered, producers as part of the solution
- Work with communities (networks, peer-to-peer, celebration of success)



<https://www.morningagclips.com/central-pa-dairy-farm-helps-protect-chesapeake-bay/>



https://www.lancasterfarming.com/news/main_edition/one-farmer-s-journey-to-planting-a-better-buffer/article_40d2dbed-a0fc-5b81-b4e8-44b8140f0653.html

What we learned: Day 2

Developing Solutions through Exploring Scenarios

Scenario 4: Rewarding Conservation Professionals

- Rewarding conservation professionals who work for conservation districts may not work; consider farmer peer-to-peer networks?
- Opportunities for other types of rewards/incentives?



<https://conservationfinancenetwork.org/2020/04/15/farmers-on-the-frontlines-of-the-regenerative-agriculture-transition>



Pennsylvania No Till Alliance

- Farmers Improving Soil Health -



<https://www.suffolknewsherald.com/2016/09/08/farmers-take-boating-trip-along-chesapeake-bay/>

What we learned: Day 2

Developing Solutions through Exploring Scenarios

Scenario 5: A Mix of the Above

- No single idea enough- need a mix of practices to meet people where they are
- Think about programmatic design, streamlining, funding, human behavior

RIGHT BMPs?



RIGHT PROGRAMS?



<https://bloximages.newyork1.vip.townnews.com/lancasterfarming.com/content/tncms/assets/v3/editorial/b/c4/bc4a0770-a396-11eb-8db5-bfe971433a44/6081bd486a2bd.image.jpg>

Key Takeaways

BMP Implementation Programs Should be Easy & Flexible.

Outcome-Based BMP Incentives are Needed.

Farmers Want to Know What Works.

Conservationists Want to Know What Works.

Fostering Career Conservationists is Essential.

Connecting with Reluctant BMP Adopters is Critical.

Evidence-Based Program Design Can Increase Effectiveness.

BMP Implementation Programs Should be Easy & Flexible.

Immediate Need

Reduce barriers to farmer outreach and BMP adoption.

Collaboration needed across federal, state & NGOs to streamline conservation programs.

- Restructuring to allow for fast-tracking of funding and fewer paperwork requirements.

Allocation of resources for building trusted relationships between service providers & farmers.

- Establish indicators of successful relationship building as a specific deliverable in anticipated project outcomes.

Outcome-Based BMP Incentives are Needed.

Immediate Need

Long-term commitment to development of alternative BMP incentive mechanisms.

Scalable programs related to Pay-for-Performance & other incentive structures.

- steadiness of payments, committed funding, BMP crediting assurance, communication & outreach.

Clear & consistent BMP crediting system

- load reduction credit reflects the impact of BMPs in critical landscapes
- based on potential water quality impact (right BMPs, right place) in lieu of avg. values

Farmers Want to Know What Works.

Immediate Need

Build trust in sources of information through local community (e.g., farmers, local govts).



Bolster local efforts to collect & synthesize data.

- Communicate localized monitoring findings with local & regional BMP influencers

Communicate directly to ag-minded audiences on the opportunities & limitations of the CBP model & other available decision support tools.

Conservationists Want to Know What Works.

Immediate Need

Forum for idea exchange for creative solutions to increase effective BMP adoption.

Establish quarterly workshop sessions for service providers to discuss BMP implementation strategies.

- Identify timely topics with conservation boards & other relevant organizations
- Provide continuing ed credits for professional advancement

Fostering Career Conservationists is Essential.

Immediate Need

New incentive structures for the development & retention of conservation professionals.

Strategies will vary depending across the six Bay states.

Address retirement wave with new generation of conservationists.

Evaluate need for predictable funding to conservation districts

- competitive staff salary & benefits (relative to federal & private sector)

Equitable distribution of funding for conservation district staffing

- history of positive water quality outcomes
- continued need for improvement

Increase technical capacity with more conservation training opportunities



Connecting with Reluctant BMP Adopters is Critical.

Immediate Need

Incentives & tools to better equip conservation professionals to reach reluctant BMP adopters.



Adaptation of capacity needs to local areas
(e.g., training in leadership and social engagement strategies).

- Train service providers to tailor messaging for individual farmers □ expand reach beyond active BMPs adopters.
 - e.g., National Wildlife Federation's *Grow More*
- Identify compelling & useful (to farmers) technical targeting tools proliferate their use in conservation efforts.
- Fund & support for farmers doing peer-to-peer education & outreach in conservation.
- Identify & celebrate success at all levels
 - long history of prioritizing conservation
 - those taking the first steps

Evidence-Based Program Design Can Increase Effectiveness.

