

U.S. ENVIRONMENTAL PROTECTION AGENCY

Farm, Ranch, and Rural
Communities Committee
Report

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FRRCC REPORT – EXECUTIVE SUMMARY

INTRODUCTION

The Environmental Protection Agency’s Farm, Ranch, and Rural Communities Committee (FRRCC) has concluded over a year of evaluation of EPA efforts to restore, maintain, and enhance water quality through nutrient management programs. Among the key findings are a need for more public engagement, more effective two-way communication with the agricultural community, and refinement in the application of science with respect to the water quality programs it oversees.

In the agricultural community, EPA’s role is often seen as the enforcer of overly restrictive regulatory policy and thus the Agency is treated with suspicion. However, to the Agency’s credit, EPA has shown a willingness to maintain and advance an open dialogue with key stakeholders on how to address agricultural nonpoint source pollution; has created a proposed framework for State nutrient reductions that encourages partnerships, flexibility, innovation, and better targeting; and has expressed a desire to encourage market-based tools where appropriate to improve the cost-effective clean-up of impaired watersheds. Such actions, along with the additional recommendations detailed in this report, will help the Agency move forward with the public and private support it needs to accomplish its mission. What follows is a summary of the critical review by EPA’s FRRCC and its recommendations on how the Agency can more effectively accomplish its goals related to maintaining and enhancing the nation’s water quality, specifically addressing the role of agriculture in achieving water quality goals.

While three workgroups established by the FRRCC independently developed recommendations in the areas of Science, Resources, and Partnerships, overarching themes emerged from all three groups. First, establishing timely dialogue between the Agency, its partners, and the public will strengthen trust, as shown by many examples in the report. The workgroups identified steps to improve trust and success through better science, more meaningful partnerships, and effective two-way communication. Second, agricultural landowners and operators are in a unique position to voluntarily engage in conservation behaviors that provide multiple ecosystem services and enhance water quality more efficiently and cost effectively than mandatory rules and litigation. The Agency can catalyze voluntary actions by producers by continuing to support the development of certainty agreements by States to encourage and acknowledge an appropriate level of stewardship by agricultural producers. Third, the workgroups felt it was vitally important for EPA to continue to be sensitive to underserved groups including limited-resource and minority farmers, and to work in collaboration with 1890s, 1994s, Hispanic colleges, and community-based organizations to address the educational and remedial needs of this growing segment of the farm community. And finally, the workgroups reaffirmed their support for the use of voluntary conservation practices by agricultural producers and felt it was important for EPA to continue to recognize the value of these practices in achieving environmental goals.

FRRCC Background and Charge

Recognizing the unique challenges and opportunities of agricultural nonpoint source pollution, the Environmental Protection Agency (EPA) established the Farm, Ranch, and Rural Communities Committee (FRRCC) as a federal advisory committee in 2008 to provide independent policy advice, information, and recommendations to the Administrator on a range of environmental issues and policies that are of importance to agriculture and rural communities.

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In February 2010, the Agency renewed the FRRCC's current charter to make recommendations to the Agency on the most effective approaches to addressing water quality issues associated with agricultural production during the current chartering cycle. Following a request for applications in the Federal Register, the FRRCC's current membership was appointed in May 2010 by the EPA Administrator and consists of 29 members representing academia, industry (e.g., agriculture and allied industries), non-governmental organizations, and state, local, and tribal governments. The FRRCC was charged with developing a report encapsulating their experience and perspective on these issues by early 2012.

Summary of Recommendations

The recommendations summarized below are discussed in more detail later in the Executive Summary.

- EPA should ensure that nutrient criteria and new suspended and bedded sediments (SABS) criteria developed by states or, where appropriate, by EPA are science-based and rely upon a clear cause-effect relationship. EPA should use adaptive management to inform the ways in which nutrients and SABS can be managed most effectively to reduce off-site movement into waterways.¹
- EPA should always use the EPA Guidelines for Preparing Economic Analyses, and ensure that they are updated as appropriate.
- EPA should develop a coordinated public engagement plan to exchange information on agricultural and environmental issues.
- EPA should ensure it has adequate staff with resources to work effectively in the field with agriculture on environmental issues, specifically Regional Agricultural Advisors, Strategic Agricultural Initiative-like specialists, and EPA-Land Grant University liaison positions in all EPA Regions.
- EPA should work proactively with agriculture to address water quality issues early and often, and continue to encourage and support state certainty programs, especially with respect to stewardship.
- EPA should continue to improve the effectiveness and reach of currently available resources by leveraging resources with others, including State and Federal conservation programs, Section 319 funds, USDA National Institute of Food and Agriculture (NIFA) opportunities, state revolving funds, private foundation funds, and private markets.
- EPA should enable and provide resources for a multi-entity, multi-disciplinary partnership to develop and use tools and protocols for improved measurement, documentation, and verification of water quality benefits from agricultural practices and

¹ Discussions in Committee deliberations of adaptive management focused on better use of data and information to evaluate current management practices and strategies and to improve implementation at the farm and field level.

