FRRCC
Agriculture Producing Solutions

U.S. Environmental Protection Agency (EPA)
Farm, Ranch, and Rural Communities Advisory Committee (FRRCC)
Virtual Meeting Summary
November 12 - 13, 2020

Contents

I. Participants

FRRCC Members - Attendance Day 1 (31 out of 32): Mr. Michael Aerts, Mr. Barry Berg, Ms. Emily Broad Leib, Cmr. Don Brown, Mr. Jamie Burr, Mr. Phillip H. Chavez, Mr. John Collison, Mr. William Couser, Mr. Michael Crowder, Mr. Matthew Freund, Ms. Sharon Furches, Dr. Jeffrey Gore, Mr. David Graybill, Mr. Alex Johns, Mr. Jimmy Kinder, Ms. Jeanette Lombardo, Ms. Lauren Lurkins (Vice Chair), Mr. Gary Mahany, Mr. Nicholas McCarthy, Mr. Jesse McCurry, Mr. William Thomas (Tom) McDonald (Chair), Mr. Jay Olsen, Mr. Christopher Pettit, Mr. William Pracht, Dr. Graciela Ramírez-Toro, Dr. Charles Santerre, Dr. Beth Sauerhaft, Mr. Davie Stephens, Sec. Jeff Witte, Ms. Amy V. C. Wolfe, and Mr. James Zook.

FRRCC Members - Attendance Day 2 (28 out of 32): Mr. Michael Aerts, Mr. Barry Berg, Ms. Emily Broad Leib, Cmr. Don Brown, Mr. Phillip H. Chavez, Mr. William Couser, Mr. Michael Crowder, Mr. Matthew Freund, Ms. Sharon Furches, Dr. Jeffrey Gore, Mr. David Graybill, Mr. Jimmy Kinder, Ms. Jeanette Lombardo, Ms. Lauren Lurkins (Vice Chair), Mr. Gary Mahany, Mr. Nicholas McCarthy, Mr. Jesse McCurry, Mr. William Thomas (Tom) McDonald (Chair), Mr. Jay Olsen, Mr. Christopher Pettit, Mr. William Pracht, Dr. Graciela Ramírez-Toro, Dr. Charles Santerre, Dr. Beth Sauerhaft, Mr. Davie Stephens, Sec. Jeff Witte, Ms. Amy Wolfe and Mr. James Zook.

Speakers: Carrie Vicenta Meadows, Agriculture Advisor to the EPA Administrator; Anna Wildeman, Principal Deputy Assistant Administrator, EPA Office of Water; Sharon Nappier, PhD, National Program Leader for Water Reuse, EPA Office of Water; Lana C. Suarez, Associate Chief, Materials Management Branch, EPA Office of Land and Emergency Management; Jean C. Buzby, Ph.D., USDA Food Loss and Waste Liaison, USDA Office of the Chief Economist; Dana Gunders, Executive Director, ReFED; Sheryl Kunickis, Ph.D., Director, Office of Pest Management Policy, USDA; Ed Messina, Esq., Acting Office Director, EPA Office of Pesticide Programs; and Michael Goodis, Acting Deputy Director for Programs, EPA Office of Pesticide Programs

Other EPA Event Staff: Megan Striegel, Emily Selia, Rebecca Perrin, and Angela Hackel

Public Attendees: 229 members of the public registered to attend this meeting.

II. Meeting Overview

On November 12th and 13th, 2020, EPA hosted the second public meeting of the new membership of the Farm, Ranch and Rural Communities Committee (FRRCC) which was appointed in June of 2020. The meeting was entirely virtual; there was no in-person gathering for this meeting.

On November 12th, the Committee was welcomed by Carrie Vicenta Meadows, the Agriculture Advisor to the EPA Administrator. She provided a summary of the Charge topics the FRRCC received from EPA Administrator Andrew Wheeler in the September 10th meeting. The Committee then received an update from FRRCC Chairman William (Tom) McDonald regarding the activities that had taken place since the first meeting in September 2020 and an overview of the preliminary workplan for the FRRCC to address the charge topics. The Committee received updates from both the Water ad hoc Workgroup Chairman, Jaime Burr and the Food Waste ad hoc Workgroup, Matt Freund, regarding the current efforts of both workgroups. There were also two EPA Office of Water presentations (one on excess nutrients and one on water reuse) and two presentations related to food waste and loss from EPA's Office of Land and Emergency Management and USDA's Office of the Chief Economist. All speakers answered questions from the Committee after each presentation. The Committee also engaged in a discussion regarding the current thinking of the Water ad hoc Workgroup to prioritize the various issues identified.

There was one request for oral public comments for this meeting and they also provided written comments, which were accepted at FRRCC@epa.gov through 11:59pm on November 13, 2020.

On November 13th, the Committee received updates from the Pesticide ad hoc Workgroup Chairman, Lauren Lurkins, regarding the current efforts of the workgroup. They also received a presentation from the nonprofit ReFED, regarding food waste and loss and two presentations related to pesticides from USDA's Office of Pest Management Policy and EPA's Office of Pesticide Programs. All speakers

answered questions from the Committee after each presentation. The Committee also engaged in a discussion regarding the current thinking of the Food Waste and Pesticides ad hoc Workgroups to prioritize the various issues identified.

The meeting was recorded in three parts. Links to the recordings are below.

- Part 1, including Water Quality and Reuse Session
- Part 2, including Food Waste and Loss Session
- Part 3, including Pesticides Session

III. Presentations

A. Opening Remarks Summary

On November 12th, the Committee was welcomed by Carrie Vicenta Meadows, the Agriculture Advisor to the EPA Administrator. Ms. Meadows provided a summary of the below two Charge topics the FRRCC received from EPA Administrator Andrew Wheeler in the September 10th meeting. She highlighted that Administrator Wheeler wants EPA to both work together with agriculture as a partner in environmental stewardship and better understand of how agriculture currently provides environmental benefits, for which they may not be receiving credit.

1. "Creating a Holistic Pesticide Program for the Future" - The questions asked included: How can EPA reduce barriers for American agriculture to continue to feed the world with less resources through innovations in crop protection? How can we better communicate with the American public and our international trading partners about EPA's holistic approach to pesticide management and improve the availability of information about our science-based process? How does encouraging and facilitating technologies and practices like new active ingredients, plant incorporated protectants, biotechnology, and integrated pest management advance this mission?

2. "Supporting Inter-agency Environmental Benchmarks with Interagency Partners" – **This charge looks specifically at the topics of water quality and quantity and food loss and waste.** The questions asked included: How can EPA facilitate the development of new technologies, practices, or market-based approaches to advance environmental goals around nutrient pollution, water reuse, and food loss and waste? How can EPA coordinate with other agencies to better measure data and information regarding proactive measures that production agriculture and rural communities take; utilize or coordinate data from state, local, or federal level partners; leverage existing EPA programs; and support agriculture's and rural America's efforts in these areas?

FRRCC Chairman William (Tom) McDonald gave an update regarding FRRCC activities since the first meeting in September 2020. Chairman McDonald stated that three ad hoc workgroups were formed to focus on the pesticides, water quality and quantity, and food loss and waste charge topics. Lauren Larkins is chairing the pesticide workgroup. Jamie Burr is chair of the water quality and quantity workgroup. Matt Freund is chairing the food loss and waste workgroup. He stated this meeting would explore the charge topics by learning what policies, projects, and processes are currently in use by EPA and other partners. The format of the meeting allowed each ad hoc workgroup chair to provide a brief status update of their work to date, followed by two presentations from experts in each charge topic area, and ending with a full committee discussion on the charge topics associated with each ad hoc workgroup. He reminded

the members that the FRRCC is comprised of 31 individuals, with unique expertise and unique experiences and represent a demographic of farms, ranches, and rural communities that are counting on their voice to be heard. Chairman McDonald outlined his preliminary workplan for the Committee to advance the group beyond clarifying questions, information needs and defining the scope of this task into substantive discussions and ultimately policy advice for the US EPA over the next 14 months. He plans to have two full committee meetings in 2021, one in the spring and one in the fall, with the possibility of an additional virtual meeting if needed. By December 15th, 2020, EPA will provide a SharePoint site or similar file sharing site. By March 1st, 2021, each ad hoc workgroup should have all their advice issues identified and prioritized, with at least one advice letter in draft form for the full committee to deliberate at the Spring 2021 meeting. By July 1st, 2021, each ad hoc workgroup should have all advice letters in draft form. By September 1st, 2021, each ad hoc workgroup should have advice letters prepared for committee deliberation and adoption at the fall full Committee meeting. In either December 2021 or January 2022, the FRRCC policy advice will be presented to the EPA administrator. He emphasized this work plan and timeline is dynamic but will help to measure the Committee's progress.

B. Water Ad Hoc Workgroup Report Out

Jamie Burr, Water Ad Hoc Workgroup Chair, provided an update to the FRRCC regarding the progress achieved to date. The Workgroup had two meetings since September 2020. The first meeting included an introduction of FRRCC workgroup members, a discussion of the water related charge topics, and developed questions the group wants to address to refine the issues associated with this charge. In the second meeting, the workgroup developed a list of five priorities to get input on from the FRRCC full committee. The five priorities the workgroup would like to concentrate on are in the order of importance.