Immediate Need

Insights from the social sciences to guide conservation program design & implementation

Embed social science research within programs to test new strategies & measure their success.

Synthesize relevant social science knowledge

- What do we already know about conservation decision-making?
- Identify strategies with potential to improve conservation outcomes.
- Systematically test different communication & outreach strategies and evaluate
 - BMP adoption & water quality
- Develop, experimentally test & evaluate an incentive-based program for farmer advisors
 - Connect reluctant BMP adopters to service providers.

What's Next?

Final Report with Copious Notes & Recommendations Coming VERY Soon!

Coming Full Circle...

“...The incredible complexity of delivering resources to farms creates an unusual amount of waste of public resources and it is frustrating to farmers,

so I think focusing on how to **deliver those resources quicker and with less complexity is crucial.**

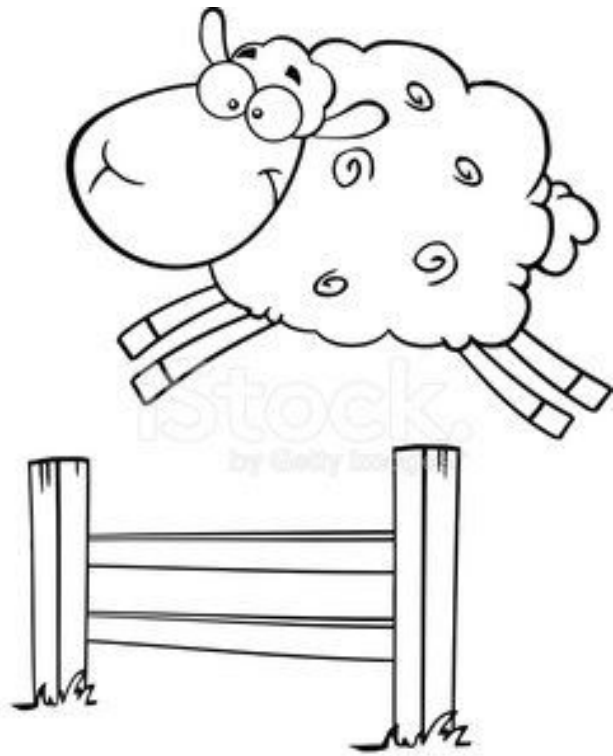
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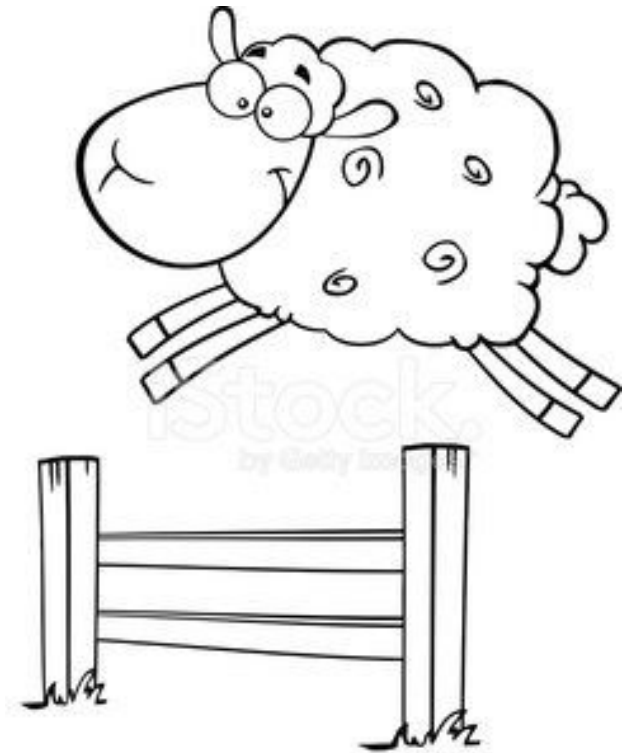
A very basic concept: **Everything has an opportunity cost. If you make being a responsible citizen too difficult or complicated, they’ll go do something else.”**

--Day 3 Workshop Participant

Questions/Discussion



Thank You
lcollins@chesapeakebay.net



Abbreviated Recommendations

Recommendation #1 (Streamline):

The CBP should support the collaboration of federal, state, county, and non-governmental partners (NGOs) in accelerating efforts to streamline conservation programs so that farmers can enroll easily and conservation professionals can manage projects efficiently.