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strategies, and to improve the use of resources for the development and delivery of critical best management practices.

- EPA should convene, support, and facilitate a multi-entity, multi-disciplinary partnership to evaluate and advance more effective approaches to delivering real improvements to nutrient management and other critical conservation practice efforts, and to advance more effective use of federal and state resources invested in conservation programs.

PROCESS

Committee Process

In the development of this report, the FRRCC held four public meetings in the Washington, DC area and consulted with a broad range of technical experts, program managers, and decision-makers both within and outside the Agency to inform its findings and recommendations.

The FRRCC's first three meetings were predominantly focused on gathering information. At its first meeting on September 30 - October 1, 2010, the Committee was addressed by Administrator Lisa P. Jackson and Deputy Administrator Bob Perciasepe, and also received an overview of water quality issues as they relate to agriculture from the EPA Chesapeake Bay Program Office. Members were also given specific information about agricultural water quality issues through regional case studies to inform their discussions and ultimately, their recommendations. Three distinct geographic areas were covered at this meeting: the Chesapeake Bay, the Mississippi River Basin, and Florida.

The FRRCC held a second meeting on March 29-30, 2011, where members learned more about specific water quality issues facing three additional geographical areas: the Great Lakes, the California Bay Delta, and the Puget Sound. The FRRCC also received an overview of USDA Conservation Programs, and began to discuss overarching themes and goals for its final report. At the FRRCC's third meeting on June 22-23, 2011, the members invited various stakeholders and experts involved in agricultural water quality issues to discuss their perspectives and further inform the Committee's discussions and findings. The FRRCC heard presentations from various speakers over the course of the meetings described above. A list of all presenters and topics from these three meetings is attached.

While the FRRCC engaged in deliberations collaboratively and made decisions collectively whenever possible, the Agency did not request consensus-based recommendations from the Committee since some good ideas may not be unanimously agreed upon, and there is value in hearing differing points of view on an issue where there is not agreement. Notwithstanding that fact, there was broad agreement and support for the vast majority of the recommendations expressed in the attached Workgroup reports.

Committee Deliberations

In its initial deliberations, the Committee identified several overarching principles that are important to consider in the process of developing and implementing measures to conserve and protect water quality:

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- Credibility
- Flexibility
- Technical Feasibility
- Economic Viability
- Environmental Soundness
- Transparency

The Committee also identified three main topic areas – Science, Resources, and Partnerships – to serve as a structure for its deliberations and, ultimately, for the FRRCC’s report to the Agency. To further those discussions, the Committee established three workgroups around those topics. These workgroups spent considerable time over three meetings in discussions and collecting information. (The full deliberations of the workgroups, along with detailed recommendations, are enclosed in the attached Workgroup reports).

The **Science Workgroup** was tasked with an evaluation of the science-based process of discovery with regard to water quality policies. Specifically, the Workgroup was asked to: 1) identify key areas of influence within the science-based process; and 2) make recommendations to EPA on how to better inform the policy development process with science-based information. The Science Workgroup separated its charge into three functional areas: modeling and standards, economics, and communication.

- The *model and standards* subgroup assessed: 1) how nutrient and suspended and bedded sediments criteria and standards are being established; 2) model uncertainties and the role of modeling in this process; and 3) the links of models and standards to biological impacts on water quality and management solutions. In its discussions with EPA scientists as well as policymakers, state regulators, academic experts, and the affected farming community, the subgroup members noted that a lack of confidence exists among some stakeholders in:
 - the representation of Best Management Practices (BMPs) in models and documentation of BMP efficacy in meeting water quality goals;
 - the feasibility of improved linkages across models to more accurately characterize a region on a water quality issue; and
 - the connection between the appropriate biological condition (water quality goals) and the standards EPA sets to achieve its goals.
- The *economic analysis* subgroup sought to address data, scope, and methodological considerations in analyses as well as timing, team building, and collaborations relating to the economics of policy development and policy implementation. The subgroup deliberations noted that many issues impact the reliability and relevance of economic analyses to the policy-making process. Some of these issues are: 1) existence and use of consistent guidelines for economic analyses; 2) timing and triggering of economic analyses; 3) expertise and other collaborative requirements; and 4) scientific peer review.
- The *communication* subgroup addressed: 1) alignments and links across agencies in sharing science information; 2) linkages and information flow regarding science from agencies to producers and flow of information back to agencies from producers regarding

