U.S. Environmental Protection Agency (EPA)
Farm, Ranch, and Rural Communities Federal Advisory Committee (FRRCC) Meeting

June 22-23, 2011
Sheraton National Hotel
Arlington, VA

EXECUTIVE SUMMARY

WEDNESDAY, JUNE 22, 2011

Call to Order and Welcome
Dr. Steven Balling, Committee Chair
Alicia Kaiser, Designated Federal Officer (DFO)

Ms. Alicia Kaiser (FRRCC DFO) called the meeting to order at 8:39 a.m. and noted this will be the first FRRCC meeting with web conferencing capabilities.

Dr. Steven Balling (Del Monte Foods), Chair of the FRRCC, welcomed the Committee members and other participants to the meeting. He stated that the goal of this meeting is to continue the progress made by the workgroups in developing recommendations on water quality issues for the Agency. The intended meeting outcome is a more developed focus that will lead to development of clear recommendations for EPA.

Opening Remarks
Larry Elworth, Agricultural Counselor to the Administrator, EPA

Mr. Larry Elworth (EPA) reported three updates to the Committee. First, EPA and the U.S. Army Corps of Engineers (USACE) have made available for comment guidance on Clean Water Act jurisdiction ("Waters of the United States"). Mr. Elworth will make this product available to the Committee. Second, a decision by the Federal 5th Circuit Court of Appeals (*National Pork Producers Council v. EPA*) defined the permit application responsibilities of Confined Animal Feeding Operations (CAFOs) and clarified that those who actually discharge pollutants (and not CAFOs with the potential to discharge) need a permit. Third, the Senate Agriculture Committee marked up and passed HR-872 (*Reducing Regulatory Burdens Act of 2011*), a bill dealing with the U.S. Court of Appeals for the 6th Circuit decision (*National Cotton Council v. EPA*), obviating the need for a Clean Water Act permit for pesticide application for aquatic uses. This bill concerns an issue that EPA has been dealing with for years. The U.S. Senate outcome is pending.

Mr. Elworth also commented that legislation recently passed in Washington concerning what Ron Shultz (Washington State Conservation Commission) discussed at the last meeting in regards to Puget Sound. This new legislation establishes a collaborative process at the county level with alternative options to deal with water quality and agriculture. The idea is labor intensive; however, there is no promise of funding in the legislation to accomplish the work.

Mr. Elworth proffered additional meeting objectives and some ideas for developing recommendations. The Committee is broad in terms of expertise, scope, and perspectives, but there are some outlooks that are not represented on the Committee. Therefore, the panelists that present at today's meeting will offer additional water quality issue perspectives and should be used by the FRRCC members as "sounding boards" for Committee ideas. He suggested that each workgroup summarize and examine key observations and recommendations, and then pull these together in a workgroup report. The workgroup

reports will be combined into a 5 to10 page executive summary, which will be made available to the public. Once a draft summary is synthesized, Committee members should consider how best to present it to the Agency. In the past, the FRRCC has drafted letters or reports, but this time a meeting with senior leadership may prove more prudent.

Abby Dilley, FRRCC Facilitator

Ms. Abby Dilley summarized the meeting agenda and the timeline for completing the recommendations and preparing the workgroup reports. Additional stakeholders will present today and workgroups will meet and report back to the Committee. This will elucidate any workgroup overlaps and provide the opportunity for integration and coordination between workgroups. After the second day of the meeting, workgroups should have a clear plan for fine-tuning their recommendations and be able to produce a draft document of these recommendations for the October FRRCC meeting.

Stakeholder Panel

Agriculture and Environmental Stewardship: Integrating Science and Policy
Dr. Andrew Sharpley, Professor, Division of Agriculture, University of Arkansas

The response of science to water quality and environmental issues involves nutrient management planning, a system response to management changes, and the use of models in this management. We need to learn where and how breakdowns occur and how partnerships and resources play a role in outcomes.

As background, the current nutrient cycle is fragmented. The system was more sustainable when it was developed, and its development was based on transportation infrastructure and rural economies and not on the nutrient needs of local agriculture. These needs have changed over time and so the system no longer works effectively. Local agricultural nutrient needs have to be incorporated, with specific regard to balance of nutrients. There currently is a nutrient balance dilemma, which began prior to 2000, when application was based on nitrogen (N), with phosphorus (P) application generally being two to three times what was needed. Recently, however, P-based management has been implemented because of fresh water quality concerns. Managing P in manure application has left farmers short on N in the applied manure, creating a nutrient balancing dilemma.

Nitrogen moves through the soil rapidly, while P is less mobile and more surface bound. Therefore, the excess P applied prior to 2000 has been built up in the soil and the surface loss of P needs to be controlled. Erosion and runoff have led to increased P concentrations in the water, where there is a greater sensitivity to P levels compared to soil. The differences in mobility of the nutrients need to be accounted for and considered as a whole system, not as single components.

In regards to policy, in 1997, Maryland implemented a law restricting soil P thresholds for manure management, which was poorly received, and this led in 2000 to the adoption of a risk assessment-based manure management approach.

The risk assessment-based manure management approach is used in 47 of the 50 states, and therefore is considered a success. The P needed and lost from the soil, however, can vary widely depending on the local soil differences and land types, and varying distances from streams and water sources. These differences led to the 80/20 rule, which states that 80 percent of P runoff comes from 20 percent of the land area in a watershed. Many states targeted this 20 percent of land and decreased manure application in these areas. There is political disparity among the states, however, in regards to the interpretation of the science, which often leads to policies that do not improve the water quality. The bigger issue is that these tools were made to educate farmers and the public; they were never meant to be used as a management solution.

In a nutrient management lawsuit between Arkansas and Oklahoma involving how rules change when water crosses state lines, it was mandated that there be a soil P threshold, which limits what and how much P can be applied. This resulted in less poultry litter being applied to pastures and 33 percent of poultry litter being exported out of the watershed. This litigation required scientists to work with lawyers and develop a science-based tracking tool and management solutions. This lawsuit demonstrates not only how science defines policy, but also how policy can define how science is presented. Now, 75 percent of the poultry litter is being moved out of the watershed. The removal of these nutrients has placed an economic strain on farmers who must now buy supplemental fertilizer. In addition, the reduction of nutrients in the watershed may lead to poorer soils growing less ground cover, which can lead to more erosion.

The Illinois River Watershed Partnership grew from the Arkansas/Oklahoma dilemma, and involves educational programs, riparian buffer establishment, and volunteer stream water quality monitoring. Dr. Sharpley used Lake Erie as an example of conservation management. In 1985, there was a decrease in P levels in Lake Erie due to a voluntary effort using conservation tillage; however, the levels increased again in 2005 and created algal blooms. This increase was attributed to the adoption of no-till mulch. When nutrients are added to this soil, they enter into runoff easier because they are never incorporated into the soil by tilling. From this example, we have learned that weather can exacerbate trends (heavier rainfall induces greater nutrient runoff), the response of an environment to management changes takes time, and adaptive management (moving to partial tillage, alteration of the season when fertilizers are applied, and the use of winter cover crops) may result in reduced nutrient loss.

From the fertilizer dealer's and farmer's perspectives, spring fertilizer costs more and the spring workload is larger, while both labor and equipment are abundant in winter. Researchers have to help farmers overcome this position by looking at this bigger picture.

In regards to legacy effects and response to watershed management, the coastal plains have great variation in water age and residence time. It can take up to 30 years for water to get from top to bottom in a watershed, meaning it could be 30 years before the effect of an implemented change is observed. These lag times increase with scale, and taxpayers do not want to wait that long to find out if the measures are effective. The use of models, which are designed to represent reality, in the development of total maximum daily loads (TMDLs) can inform decisions, provided the data input discrepancies are not large (large discrepancies can significantly alter model output). Agencies (e.g., EPA, U.S. Department of Agriculture [USDA], and U.S. Geological Survey [USGS]) and modelers need to come together on data input and models. With respect to models, it is important to use the correct models to meet defined goals, to keep in mind that models have some inherent uncertainty, and to recognize that models must be used at the same scale for which they were developed. When used correctly, models can produce succinct and clear policy guidelines.

Dr. Sharpley identified the following factors to keep in mind with regard to future nutrient management planning: national guidelines for nutrient management, livestock diets and enzyme usage, manure treatment and transport, and alternative uses for manure. To manage public expectations, goals should be realistic, remedial management should be targeted, change should be documented by robust monitoring, and legacy effects should be explained.