1. Encourage EPA to develop a water quality trading framework and provide guidance to states on developing a framework. Consider individual states rights and legal implications (Clean Water Act and Safe Drinking Water Act) in a trading agreement. Include how the NPDES program could impact trades and the ratio of the trade.
2. Encourage collaboration with EPA, USDA, FDA, and other state environmental agencies on water reuse.
3. Evaluate the use of voluntary efforts to provide certainty to farmers.
4. Address impaired waters.
5. Provide input to EPA on carbon sequestration and soil health as it relates to water quality and water quantity.

The FRRCC discussed this information generally. A member shared information regarding successes and challenges of Florida's water quality trading framework, which resulted from legislation about a decade ago. The State is working within these market-based mechanisms for not only water quality trading credits but for ecosystem services. They are looking at options over and above the conservation gains available from best management practices. Downstream users can impact these programs so transboundary issues are very important. Florida is expanding beyond the traditional water quality credit to more nuanced market mechanisms that can provide benefits to water quality challenges.

C. Water Quality Trading and Other Efforts to Address Nutrient Pollution Presentation Summary

Anna Wildeman, Principal Deputy Assistant Administrator for EPA's Office of Water (OW) gave an overview of EPA's efforts to promote water quality trading to reduce excess nutrients in U.S. waters through an "all of the above approach." These efforts include enhanced federal and state coordination, stakeholder engagement and promoting market-based and other collaborative approaches to water quality improvements. She shared examples of EPA efforts to reduce excess nutrients such as Great Lakes Restoration Initiative grant funding, the Farmer to Farmer Cooperative Agreements, hosting an innovative nutrient financing webinar series and national forum, Co-Chairing the Hypoxia Task Force and general efforts to advance a market-based approaches in water quality trading specifically related to the NPDES permit program. Ms. Wildeman explained that for decades EPA has worked to reduce point source discharges of nutrients through the Clean Water Act's regulatory programs. As a result of EPA's investments and efforts the next incremental reduction of nutrients from a brick and mortar treatment facility (in most cases) is likely to be expensive. This means that the most significant and most cost-effective opportunity to reduce excess nutrients in US waters comes from non-point sources.

She stated that market-based approaches have a history of being used in the water sector to enable point sources like Publicly Owned Treatment Works to meet water quality standards more cost effectively. These approaches require strong working relationships between nonpoint and point source dischargers. EPA Office of Water's (OW) view is that market-based approaches have not reached their full potential because EPA's policies and approaches in effect for 15 years have not yielded the type of market-based participation or development that the Agency would have liked to have seen. Where trading has been attempted it has sometimes failed because: (1) there is a limited geographic area where trading can occur; (2) the cost of entering the market is high; (3) there may be a lack of regulatory drivers; (4) and/or there are rigid requirements for generating credits.

In February 2019, EPA released an updated water quality trading policy memo to promote market-based approaches, which identified six market-based principles: (1) states, tribes an stakeholders could consider implementing market-based programs on a watershed scale; (2) encouraged the use of adaptive management strategies for implementing market-based programs; (3) encourage water quality credits and offsets to be able to be banked for future use; (4) encourage simplicity and flexibility in implementing baseline concepts; (5) clarified that a single project may generate credits for multiple markets; and (6) financing opportunities exist to assist with the deployment of nonpoint land use practices. EPA received public comments on this suite of proposals and has considered those comments. Ms. Wildeman stated that EPA plans to finalize some policy changes very soon and hopes this effort will help improve the efficiency and the feasibility of trading, particularly in watersheds with EPA approved TMDLs.

OW issued technical guidance to help inform state and tribal policymakers about setting the size of the trading area and how to better look at the watershed scale concept. She stated that a watershed boundary for planning and achieving water quality improvements is more appropriate and effective than a municipal or jurisdictional boundary because it facilitates greater market opportunities, participation, and resource improvements. The guidance addresses three factors for policymakers to consider: (1) what are your water quality goals? (2) What are the local

regulatory and policy or guidance limitations? and (3) data, data modeling and data uncertainty.

OW is also looking at options of generating credits for multiple markets from a single project, otherwise known as "stacking". She stated this concept is important because practices in carbon sequestration or species habitat improvements could have water quality benefits and vice versa. The ability to generate credits for multiple markets through one or more holistic environmental improvement projects has both a greater environmental outcome and potential return on the investment for the landowner.

The Committee asked Ms. Wildeman questions regarding pilot projects for water quality trading; pilot projects for new technologies that clean brackish water/irrigation runoff for areas without access to imported water; regulatory and risk based hurdles for permitting new technologies for improving water quality; regulatory barriers for water quality trading; regionalizing or standardizing clearinghouses for states or watersheds; non-credit type of marketing projects; and the spatial scope (transboundary between states and/or when most of the watershed is agriculture). There was discussion on the importance of self-sustaining market. The 2019 memo was received with both positive support and skepticism because there are not really great examples of this working related to agriculture. However, this could also be a way to generate additional income for farmers. There was discussion on ag related BMP technologies and how to bring everyone up to a level playing field. The ability to implement BMPs can vary by region of the country. There was discussion regarding the lack of farm level data related to nonpoint source pollution. Finally, a member stated that the money a farmer is paid to do a BMP or practice needs to be more than the crop income. They believe credits need to be worth something for a program to work.

D. National Water Reuse Action Plan Presentation Summary

Sharon Nappier PhD, National Program Leader for Water Reuse in EPA's Office of Water gave a presentation on the National Water Reuse Action Plan (WRAP), which was released February 27, 2020. The plan is a collaborative and integrated watershed-based approach to improving the security, sustainability and resilience of the nation's water resources. EPA facilitated a collaborative approach to the WRAP's development, seeking ideas and input from various sources, including two public comment periods, two expert convening sessions hosted by the WateReuse Association, and regular outreach with numerous federal, state, tribal, local, and private stakeholders. The document went through two OMB reviews and a literature review. The WRAP is organized into 11 strategic themes, 37 developed action plans and over 200 implementation milestones. These actions are led by nearly 30 unique action leaders (EPA is one of those leaders) and more than 80 different action partners. At the time of this meeting, 121 implementation milestones out of 270 have been completed and more than 30 new milestones have been added since February 2020.

There are several drivers for why different regions of the United States are considering water reuse: (1) Addressing drought. Within ten years, 40 states expect to face freshwater shortages. (2) Reducing reliance on imported water. (3) Providing alternatives to storm water management. (4) Addressing groundwater overdrafts. (5) Diversifying water portfolios to enable a long-term sustainability. There are several sources of water for potential reuse: (1) municipal wastewater; (2) agricultural water; (3) industrial wastewater; (4) oil and gas produced water; and (5) storm water. EPA estimates that nearly 350 billion gallons per day are discharged with over 280 billion gallons potentially available for reuse. She explained that the WRAP aims to reduce barriers currently preventing water reuse where it makes

sense and to allow the U.S. to better capture water for their regional, state, tribal, or local community needs. Implementation of the WRAP is an iterative and collaborative process that is dependent on action leaders and partners across the full water user community and not just the federal government. Dr. Nappier also discussed the WRAP Online Platform which launched in February 2020 and provided a brief overview on the implementation status of several ag related WRAP actions that fall under the themes of policy coordination, science and specifications, water information availability, and finance support. The online platform is updated weekly with, at the time of this meeting, about 700 total updates across the 35 actions since the plan's launch.

Dr. Nappier also discussed the October 13, 2020, Executive Order titled "Modernizing America's Water Resource Management and Water Infrastructure," which formally established an interagency Water Subcabinet. This group is chaired by U.S. Department of Interior and EPA. The subcabinet includes officials from U.S. Department of Agriculture, U.S. Department of Commerce, U.S. Department of Energy, and the U.S. Department of Defense. Implementation of the WRAP is one of the Water Subcabinet's priority activities.

Dr. Nappier closed her presentation on next steps for the WRAP. The third WRAP quarterly update will be released in January 2021, covering WRAP Activities from October through December 2020. She anticipates there will be a Progress Update on the WRAP in spring 2021. The WRAP team is also seeking to engage the agricultural sector to better understand water use in agriculture and engage experts in agricultural reuse.

The Committee asked questions related to trust behind reuse; regarding funds available to help producers implement new technologies; on who gets the data and how much is needed to make a risk assessment; and regarding monitoring for pH of different water types/sources. Committee members commented that: data can help farmers better understand impacts; water reuse impacts differ by region; this as a "huge undertaking" with people in the room who would not normally talk to one another, (ag and municipalities); the importance of consistency for producers; the challenge of state water rights; and while there should be more data, some crops (almonds) can be demonized for reusing water, specifically produced water.

E. Committee Discussion on Water Charge Topic

Jamie Burr, the Water ad hoc Workgroup Chair, went through the prioritization list of activities that the Workgroup proposed:

1. Develop a water quality trading framework.
2. Encourage additional collaboration with EPA, USDA, FDA, the state environmental agencies, and the ag agencies on water reuse.
3. Use of voluntary efforts to provide certainty to farmers.
    - Need more EPA guidance to ensure consistent interpretation of regulatory items such as Waters of the United States.
    - Encouragement of water reuse on ag lands.
    - Nutrient management and conservation planning. Specifically, how can farmers obtain certainty from EPA if they are following a voluntary program such as having a nutrient management plan or conservation plan.
    - Groundwater specifically related to the County of Maui Supreme Court case.
    - Implications of water reuse and irrigation.
    - Definition of routine agriculture operations. Specifically, tile drains and how that impacts farmers and changes from surface water to groundwater.
    - Implications of underground injection program related to agriculture water use.
4. Addressing impaired waters, including streamlining the listing and delisting process; educating small communities and their community leaders on regulations; regional-based water quality and quantity plans to address specific differences; and the importance of innovation and implementation in water management and agriculture.
5. Carbon sequestration and soil health.