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BMP effectiveness; and 3) other policy relevant information. Effective communication for improvements to water quality requires that high quality data (scientific and economic) be generated and shared at an early stage with appropriate stakeholders in the scientific and agricultural communities.

The **Resources Workgroup** was tasked to: 1) consider the resources necessary to help agricultural producers address water quality problems related to the runoff of nutrients from their farming operations; and 2) provide recommendations to EPA on how to more effectively allocate and manage its resources to address this challenge.

The Resources Workgroup began with the premise that local, state, and federal budgets will continue to face significant cuts, and many of the funds that traditionally have helped farmers and ranchers implement conservation practices may no longer be available. This means that EPA and its partners will need to target their remaining resources to sources that contribute disproportionately to water quality problems, and will need to act proactively in watersheds to achieve water quality improvements.

Although strategic targeting can help stretch limited resources, the Workgroup emphasized the continued need for adequate resources (people, money, and time) to provide technical, educational, and financial assistance to effect and sustain positive change. In its discussions, the Workgroup noted that with broader vision, knowledge, and resources, farmers and ranchers will, in greater numbers, voluntarily make management decisions and adopt and sustain behaviors that will result in reduced pollutant loads to surface and ground waters. To achieve this shift, the Workgroup discussed the types of resources needed (financial, technical, and educational), who needed them (producers, students, regulators), and at what level they were needed (state, community, farm).

Finally, the Workgroup considered how the Agency could most effectively leverage its resources and influence the allocation of resources by others to accomplish the goal of improving water quality. The Workgroup identified ways the Agency can more effectively deploy and utilize its staffing resources, how the Agency can work more proactively with agriculture, including ways it can encourage and support economically achievable state certainty agreements, and how the Agency can continue to improve the effectiveness and reach of currently available resources by leveraging resources with others.

The Partnerships Workgroup discussions recognized that partnerships can be a very effective way for EPA to facilitate and accomplish positive change in agricultural water quality, especially in light of the limited statutory authority the agency has over agricultural operations. This strategy is not new to EPA and, in fact, there are numerous examples of successful partnerships between EPA and agriculture, industry, and various interest groups. The Workgroup members gathered, reviewed, and discussed several of these examples and others outside the Agency as a means of identifying key factors for why and how partnerships can enhance efforts to address problems.

Key factors to be considered in deploying partnerships as a core strategy include:

- The investment in building trust predicated upon mutual respect and deference in appropriate circumstances;

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- Different roles and how to identify the best role to support partnership;
- Mechanisms essential for supporting partnerships; and
- The best contexts in which partnerships can be successful.

The scope of partnerships can range from national to regional to state to local, and EPA can play various roles in the partnership depending on the nature of the issues. Because the vast majority of natural resource impacts associated with agriculture are non-point in nature, the Workgroup discussed the need for EPA to increase its attention to and support of partnership approaches to effectively advance agricultural water quality goals. In order to make more meaningful, lasting, and significant impacts across the landscape, the Workgroup identified three areas where partnerships can increase the effectiveness of and foster more rapid and sustained implementation of solutions to water quality challenges:

- Partnerships to advance collaborative research to better understand the science behind challenges and opportunities and to support collection of better data from which to develop solutions;
- Partnerships to discuss and resolve an agricultural water quality impairment issue; and
- Partnerships to implement agricultural water quality solutions.

The Workgroup also noted that agricultural certainty was another issue around which EPA should leverage a partnership approach, which could play in increasing adoption of conservation measures by farmers.