Dr. Sharpley indicated that a combination of mandatory environmental standards and voluntary stewardship programs promoted by the Natural Resources Conservation Service (NRCS) are necessary to achieve the goal of improving water quality. Watershed partnerships and coalitions also will have a role to play. Along this vein, the Discovery Farms Program (currently working in Wisconsin [Dennis Frame], North Dakota [Ron Wiederholt], Arkansas [Andrew Sharpley], and Minnesota [George Rehm]) involves universities working directly with farmers on their farms to address actual problems and implement best management practices (BMPs) more individually. This works to tackle local and regional water quality

issues and promote farmer interaction, which is a very important component of finding and implementing solutions.

Nutrient Pollution and the 2012 Farm Bill: Are There Opportunities to Do Better?
Patricia Sinicropi, Director, Legislative Affairs, National Association of Clean Water Agencies

Excess nutrients in our waters create public health concerns, as well as ecological and economic impacts such as: (1) high nitrate levels that are linked with cancer in drinking water, especially for infants and the elderly; (2) harmful algal blooms that are toxic to humans in recreational waters; and (3) hypoxic zones created by nutrient overload which hurt commercial, recreational and subsistence fishing. In fact, the National Oceanic and Atmospheric Administration (NOAA) estimates that there are $80 million of economic losses each year attributable to unusable water resources.

With hypoxic zones scattered all along coastal areas, it has been demonstrated that agriculture is the dominant source among various nutrient sources (including sewage, atmosphere, and agricultural land). The nitrogen deposition from agricultural sources (manure and fertilizers) saturates the landscapes far more than wastewater. The Clean Water Act requires that nutrients be removed from storm water sources, but this probably will have little effect on water quality. On average, the cost of installing a denitrification system for an agricultural operation is less expensive than retrofitting storm water systems and wastewater treatment plants.

The Conservation Effects Assessment Project (CEAP), managed by NRCS, makes reports at the watershed level. In the first report, released last year, CEAP determined that there was inadequate nutrient management in the hog sales and agricultural area of the Upper Mississippi River Basin (UMRB). To reduce nutrient loss, 62 percent of cropland requires additional treatment, and only 14 percent of the total acreage currently has good management practices. On the upside, the CEAP report finds that conservation practices can reduce both N and P nutrient runoff. The use of cover crops is the single most effective conservation method to reduce nutrient runoff. In fact, land in long-term conserving crop cover, albeit not always a realistic option for farmers, sees total nitrogen loss reduced by 81 percent, while total phosphorus is reduced by 97 percent. Models show that if the 36 million acres of undertreated land in the UMRB were nutrient managed, there would be a 43 percent total N and 51 percent total P reduction.

In 2007, the EPA Science Advisory Board (SAB) determined that a 45 percent reduction from 2005 levels of nutrients transported to the Gulf of Mexico was needed to shrink the hypoxic zone from 22,000 km to 5,000 km and avoid an ecosystem disaster. CEAP modeling suggests that this goal is achievable if agricultural sources begin aggressive nutrient management practices.

The 2012/2013 Farm Bill will make an attempt to address nutrient management practices in this more aggressive way. Policy improvements include: prioritization of nutrient control in nutrient-impaired watersheds, incorporation of conservation compliance measures for better nutrient control, and better monitoring data. Although this will not be easy to achieve, a 2001 survey found that the public would support giving more taxpayer funds to farmers using anti-pollution practices. As a result, it is possible to make significant progress with this 2012/2013 Farm Bill.

"Independently Applicable" Numeric Nutrient Criteria; Some Science and Alternatives
Tom Hebert, Bayard Ridge Group LLC

As Senior Advisor to the Agricultural Nutrient Policy Council, Mr. Tom Hebert discussed "how the rubber meets the road" in regards to the Clean Water Act and water quality criteria.

The underpinning of the Clean Water Act is that waters in counties need a designated use. The default for this, in many people's minds, is fishing/swimming; however, that does not have to be the case. The Clean Water Act requires criteria to be used that will determine designated water uses in regards to pollutants

and specifically for particular water bodies and pollutants. In determining such criteria, there are "numeric" criteria (e.g., no nutrients in excess of 0.034 parts per million [ppm] total P) or "narrative" criteria (e.g., no nutrients in excess of that appropriate to achieve the warm water fisheries conditions of this water body). Making decisions on the designated uses and criteria for these uses drives the Clean Water Act.

EPA's current Numeric Nutrient Criteria (NNC) position is that, working with states and the Clean Water Action Plan (which contains a NNC strategy), all states must determine NNC (for N and P) for all state water bodies. The states must then apply the NNC, regardless of observed water body biology or in-stream impairment. In determining water body quality, qualitative measurements (e.g., how healthy the water body looks) cannot be used, and only the quantitative NNC is applicable.

To better understand this, the National Water-Quality Assessment (NAWQA) Program conducted a 2010 study and found that total N and P in 90 percent of agricultural streams across the country were above background levels. "Background level," however, is defined as "pristine water," which is not a condition required for fishing and swimming purposes. The use of "pristine water" in the definition sets the states up for failure.

Another issue, though independent, is that it is impractical to scientifically identify exactly when biology will respond to lower nutrient levels. In addition, there has been no demonstrable cause and effect made in regards to the biological significance of "pristine." Waters may be able to handle more nutrients than "pristine" would allow and still biologically function. Another issue is that nearly all water bodies are impaired, as they do not attain the "pristine" label. A final issue is the attainability of such standards. In Florida, the cost of attaining such standards amounts to $750 each year per household, which is substantial.

The Agricultural Nutrient Policy Council (ANPC) is concerned because when they modeled the Mississippi Valley and removed all the crops, replacing them with grass (which puts the system back to its original land use), the models never saw P drop below 0.066 ppm, which does not inherently make sense. With "pristine" water as the reference condition, nutrient levels cannot be realistically attained.

EPA's SAB found that there is "…uncertainty associated with estimated stressor-response relationships that would be problematic if this approach were used as a 'stand alone' method because statistical associations do not prove cause and effect." The SAB also pointed out that the NNC approach will work if it is not used in isolation, but as part of a larger weight-of-evidence approach.

The states' alternative approaches include using NNC only after verification that nutrients are the cause of a deleterious effect, focusing directly on reducing nutrient load, focusing on balancing biological and environmental response variables, using monitoring to set NNC for designated uses, setting criteria for response variables (i.e., chlorophyll *a* or dissolved oxygen), using non-nutrient indicators of water quality, and setting controls for only the problem nutrient. The ANPC supports these alternative approaches, as well as the SAB's weight-of-evidence approach.

Discussion of Stakeholder Panel (Dr. Sharpley, Ms. Sinicropi and Mr. Hebert)

Dr. Janis McFarland (Syngenta Crop Protection) questioned if there are models in use based on biological cause and effect by designated use for N, P, or sediment total suspended solids (TSS). Mr. Hebert responded that those models cannot be calibrated appropriately because of the lack of statistics that link nutrient loads to biological conditions. That is not to say, however, that they are not being developed.

Mr. Douglas Young (Spruce Haven Farm and Research Center) asked Dr. Sharpley to highlight successes that resulted from the Discovery Farm Project in Arkansas. Dr. Sharpley responded that the program is still developing in Arkansas. The Wisconsin program is furthest along, and they have found that some NRCS programs work better than others there; some programs would work better if they were more

flexible. There has been success in Arkansas in gaining interest and support from the farming community and Farm Bureau, which are allowing the program to gain momentum.

Dr. Balling asked Ms. Sinicropi to clarify her earlier statement, "Treatment of erosion alone can exacerbate the N leaching problem." Ms. Sinicropi replied that the tile drainage systems put in place to send water to the subsurface for erosion control, are carrying water soluble N below the soil surface and out to waterways. These systems control P very well (reducing erosion reduces P), but they do not reduce N, because a N flush actually occurs. Dr. Sharpley added that measures taken to control one element can exacerbate what happens with other elements. While tile drainage and conservation tillage are needed to reduce erosion, these N systems need to be managed to ensure proper timing and application methods to minimize excess nutrients entering the system at times when leaching will occur.