Mr. Burr solicited feedback from the FRRCC members on the list topics and prioritization. The Members provided examples of programs or their experiences. There was discussion on how, depending upon where you live in the country, this list could be prioritized differently. The FRRCC recommendations need to be able to be done at the agency level. Maybe EPA needs to write up the common issues and provide some ways to navigate those issues. That may help the FRRCC to address some of the questions raised in the discussion. A member felt the 5 areas the workgroup identified are appropriate, but it will be important for the workgroup to stay on point and maintain the producer perspective these issues and solutions. This is important given the diverse perspectives on these multifaceted and complex issues across states, tribes and territories. The majority of the FRRCC discussion centered around certainty and effective communication. The information below summarizes some of those points.

- Multiple members discussed the importance of assurance or certainty for farmers that implement voluntary actions. There were multiple viewpoints on the length of certainty (through environmental contracts, programs or other mechanisms) which would be needed for farmers to implement water quality improvement practices ranging from 3-10 years. The Farm Bill was given as an example of certainty because if provides security to farmers that programs are funded and consistent for 5 years.
- A member wondered if there was a way to revisit regulations every five years and if this can be worked into any recommendations the FRRCC might make.

- Many members stressed that any improvements or practices on the farm needs to be sustainable, profitable and economical for the farm.
- A lot of conservation practices require large financial investments and 3-5 years is no longer adequate. People leave the businesses and the big operations get bigger.
- The BMPs might change (and likely will over the years) but farmers need certainty that the practice will satisfy until a certain period and it is profitable for the producer. If the reason for doing the practice is for a common good, then there should be cost share with society for that activity.
- Farmers also want to make sure if they make the investment that it is not going to come back and bite them in ten years. An example was given of the government changing program requirements on farmers that wasn't discussed when they signed the contract for a ten-year project. Another example was related to drought, extreme rainstorms or other disasters that prevent the producer from getting practice done at all or exactly the way the program indicates. When this happens, the producer is out of compliance. There should be more flexibility in the programs to give a little more certainty.
- Discussion on whether FRRCC should identify the issues farmers would like to have certainty. What are the key issues? For example, in nutrient management there is no such thing as an accounting system in a biological setting. In CAFO, NPDES permits if they are managing nutrients according to the permit or NRCS code 590 standards then they know they are fine. Producers want to know that if they do something a certain way that they will be OK.
- There was a concern regarding the lack of consistency across the country at the state level on water regulations. Many states have more encompassing water definition than the federal WOTUS rule, creating an interesting challenge for EPA to recognize the cooperative federalism framework and the common goals they are trying to accomplish.
- Regulations need certainty. Gave an example of drainage ditches and stated they usually have water year-round. The previous WOTUS rule said that if you were going to apply products on, over, or near water it had to have a permit. Nobody ever defined near. Is it a quarter of an inch or a half a mile?
- A member stated that weather can be a huge factor in nutrient management plans. If it rains too much (or too little) the plan is not going to work. A producer is not changing the nutrients they manage but they can change the day-to-day management.
- In the arid west, many federal land and forest service agreements typically run ten years, but the agreements tend to change. There was concern regarding agencies making examples out of a producer which causes everybody to get a lawyer and that is expensive. Felt that agencies say they want to help but then create rules which require producers to hire attorneys to defend themselves. Recommend that FRRCC look at the length of some programs and exemptions.
- There are eight business risks in agriculture: (1) production risk. What is the variation in the dollar return due to variations in the quality of output? (2) price risk. The price of water, the price of technology, the price of legal. (3) casualty risks. The age of your infrastructure. (4) human risk. Losing the water technicians for irrigation districts or they don't have the level of knowledge they need to keep up with the innovation. (5) legal risk. (6) Political risks. The agenda and it's constantly changing. What is it going to be next? How do you protect yourself from that? (7) economic risks. (8) obsolescent risk. Get a new piece of equipment, then regulations make the equipment obsolete. For there to be certainty, these eight things must be addressed. There's a risk to everything and everybody has different tolerance for risks.
- There was a discussion on how EPA ties their regulatory programs to USDA NRCS programs, and feedback that this may be where the FRRCC can be impactful.

- A few members thought that Farmers and land managers distrust EPA, but USDA NRCS has a high reputation with producers. There was discussion regarding the value of NRCS to implement best management practices as their rules don't change a lot and farmers can work with that. The relationship between EPA and USDA FPAC was given as an example of a strong relationship between agencies.
- Another member did not agree that NRCS is the best partner to engage because NRCS practice standards can be (1) outdated making innovation hard or (2) requires producers to use engineers, when the producer could do the work themselves.
- There was agreement that getting stakeholders involved leads to success. Members stressed the importance of working with grower and/or commodity groups but highlighted the need for EPA to ensure getting advice from people who actively farm.
- Expressed frustration with engaging NGOs with early outreach only to have an NGO disrupt these efforts at the very end. Gave a water example in California. Conversely, others suggested making sure NGOs are present in the beginning to identify concerns is the most important thing to do in the multi-stakeholder approach.
- Producers want to partner with an agency that is there to help farmers succeed and not to be regulatory and punitive. Relationships with farmers and attitude of people in program helps it to be successful or not.
- EPA needs to work with other federal agencies and the FRRCC can encourage EPA to continue to have leadership in the water subcabinet and to work across sectors.

F. Food Waste Ad Hoc Workgroup Report Out

The Food Waste Ad Hoc Workgroup Chair, Matt Freund, provided an update to the FRRCC regarding their activities to date. The Workgroup has met two times since September and focused on introducing this topic and what EPA can do related to agriculture. The group started this process with questions for EPA, specifically what their role is and what is the definition of food waste. One of the first activities of workgroup was to listen to a TED Talk by a John Maddock to learn about the food waste and the multiple players in this issue. The workgroup began discussing the food recovery hierarchy to look at each level and understand where agriculture and EPA could fit. Mr. Freund went through the food recovery hierarchy related to his thoughts on agriculture:

1. Source Reduction - Make sure not regulating ag production.
2. Feeding the hungry people – Workgroup is not going to work on this unless directed.
3. Feeding animals – This comes with a lot of regulation, odor concerns from neighbors, packaging on food waste (which farmer must be deal with), and food waste brings more nutrients to the farm. This is a topic more information is needed.
4. Industrial uses - Bringing in the waste oils, renderings and other food waste to convert into energy with digesters relieves stress off the landfills but need to understand what the ramifications are to ag so don't overburden farms trying to solve a public issue.
5. Composting and making soil amendments – heavy regulations on these activities.
6. Landfills - Costs everybody when food goes to the landfills.

G. Reducing Food Loss and Waste – Interagency Efforts – Panel Presentations Summary

This was a joint panel with Lana Suarez Associate Chief, Materials Management Branch, EPA Office of Land and Emergency Management and Jean Buzby Ph.D., Office of the Chief Economist, USDA Food Loss and Waste Liaison

EPA Presentation:
Ms. Suarez gave an overview of EPA's national food waste reduction goal, the federal government's interagency efforts, terminology, EPA's program activities, and listed tools and resources available.

In 2015, EPA and USDA jointly announced the goal to reduce food loss and waste by 50% by the year 2030. EPA and USDA have been working on this effort for decades. In October 2018, EPA, USDA and FDA signed a formal agreement and launched the "Winning on Reducing Food Waste Federal Interagency Strategy". In 2019, the three agencies also developed an interagency strategy on how to improve coordination and better support communities, businesses and other organizations in reducing food loss and waste. This strategy included six priority areas: (1) enhancing interagency coordination, (2) increasing consumer education and outreach efforts, (3) improving coordination and guidance on food loss and waste measurement, (4) clarifying information on food safety, food date labels and food donation, (5) collaborate with private industry to reduce food loss and waste across the supply chain, and (6) encourage food waste reduction by federal agencies in their respective facilities. EPA and USDA developed U.S. Food Loss and Waste Champions which are businesses who made a public commitment to reduce food loss and waste in their own operations by 50%. EPA has matched Champions to others within the same industry for a peer network and peer partnering opportunities. EPA also has a Food Recovery Challenge, which is a voluntary incentive program in which organizations and businesses set data driven goals, implement targeted strategies to reduce wasted food in their operations and report results to compete for annual recognition from EPA. There are over a thousand participants and endorsers in the food recovery challenge, from local governments, educational institutions, food rescue organization, restaurant, sports and entertainment venues and hospitality businesses. These entities enter data annually and recognition is based upon the amount of improvement over the previous years. The success stories in association with the award are posted on EPA's website every year. Finally, in 2019, EPA signed an MOU with the Food Waste Reduction Alliance and with ReFED.

Ms. Suarez explained one of the reasons why EPA is involved in this effort is data. For more than 30 years, EPA has collected and reported the generation and management of municipal waste in the United States. The presentation included the 2018 estimates of food waste generation. EPA estimates that 35.3 million tons of wasted food went to landfills in 2018, representing 24.1% of all MSW landfill. Ms. Suarez stated that EPA expanded its estimation methodology to more accurately estimate how excess food and food waste are managed in the United States and to align with the food loss and waste accounting and reporting standard, or the FLW standard. The 2018 facts and figures report is the first year in which EPA utilized the new enhanced methodology.