RECOMMENDATIONS

Science Workgroup Recommendations

Effective water quality management relies on the science-based process of discovery. That process must not only address the technical issues of cause and effect, but also fully analyze the economic implications of policy decisions. Open and effective communication is a key component that helps to inform the science and to implement policy. EPA has the opportunity to adopt a comprehensive, interactive, and flexible approach to science-based water quality regulation and strengthen the process of continuous improvement through adaptive management. To this end, the Science Workgroup recommends that the Agency take the following steps:

- **Ensure that nutrient criteria and new suspended and bedded sediments (SABS) criteria developed by states or, where appropriate, by EPA are science-based and demonstrate that the nutrient or sediment in fact causes an adverse biological effect on the designated use for the water body.**
 - Use a weight of evidence approach (e.g., use more than one model, document model uncertainties, calibrate to the size and class of the water body, and account for confounding factors) to develop the science-based criteria.
 - Update guidance on nutrient criteria development to take into account key science advisory board and science peer review recommendations.
 - Building on the 2006 EPA Framework, develop guidance on SABS criteria.

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- **Use adaptive management as a management tool to mitigate the movement of nutrients and SABS off-site from agricultural operations to water.**
 - Use USDA Conservation Effects Assessment Project (CEAP) studies to identify and quantify the effectiveness of BMPs and emerging technologies being employed on farms and ranches to reduce agricultural nutrient and SABS loads.
 - Partner with USDA’s Natural Resources Conservation Service (NRCS) to link CEAP studies to 303(d) lists to help identify vulnerable lands in watersheds.
 - Partner with USDA NRCS and Farm Service Agency (FSA) to help target USDA conservation programs for water quality improvement.
 - Provide guidance to USDA and land grant institutions on EPA priorities for additional research on BMPs. New technologies and new varieties with improved nutrient use efficiency are critical to improving on farm efficiencies.

- **Adopt consistent use of the EPA Guidelines for Preparing Economic Analyses.**
 - Foster collaboration across disciplines, agencies, and the private sector during the development of an economic assessment to facilitate relevance and reduce omission of important considerations in the analysis.
 - Subject analyses related to EPA regulatory action to a timely, independent, and transparent review to ensure a peer-reviewed, validated, science-based process and facilitate interpretation of results and comparison across studies.

- **Develop a coordinated public engagement plan at the national, regional, and local levels to exchange information on agricultural and environmental quality issues.**
 - Identify and reach out to key leaders (state and local grower associations, land grant extension, tribes, and other key leadership) early in the process to notify industry about a water quality issue.
 - Develop appropriate outreach materials to explain the science behind practices, impacts, and water quality goals.
 - Instruct the EPA Regional Administrators and Regional Agricultural Advisors to establish a process to coordinate data sharing across agencies and other stakeholders.
 - Demonstrate BMPs at the farm level to facilitate understanding of the connection between action and impact on water quality.

Resources Workgroup Recommendations

With significant cuts to a variety of funding sources likely, EPA needs to make the most efficient and effective use of the resources remaining. Along these lines, EPA should: apply resources commensurate with the challenges of non-point source pollution; assign staff with excellent technical and customer skills dedicated to this task; and strengthen traditional partnerships and expand into non-traditional relationships to leverage EPA resources more strategically. To do this, the Resources Workgroup recommends that EPA take the following steps:

- **Ensure adequate staff are available with resources to work effectively in the field with agriculture on environmental issues, help catalyze effective technology transfer**

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to agricultural producers, and connect more effectively to the Land Grant Universities.

- Create and maintain full-time Regional Agricultural Advisor positions which report directly to the Regional Administrator in all ten EPA Regions.
- Re-establish the IPM Strategic Agriculture Initiative (SAI) model with SAI specialists in the Regions focused on reducing nutrient impairments.
- Expand support of the EPA-Land Grant University (LGU) Liaison positions in all EPA Regions and work with the LGUs to provide salary and adequate travel budget.
- **Work proactively with agriculture to address water quality issues.**
 - Encourage opportunities with institutions, organizations, and universities (e.g., LGUs, state universities, private colleges, non-profit organizations, etc.) to develop effective technology transfer programs.
 - Engage watershed stakeholders before planning regulatory actions to encourage voluntary local action, discuss possible solutions, and convene key stakeholders to better align resources to address the problems.
 - Develop and support integrated training for EPA employees to increase their effectiveness in working with farmers.
 - Invest in developing curricula through partnerships with LGUs and community colleges that address regulatory issues facing agriculture, for both agriculture and natural resources students.
- **Continue to encourage and support State certainty programs.**
 - Work with States to establish a reasonable level of stewardship and develop uniform checklists to assess a farm’s operation and management against this reasonable level of stewardship.
 - Consider how best to incorporate a “reasonable level of stewardship” into the TMDL process.
- **Increase the effectiveness and reach of currently available resources by leveraging resources with others.**
 - Use Section 319 funds to help States develop reasonable levels of stewardship for certainty agreements, strategically waive the 40 percent cost-share requirement if necessary, and work with State and federal conservation programs and USDA NIFA to coordinate water quality funding opportunities.
 - Expand the use of State Revolving Funds to establish wetland mitigation banks and use the proceeds from the sale of the resulting credits to reimburse the SRF loan or purchase development rights on farmland.
 - Reach out to private foundations to explore aligning private sector resources more effectively with Agency efforts.
 - Leverage private sector efforts to establish performance metrics for agriculture to meet its water quality challenges.
 - Continue to encourage ecosystem services markets by providing guidance to the States on ways to support markets and improve water quality in advance of regulatory drivers.