Proposed CBP Partner(s): Management Board, funding organizations

Recommendation #2 (Value Relationships):

The CBP should support program managers and designers by allocating resources for program design that enable the time necessary for building and nurturing trusted relationships between conservation professionals and farmers.

Proposed CBP Partner(s): Management Board, funding goal organizations

Recommendation #3 (Creative Incentives):

The CBP should support scalable programs across the CBW related to Pay-for-Performance and other incentive structures using common program design techniques such as steady payments over time, committed funding sources, compatibility with the CBP's BMP crediting system, communication and outreach.

Proposed CBP Partner(s): Management Board

Abbreviated Recommendations

Recommendation #4 (Differential BMP Crediting):

The CBP should develop and implement a clear and consistent BMP crediting system in which pollutant load reduction credit reflects the relative impact of implementing BMPs in critical CBW landscapes.

CBP Partner(s): Scientific, Technical Assessment & Reporting (STAR) Team and relevant workgroups, Water Quality Goal Implementation Team, Modeling Team

Recommendation #5 (Local Success):

The CBP should use available localized information and data to craft and disseminate success stories.

Proposed CBP Partner(s): CBP Communications Office, Scientific, Technical Assessment & Reporting (STAR) Team and relevant workgroups, Agriculture Workgroup, Local Leadership Workgroup, Local Government Advisory Committee (LGAC), Citizens Advisory Committee (CAC), Strategic Engagement Team, Chesapeake Monitoring Cooperative

Recommendation #6 (Communication):

The CBP should develop a communication strategy to directly engage agriculture-minded audiences on the opportunities and limitations of the Chesapeake Bay Watershed Model and other available decision support tools.

Proposed CBP Partner(s): Scientific, Technical Assessment & Reporting (STAR) Team and relevant workgroups, CBP Communications Office, Strategic Engagement Team, Agriculture Workgroup

Abbreviated Recommendations

Recommendation #7 (Peer Learning Exchange):

The CBP should establish quarterly workshop sessions for agricultural service providers that cross CBW jurisdictional boundaries to discuss BMP implementation strategies.

Proposed CBP Partner(s): Agriculture Workgroup, Local Leadership Workgroup, Local Government Advisory Committee (LGAC), Citizens Advisory Committee (CAC), funding organizations

Recommendation #8 (Institutional Knowledge & Capacity):

The CBP should support **new incentive** structures for the development and retention of conservation professionals. Strategies will vary depending on the organizational framework of conservation districts in each of the six Bay states.

Proposed CBP Partner(s): Management Board

Recommendation #9 (Professional Training):

The CBP should support partners in adapting capacity needs to local areas (e.g., training in leadership and social engagement strategies).

Proposed CBP Partner(s): Management Board, Local Government Advisory Committee (LGAC), Local Leadership Workgroup, Agriculture Workgroup, CBP Communications Office, Strategic Engagement Team