Mr. Hebert said that while conservation tillage can stop surface erosion, it can actually increase N infiltration. Drainage tiles are needed to farm the land, regardless of nutrient movement. There is a complex interaction between N, P, and TSS, which is not understood completely. Dr. Sharpley added that conservation tillage is an essential part of farming and should not be abandoned, but it is important for the farmers to become more familiar with the issues associated with this effective management strategy. Ms. Sinicropi mentioned that practices that work with tile draining systems that have N collectors/absorbers are expensive. She further commented that wetlands are bioreactors that can be put at the edge of a field to absorb excess water and N. Tile drains are there and will remain, but hopefully we can develop technologies and practices to better manage the N drainage.

Mr. Lawrence Clark (Farm Pilot Project Coordination) said that NNC should be done by states, and not by the Federal Government; however, this will require the assistance of many helpers and volunteers at the state level. In regards to the 20/80 rule, Mr. Clark questioned whether there are functional mechanisms that might be of use with regulatory programs and asked how the efforts can be focused geographically. Mr. Clark also requested Ms. Sinicropi to comment on the resources available to state agencies. Ms. Sinicropi responded that there are not enough resources at the state level, and the resources that are available are decreasing. One program that gets overlooked is National Program 106: Aquaculture, which helps states meet Clean Water Act regulations. The funding for this program, however, is either static or declining. States do not have the personnel and funds needed to undertake this complex criteria development.

Mr. Clark wondered what resources (e.g., human, financial, and technical) are realistically available. Ms. Sinicropi answered that the Clean Water Act generally is not high on the environmental radar screen because the perception is that it was successful in improving water quality and there is no longer a serious concern. The unintended effect of this perception is that resources are directed elsewhere.

Dr. McFarland commented that, in the area of science, data gaps need to be considered. She asked whether science gaps could be prioritized. Dr. Sharpley commented that linking models together is highly important. There is a great deal of information out there to drive these models, and it needs to be used; however, the privacy of landowners must be protected. Currently, legacy effects are a black box in models. In regards to BMPs, expert guesses are difficult to make, so these data need to be addressed. Different states also have different standards and actions.

Mr. Hebert added that more work is needed to understand the interaction between P, N, and sediments. Specifically, data gaps that need to be addressed are: (1) N-use efficiency—hard science answers are needed and that information must be delivered effectively to farmers; (2) economics—the costs of improvements have no economies with them (i.e., CEAP report), and it is not clear if they are achievable at this time (e.g., the cost of cover crops).

Mr. Thomas McDonald (JBS Five Rivers Cattle Feeding) observed that there is movement away from local control to a national standardized approach, and this raises concern. Improvements should be made where they are needed, but because the environment varies greatly from state to state across the United

States, it is dangerous to have one standard. Monitoring and assessment are appropriate and necessary, but determining what measures should be taken to improve water quality becomes tricky, especially from the agricultural standpoint. Academia is good at identifying problems, but they are not always as good at determining how best to address them.

Dr. Sharpley agreed that researchers tend to discuss things at length, and, in many cases, more research is not the answer; rather, what is needed is the application of existing science to address the problem. NRCS initiatives focus on getting practices on the ground with farmers; these initiatives are focused on watersheds and on willing collaboration with farmers. Approximately 10 percent of these program funds are going towards monitoring to document the impact of these practices. Although this has been successful, there are many farmers who are reluctant to enroll in monitoring programs.

Ms. Sinicropi stated that there is enough evidence to know that nutrient runoff from agricultural lands is a problem, which now should be addressed aggressively. National policies and priorities should be based on what is known to be effective in addressing the problem. The next Farm Bill provides a good opportunity to make this happen.

Mr. McDonald did not agree with Ms. Sinicropi's comment that we now know what works. If that were true, the practices would be implemented already. He posed the question: where are the stumbling blocks? Ms. Sinicropi replied that appropriate measures (combination of voluntary measures and regulations) are being taken in some areas (e.g., 1985 erosion control and wetland loss being addressed). However, we are not scaling it up. We know that nutrients are the problem and that agriculture is the most significant source. Adequate resources should be devoted to addressing this problem.

Ms. Peggy Beltrone (Exergy Integrated Systems) stated that choosing elected county officials is difficult, and that when elected, they are faced with some difficult decisions that impact their fellow citizens. The official has to decide how to allocate the money. Should she fund these programs and then fire five accountants or have only one sheriff on duty instead of two? People think this is an agricultural problem, but they forget that farmers allow most of the populace to live in cities because they grow and provide the necessary food. Most local governments have limited funding and do not want to pay for these programs, but taking steps to reduce nutrients and improve water quality is everyone's problem because the farmers grow our food. Ms. Sinicropi agreed that the entire population is in this problem together and if we rely solely on the Clean Water Act approach, then more problems will develop. Agricultural and urban policies need to work together. Taxpayers are asked to support schools, police and fire departments, and more, so expecting them to support programs for nutrient and wastewater management, especially in this economy, is asking a lot.

Mr. Eugene Thilstead (EPA Region 6) informed the Committee that the webinar was not working properly, but he could hear the proceedings. Ms. Kaiser responded that EPA would post the presentations on the web after the meeting.

Following the panel discussion session, Dr. Balling noted that the three workgroups (Science, Partnerships, and Resources) need to take stock of the timeline and figure out what tasks must be completed before the next meeting. He explained that the questions to be considered and answered during the first workgroup session are: (1) What should be shared with the other workgroups? (2) What questions need to be asked of other workgroups? (3) What further information is needed for individual workgroups?

Review and Discussion of Committee Workgroup Session

Science Workgroup

Dr. Jennie (Hughes) Popp (University of Arkansas), speaking on behalf of the Science Workgroup, identified questions in three areas:

(1) Modeling—How are models developed, used, and linked? What are the data gaps associated with models right now?

(2) Data collection—Where does this need to occur and when? At what scale does data collection need to occur and how should concerns of privacy be handled? Also, are BMPs being handled correctly on the ground?

(3) On-farm studies—Because all farming is local, what site-specific information is needed?

Putting all three of these questions together in the context of policy, Dr. Popp stated that the ultimate question is: What is the best policy and what will it cost farmers? Dr. Balling noted that Dr. Popp's question focuses on the best use of resources in regards to science; it will be interesting to see how this fits in with the other workgroups. Ms. Dilley suggested that the workgroups be clearer about resource questions so workgroups can find collaboration areas.

Mr. Elworth noted that there is an enormous amount of scientific detail on which a great deal of time can be spent. The balance and intersection between scientific observations and policy should be considered and those can be translated into recommendations.

Ms. Dilley noted that scientific data searches, analysis, and considering partnerships should be examined in detail. However, at some point the workgroups will have to "jump off the diving board" and make effective recommendations. Dr. Balling agreed that there is considerable scientific information, but he was concerned about making data quality decisions because it is not their area of expertise. The workgroup needs to look at policy issues and direction, and make some decisions.

Resources Workgroup

Mr. George Boggs (Whatcom Conservation District), speaking on behalf of the Resources Workgroup, remarked that the workgroup had developed a four-page outline, but it needs to be honed down to a list of questions. To target the discussion, the workgroup members were asked to respond to the question: If there is only time and money for one thing, what would it be? The workgroup agreed that, with limited resources, selected people should be targeted and low-hanging fruit should be picked. The 80/20 concept resonated with the Resources Workgroup and with the mindset of focusing on individuals. The workgroup members identified the need to educate farmers on what they can do, and that scientists/NRCS will help. It is important to consider resources and farmers' limitations. The overarching theme of the workgroup discussion was the education of regulators, consumers, and farmers. This currently is not happening because there is a perception that there is no future in farming, but knowledge needs to be imparted that jobs and opportunities are available.

Mr. Clark explained that to achieve success, it must be self-sustaining. Farmers must want to be involved. Although subsidies help, funding is not always stable; therefore, it requires thinking outside the box to make this happen. Mr. Boggs agreed that sustainability is a large issue and the paradigm of cheap food does not accommodate the support needed to achieve these environmental goals. He reiterated that education (of farmers and urban dwellers) is vitally important to support legislation.

Mr. Lee McDaniel (Harford Soil Conservation District) wondered if the workgroup discussed the issue of equity between farmers who are just outside an important watershed and not getting funding, and neighboring farmers within said watershed who are receiving funding. Mr. Boggs replied that we are all a part of the solution as well as part of the problem. There are, however, only so many resources available and decisions must be made.