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Partnerships Workgroup Recommendations

Partnerships are especially critical for EPA in addressing water quality issues:

- 1) The diffuse and complex nature of non-point source impacts necessitates working at the appropriate watershed level, and thus with the many entities in that watershed.
- 2) Given limited resources, partnerships can help and are critical to leveraging funding, expertise, and people.
- 3) Developing consensus on science necessitates having the key stakeholders, especially agricultural stakeholders, at the table.

The Partnerships Workgroup recommends that EPA pursue the following specific partnership strategies to increase the pace and success of overcoming some of today's most pressing water quality challenges related to agriculture:

- **Enable and provide resources for a multi-entity, multi-disciplinary partnership to develop and use tools and protocols to improve measurement, documentation, and verification of water quality benefits from agricultural practices and strategies.**
 - Charge partnership to coordinate existing efforts to research, develop, and pilot technical tools, such as farm-level tools for evaluating the effectiveness of nutrient management and other best management practices.
 - Ask partnership to facilitate the evaluation and adaptation of tools to improve their performance.
 - Encourage partnership to engage non-traditional disciplines, such as robotics engineers and IT developers to provide more user-friendly tools.
- **Foster and support a multi-entity, multi-disciplinary partnership to improve the use of resources for the development and delivery of critical best management practices.**
 - Dedicate a portion of 319 resources to build watershed-level capacity to develop plans and projects that will improve water quality.
 - Develop partnerships with states to implement science-based, economically achievable, best management practices.
 - Develop and provide funding for active outreach strategies to disseminate information and lessons learned from 319 and other watershed projects and require projects to deliver findings and recommendations to partners and agencies as a component of grant funding.
 - Establish prizes to incentivize development of improvements to existing conservation practices and development of innovative practices and technologies. Prioritize improved effectiveness of nutrient management, improved documentation of cover crop effectiveness, and more optimal and effective placement of filtering practices.
- **Improve support for and visibility of the role of EPA's Regional Agriculture Advisors.**
 - Increase and better coordinate communications with regional agricultural partners on relevant EPA activities and dedicate time for meeting and interacting with producers and stakeholders in the field on an on-going basis.

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- Collaborate with regional partners to identify the top three agricultural resource conservation issues in the region and facilitate partnership approaches to develop and implement solutions to those issues.
- Create and support improved tools for communicating the activities of the Regional Agricultural Advisors, including more effectively designed and user-friendly online information and web pages.

CONCLUSIONS

The FRRCC saw its mission as an opportunity to investigate how the EPA develops and implements water quality rules related to agriculture, and to provide insights that could improve water quality across the U.S.

Our deliberations uncovered critical and complex interactions between agriculture and the environment, as well as a wide range of policy and technical issues that can span entire regions, watersheds, and production systems, along with the federal, state, and local regulatory frameworks that govern them. Agricultural landowners and operators are in a unique position to voluntarily engage in conservation practices that provide multiple ecosystem services and enhance water quality more efficiently and cost effectively than mandatory rules and litigation. The FRRCC felt it was important for EPA to continue to recognize the value of these practices in achieving environmental goals.

The willingness the Agency has shown in maintaining and advancing an open dialogue with key stakeholders on how to address agricultural nonpoint source pollution is a critical first step. The FRRCC identified and recommends a number of additional steps the Agency can take to improve trust and success through better science, to create more meaningful partnerships, and to establish more effective two-way communication with the agricultural community. The FRRCC believes its recommendations will minimize and mitigate private frustrations, improve EPA's credibility, and foster increased trust. If EPA couples the positive efforts it is already undertaking with action on the FRRCC recommendations, we believe this will enhance the perception and substance of the Agency's role.