



Maryland Food System Resiliency Council

Environment & Production Committee
Virtual Meeting
January 19, 2023 1:00pm-2:00pm

1. Welcome
2. Group Discussion
 - a. Invited Speaker
 - i. Rachel Lamb, Natural Carbon Sequestration Lead for Maryland Department of the Environment
 1. This presentation will provide an overview of climate mitigation in the State, how agriculture is represented in the planning and assessment process, with an insight on ongoing engagement with others like this committee to link adaptation and mitigation to build resiliency.
 2. Maryland Greenhouse Gas Reduction Act is the cornerstone of climate legislation, our baseline greenhouse gas emission is 2006 (25%), and there are several short and medium term emission reduction goals that span from our 2020 goal and 2030 goal with a view of how things may look in 2045 or 2050. In order to reach these targets the state developed a Climate Action Plan, otherwise referred to as the Greenhouse Gases Action Plan or GGRA Plan, the draft was released in 2019 and the final plan was released about 1 year ago. During the last legislative session new legislation was introduced, the Climate Solutions Now Act (CSNA) which changed the emission reduction targets to one of the most ambitious in the country (e.g. 60% reduction by 2031, and set a net zero goal). The CSNA is not only ambitious, indicating new



- strategies needed to achieve goals, but the net zero goal changes the accounting paradigm. Gross goals indicate reduction of emissions at the source, but with a net zero goal, emissions reduction at the source and a need to increase carbon removal/carbon sequestration capacity of the natural working land is needed.
3. The two primary tools used to help the State determine how to reach targets are:
 - a. The Greenhouse Gas Emissions Reduction Act 2030 GGRA Plan and another plan is under development for 2031 goals (planning tool)
 - b. The State of Maryland 2017 Greenhouse Gas Emission Inventory is an official inventory/basis, by which the State looks across all sectors to determine progress on achieving our targets (assessment tool). Increasingly we spend more time on better methods to capture the impact of natural and working lands (NWL), agriculture is a key part, as well as others (e.g. trees and forestry, and tidal wetlands).
 4. What does this look like in practice? Examining the 2030 Plan many sectors develop soft targets (e.g. considering the range of activities that are known to be climate smart that can be incentivized, the magnitude of impact, and the potential to scale impact over a point of time). MDA led work with advisory committees to determine what the menu of best practices should include (refer to appendix K in the 2030 GGR Plan). The goal of these tools is to go beyond qualitative assessment and begin to quantify what impact could be, and how this may change across space and time (e.g. COMET-Planner).
 5. The State reduced the GGRA Progress Report, this report focuses on program metrics. If part of the GGRA Plan is to consider ongoing implementation of best practices (climate smart/carbon sequestration), this report examines how many acres per practice were implemented on the



- landscape at any given year (visit the website www.mde.maryland.gov/ggra).
6. Greenhouse Gas Inventory (assessment tool) focuses on actual CO₂ emission equivalents impact of all activities identified initially. This tool divides the agricultural sector in two ways:
 - a. 2020 Inventory (released in 2023/every three years) providing a Statewide picture of what is happening for agriculture emissions, by down scaling from the EPA to a State level.
 7. Other emissions or emission impacts covered in other sectors:
 - a. Food recovery/waste (landfill emissions)
 - b. Agriculture equipment (energy emissions)
 - c. Biodigesters (depends on point of gas consumption)
 - d. Agricultural soil sequestration (land use and forestry sector)

While there is an entire chapter looking at agriculture emissions, the full impact of the sector is spread out across different parts of the inventory.

8. The 2020 Inventory was one of the first statewide inventories to include ag soil carbon, these initial numbers were the first attempt to understand actual/known impact using the EPA State Inventory Tool (Ag soil sequestration offsets <1% of statewide emissions; tree and forestry carbon is a notably larger tab, which may be on or near ag land).
9. Ag soil was in the 2020 Inventory. Maryland farmers lead the nation in adopting ongoing BMP including cover cropping. National level estimates may be sample based or slower to reflect rapid adoption by Maryland farmers. Therefore we applied for the 2022 USCA Technical Assistance Grant, goals for using state-specific data:
 - a. Historical annual agricultural soil carbon fluxes (2006-2021)



- b. Method of quantify annual flues for future inventories
- c. Estimated future fluxes under a range of planning scenarios (e.g. ongoing BMP implementation)

This project was funded last year, and is still in progress now.

10. The progress report is assisting with understanding does actual implementation align with what was planned, why or why not? The Greenhouse Gas (GHG) Inventory determines how our carbon sinks support our GHG goals, and what are dominant factors affecting change? The New 2031 Plan examines given these assessments, do we need additional programs or policies to reach existing or new targets? Many goals for carbon/climate mitigation connect.
11. How are Marylanders engaged in the process? Maryland Commission on Climate Change is the primary entity that the Maryland General Assembly has charged with advising the governor and themselves on how to mitigate, prepare for, and adapt to impacts of climate change, viewing policies and recommendation as an independent body. There is a range of research ongoing at University of Maryland (e.g. the Hughes Centers Climate Vulnerability Study), creation of new knowledge that can inform our work in a robust scientific way. Lastly, the State is continuously creating programs to engage new landowners and farmers in this work (e.g. MDA's work with the Healthy Soil Commission).
12. Contact Information for Rachel Lamb:
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b. Questions/Open Discussion

- i. What was MDE thinking regarding Maryland scope 3 inventory in general, and specifically for agriculture? One concern with the Climate Solution Now Act, and the reduction goals in Maryland is they are now inclusive of scope 3 emission reduction targets,



Maryland is a significant importer of goods, including the agricultural space. How many emissions are associated with the agricultural input, which are imported but not included (e.g. fertilizer and pesticide imports)? How can COMET strategies be used to calculate reductions, when we are not tracking all emissions that can be associated with agricultural inputs?