Mr. Hebert stressed that it cannot be an "either/or" situation. Everyone will have to work with the resources currently available. In the 2002 Farm Bill, the Environmental Quality Incentives Program

(EQIP) and the Conservation Stewardship Program (CSP) were almost lost; only when these programs became nationally available were they able to be sustained. Smart targeting of money is necessary and it must be accepted that we cannot ask farmers to implement solutions that cause them to lose money. This does not have to be a lose/lose situation.

Mr. McDonald remarked that in Maryland there is a general fund for everybody to participate, but there also are specific targeted watersheds. Mr. Elworth noted that this already is being done through the Cooperative Conservation Partnership Initiative (CCPI); however, there may be some ways to make it more effective. Mr. Boggs added that this is a work in progress. Some disillusioned environmental groups think that things are not progressing as they should and too much money is being spent on infrastructure. He noted that it is not just farmers voting on the Farm Bill. Fairness is important, and it will require education to ensure fairness. National support is essential and progress must be demonstrated for this to happen.

Dr. Balling questioned the alignment between various programs, the NRCS specifically, but also the USGS and the programs under the Clean Water Act. What is expected of the agricultural community under the Clean Water Act and what resources are being applied to get us there? Mr. Boggs agreed that the Resources Workgroup thinks alignment is very important. Mr. Boggs also reiterated that resources are limited and they should be marshaled. There needs to be a uniform national playing field with regard to expectations. USDA has reduced the number of people in the field, which has further drained available resources. This Farm Bill is very important—it should provide help with nutrient management instead of compel farmers to meet the requirements. The Bill should offer farmers help, education, and possibly financial support in implementing nutrient management measures.

Dr. Balling reiterated his question concerning the state of alignment between various programs. Mr. Ray Vester (E & M Farms Partnership) responded that they are not aligned. In general, there is fragmentation and lack of communication across the board. With the 80/20 rule, accurate monitoring is needed, and because every agricultural area is different, the biggest problem areas need to be addressed first. For the nutrients problem, there cannot be a nationalized "save the country" program. Tough spots need to be attacked first and education needs to follow. If several farmers who are proactive get on board, other farmers will follow. Farmers are not overly impressed by degrees and titles, and they do not want government officials telling them to change; if one of their neighbors, however, implements something that works, they will try it. With regard to offering the farmers funding to implement nutrient management measures, this will not happen. The Farm Bill has been reduced by $19 billion since its inception.

Mr. Clark questioned, in regards to resource restraints, whether other models for achieving conservation around the globe have been examined. Mr. Boggs replied that he had not reviewed the conservation efforts of other countries. He added that, in regards to program alignment, there is poor alignment among programs in Washington State. Achieving alignment does not require legislation, and it would show leadership if problems and gaps could be identified. With respect to examining conservation models from around the globe, Mr. Vester pointed out that farmers in Europe are held in high esteem and are respected by local governments. There is heavy subsidization of farmers in Europe; therefore, farmers make a good living and are well educated.

Mr. Elworth remarked that federal agencies can no longer afford to fund programs that are off-target and ineffective. There are many factors that lead to an area being considered critical, and it remains to be seen what approaches should be implemented in these areas.

Mr. Hebert mentioned that, with respect to farmers, Australia is on the other end of the spectrum from Europe. He added that there are some states where NRCS works with the state's Water Quality Agency and the Department of Agriculture and still maintains the program viability. EPA and USDA should find these states, learn how they function, and create a model that could be used in states.

Ms. Martha Noble (National Sustainable Agriculture Coalition) commented that program alignment can be attained and one way to do it is through EQIP. EQIP has a component focused on helping farmers meet regulations. A great deal of EQIP money was spent for CAFOs. CSP devices can identify resources of concern (e.g., water quality) and then farms that want CSP money could be targeted. How can these farms be identified? How many resources should be used to make that identification? Targeting is needed and it will take time and money. It will be difficult, however, to get money from the Farm Bill to make it work.

Partnerships Workgroup

Mr. Young, speaking on behalf of the Partnerships Workgroup, said that the workgroup labored under the axiom "if you don't have what you want, use what you got." He noted that the key decisions to be made are: (1) EPA's exact role in making sure the data being developed are consistent and understandable, (2) the resolution of partnership directions and what role EPA should play, and (3) how solutions should be implemented. Further elaborating on this third decision, Mr. Young stated that it is necessary to look at market methodologies, nutrient management and EPA's role in this, and drainage. The workgroup identified the following attributes of successful partnerships: (1) they should be driven by a local farmer; (2) they should be market driven; (3) whole farm effects and environmental issues should be known before implementing measures across a watershed; (4) EPA should maintain a low profile; (5) the measures must be economically viable; and (6) a central coordinator is needed for continuity.

Ms. Suzy Friedman (Environmental Defense Fund) added that the three ways partnerships are helpful to EPA are: (1) data gathering, (2) resolution of issues, and (3) implementation focus. She stressed the importance of providing clear, specific examples for the recommendations to EPA. One such example is the metrics of a protocol, which is a science issue, and leveraging this into the marketplace. Another example is nutrient management and drainage. Maintaining production goals also needs to be addressed. When specific recommendations are described, the following two issues must also be considered: (1) What are EPA sidebars (policy, legal mandates, etc.)? (2) What are the various sources of money that can be utilized? Mr. Young noted that market-driven metrics work with the Sustainable Agriculture Initiative (SAI). He noted that the market often can do a better job of driving change to improve environmental conditions than regulations.

Dr. McFarland asked if the tile drainage questions are driven by data gaps or because they are known to be problematic in high-priority areas. Ms. Friedman responded that new scientific data on tile drainage and general drainage are continually becoming available, and those reports are being reviewed. Mr. Clark added that the Midwest is responding well to tile drainage management and discovering new ways in which to manage drainage. Dr. Ann Sorenson (American Farmland Trust) commented that according to the NRCS webpage, there is a USDA group actively looking at agricultural drainage. There also is an advisory group with representatives from land grant universities and the Agricultural Research Service (ARS) working on the drainage issue. Ms. Friedman confirmed that the USDA group's work is focused on a couple of specific practices. Mr. Hebert reminded everyone that North Carolina State initiated much of this study on the management of drainage, risers, and tiling drainage.

Dr. Lori Berger (California Specialty Crops Council) thought that looking at how other countries are handling these issues would be a good point of reference and could help the workgroup put things in better context.

Mr. Boggs observed that drainage is an example of targeting particular contributions. Focusing efforts and bringing assistance to these targeted areas is important. Education and partnering with land-grant universities has not been mentioned. Curriculum to support the management of drainage would be beneficial. Ms. Friedman felt that land grant university education and technology assistance need to be revitalized.

Stakeholder Panel

Environmental Stewardship in Virginia's Poultry Industry

Hobey Bauhan, President, Virginia Poultry Federation

As farmers and farms are aging, they are being converted to poultry operations and other uses. The Shenandoah Valley is the largest region of poultry production in Virginia, and poultry contributed more than $980 million to the Virginia economy in 2010. Many jobs are created by the poultry industry within poultry farms and companies that process poultry products (e.g., Perdue), as well as outside the industry.

The Shenandoah Valley is part of the Chesapeake Bay Watershed (CBW) and so poultry farms have been under close scrutiny; however, they are not new to nutrient management. Nutrient management plans have been studied and implemented since the early 1990s and the Virginia Polytechnic Institute and State University (VA Tech) has received funding to study P, converting manure to energy, and markets for the manure. With regards to marketing the manure, there is less P in chicken litter now than in the past because the chickens are being fed an enzyme that causes them to better use the P in their feed. Another study at VA Tech is looking at the transport of litter regionally. The transport of litter to farmlands that need P (farms with poor soil and low P) can be difficult, and there actually is not enough P in poultry litter to fulfill the needs of farmland. It is sometimes easier to utilize commercial fertilizer.

Poultry litter also can be used for energy, exemplified by Fibrowatt LLC, which has power plants that run on poultry litter. With various combustion, pyrolysis, digestion, and other technologies converting poultry litter to energy, commercialization of these technologies should increase over the next 5 years.

Collaborations have been helpful. For example, the Waste Solutions Forum, which includes members from USDA, EPA, and VA Tech, established a steering committee focusing on poultry litter management and initiated some projects. The Forum received funds for a pilot project associated with the VA Tech poultry litter research. Efforts are under way to commercialize the results.