The definition of food waste is what is thrown in the dumpster or trash can and is not edible. EPA uses the broader term of "wasted food" when talking about food that was not used for its

intended purpose and is managed in a variety of ways, because it could be considered offensive to donate "food waste" to feed people. Instead "wasted food" or "excess food" is used. While the "wasted food" term incorporates many of these terms together, "food waste" is measured at the point it's ready to be managed in one of the various pathways identified in the food recovery hierarchy. She explained the food recovery hierarchy levels (or recommendations) and stated there is recognition that many factors go into making these decisions. For example, there may not be a composting facility nearby, or a business may not have a relationship with a food bank established.

EPA Regional Office have staff who work on sustainable food efforts and support various local projects, convene stakeholders, host workshops on the excess food opportunities map, build networks, and offer the technical expertise on EPA's tools and resources. Ms. Suarez outlined a few of the several tools and resources available on EPA's website at (www.epa.gov/sustainable-management-food/tools-preventing-and-diverting-wasted-food):

- Further with Food: Center for Food Loss and Waste Solutions' website (https://furtherwithfood.org/) is a crowdsourcing site hosted by ReFED, that provides information and solutions dedicated to reducing food loss and waste in the United States.
- "Save the Food" is a public service campaign targeted towards households. https://savethefood.com/
- Food Matters Action Kit website has youth activities. http://www.cec.org/flwy/
- EPA Excess Food Opportunities Map supports diversion of food from landfills by seeing potential generators (>1 million) and recipients (about 5,000) across the U.S. identified at the county level. www.epa.gov/sustainable-management-food/excess-food-opportunities-map.

USDA Presentation:

Dr. Buzby gave a presentation regarding the definition of food waste and loss, USDA's programs and research related to food waste reduction, the Bill Emerson Good Samaritan Food Donation Act and the USDA Food Keeper App.

The UN's Food Agriculture Organization uses the term "food loss" from the farm up to the retail gate and "food waste" is retail and consumer level. The FAO and the United Nations Environmental Program developed a food loss index with the goal of better measuring food loss and food waste across the different countries. USDA estimates 31% of the available food supply, which translates into 133 billion pounds, $161 billion using retail prices, and 141 trillion calories is wasted. She shared with the Committee how USDA calculates or estimates food loss estimates. USDA Economic Research Service estimates food loss by using supply and use balance sheets for 215 different commodities like fresh apples, eggs, beef, canned tomatoes, etc. The current estimates use 2010 data, but USDA has three initiatives under way to get retail level and consumer level data. Dr. Buzby stated that each action to reduce food loss comes at a cost and it needs to be considered alongside goals like improving farm income for industry adoption of food loss initiatives. There are many economic reasons why food may be left unharvested in the field or not sold by a distributor such as price volatility, labor cost, lack of refrigeration, consumer preferences, etc.

USDA's ARS produces innovations and new technologies that utilize excess food or the byproducts from food processing, to add value and create new products. USDA NIFA (National Institute of Food and Agriculture) partners with land grants, universities, government, private and nonprofit organizations

through different kinds of funding mechanisms to conduct research. Dr. Buzby briefly talked about liability protection for donating food under this Bill Emerson Good Samaritan Food Donation Act. This Act removes liability for persons and gleaners who make good faith donations to nonprofits that feed the hungry. The term "person" includes farmers and ranchers and she included resources for more information in her presentation.

Dr. Buzby also highlighted the free Food Keeper app which provides guidance and safe handling preparation and storage of more than 650 food items. USDA's goal is to stimulate innovation to increase U.S. agricultural production by 40% while at the same time cutting the environmental footprint of U.S. agriculture in half by 2050. USDA agencies are currently developing implementation strategies for internal recommendations on improving current data, estimation methods and exploring alternative food loss and waste metrics.

The information below is a summary of the discussion between Committee members with each other and the panel speakers:

- The permitting cost to take food waste for farm digesters is a deterrent. Example given in Connecticut of $25K fee for a permit.
- Bringing food waste to the farm also means bringing more nutrients to the farm that must be managed. Important farmers don't over burden themselves with a nutrient pollution problem.
- Digesters need economies of scale. Need large enough volume to make it worthwhile. The Committee needs to understand the value of that food waste. Possibly a good recommendation for EPA is to understand what the value (in dollars) of food waste as it moves down the pyramid to the farmer for taking the product and the municipality not receiving the waste. This will help FRRCC to understand the best place and best purpose of the wasted food.
- There are many different factors related to the value of food waste including available infrastructure and transportation so not possible to develop an overall national value on food loss. EPA's map, specifically related to capacity, location of facilities, and other different items related to co-digestion and anerobic digestion has good data. ReFED has a road map that lists different policy approaches and valuations for different strategies.
- The feed stock composition is what matters the most as the ultimate value. The closer to the consumer, the more embedded value which is why prevention is best option.
- Regarding trend analysis, there was concern about plastics, which are used for strawberries, our strawberry plantings, and hoop houses. They wanted to know if EPA was seeing a decrease in that trend analysis? Plastics continue to be a hot topic.
- Many growers in California tried the ugly fruit boxes but consumers didn't respond favorably. Want more information from EPA and USDA on how agencies are educating the consumer sector to buy products that don't meet the grade for regular retail sale.
- The tonnage of food waste includes the plastics (i.e. packing) and these figures are measured by modeling and estimation. When a farmer takes in a load of product for the digester (weighed by the ton) it is dumped on the farm with all the packaging.
- Regarding why the ugly fruit marketing campaign didn't take off, there isn't the data to see what's working. This gets into behavioral economics as consumer behavior is hard to change.
- The "winning at reducing food waste national strategy" has six priorities. The FRRCC could review and think about which strategies could work for ag producers and how that interrelates with EPA. There are areas where EPA could have a bigger role such as consumer education, industry outreach and measurement efforts. A FRRCC goal could be to take on the

largest amount of waste going to landfills because this may make the most difference. Anything that goes in a landfill, the embedded cost value is totally wasted unless you tap the landfill for methane.

- The FRRCC could think about school cafeterias as kids waste a lot of food. There are regulations or infrastructure that prevent some of the wasted food from going to feed hungry people. There is no storage capacity to put wasted food into single serve containers to send it home with kids. The FRRCC should look at state and local regulations.
- When school cafeterias serve food that is identified from local sources the food waste went down. For some reason the kids really identified with the local producers and they liked it better.
- In EPA's presentation, there was a slide about food waste management and measurements in which the data from the 1960s and 1970s were flat, the numbers increased in the 1980s and has not changed since. The reason for this was the data got better. In 2017, EPA enhanced their methodology to measure more. Important to remember when looking at historical trends, that EPA hasn't used the same studies or updated past studies.
- Regarding the trends EPA sees regarding packaging and food waste, EPA looks at plastics and different types of packaging from a sustainable materials management and life cycle perspective. Packaging serves a purpose to preserve food, serve food, and for hygiene. Consideration given to spending time talking about the terminology on products. For example, biodegradable isn't necessarily compostable but that is what it means.
- There must be a balance between food safety and unique products that disintegrate quickly. The packaging must be functional and protect the product. Exploring different sources for packaging and protecting food products is a hot topic with different innovations being developed to better serve food.
- Part of the problem on why the food waste goes to the landfills vs. digesters is that farms cannot deal with the packaging. If it were in biodegradable packaging or an organic material that is digestible, then more food waste would go to digester to make energy vs landfills.
- Regarding food recalls from contamination such as E. Coli. The tonnage figures do not include this. USDA estimates food loss at the retail and consumer levels. The USDA ERS does study food recalls and has estimates.
- There are studies in Brazil and in Europe that looked at the economics of not taking things to the landfill. The Brazilian study found that for every $4 that they put in water treatment and waste management they saved $12 in health costs. Is there any (economic) data about other ways that money can be saved, so that saving can be applied towards helping resolve this issue? Are there any criteria that reduces contamination and can be used in terms of the benefits of the food waste program? USDA has not come across data like this but does know that the estimated loss for a family of four is about $1500. EPA tries to equate this for their voluntary food recovery challenge, but the partners are using strategies to divert food wastes. There may be different ways to manage the waste at that point of separation, composting or donation. There are tax benefits for donation, but usually the dollar amount is the tipping fee avoidance.
- The costs mentioned by the agencies are cheaper than the costs from contamination in the landfills. The tipping fees are locally specific but there are some national averages. Some states fees are very cheap making it more expensive for an entity to compost. In other states or cities, with landfill bans and/or more densely populated areas, the tipping fees may be very expensive. In these areas alternative ways to manage waste would save money.
- In Massachusetts there is an organic waste restriction so businesses, retailers and institutions

can't send more than 1 ton of food waste to the landfill per week. They did a cost benefit analysis and found there were tradeoffs in who is paying for the cost and who is getting the benefit. The state made $175 million in new revenue, increased food donation by 22% and created 500 new jobs from implementing the policy because food not going to landfills had to be used in other ways (e.g. more composting facilities and more jobs at food banks and food rescues.) New England tipping fees are high, and compost and digesters are less. This is not the case in other parts of the country.