1. The State does not use scope accounting, the guidance that States use to categorize emissions generally follows the EPA guidance. We know States can have difficulty with questions regarding imports, out of boundary emissions, etc.; most of what we track is what is happening within our borders. The benefits of scope 1 is it translates to every land area in the State, we are looking at all ag land (direct State control or not; we account for it). By law in its inventory, Maryland must account for imported electricity, interesting because unlike other States this is an exception. This is a conversation that comes up a lot, where do you define your boundaries? There is interest in having an entity scale corporate GHG goal, the State of Maryland having its own greenhouse gas goal, where tracking would be per scopes or more traditional . Examining the State government's impact could help us understand concerns identified earlier. DGS does track the carbon footprint of State activities and we generally know the carbon sequestration footprint of State owned and managed lands, but it is not neatly packaged at this time. Agricultural impacts are captured where it is used in the State.
- ii. When numbers come out regarding improvement of Maryland farming (e.g. shifting practices), it would be useful to issue a State level acknowledgement to farmers publically. Often farmers feel they are being blamed for everything. What can extension agencies through land grants, and the HBCUs particularly, do to help farmers learn practices to implement, which could improve resiliency, and climate/environment impacts? In the chart shown in the beginning, most of the actions discussed (e.g. no till,



fertilizer management, etc.) are all related to crop production. The large producer of emissions shown is methane, which comes from animal agriculture. What is being done to help dairy producers, and beef/cattle ranchers to shift production practices and technologies to lower emissions?

1. Agreed, we need to find ways to highlight what the Maryland farmers are doing, this is one of the reasons we are seeking out funds to improve science and accounting. The State has unprecedented adoption compared to peers, we can do better. Deferral may be needed to MDA regarding the emission question. The USDA approach to climate smart commodities, and the result from grants that were distributed to assist with the accounting paradigm for major industries (e.g. dairy), to help evaluate their footprint, adopting strategies or technologies and how to improve quantification of outcomes. From a State inventory perspective, how does activity choices reflect in the way we assess progress? There is no perfect category on any State inventory, but that is the goal. How do we incentivize changes that have an impact, and how do we refine assessment tools so that we see real findings?
 2. There is a lot underway for sectors, particularly the dairy sector, setting sustainability goals and implementing them. At a national level, at the Maryland State we support this and have the benefit of financial assistance to go along with that. So when the milk cooperative in the dairy sector wants to help individual producers, there are a host of programs that are going to help the dairy sector to achieve goals. How do we quantify that information so it can be readily used by MDE to share the success?
 3. In terms of the University Extension, there are a lot of projects underway, a lot from the federal level are coming back to Maryland. Working with UM Extension, MDE, and MDA can coordinate efforts.
- iii. There was a very strong minority view of the Healthy Soil Committee, the high carbon storing practices that are supported



by science are not being recognized or inadequately recognized. 4 of 5 objected to the recommendations for various reasons, some being:

1. The group for five years would not examine the impact on carbon associated with organic vs. conventional practice. It was viewed as being biased or discriminatory in favor of organics to look at the science.
2. Pastured animal production was viewed as not ready for primetime. Ultimately it was recognized in a limited way.
3. Not willing to do an objective measurement of the carbon stored in the soil.

We do not need to examine specific types of ag practices, farmers choose for themselves, and what practice they think is going to store carbon for the public benefit of the carbon storage, and the farm specific economic benefit.

- iv. The Chesapeake Bay Watershed Implementation Program in the three sectors, I wish we could let the public know how poorly we're doing with the storm water management sector (e.g. Ellicott City). MDE has taken over the management of Back River Water treatment plant in Baltimore City because of local difficulties. Agriculture is doing the most progress, even with the overall grade for the Chesapeake Bay being a D+. The number one agriculture product in the State is the chicken broiler industry, this is a best example of locally produced food. Organic farming is done on a very small scale compared to conventional ag.
 1. We need to continue elevating all the work farmers continue to do, we hope this comes across in our climate action plan. MDE is working hard on storm water to have more climate resilient and adaptation permitting processes (considering climate impacts like storm water load, increased storm frequency, etc.).
- v. The degree the State is examining the COMET tool to quantify the benefits of conservation practices, that tool does not distinguish farm operations (organic, conventional, and traditional), it examines the suites of practices that would be



relevant to any operations (animal ag, row crop, diversified vegetable, etc.).

1. COMET is limited but it does recognize synthetic nitrogen.
- vi. The committee should keep in mind that MDA is geared to represent all agriculture, and does not promote one type of agriculture vs. the other. When creating legislation the committee should consider if legislation goes against the State agency's mission.
 1. This topic has been discussed in the past, the mission of MDA is set by the governor and legislator, thereby if those parties determine a transition to organic agriculture is appropriate and funding should go there, then MDA can do that. Part of the goal of this committee is to advise the legislator, we should not constrain ourselves because part of our goal is to rethink these considerations.
 2. Let farmers determine farming operations, and use metrics to incentivize best practices. Respect the farmers.
3. Next steps and adjourn