Organic sources of poultry litter increased substantially after the increase in petroleum prices (needed to make traditional fertilizers). In fact, farmers have little trouble getting rid of their poultry litter under free market forces because it is so valuable.

Although local volunteers and education are very helpful in poultry litter and water quality management, efforts are ongoing to create some bills and regulations at the state level. Currently, permits are needed for poultry litter production and transfer.

Virginia recognizes the importance of restoring the CBW, and has made plans for proper resource management. The states are looking at farms on a farm-by-farm basis and creating specific incentives. For example, if nutrient management is needed on a specific farm, the state will ensure that those measures are implemented.

With states leading the way and a firm reliance on solid scientific data, voluntary approaches should be emphasized as much as possible, as they tend to work much better than regulations. Cost sharing also is very important because farmers often work on thin margins to implement these costly practices.

Agriculture and Water Quality

Michael Plumer, Consultant, Conservation Agriculture

The Illinois farm community is examining agricultural sustainability and water quality issues, such as: (1) sediments, (2) nutrients (N and P), (3) agriculture and sustainability, (4) lack of water quality farm research, (5) regulations without basis or applicable research, (6) need to target priority watersheds, and (7) conservation programs.

Thanks to technology, the U.S. corn yields have been on the rise. N and P used in fertilizers in Illinois have been steadily declining since 1975. This trend also has been observed nationally, because farmers cannot afford to apply excess fertilizer. In fact, Illinois has seen a 37 percent drop in applied anhydrous ammonia (N). This can be reduced even further if there is a conversion from fall fertilizer application to spring application. It cannot be overlooked, however, that applying fertilizer in the spring rather than the fall results in higher costs, has higher risk of coverage, and wet springs can delay fertilizer application and crop planting.

Conservation practices can increase operating costs (for example, requiring the purchase of special equipment to get through wet fields in the spring). Illinois farmers have implemented various nutrient management measures, including buffer strips, zone sampling nutrient management plans, sidedressing N, wetland/wildlife in place, and riparian management areas. These practices can be costly and difficult to maintain, and create unused land for farmers. There can be 5 to 6 acres of unused farmland that reduces the farmers' income and increases farm maintenance expenses. Many older farmers do not like the conservation practices and it can be difficult to help these farmers because Illinois conservation programs are laden with rules, making them hard to implement.

Economical solutions are needed to help farmers, such as cost sharing and access to specialized equipment. Management knowledge also is essential, because implementing a new system is generally high risk for farmers, so they tend to remain conservative. In the mid-1980s, 30 percent of Illinois farmers went bankrupt and this has not been forgotten by the farming community. Policies need to be practical and supported by sufficient data.

Farmers and the Illinois EPA launched a grassroots effort to increase education and research for the voluntary adoption of conservation practices in Illinois. Funded by farmers and the agricultural industry, and supported by dealers, suppliers, and communities, the educational program to reduce nutrient loss is called Keep It for the Crop 2025 (KIC 2025). Illinois EPA approved KIC 2025, which was initiated in April 2011. KIC 2025 has to replace the Illinois Department of Agriculture's Fertilizer, Research, and Education Council that already is in place. This is a difficult process that has led to the KIC 2025 program being blocked by the Illinois legislature. Farmers, however, are funding themselves anyway and they are planning to start the program without the legislature. The farmers are concerned about water quality and believe they should be consulted regarding how to address nutrient management.

Incentives and Market-Based Approaches to Farming and Conservation
Robert Bonnie, Senior Advisor to the Secretary for Environment and Climate, USDA

There is an interest in market-based approaches for farmers to address water quality issues. NRCS has been focusing efforts on priority landscapes and working with farmers and ranchers. Examples of this include work in the CBW, the UMRB, and the California Bay Delta. In fact, in the CBW, $600 million will go to targeted conservation.

Regarding wildlife, the NRCS is proud of the Sage Grouse Initiative (the sage grouse is a candidate for endangered species listing). Farmers are interested in being involved with the NRCS on this initiative because financial and regulatory incentives are provided to farmers.

CEAP assessment conclusions in the CBW and UMRB watersheds (and one more assessment to be concluded soon from the Great Lakes region) mirror each other: (1) voluntary practices work to get the right management practices done on the right priority areas, (2) much work still needs to be done, and (3) agriculture is a valuable use of land, so farmers need to be kept on this land. The actual data and modeling being done here will hopefully fill in some science gaps.

Of note, the Secretary for Environment and Climate is interested in creating new incentives for farmers to help with nutrients and wildlife. With these incentives, there should be regulatory certainty, such that

farmers can be assured that rules will not change and that they will get rewarded as promised. The concept of regulatory certainty has been applied to endangered species protection and has worked well. The idea is to create something similar for water quality. It would be beneficial to work within existing laws, as well as partner with states and farmers, to make this happen.

The Secretary for Environment and Climate also is interested in environmental markets. The idea is to use tools like CEAP to measure the benefits of conservation practices. The Office of Environmental Markets and the Office of the Chief Economist at USDA are looking into technical aspects and methodologies for this (e.g., currently working in the CBW on this). There could be benefits for municipalities. Regarding greenhouse gases, much work has been done to have individual landowners measure gases (e.g., NO_x) that can affect water quality. Projects are being funded that include: dairy farms, fertilizers, feed lots, and rice production. The experience and lessons learned from these projects will benefit landowners and the environment.

Discussion of Stakeholder Panel (Mr. Bauhan, Mr. Plumer and Mr. Bonnie)

Ms. Dilley confirmed that there were no questions from webinar/phone participants. Mr. McDaniel asked about documentation of the conservation practices on Illinois farms. Mr. Plumer responded that there currently is no documentation. Mr. McDaniel remarked that farmers are not documenting because there is no cost-share benefit or credit being given to them for doing so. Reports may show that there is no treatment even when there is, because there is a lack of documentation. Mr. Bonnie confirmed that this is a large problem in the CBW and they are trying to figure out how to encourage data sharing.

Dr. Larry Sanders (Oklahoma State University) asked Mr. Bauhan if he had any thoughts on the contract model, in which large corporations with extensive financial resources (e.g., Perdue) pass off environmental costs to those without such resources. Mr. Bauhan disagreed with this statement and pointed out that the contract system for poultry and livestock production is mutually beneficial, noting that it is a low margin industry. Nobody (i.e., farmers or corporations) is experiencing much monetary gain, but at least contracted farmers are guaranteed an income. He mentioned that 80 percent of growers have litter sheds and practice nutrient management, so these corporations are positive overall.

Dr. Balling asked Mr. Bonnie to identify priority areas for nutrient management. Mr. Bonnie responded that the CBW, Great Lakes, and UMRB are all high priorities and now they are looking at the Tennessee and Ohio Valleys. The initial focus was on places that are of the most value and are the most topical. He noted that priority decisions will become more important as we move to other areas (e.g., the West, where data are not as robust). Dr. Balling asked if the priority areas are determined by which ones are the most impaired or by which ones are impacted most by agriculture. Mr. Bonnie explained that there is considerable cropland and public interest in the Great Lakes, UMRB, and CBW areas, and because NRCS has a role in helping farmers manage their land, these are priority areas. In moving beyond these initial target areas, priority setting is becoming more difficult.

Dr. Popp asked Mr. Plumer if NRCS is partnering with the State of Illinois to help make their conservation programs more effective. Mr. Plumer replied that there is no leniency or flexibility in the Illinois programs so farmers are afraid to use them. The local NRCS offices in Washington, DC, have great field staff that help and the regional office is good, but the state is inflexible and this makes things very difficult. Mr. Bonnie mentioned that the NRCS Chief wants more people out in the field and is working on streamlining to get more people out there with the landowners. Dr. McFarland asked Mr. Plumer about the science that needs to be done to better understand the costs of BMPs. She asked about the Virginia Poultry Association funding the equipment and whether there can be a monetary input to help with equipment sharing, and also whether the checkoff programs work and whether they should be applied to more industries. Mr. Plumer responded that checkoff dollars are available in Illinois; however, the governor uses these checkoff funds. Consequently, the soybean and corn growers are paying for all the research through checkoff programs.

Dr. McFarland asked about the cost of maintaining buffer strips and other conservation practices, and said that a maintenance analysis is needed for research purposes. Mr. Plumer answered that costs are not reported; the farmers just keep them in place and maintain the buffer strips.