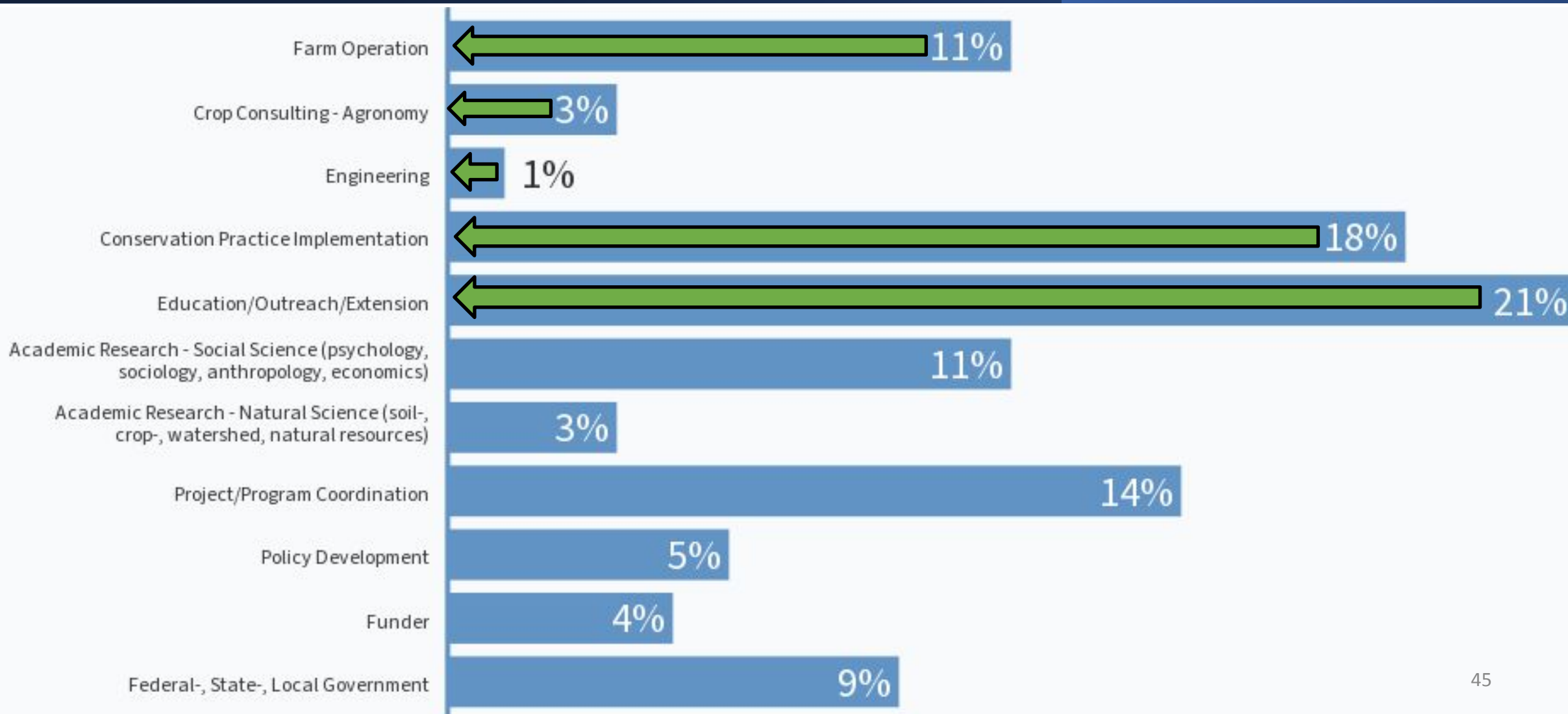
Recommendation #10 (Research Synthesis & Application):

The CBP should support collaboration amongst CBW partner organizations to synthesize relevant social science knowledge and distill what we already know about behavior as it applies to conservation decision-making.

Proposed CBP Partner(s): Chesapeake Research Consortium (CRC), The Center for Behavioral & Experimental Agri-Environmental Research, Management Board, Fostering Chesapeake Stewardship Goal Implementation Team, CBP Communications Office, Strategic Engagement Team