- Harvard published a toolkit on organic waste restrictions in states and localities a year ago.
- There are good tax benefits for food donation, but these don't apply to compost or digesting facilities. Unsure if farmers benefit from these tax incentives because have heard that farmers don't make a lot of money so tax deductions are hard for them to claim. Perhaps a credit for farmers would be better. Tax incentives for farmers may not be enough to cover their harvesting and getting the crop to food banks, which is why it is plowed under.
- What is the framework for how EPA works with states around organic waste bans or other state regulations? Does EPA offer technical assistance to states to think about regulations or incentives? Does EPA align incentives to make it easier to divert food from landfill?
- What pilot projects, NIFIA grants or ARS grants look at diverting food wastes from a landfill into a livestock feed? Major Metropolitan areas could create enough supply. Is there anyone looking at the process to stabilize that waste, to put it on a train to the central US for livestock feed or something similar?

H. Food Waste Solutions, Economics, and Agriculture Presentation Summary

Dana Gunders, the Executive Director of ReFED, a nonprofit focused on advancing data driven solutions to U.S. food waste, gave a presentation regarding their organization's work on food loss and waste, the definitions of food waste (US and international) and their policy recommendations regarding reducing food waste. The US has a different definition of food waste than the international community. The main differences are that the international interpretation of the food waste term does not include composting. Also, any food waste that goes to digesters, is applied on land, or is grown but not harvested does not count towards their 50% reduction goals. Ms. Gunders stated that actual measurement of food waste is very difficult because no one is weighing garbage cans, dumpsters, etc. and tracking that data. While ReFED would like to see automated measurements such as scales on waste trucks, that is not happening. For models, they use any data sets available and academic studies to develop estimates.

In 2016, ReFED produced a road map that reviewed 27 different solutions to food loss and waste and evaluated these solutions by how much food they saved and how much they cost or saved financially. To do this evaluation ReFED first established a baseline. They found about 40% of food loss occurs in households and another 40% happening in consumer facing businesses, such as grocery stores, restaurants and food service (hospitals, corporate cafeterias, universities, etc.) There are situations at the specialty crops where due to volatile prices, fields are not harvested because of low market prices. The value of food getting thrown out increases later in the supply chain. However, it is estimated that $15 billion is lost at the farm level. Ms. Gunders stated the current website can sort the 27 policy solutions by topics such as, net financial solutions, consumer education campaigns, standardized date labeling, packaging adjustments, or by policy. ReFED is in the process of conducting a more extensive analysis on quantifying the problem and the website will be upgraded to more easily search for the solutions most relevant by situation. This updated website will also have financial analysis, show the investment

needed and the potential value of the return, a directory of 700 organizations providing services, and an impact calculator to see the impact of both food going to land fill vs other destinations. ReFED's work is related to specialty crops in the fruit and vegetable industry as there has been very little analysis of losses at the production level for animal ag and for commodity crops.

Ms. Gunder gave the FRRCC a preview of ReFED's Roadmap to 2030, which looks at 80 solutions, modeled 40 of them, and identified seven themes. She highlighted some of the solutions that may be of interest to the agriculture:

1. Right size production to harvest as much as possible.
2. Reviewed different technologies that may lead to increased freshness and reduce losses later in the supply chain, ensuring businesses are not over purchasing products.
3. Secondary resale channels, which increased in the pandemic.
4. Maximizing product utilization or using as much of the product as possible.
5. Upcycling which is taking byproducts from manufacturing and converting them into food products. (For example, converting spent grains at a brewery into flour.)
6. Behavior change gets consumers to use strategies to reduce the waste in their home by planning meals, using shopping lists, not buying too much, using meal kits, etc.
7. Strengthening food rescue.
8. Recycle anything remaining, including strategies such as animal feed, composting, anaerobic digestion, industrial uses, etc.

Ms. Gunders stated that they don't expect an individual grower to make a poor business decision if there is no financial benefit for them to harvest. If it is in the public's interest to get that food out of the field but economics don't work for the farmer, then the farmer should be paid to harvest it. This may require public funding. She outlined several ideas:

1. Certain produce categories specifications could be expanded to allow for more food to be harvested by preventing buyers rejecting entire loads by accepting a percentage of the load.
2. Gleaning, which is when volunteers harvest fields.
3. Whole Field Purchasing, where a company agrees to buy the entire field, all produce grades. This allows for better sharing of risk across grower and buyer communities, as opposed to the grower taking all the risk. Farmers grow more to ensure their contract is met but this can lead to 10 to 20% over production, bumper supplies, tanking prices and fields not being harvested.
4. Increased Communication. ReFed hears that growers must guess because they do not get a lot of feedback on planting schedules or what to produce for buyers in the coming year.

Ms. Gunders briefly highlighted landfill bans. There are seven states (California) and several cities (San Francisco, Denver, etc.) with restrictions on food going into landfills. She also discussed tax donation; some at the federal level but more often with states passing tax incentives. Most farm level incentives are tax credits vs. deductions because federal policy offers an enhanced tax deduction for food being donated. However, growers are often not able to take advantage of tax deduction because they already claim loss, a tax credit could be more valuable and more effective at the farm level.

The information below is a summary of some of the questions and discussion the FRRCC had with each other and Ms. Gunders:

- There is a correlation between cost of food and waste. American consumers waste about 10 times more than consumers in southeast Asia. Food is a smaller portion of American's budgets vs

anywhere else in the world. Europeans waste less per capita, and that may be a cost issue, or it could be a customary issue with portion sizes, sizes of refrigerators, and how they grocery shop.

- On slide 21 (surplus and climate mitigation), does the net financial benefit consider health costs to society for food or nutrition insecurity? The net financial benefit is the cost and savings, regardless of who is paying and who is saving combined. They did not factor in externalities.
- In specialty crops there is a major issue with the grading and contracts. Farmers assume most of the risk. There was an effort in the 1980s to try and stabilize the market price. Referred the speaker to the American Journal of Agricultural Economics, which has done work on this.
- Producers are shamed for taking crop insurance payments or subsidies of any kind and this needs to be overcome for funding of farmers on to occur.
- There was concern about the numbers used in the presentation which drives the policy. They heard about reducing the ag footprint and they hope this not the number of farms producing food.
- There was concern that the California state tax incentives is not a feasible solution with landfills and a question of where money is coming from.
- Regarding paying for food to come off the field, a dedicated fund to cover the pick and pack out (harvest) and transport costs, that ordinarily would not make harvest financially possible and get food into food bank system
- Maybe FRRCC could consider more on gleaning. Members learned about the Good Samaritan Act, and concerns farmers don't want people to glean due to insurance, liability and risk issues. Multiple members expressed concerns regarding farmer liability.
- Every state has versions of the Emerson Act and those laws protect donors from liability if somebody were to get sick from eating the food and explicitly protect if someone gets injured when gleaning because they're doing something for a social benefit. While this law exists but there is not a lot of guidance or information tailored to different groups.
- Question about potential issue with one farm gleaning (other farms having the same type of crop in the same area) and what happens to their competitors. Gave apple cider example. Gleaners have typically come in once everyone else has removed what they want.
- Issues in Michigan with migrant labor not able to pick and the waste that can happen because the labor force is not there. It could be an anomaly because they couldn't get across the border to help. Perhaps dealing with these issues will help reduce food waste.
- Another issue in Michigan is around composting and if it is a waste and if producing it makes you a waste generator. There's special permitting that must happen if you compost. It is so complicated.
- Labor is moving towards third party contracting system. It used to not be as much, and it has caused even more pressure around how farmers use their labor (when they have them) in a way that does not incentivize spending time on anything but the highest-grade product.
- Important to ensure that policies on reducing waste doesn’t cause angst in another goal area.
- The state policy in California that requires edible food to be recovered does not apply to farms because farmers do not send a lot to landfills. Regarding state tax, there is a policy to incentivize farm donations, but it doesn't really touch logistics.
- A huge opportunity area that has been highlighted through the pandemics is that transportation (and cold storage) can be barriers to food being donated. Logistics companies donating transportation of a product is not covered for liability and doesn't get a tax benefit. Other organizations do.