Mr. Daniel Botts (Florida Fruit and Vegetable Association) asked about the intended use of checkoff funds. Mr. Plumer shared that although there is some university involvement and verification, private consultants are usually hired because of their lower overhead cost compared to universities.

Mr. Clark asked about targeted nutrient reductions and what is being used as a benchmark. What is the level of funding from the Illinois EPA? Are there numeric goals/zones established? Mr. Plumer reported that the Illinois EPA does not provide funding. N and P are targeted nutrients. Collected monitoring data show that N is the problem, not P. Mr. Plumer added that there are no numeric goals/zones, and that they are doing narrative nutrient criteria.

Dr. Sanders asked if there is research being conducted on how conservation affects water quality. Are the costs of conservation practices too high for producers? Mr. Plumer responded that producers often do not understand conservation practices (e.g., no tillage, cover crops) and they think the risk is high. Good data on tile drain land in Illinois are not available and more information is needed. There are some overflow data available. Soils with increased organic matter often are considered "young soils" and are managed via tile drainage; because there is a high degree of mineralization in these soils, the data become convoluted and confusing.

Dr. Sanders followed up with a comment on the Extension Service (i.e., universities reach out via teaching and research, and "extend" resources to solve public needs through non-formal programs). One way that programs have paid off and worked in Oklahoma is through partnerships among the Farm Service Agency (FSA), the Extension Service, and NRCS. Mr. Bonnie commented that adding staff for technical assistance is impossible. Mr. Bonnie commented that adding staff for technical assistance is impossible. Partnerships and collaborations are very important right now because of the economy. Mr. Omar Garza (Texas/Mexico Border Coalition) commented that most of the listed partners/collaborators were State of Illinois entities; he noted that no federal or local collaborators were listed. Mr. Plumer responded that the partners listed are not state agencies; they are all local producers and groups. He emphasized that farmers pay little attention to things that are not local.

Mr. McDonald questioned if poultry producers can be proactive by moving nutrients out of the CBW and away from sources with the goal of improving water quality. Perhaps incentives could be used to encourage this. Mr. Bauhan explained that Virginia poultry litter is regulated through its entire life cycle. Farmers accepting litter must be able to accommodate the P from the litter. There is no requirement to move the litter out of the CBW because it is regulated; he added that subsidizing litter transfer from the Shenandoah Valley to other locations would not be economically viable. Mr. McDonald pointed out that if poultry litter is transferred from the Basin, new commercial fertilizer will have to be used. Mr. Bauhan agreed and added that there is no regulation of commercial fertilizer application in Virginia.

Following the panel discussion, Ms. Dilley encouraged the workgroups to identify overlaps between the groups and to focus on developing two or three recommendation areas. She noted that a discussion of this workgroup session would commence in the morning.

Public Comment

Ms. Kaiser called for public comments and there were none.

The meeting was adjourned at 5:50 p.m.

THURSDAY, JUNE 23, 2011

Ms. Kaiser called the meeting to order at 8:08 a.m.

Dr. Balling commented that the workgroups needed to report their progress to the Committee and identify some specific recommendations.

Ms. Dilley stated that the workgroups needed to make more progress on identifying specific recommendations and developing a work plan for today and what must be accomplished before the October meeting. She also suggested that the workgroups check the chart (distributed already to the Committee members) for overlaps and potential coordination with other workgroups, and to populate the chart cells. Ms. Dilley also emphasized that a draft report had to be developed by October. Mr. Elworth added that recommendations need to be summarized and discussions need to be incorporated into the report as well.

Review and Discussion of Afternoon (6/22/11) Committee Workgroup Session

Science Workgroup

Dr. Popp, speaking on behalf of the Science Workgroup, reported that problems include a lack of science and scientific transparency, a lack of alignment between agencies, and a lack of economics around recommendations. Dr. Popp recounted three problem areas: (1) model uncertainties and links between models, (2) economic policy development, and (3) communications between science and policy (i.e., science needs to be communicated across agencies and to producers). Dr. Popp also added that given the limited resources, these needs will be prioritized.

Ms. Dilley commented that problems must be identified and characterized, and the Science Workgroup is doing this well. Solutions also must be generated and implemented and little has been done on that. Dr. McFarland commented that a timeline needs to be developed for where and when data should be received.

Mr. Elworth remarked that stakeholder involvement is good and should be maintained; stakeholders have information that is useful for the regulatory process. Dr. McFarland noted that people want to know why they should help and the science behind what is happening. This should be foremost in people's minds at the level of implementation, but it is not. Why not? People need to understand the importance and impact of these methods. Mr. Elworth mentioned that the public generally becomes interested and engages only when actions are actually being implemented. People need to be able to look back at the scientific process that led to the actions. Dr. McFarland emphasized the need for states to ensure that growers are involved in the process.

Ms. Dilley asked about EPA's role. Would the Agency be convening, participating, and/or facilitating? Mr. Elworth observed that engaging growers can be difficult; it is easier to obtain input when the interest of grower groups has been sparked. Mr. Vester affirmed that the best way to reach growers is through grower associations. Dr. McFarland said that state conservation experts, extension programs, and people at the local level should be involved.

Resources Workgroup

Mr. Boggs, speaking on behalf of the Resources Workgroup, summarized the three major points of the workgroup discussion. The first point is people; this is where the workgroups need to cross, and find newer ways of thinking and new paradigms. In regard to science, Mr. Boggs said that the problem is a lack of confidence in the scientific process; it is this lack of appreciation that leads to no behavioral change in advance of regulatory action. The credibility of solutions is not readily believed. People do not

see that solutions for Virginia will work in Indiana, for example. The practices that are selected must address the problems, and the scientific community needs to communicate this. Time and money are the second and third elements discussed by the Resources Workgroup. EPA has limitations and it cannot be the source of all things. Partnerships, like the one with USDA, are vitally important. The pot of money, however, needs to get bigger to solve these problems, and education is very important to garner taxpayer support.

Mr. Elworth conceded that education is important; however, it takes time, people, skills and resources to engage people early on. With the passage of the Continuing Resolution bill, there are fewer funds available, so it will be necessary to engage regional people and organizations, in addition to EPA headquarters. Mr. Vester concurred that it is useful to educate at the local level; if key individuals are educated within a community, information will spread from there to other growers. This bottom-up approach is key. Mr. David Petty (Iowa River Ranch) reiterated that a rapport needs to be established with the locals and regional people need to interact with these local people. Dr. Sanders added that discussions should include the concept of government reduction. Therefore, solutions need to be self-sustaining and rely on local people to monitor nutrient levels, as opposed to monitoring at the federal level. Mr. Boggs agreed that when standards are not being met, the value of the water resources needs to be established and understood in the community as well as the value of the individual farmers. Sustainability happens when local people see the importance and want to help, not with the implementation of new regulations.

Dr. Berger questioned whether in developing recommendations, some hard numbers (e.g., costs for programs) are needed. Mr. Boggs responded that this report will lay the path for steps that should be taken. Dr. Berger stressed that some "ballpark" numbers would be helpful. Mr. Elworth noted that the appropriations committee will look at the recommendations and want some numbers. This Committee should develop ideas to actually remove more expensive mistakes in the long term. Mr. Elworth asked the workgroup to identify some good examples of this.

Mr. Young questioned how this will all be paid for. In general, the consumer always has to pay for what it costs to produce high-quality food. The funds have historically gone from the consumers through government to researchers, and then the knowledge and information flows to farmers. That paradigm is shifting now. Consumers will still pay, but a market-driven future will mean farmers will be developing brand value, as opposed to the current paradigm for commodities where everything is the same. There will be product differentiation, which will fund those improvements that are necessary to make things better. This means finding the practices, on a whole farm basis, that will maximize productivity and minimize nutrient loss. Mr. Young is working with the SAI platform and companies trying to develop international standards, to figure out how to measure sustainability. SAI is working on a metric or index number that informs people what farmers are doing in regards to sustainability; this index then can drive the market. Farmers, however, will need help initially in developing better sustainability practices, which will become profitable in the long term.

Mr. Vester agreed and added that before people can be educated about solutions, they need to be educated on the problems. The science must be there before anything can be market driven. It takes the average consumer a long time before he or she will look at any number on a package other than price (such as a sustainability index); therefore, there must be a serious effort to educate the public before such an approach can be effective. This education should be supported by state and federal funds. Mr. McDaniel commented that the FRRCC has always focused on agriculture, but in regards to resources and partnerships, others (e.g., homeowners, wastewater groups, etc.) might have input and should be involved.