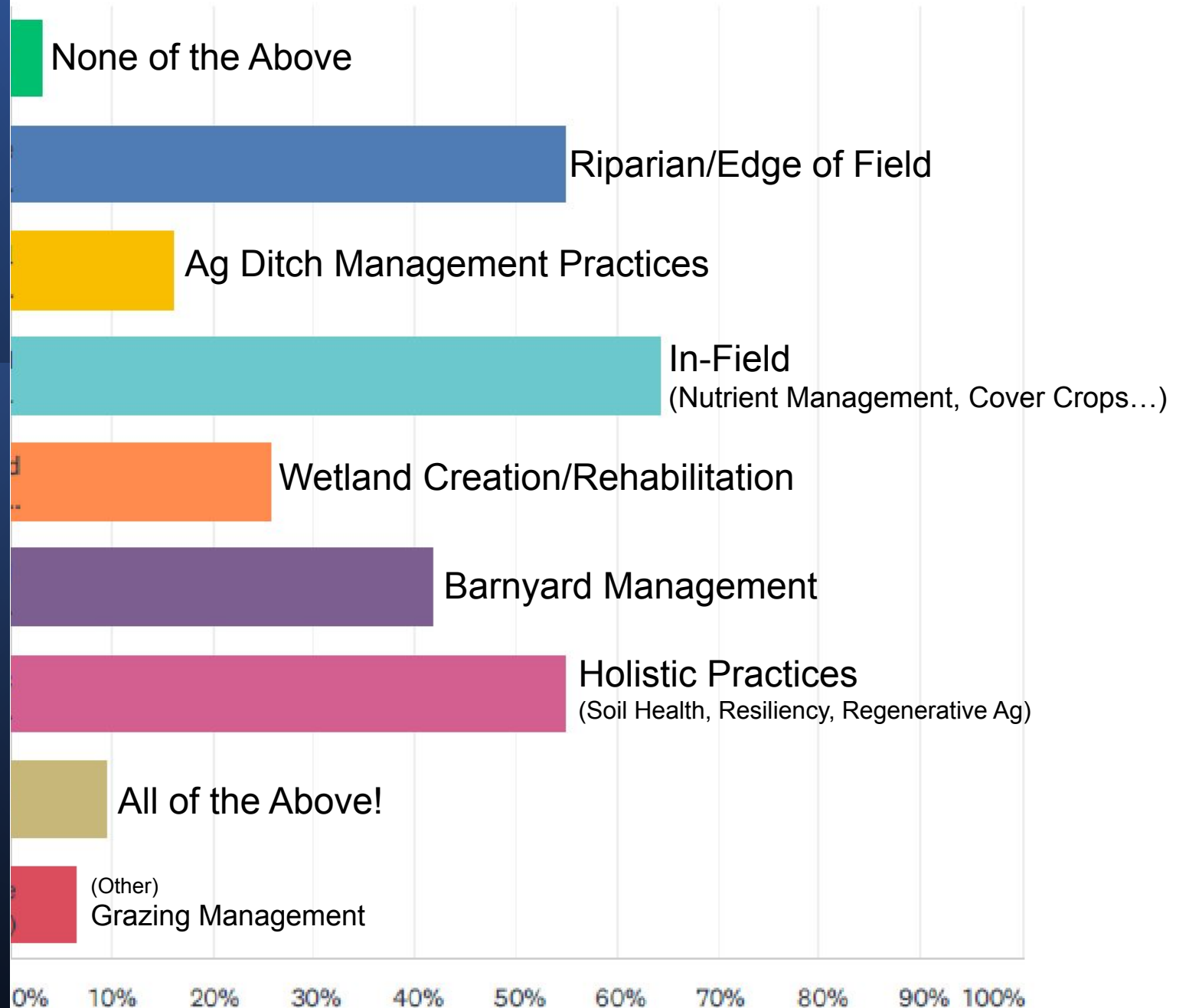
Who are You?

(Check All that Apply)



Participants' BMPs of Focus

(pre-workshop survey)



Connecting the Dots...

2011: [Integrating the Social Sciences into the Chesapeake Bay Program.](#)

- Acknowledged Complexity of Human Behavior & Need for Consideration in CBP Goals

2012: [Chesapeake Bay Goal Line 2025: Opportunities for Enhancing Agricultural Conservation Conference Report.](#)

- Did Not Address Socio-Economic Factors

2015: [Exploring Applications of Behavioral Economics Research to Environmental Policy-Making in the Chesapeake Bay Watershed.](#)

- Catalyst for Center for Behavioral and Experimental Agri-Environmental Research (CBEAR)

2020: [Increasing Effectiveness and Reducing the Cost of Non-Point Sources Best Management Practice \(BMP\) Implementation: Is Targeting the Answer?.](#)

- Opportunities to Improve Effectiveness of NPS BMPs via targeting of high loss areas

Connecting the Dots...

2020: [Increasing Effectiveness and Reducing the Cost of Non-Point Sources Best Management Practice \(BMP\) Implementation: Is Targeting the Answer?](#).

Purpose: Develop & Integrate Mechanisms to Target BMPs to Areas of Watershed Producing Disproportionate Nutrient & Sediment loads.

Recommendations:

1. **Improve the spatial prediction capability of the CBP TMDL accounting system by:**
 - a. Develop finer scale modeling capacity to guide and inform targeting.
 - b. Continue to improve spatial resolution of datasets that drive the CBP models and increase sharing and development of remote sensing and high-resolution data that can inform the location of NPS loads and BMP removal effectiveness.
 - c. Allow for differential crediting of NPS BMPs.
 2. **Develop and test alternative incentive systems for targeting programs:**
 - a. Develop and support small testbed watersheds to pilot and test targeting incentive designs and assessment of outcomes
 - b. Support development and testing of nonfinancial approaches to encourage wider program participation and improved land manager identification of NPS hotspots through behavioral “nudges”, communication strategies, and feedback on NPS management performance.**
- 