I. Committee Discussion on Food Waste Charge Topic

The FRRCC discussed the charge and the main themes of the discussion were farmer liability, tax deductions and incentives, questions that require further research, anaerobic digestion, and other barriers for ag to implement some of the recommendations. The following is a summary of some of the discussion:

- There was discussion regarding the difficulty of this charge as there is a lot of impact outside agriculture. A recommendation was made to focus on production agriculture issues with this topic.
- Several members gave examples of issues with: gleaning (i.e. people stealing potatoes by picking in fields that were not authorized by the farmer); odors from composting (i.e. composter taking eggshells); permitting (i.e. either very expensive or difficult to get permit to access food waste for anaerobic digestion); and COVID-19 related issues (i.e. milk dumping for 2 months until herd could adjust to produce less milk).
- A member questioned the ability of a farmer to "target markets" to grow only what they can sell as a food waste strategy given that the farmer doesn't know what the growing season is going to be (i.e. 400 potatoes/acre one year and 150 the next without changing management practices.)
- There was discussion regarding the definitions of food waste and loss between agencies. Food loss seems to occur up to the farm gate and food waste is what occurs after it leaves the farm. This is one of the issues the FRRCC could make some recommendations EPA. The presentations said that fruit peels and other inedible parts of food are waste, but it also makes good animal feed. A challenge is access to this waste depends on the location of the ag operation.
- While state organic waste bans generally don't apply to farms, the FRRCC could review these laws and the consequent development of new infrastructure in states to see if farmers can benefit. If the issues like nutrient management and infrastructure can be overcome, there might be opportunities for farms to financially benefit from taking food waste.
- Data gaps make it difficult to establish that link between farms and landfills. The FRRCC could investigate this or recommended EPA do studies or information collection. This could help ag understand their contribution and potential opportunities for the farmers. FRRCC could also advice on areas where agriculture doesn't feel comfortable with EPA gathering the information.
- There were lessons learned from COVID and processors having to pivot their packaging from institutional to retail. Many of the problems were due to "just in time" inventory and the efficiency of the system does not bring product to the shelves until it is wanted. How does what the industry learned from the pandemic work into the food waste equation?
- Regarding date labels a member offered to share their knowledge on the current federal law and where states are headed for the workgroup.
- Regarding liability, Congress wrote a statute offering protection, but did not assign it to an agency to review and provide guidance. To understand the liability protection an individual must read the Congressional language which most people won't do. This law is intended to be protective and farmers and gleaners are mentioned specifically.
- FRRCC could make recommendations on liability protection. If Congress did not assign it to anyone, maybe EPA can pick it up and work on it. Information can be developed for farmers.
- Regarding incentives to farmers, if EPA can do something then the FRRCC can give advice otherwise pass it on to other agencies.
- Wanted to understand why farmers don't benefit from tax credits. Felt that everyone could use a tax credit at times, and it is an incentive that the government doesn't have to write a check.

- The federal deduction is complicated and not as straight forward as the way states have structured their credits. The federal deduction was written more for retailers and food manufacturers vs. farmers. Need an alternative that brings dollars to farmers for doing something in the public good.
- Really want to encourage tax credits to solve the mix of food and packaging that prevent food waste from going to composters and digesters vs. landfills.
- Tax credits/incentives - maybe there is something EPA could help with or have some impact on.
- There may be synergies between this and the pesticide workgroups. The Food Recovery Hierarchy listed source reduction as a strategy. EPA continuing to bring more pesticide products to the market helps more food grown make it to the edible stage (i.e. pest blemish reduction) and market.
- Regarding the barriers preventing food from being composted or sent to digesters the FRRCC could ask EPA to investigate these issues to reduce the barriers (that they have influence on) which prevent producers from doing these activities.
- EPA is doing a lot of work on raising awareness and maybe the FRRCC can help bring awareness for farmers on these topics.
- Regarding the amount of waste that is generated from schools. Schools should teach kids about food waste and what they can do to reduce food waste going to the landfills.
- Several members discussed some of the barriers to food waste going to anaerobic digesters on farms:
  - The value of the gas from a digester is less when it includes food waste vs. straight manure. There is not as much of an advantage to take the food waste in digesters as there was 2 years ago.
  - The plastics may be the reason a lot food waste goes into the landfill due to the de-packaging problem. Specific equipment is required to compost or digest it, so “cleaning up” that food waste is a tremendous labor problem.
  - Dairy farmers are interested in methane digesters but there is a major disconnect between the press releases on grants and technology awards and what translates at the state, which falls short of something that people can implement. Farmers go to state agencies for help but tend to get lost in the maze of permitting resulting in technology not making it to the farm. Need to streamline not just the discussion of we should be doing X to minimize waste, but how to help to put the technology on the farm. Need a little bit of creative thought about permitting.
  - There is a lot of technology in Europe with smaller, efficient digesters. The price of energy is higher, and they grow crops for digestion for energy. Their green energy has a little more value than in the United States. Part of the problem is that bigger digesters come with bigger problems, especially in smaller states like Connecticut or all New England.
  - People are not interested in the size of agriculture it takes to feed digester systems. Animal manure acts like a buffer in the digester and can help convert food waste to energy.
- There are issues to be resolved through pilot projects. (1) how do you remove packaging from the food waste coming on to your farm to mix with those manures? (2) how can farmers get access to the technologies that European farmers use on smaller farms? There are a lot of questions and EPA could be a catalyst to answering them.

J. Pesticides Ad Hoc Workgroup Report Out

Lauren Lurkins, Chair of the Pesticide Ad Hoc Workgroup, gave an update on progress since the September meeting. The Workgroup met once to learn about each other’s experiences in pesticides law, regulations, on the farm use, and discussed the Charge. The workgroup sought to identify both speakers and additional clarification that would help the FRRCC dissect the charge of creating a holistic pesticides program of the future. The workgroup views crop protection tools as vital to agriculture's

ability to provide the fuel, fiber and food for the U.S. and the world. There are a lot of advancements and innovations in crop protection technology that will allow farmers across the country to gain efficiency and produce agricultural products with less resources. The Workgroup is interested in the role that EPA plays in registering products and active ingredients, establishing tolerances for the pesticides residues in food and regulating pesticides disposal. The workgroup is trying to break up this very large charge into a couple of areas: (1) how EPA can reduce barriers to bring crop protection tools to market while at the same time balancing and protecting the environment, human health, and safeguarding pollinators and endangered species. The speakers today will help explain what is currently being done so the FRRCC can provide a set of robust recommendations on what EPA can do could do better. (2) How can EPA improve the consumer confidence and build trust with the American public related to pesticides. From the first workgroup discussion, there was a question of how the committee/EPA knows they aren't confident. The FRRCC still needs to understand how EPA communicates to the public, so the committee can figure out whether they are looking at success or not. (3) How can EPA build trust with international trading partners about pesticides. Much of the workgroup discussion to date has been about the first two discussion questions. The Workgroup raised the following questions, which picked up from where the September FRRCC conversation left off.

- Should EPA get into public relations regarding pesticides? The rules exist for EPA to walk the line between being the regulatory agency on very complicated technologies and processes and making sure that the public understands the process and these regulated products.
- Does EPA have the resources and personnel to do the job of communicating to consumers and the public correctly?
- Regarding building trust with international partners, how does that happen currently? How would it be envisioned with how data is collected (particularly regarding the MRLs)? Congress gave USDA resources to work with FDA and EPA around promotion of biotechnology, so what happened to those resources, how were they spent, what was the result, and what can the FRRCC learn from this effort?
- What is the farmer's role as an end user in EPA's process? There is not an official role for farmers and end users, particularly on the products where there can be a variety of viewpoints. Is the farming community aware of the current process?

The Workgroup wanted to learn directly from the agencies on how EPA operates today before offering constructive thoughts on what EPA can do better.

K. USDA, EPA and FIFRA - Working Together on Pesticides Presentation Summary

Dr. Sheryl Kunickis, Director of the USDA Office of Pest Management Policy, emphasized that USDA has a good relationship with EPA related to pesticides. They work with EPA and USDA's Foreign Ag Service on MRLs by data collection of random samples of different crops, fruits and vegetables to determine pesticide residuals. She stated that 99% of what is tested is below tolerance, so farmers are doing a fantastic job. USDA reviews EPA registration decisions and provides feedback on how ag uses pest control products or certain chemicals in ag and what would happen if they were taken off the market. EPA communicating with the USDA Secretary is required under FIFRA and this responsibility is delegated to her office. She stated that USDA is required to look at the economic impact to agriculture of EPA's decisions. She explained USDA's role in the EPA rulemaking process. They have received 20-40 risk assessments from EPA every quarter to review. Pesticides must be reregistered every 15 years or sooner if there is a concern. She gave a recent example of good communication that EPA performed on Enlist Duo, wherein EPA presented how they did the health risk assessment, the ecological risk assessment, worker exposures, conservatism for pregnant woman and children, and how they did the

ESA assessment. She believes if the public listened to that presentation they would have been impressed with EPA's science, the conservatism used for safety and how to follow the label to apply these products safely. Opportunities for EPA improvement in her view: need better data for models so EPA can understand how medium sized operations are impacted, specifically when they need to apply something, why they need to apply something, and the timing of the pest and the crop. EPA does send questions to USDA for USDA to reach out to the ag community. Most of this outreach occurred through the Extension program. She gave many specific examples of the collaboration between USDA and EPA (i.e. intervals for table grapes, pineapples, water crest). She also talked about their work with EPA related to the Endangered Species Act (ESA). She said EPA does not have enough staff to do this work and stated that will take 200 years for EPA to do the workload they currently have. This make it a challenge to get new tools or technologies registered. In the last Farm Bill Congress required EPA, Dept of Commerce, Dept of Interior, USDA, and White House Council on Environmental Quality to address the issues that the agencies were having during consultation. One insecticide is not necessarily an alternative for another insecticide. There is no one size fits all approach. Timing of application is important. USDA works with EPA on pollinator protection and has hosted workshops, symposiums, reports and other activities EPA and USDA also work to ensure that research on pollinators is not duplicated between agencies. There was a question regarding how to communicate to the public that the products are safe, the food is safe, as ag community has confidence in EPA's science. Dr. Kunickis said that it seems most people get their information from social media and when anyone tries to relay information there can be intensive backlash. She said people trust farmers.

L. Office of Pesticide Programs Registration Overview

Ed Messina, Esq., Acting Office Director for the EPA Office of Pesticide Programs (OPP) and Michael Goodis, OPP Acting Deputy Director for Programs, gave a presentation with background on OPP structure and responsibilities, the various legislations under which OPP operates (ex. FIFRA, FFDCA, FQPA, PRIA), the pesticide registration and reregistration review process, risk assessments, characterizations and management, public involvement, and collaboration with domestic and international partners. The presentation also included slides with updates on a few EPA issues (i.e. the Endangered Species Act, pollinator health, plant incorporated protectants, and animal testing) but due to time constraints the speakers did not go through all the slides with the FRRCC.