Ms. Noble said that the involvement of farmers is important. A USDA program, the Sustainable Agricultural Research and Education Program, works well because farmers are involved directly in research and trying different farming systems. This program requires farmers to demonstrate these practices to other farmers, and discuss the results of these techniques, both good and bad.

Partnerships Workgroup

Mr. McDonald, speaking on behalf of the Partnerships Workgroup, reported that this workgroup has overlap with the other workgroups and will leave funding discussions to the Resources Workgroup. He also said that a search has found that EPA has partnered with many groups over the years. Some of the partnerships have worked well and some have not. In the area of water quality and non-point source water quality, partnerships will be very effective at having an impact because EPA does not have regulatory authority over non-point sources. Mr. McDonald added that for partnerships to be productive there must be trust among the stakeholders, and the decisions of the partnership must be supported by all. The Agency and partners with regulatory authority need to set and also be clear about minimal standards and ground rules.

Mr. McDonald identified three key points for effective partnerships:

1. When there is a lack of understanding, people must get together and be educated to understand and identify problems. This requires resources and deciding who should be at the table (i.e., environmental community, farmers, EPA, etc.).

2. The solutions developed must be science-based, and EPA's role in making this happen must be established.

3. When solutions are implemented, education and outreach are important in pulling people together to implement them.

Mr. McDonald questioned how the stakeholders will know if water quality improvements are being made in real time. In regards to monitoring and resources, it is difficult to determine which scientists should do the monitoring (e.g., those from academia, industry or government) and where resources will be obtained for monitoring. Mr. McDonald noted that the agricultural sector rallies around solutions they believe in; therefore, the buy in of stakeholders is essential for an effective partnership.

Ms. Friedman emphasized the importance of continuing to identify science needs. Are the approaches being implemented by farmers working? Are the changes being documented? Are there marketplace changes? She noted that EPA can facilitate partnerships with universities and industry that can help establish communication among stakeholders and agreement on what is the most valuable tool suite.

Dr. Sanders questioned the validity of different roles. He remarked that the facilitator of managerial issues must be seen as an honest broker without a vested interest. When EPA steps in, this sometimes can create problems inadvertently. Mr. McDonald suggested that the best possible role for EPA is to provide Nonpoint Source Management Program (Clean Water Act, Section 319) funds to a state and let the state take the lead role. Sometimes minimal resources are actually required; people just need to communicate. Ms. Friedman noted that the workgroup did not determine EPA's role, but the workgroup members agree that the general idea is a hands-off approach in which EPA facilitates and coordinates, bringing people and groups together. The Agency then benefits from the information that is developed through the partnership. Mr. Elworth said that EPA does not have to be a partner to recognize the value of a partnership; the Agency still can gain valuable information. Ms. Friedman added that the workgroup also thought EPA could be a source of resources and research.

Dr. Sorenson questioned whether the concept is that all partnerships go through all three stages (defining and understanding the problem, identifying the solution, and implementing the solution) or whether partnerships can be formed to address the various stages. Ms. Friedman responded that the Partnerships Workgroup wanted to offer EPA more than simple recommendations and generalities; the workgroup explicitly wanted more specifics to engage EPA.

Ms. Dilley recounted that the workgroup was looking into examples of partnerships that came together, developed a plan and initiated work, but did not have any systems in place to check up on progress and interpret what was happening. The lack of these systems makes partnerships fall apart, often leaving the problem unsolved. The Partnerships Workgroup hopes to assess what makes partnerships work, how long they need to be in existence, how they determine if they accomplished their goals, and whether what they intended to accomplish changes over time.

Mr. Petty affirmed that EPA meetings in Iowa did not work, as people there are hostile towards government agencies, especially EPA. Alternatively, having EPA attend a cattle meeting to answer people's questions seemed to work well. Inclusion of EPA as a participant, instead of a facilitator, has worked very well too.

Mr. Vester asserted that partnerships focused on education and locating funding would be beneficial, and such partnerships likely would last given the importance of these two foci. Dr. Berger shared that the Pest Management Alliance Program was highly successful in California. It might be helpful to examine this successful model, as it had significant outreach and education.

Mr. Elworth asked Bruce Knight, former NRCS chief, for examples of other program models. Mr. Bruce Knight (Strategic Conservation Solutions, LLC) encouraged the FRRCC to be bold with its recommendations for EPA; he said the Committee should not be shy about mentioning budgetary needs. Investment in partnerships should be a high priority for agencies given the budget reductions they face today, and this statement should be emphasized in the recommendations. He also posited that regulations must be based on quantifiable science. In regards to examples of successful partnerships, Mr. Knight mentioned an effort in Iowa. To achieve zero runoff in Iowa, regions were convinced to put in swales and other alternative technologies. This was a highly successful partnership. There have been significant improvements in the CBW as a result of the improvements made by agriculture. The Miami Basin in Ohio is a good example of nutrient trading mechanisms. The Boone River Watershed in Iowa, with the work that has been done upstream, is another good example of a successful partnership. In another example, Washington and Oregon were dealing with a water temperature situation and they implemented a water temperature strategy that worked well.

Mr. Knight also suggested that the FRRCC highlight situations where partnerships should have happened, but did not. In the case of the Arkansas and Oklahoma water quality situation, had they partnered and worked together, there could have been a better, more productive climate there. This is a good example of a partnership that should have happened.

Other examples of successful partnerships include: the USDA, EPA, and farm community working together to improve air quality in the San Joaquin Valley, California; New Mexico and Texas working together on Tamarix control to increase water quantity; and people in California working together to keep sage grouse from becoming endangered. Mr. Knight mentioned that USDA has had challenges in advisory committees because it is difficult to quantify environmental attributes of technological advancements. Technologies can reduce N and P inputs, which is better than more regulations or NRCS cost-share. The challenge is to quantify the benefits of these technologies and aggregate them for the models.

Mr. Elworth asked if anyone discussed doing work on the utility of production systems analysis, in regards to environmental impacts. Ms. Noble said that industry can start looking at a system, from an environmental framework, to deal with pollution, and some who have done this have seen economic benefits.

Mr. McDaniel commented on measuring the benefits of new technologies. NRCS has some numbers on the benefits of various technological developments and fertilizer technologies. These numbers, based on technologies, may be more helpful than the numbers that currently are being monitored. Dr. Popp

remarked that in academia, research has to evaluate processes one at a time, let them build on each other, and then look at the benefits.

Mr. Garza reminded the Committee that EPA is a regulatory agency and USDA is not; therefore, are these two agencies meeting to figure out how they can work together, partner, and bring about changes to address environmental problems? Mr. Elworth added that EPA could co-fund projects with USDA and the two agencies could identify additional ways to be more effective. He admitted that there is tension at times between EPA and USDA, but this is calmed when they concede their actual jobs (i.e., regulatory vs. non-regulatory). In collaborations between EPA and USDA, both agencies must make sure that they are doing their job or the funding will be pulled. Mr. Knight commented that there is wisdom in these different agency roles that can be useful. For example, USDA is the "non-threatening" agency that people are willing to talk to, while EPA is the more "threatening" regulatory agency.

Ms. Beltrone mentioned the Small Business Innovation Research (SBIR) program and said that some businesses that received SBIR funding should be encouraged to talk about the impacts of their technologies on sustainability. This may create an incentive towards sustainability. Mr. Elworth thought Ms. Beltrone's idea was a good one. Dr. Sanders stated that, using the Arkansas and Oklahoma litigation example, political situations can impact the EPA relationships. In some cases, people are actually told not to cooperate with EPA, pending the political climate. In regards to doing a better job of measuring environmental benefits, ecosystem services is the new direction, which will benefit agriculture and the public.

Dr. McFarland asked if NRCS looks at regulations on the horizon or just those regulations currently in place. Mr. Knight responded that the NRCS prioritization process is complicated. At the federal level, NRCS considers where money should flow and which technologies should be developed; at the state level, money is pooled and state conservationists must decide on the priorities. Mr. Elworth commented that, based on some of his work, new practices put forth from the county level can then get brought up to the state level. This can be labor intensive; however, bringing it up locally and getting buy-in from local people gives the new practice a much better chance of passing at the state level.

Dr. Berger questioned whether the benefits of the State Technical Advisory Committee (STAC) can be optimized. Although somewhat successful, the current process is cumbersome, complex and commodity driven. Mr. Knight pointed out that in California, for example, the process is very difficult as it is quite technical and complex. STAC only works when 20 to 30 people come together consistently and work out what needs to be done. Mr. Elworth added that learning the entire process at each level, although labor intensive, may be very helpful. NRCS has various degrees of understanding about flexibility and non-flexibility. Mr. Clark commented that STAC is good at setting priorities. He noted that STAC exerts a great degree of influence, but it is vital to have an effective organizational structure established in working with them. This is a downfall of many technical committees, but they are hugely successful in setting priorities and bringing interests to the table that are not always observed otherwise.

Ms. Noble stated that STACs have a network (i.e., e-mail listserv) through which they can communicate with each other. This network has been great at getting support built at the ground level and then moving that support up. In fact, special attention was given by STACs in the Farm Bill to organic farming and pollinators, which was started by this network locally and then moved up. Mr. James Ford (Square "O" Consulting) agreed that STAC is a great forum to bring state partnerships together. He added that local level partnerships, brought together by STAC, often are taken for granted. Mr. Petty affirmed that the STAC in Iowa has successfully addressed issues, and the committee members listen and help develop positive working relationships within the community.

Ms. Dilley explained that the workgroups should decide on their recommendations and then fine tune them; workgroups also should develop a work plan. Mr. Elworth emphasized that this is the last time the workgroups will meet until the October meeting, at which time a draft will be needed. Ms. Dilley clarified that a first draft should be submitted by August or September so that an executive summary can

be compiled for the October meeting. Workgroups need to define their final tasks, establish a timeline, and identify the support they will need.

Public Comment

Ms. Dilley called for public comments and there were none.

Review and Discussion of Committee Workgroup Session and Final Remarks

Ms. Dilley indicated that the FRRCC needs to develop a work plan for the October meeting. Workgroups should communicate to EPA any support they will need to complete their drafts, and workgroups need to share their product timelines and products with the entire Committee. An executive summary needs to be prepared for the October 26-27, 2011 meeting. Mr. Elworth added that an executive summary also should be prepared for administrators and the public.

Ms. Dilley emphasized that the workgroup drafts submitted by September should be almost final so an executive summary can be prepared by the October meeting. First drafts should be circulating within each workgroup by mid-August (themes, issues and recommendations should all be described and addressed). Mr. Elworth asked that workgroups be sure to define and describe resources, terms and other topics that may not be understood by those outside the FRRCC. Ms. Dilley went on to state that by mid-September workgroups need to prepare a second draft, which will be circulated among the entire Committee. Comments from the full Committee on each workgroup draft will be due by September 30, 2011 and a final draft from each workgroup will be ready by the October meeting. At that meeting, an executive summary group will be formed to bring together the workgroup findings and recommendations into one executive summary.

Mr. Elworth remarked on the importance of this executive summary. It needs to be a cohesive narrative. Ms. Dilley affirmed that it should seamlessly knit together all the workgroup reports and clearly present the Committee's recommendations. Mr. Elworth noted that the drafting process is not definitive, but it will help facilitate discussion.

Mr. Boggs asked how refined and polished the writing should be for the workgroup reports. Ms. Dilley replied that it probably will require more work to refine and polish the executive summary because it is a compilation of different reports written by different workgroups. Mr. Elworth clarified that individual workgroups can decide on the level of polish for their reports; the executive summary, however, needs to be polished. Ms. Dilley added that the workgroup reports should be in good shape though; specifically, the workgroups should pay attention to the wording of the findings and recommendations.

Mr. Boggs asked for validation during the process to keep the workgroups on the right narrative path. Mr. Elworth asserted that the writing of the individual workgroups can be different; it is more important that the reports provide key observations and recommendations. Mr. Boggs was concerned about the isolated discussions within the workgroups, as there may be comments that other workgroups should hear. Mr. Elworth reminded Mr. Boggs that the second draft from each workgroup, due in mid-September, will be reviewed by the whole FRRCC. Each workgroup will get Committee feedback and there will be discussion and interaction with other workgroups. Mr. Boggs suggested that the workgroups distribute their frameworks to the Committee in July to get validation and early feedback. Ms. Dilley agreed to this request.

Dr. Sanders mentioned that summer is a time of vacation for many members and it can be a difficult time to accommodate deadlines. He asked about the flexibility of the timeline. Is there a requirement to complete the report by a particular date? Mr. Elworth responded that there is no legal deadline, but the executive summary needs to be completed as soon as possible. He then posited two options: (1) have the executive summary completed, as planned, in October and discuss it with EPA staff at the end of October, or (2) have a subsequent meeting before the end of the year to meet with the EPA Administrator or senior

leadership and present the recommendations. Mr. Elworth reminded the Committee that the value of the recommendations decline somewhat as the deadline is pushed out further. Dr. Sanders asked if the draft deadlines could be pushed back one month. Mr. Elworth conceded to the delay. Ms. Friedman said she preferred Mr. Elworth's second option, and this seemed to be the consensus of the Committee.

Ms. Dilley then asked the workgroups what support they will need to meet these deadlines. Dr. McFarland, on behalf of the Science Workgroup, requested help with three conference calls (July 18 to discuss data gaps/models, August 22 to discuss economic resources, and September 12 to discuss communication). On September 16, the Science Workgroup will have a draft for circulation to the other workgroups. Dr. McFarland stated that the workgroup may request facilitation for these conference calls, and they may need some EPA experts on the calls.

Dr. Sorenson, on behalf of the Resources Workgroup, stated that they will have a conference call the first week of September, which will not require facilitation. A draft will be distributed to the Committee on July 22, and the workgroup would like to receive any comments by August 5.

Ms. Kaiser asked the workgroups to send her the dates for their conference calls. She also asked them to specify facilitation needs and any other needs for EPA or outside experts.

Mr. McDonald, on behalf of the Partnerships Workgroup, said that they will not require any outside resources and there are no plans for a conference call. The workgroup members will communicate via e-mail. Ms. Friedman stated that the workgroup may need help in capturing the flip chart notes.

Mr. Elworth commended the Committee on a job well done and reiterated that workgroups should inform Ms. Kaiser if they need additional support. Dr. Balling thanked the Committee members for their time and effort. He also extended his gratitude to Mr. Mark Joyce (OFACMO) and Ms. Kaiser for their support, as well as the assistance of the support staff.

Ms. Kaiser said she will distribute a timeline to the Committee members and then she adjourned the meeting at 12:49 p.m.

Full Committee Action Items/Timeline

- ✧ In July, workgroups have the option of sending out a framework of their reports to the Committee for validation and early feedback.
- ✧ By mid-August, workgroups will have a first draft of their reports completed.
- ✧ At the end of August, workgroup first drafts will be circulated within workgroups for comment.
- ✧ In mid-September, workgroups will have the second draft of their reports completed and will circulate those to the full Committee for comment.
- ✧ By September 30, Committee members will have submitted comments on workgroup second drafts.
- ✧ At the end of September, an Executive Summary Workgroup will be formed and that workgroup will outline or form a preliminary draft of the executive summary document before the October meeting.
- ✧ By October 7, workgroup third drafts will be completed, with Committee comments integrated.
- ✧ During the October 26-27 FRRCC meeting, final workgroup reports will be completed and reviewed by the Committee.
- ✧ During the October 26-27 FRRCC meeting, the Executive Summary Workgroup will present the draft executive summary to the full Committee and it will be further developed by the Committee at the meeting.
- ✧ By November 30, the workgroup final reports will be completed and the executive summary will be finalized.

- ✧ In December, the executive summary report and the Committee's recommendations will be presented to the Administrator.

Workgroup Expressed Timelines

Science Workgroup
- ✧ July 18: Conference call covering data gaps/models
- ✧ August 22: Conference call covering economic resources
- ✧ September 12: Conference call covering communication
- ✧ September 16: Workgroup report draft sent to full Committee

Resources Workgroup
- ✧ July 22: Preliminary draft/outline sent to full Committee for comment/guidance
- ✧ August 5: Full Committee returns draft with comments
- ✧ First week of September: Conference call

Partnerships Workgroup
- ✧ E-mail contact will be maintained to form draft reports, provide comments, and circulate revised drafts within the specified deadlines

Farm, Ranch, and Rural Communities Federal Advisory Committee (FRRCC)
June 22-23, 2011 Meeting Participants

✧

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