Mr. Messina went through some initial statistics for the FRRCC related to pesticide registrants the scope of pesticide registrations, registrants and users in the United States:

- Production and Formulation: 18 major producers, 100 other producers, 2,300 formulators, and 20,000 distributors.
- Agriculture Use: 2.2 million farms and 1 million certified applicators.
- Residential Use: 105 million households and 33,000 pest control companies
- U.S. pesticide Registrations: Over 1,200 active ingredients and 16,800 pesticide products; Over 16,300 tolerances (max allowable pesticide residue on food); EPA processes greater than 10,000 transactions/year; and EPA receives and evaluates scientific information for over 2,000 applications/year.

Mr. Messina shared that EPA has highly educated and technically trained OPP staff who have backgrounds in biology, chemistry, toxicology, genetics, weed science, wildlife biology, entomology, plant pathology, statistician, etc. OPP has world renowned experts and other countries come to EPA to learn more about how our programs operate. There are seven divisions and about 600 employees in

OPP. Most are located in Washington, D.C., but there are pesticide liaisons in the 10 regional offices. EPA also does farm tours to understand the pressures that farmers are under to make sure they have access to multiple tools to address the pest pressures. He briefly described the responsibilities of the seven divisions within OPP and how they work together. OPP is responsible for: (1) protecting human health and the environment; (2) ensuring any pesticide residue on food and feed are safe; (3) ensuring pesticide users have information on proper use; (4) ensuring decisions reflect best science and policy judgments based upon evolving science and other challenging science and policy issues; (5) meet market needs by ensuring industry has timely decisions and farmers and other consumers get products they need; and (6) meet milestones and statutory mandated deadlines for regulatory actions. The standard EPA is trying to achieve is all the science is measured and shows the product will not cause an unreasonable risk to humans or the environment. OPP considers the economic, social and environmental costs and benefits of the pesticide. OPP implements several statutes related to pesticides:

- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) - Governs the licensing, sale, distribution of pesticides and ensures safety when used in accordance with the label.
- Federal Food, Drug and Cosmetic Act (FFDCA) - Established tolerances and maximum residue Levels (MRLs) for residues in food.
- Food Quality and Protection Act (FQPA) - Primarily amended FFDCA to establish a new standard of no harm and stricter standards for tolerance setting including for protected populations for children. EPA applies a 10X safety factor.
- Pesticide Registration Improvement Act (PRIA 1, 2, 3 &4) - Deals with the fees for registrations of products paid by registrants, timelines and requirements for additional data.
- Endangered Species Act (ESA) – Protects endangered wildlife and plants

The presentation gave an overview of the pesticide registration and registration review process. EPA grants license (or registration) to sell or distribute pesticides in the US. There are several kinds of registrations: new pesticides or new uses (section 3); emergency exemptions (Section 18); state special local need registrations (Section 24(c)); and experimental use permits (Section 5). For the registration process the applicant develops a pesticide, generates data and applies to EPA. EPA reviews submitted data to assess risk and makes decisions based upon all available information (i.e. typically over 100 studies for a new active agreement application.) Mr. Goodis explained the different types of data required for registration and reregistration review and the conditions EPA may impose for the registration. Explained that new active ingredients, are high priority for the program. These products are viewed as very critical for agriculture and public health as new products generally are more targeted and lower risk compounds compared to those on the market.

FIFRA requires that EPA review each registered pesticide every 15 years to ensure each pesticide is registration is based upon the current scientific and other knowledge on the pesticide related to human health and the environment. New information could arise that may change EPA's understanding of the safety and use of that chemical. EPA categories active ingredients and closely related compounds which can rely on the same data into a single "case". EPA then creates a preliminary workplan based upon the current state of the science, what additional data is needed, and the timeline for completing the case. Mr. Goodis explained that 726 "cases" which encompass over 1,100 pesticide active ingredients must be complete by Oct. 1, 2022. EPA began this process in October 2007 and has completed 646 draft risk assessments, 551 proposed interim decisions; and 481 final or interim decisions.

He also explained the several public comment opportunities that are available as the registration moves through OPP: (1) Open Docket/Initial Comment Periods (workplan development); (2) Preliminary Risk Assessment and Proposed Decision; and (3) Final Risk Assessment and Final Decision. EPA also collaborates with domestics and international partners. While this is not required, EPA offers public comment opportunities for new registrations to ensure transparency and receive input on how chemicals will be used. Mr. Goodis said it can take almost 4 years for EPA to compete a draft risk assessment and issue it for public comment. Based on the information received, EPA may change how the risk assessment is conducted and use the information to make a proposed regulatory decision or a proposed interim decision which is released to the public for comment. Based on that information, EPA will either make some changes or not, and finalize a decision. It takes six years to completes a "case". EPA also interacts with a wide variety of organizations at many different levels. For example:

- FIFRA Scientific Advisory Panel - This is an expert panel pulled in for complex science issues when EPA needs external peer input to help the agency navigate the issues.
- Pesticide Program Dialogue Committee - A diverse group of stakeholders from industry, academia, environmental groups, governmental organizations, etc. to help work through issues.
- States - Co-regulatory partners in pesticide decisions. EPA often consults with the state lead to ensure decisions are implemented and enforceable.
- Tribal Pesticide Council – To make sure EPA's work is not negatively affecting tribal lands.
- International – EPA spends time on this to make sure there is harmonization of MRLS or tolerances to minimize trade barriers.

The "Label is the Law" principle means it is a violation of federal law to use a pesticide not in accordance with the label. The primary enforcement is through the State Lead Agencies. EPA determines the amount of pesticide residue allowed on food by establishing enforceable tolerances. The determination of the appropriate level of residues is based on the intended use of that chemical, the residue data and other information received in evaluating the chemical. FDA (domestic food and imported food), USDA (meat and milk products) and States work together to monitor food residues and enforce tolerance limits.

FIFRA it is a risk-benefit standard which considers human and ecological risk and requires (for non-dietary risks) the consideration of the benefits from the use of pesticide. When there are no alternatives to a product to address severe pest pressures, in some instances the benefit can outweigh the risks. In these cases, EPA enlists appropriate mitigation to make the product available. This is a different approach from the European Union standards which uses precautionary principle, meaning if they identify any hazard, then that product will not be registered. Data associated with a pesticide product goes through multiple reviews and is discussed in internal EPA committees to get feedback from other experts to ensure nothing is overlooked. This information is then used to generate risk information and assessments. EPA may add additional safety factors to accommodate for uncertainties. Refining risk assessment makes them more representative of how that chemical is performing and what kind of effects have been seen. The presentation explained the following EPA terms: human health risk assessment; environmental fate and ecological risk assessment; risk assessment; risk characterization, benefits, benefit assessment, alternatives assessments, and impact assessments. EPA looks at all kinds of different scenarios in the information received, including the benefits and impacts. All this information feeds into a risk management decision. Registration review is where that information comes together to make a regulatory decision on whether or not the product can be registered and if additional restrictive measures need to be added or (in some cases) reduced.

The FRRCC asked questions and discussed the presentation with each other and the speaker.

- EPA confirms the registrant submitted data is accurate because the registrants are not the only ones providing data. EPA gets data from academics and takes all the science into account. Registrants are responsible for making sure there are adequate procedures in place. There is a famous criminal case EPA brought where there was data manipulation. EPA has checks and balances in place to make sure the data is appropriate. EPA receives the raw data and goes through all of it making it very hard to fake something because EPA catches any attempts.
- Regarding if it is more difficult to register a product than 20 years ago, EPA tiers studies so a screening study is typically the first step. If there is a robust data set, then may not need more data. If more info is needed, then EPA has a second tier of studies.
- Have heard from industry that for R&D on a food crop (including the years of development and not just data) that registering a product can cost $200 to $300 million.
- Where can FRRCC provide recommendations on how EPA can streamline, improve, continue to protect human health and wellbeing the environment while trying to streamline the process to bring more products to market and serve producer's needs? EPA is working with industry to streamline the science reviews, and there are several LEAN management projects within OPP, but the biggest challenge is how can EPA improve risk communication. The EPA process has a lot of checks and balances and a lot of time is spent on ensuring the science is right, but risk communication is all about public trust. EPA really needs an innovative approach.
- Concerning the communication piece, (1) these are highly technical discussions that are hard to explain generally and (2) should someone else do the communicating or does EPA needs= to communicate in a different manner to the public? EPA is the right agency to communicate with the American public and NGOs on what they do. The takeaway message is lots of smart people, who care about getting tools to growers, who go where the science leads them for protecting health and the environment sometimes need to take products off the market. Growers will get frustrated and want to know why EPA is doing that but need to trust the fact that EPA looked at hard science to make that decision.
- EPA has lots of models (including drinking water models over different topography) that investigates how much consumption of a particular pesticide or chemical in the diet is problematic. Water is monitored in many states for pesticides and in most cases, there are no hits for many of these pesticide chemical substances. EPA coordinates to make sure the data is similar when doing our risk assessments. Part of the analysis is to determine whether the levels we expect to occur from the maximum use of this label will have no impact on human health in the environment. Important that regulatory decisions do not create a problem somewhere else. If something occurs in the monitoring programs that is unexpected, then EPA has a mechanism reevaluate that chemical and make appropriate changes.

M. Committee Discussion on Pesticides Charge Topic

The FRRCC focused their discussion on three areas: (1) how can we help EPA reduce barriers to bring crop protection tools to market while protecting the environment, human health, pollinators and endangered species? (2) how can EPA improve confidence and build trust with the American public? (3) How can we help EPA build trust with international trading partners?

- The USDA needs to advocate more for the work EPA is doing to help with consumer confidence.
- The more people and professional groups show confidence in the EPA helps. However, there is a little miscommunication involved with EPA's messages about the company supplied data, the good laboratory practices and the data was coming from contracted labs. The companies themselves aren't doing these studies themselves but are contracting with an independent lab to do these studies. EPA's messages about the data coming from the companies is a little misleading to the general public. EPA needs to be more transparent about exactly where the data comes from.
- Can the federal government get access to ad council money? There have been concerted efforts to stamp out smoking. To what degree is this a priority for the country to help people understand safe food and available food.
- The process has a long-time horizon with four to six years for a registration process and 15 years later is the reregistration process. There are multiple points in process for public participation and it must be daunting for EPA to have to remind the public of the process each time because it has left the general public's memory. It is probably prone to some misinformation at each of those points along the process. Maybe FRRCC can help EPA figure out when in the process it is legitimately needed but it takes a long time to work through the process.
- When trying to gain trust for the EPA for pesticide certifications, tie in farmers who use the product. Producers put the product on their ground and trust EPA about the required rates and label language. Build upon that concept that people trust farmers and farmers trust the work being done by EPA to put those chemicals on their crop and with their life. Maybe tying this together will help with public acceptance.
- A recent national public opinion poll of 2200 US adults from the American Farm Bureau, that the public has a positive view of farmer sustainability practices with an overwhelming majority trusting farmers.
- What is EPA's communication strategy currently relative to how they explain the process? There is obviously a significant disconnect from the consumer or at least the people surveyed. They trust farmers from a sustainability perspective but don't make the connection that farmers use pesticides as a necessary part of what they do. How is there this incredible trust in that group and then have the serious issues with consumer's attitudes around pesticides and around what EPA does to protect consumers relative to allowing pesticides use? Need more data because this seems like conflicting information.
- The American Farm Bureau has done a great job getting the story of ag into the classrooms, specifically the elementary classroom with books. Has EPA looked at making children's stories out of their work?
- If you had a commercial that showed someone going into McDonald's and they get the bill it is $30 just to get a hamburger and a coke, they say I can't afford it and walk out. This would happen without pesticides.
- Many strategies of EPA and programs don't percolate to the local level. Disagree that EPA cannot do anything about the local regulation. In many areas, EPA is the most important face in terms of environmental protection. The local program can be delegated, or it can manage by EPA. The emphasis is in enforcement and inspections in the programs which creates a big divide because the regulators are seen at the enemy. In the 90s, EPA changed the culture of the Agency away from this

but it didn't get relayed to the local, small communities or municipalities. This is an area the FRRCC should discuss to help change the face of EPA as only the policemen or enforcer.

- The many ways the regulated public would interface with EPA or its delegated program is through enforcement programs. The FRRCC should look at compliance assistance related to the ag community. The FRRCC should spend time thinking about the best approach for EPA (knowing they are a regulator) to do their job effectively. This doesn't necessarily cost more money or take additional resources, but it is about the effectiveness of those resources.
- After talking to reps in the country and with the public, maybe EPA doesn't have to be the department that does that. It may be better suited for USDA, FDA, and others to get the science out. Maybe EPA doesn't have to be in the forefront of this effort but instead has relationships with these other entities (federal, state or local) who can tell the public they believe in what EPA is trying to do and may have better resources to do the communication. In Extension the best way to get a farmer to adopt a new practice is to find another farmer doing that exact practice, then have the other farmer talk about it vs. Extension. This model resonates with local people and people that are being regulated. Maybe EPA looks to other entities that are doing it already and have them get the science out.
- USDA has science communicators who can break down information. The EPA Pesticide presentation mentioned that OPP referenced several difference stakeholder groups they communicate with regularly. Maybe the FRRCC can figure out who at EPA communicates to different audiences interested in pesticides.
- It is going to be a selling point to convince agriculture and remind agriculture that EPA can be their partner. They give this administration credit for the fact that it exists. Is there a point where agriculture is willing to let go of a product?
- Back in the late 70s, EPA was perceived as bad by farmers. It's having to work with everyone and come up with a solution that works for everybody with this stuff, and I think there needs to be an endorsement there or rewind the conversation between the different agencies and producer groups or producers, for that matter, with EPA to straighten that whole thing out because it really hasn't been done, but I still think it is looked at as a negative thing and maybe that's a starting point, to repair what was done years ago.
- The FRRCC needs to figure out how to "rekindle" the EPA relationship with agriculture. We all either represent farmers and talk to them every day or we are farmers and that sentiments is still very real. One piece of that rekindling and repairing is a continuous effort to listen and to dialogue.
- The FRRCC needs dig deeper into the data in dealing with consumers. They say they like small farmers, organic farmers, but when you get into corporate ag, that's where the trust starts to wane. The problem is they don't understand that corporate ag is, for the most part, still family farms which are only incorporated because of the tax or liability issues.
- Agree that in concept, getting rid of some pesticides if needed but the problem is it hard to build consensus within the farming community. 400 different crops are grown in California, and someone in the Midwest may not know or care about a product. So, must be careful when we divide the ag industry.
- Working with groups for 20 years training them to be an advocate for the industry by going on social media platforms talking about pesticides, water, and other issues. The problem is this is a very complex topic. If I gave them talking points, they may be willing to say a few things in social media

but then the trolls come, and they stop because they feel like they don't have the help. The industry has tried to set up help lines for advocates to call to figure out how to best respond to questions. There needs to be a coordinated -PR program or something like that-. Denmark and France are making pesticide decisions based upon policy and not science.

- Hearing some themes on farmer trust, but some disconnects in the awareness, even in the farming community of this incredibly robust process. Farmers are not the entomologists or risk assessment managers at EPA so they can't be expected by the public to defend every "nook and cranny of the process" but as end users of the product we need to continue to go through that.
- Remember when New England was having a real issue with RBST, which if given to a cow, the cows produces more milk. Works well and made a lot of money for farms but the public didn't like it. Or the apple farms in Washington state were devastated and it was farmers fighting against farmers and what's the public to think. Farmers are an independent group of people and they all have opinions which makes it difficult. It is the relationships ag has with EPA, USDA or FDA and trying to work together with a calm voice that helps to move past distrust.
- An important element to all of this is the role that the states play and their authority to implement even more strict regulations than what the EPA has in place which adds another layer of complexity to these discussions. Farmer's hands are literally tied, regardless of what is happening at the federal level. Need to understand the interaction between EPA and states in any of the FRRCC discussion.
- This discussion is identifying the importance of certainty and predictability for farmers. One thing farmers are most worried about is losing tools in a way that is fast with either no options that are as effective or are even available. Farmers see this happening to other commodities. This may be where the science is leading but stakeholder input is important to decision making. Stakeholder input is something the pesticide workgroup could think about is the role of stakeholders. If a tool isn't going to work, then what is the plan for something else or a phase out instead of that immediate urgency and change at the farm gate level.
- This is easy conversation to have until it is your chemistry. Some self-policing or accountability among agriculture as good faith partners. There are a lot of scientifically driven products that are part of the system, but it can't just be a sales pitch.
- Want the FRRCC to dig into the ESA consultation process a bit because some of the efforts are duplicative and this is one of the biggest barriers on products being brought to market.

IV. Wrap Up and Closing Remarks

Tom McDonald went through the FRRCC proposed workplan and solicited final thoughts from the Committee. He gave closing remarks which included encouragement of the Committee to continue to have dialogue and a request for Carrie Meadows to let the EPA Administrator know their appreciation for the partnership that he's forged with agriculture.
Carrie Meadows, the Ag Advisor to the EPA Administrator, asked that the workgroups reach out to EPA to get them the information they need. She stated the input and advice the FRRCC gives EPA is incredibly valuable and thanked the Committee for their service. She reminded the public they can communicate to the committee by providing comment until 11:59 at frrcc@EPA.gov.

Rebecca Perrin, FRRCC DFO, informed the public that the presentations and materials from the meeting will be posted to the EPA website when available. The meeting minutes will be posted to the FRRCC website within the required 90 days.

Motion to Adjourn made by Matt Freund and seconded by Amy Wolfe.

V. Public Comment

Scott Yager, from the National Cattleman's Beef Association gave public comment. His comments can be found at https://www.epa.gov/faca/frrcc.

VI. Meeting Materials, Reference

Recordings of the broadcasted meeting and meeting materials are available on the FRRCC website: www.epa.gov/faca/frrcc.

VII. Chair Certification of Meeting Summary

I, William Thomas McDonald, Chair of the Farm, Ranch and Rural Communities Committee, certify that this is the final meeting summary for the public meeting held on November 12-13, 2020, and it accurately reflects the discussions and decisions of the meeting.

Tom McDonald Digitally signed by Tom McDonald Date: 2021.02.09 16:12:27 -06'00'

William Thomas McDonald, FRRCC Chair

2/9/21

Date

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