Liane Randolph, Chair
California Air Resources Board
Sacramento, CA 95812

July 14, 2021

Re: Dairy Methane/SB 1383 report

Dear Ms. Randolph,

On behalf of the undersigned groups, we write to offer our comments on the recent draft report, *Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target* by staff of the California Air Resources Board (CARB).

We are concerned that the report lacks any detailed analysis of alternative manure management practices, their GHG emission reduction potential, opportunities for scaling up those practices, and what their multiple benefits may be for both climate mitigation and improved air and water quality. The failure to do a more rigorous analysis of the alternative manure management practices is a significant enough limitation of the report that we request that CARB — working with agency partners like the California Department of Food and Agriculture (CDFA) and the State Water Board, along with UC Agriculture and Natural Resource (UCANR)'s research and extension experts — conduct that analysis before completing the final report and its recommendations.

To do anything less hampers the ability of the state to advance a comprehensive and effective approach to dairy and livestock methane reduction. CARB is simply not meeting the SB 1383 requirements with this current draft report. We provide greater details on what is necessary to complete this analysis in our comments below.

It is clear from the report that the dairy and livestock sectors are not on track to meet the state's 40 percent methane reduction target. More must be done to achieve the goal. Starting with a more complete picture of the current state of dairy and livestock practices that reduce methane emissions and how those practices may be scaled up is critical to advancing climate strategies in the dairy and livestock sector that will effectively meet SB 1383 goal and provide the multiple benefits sought by the state's climate investments.

We look forward to discussing this further with you.

Sincerely,

Jeanne Merrill, Policy Director, California Climate and Agriculture Network

Rebecca Spector, West Coast Director, Center for Food Safety

David Runsten, Policy Director, Community Alliance with Family Farmers

Jo Ann Baumgartner, Director, Wild Farm Alliance

1. Conduct a Robust, Practice-by-Practice Analysis of Alternative Manure Management Practices, GHG Emission Reduction Potential

Currently, the analysis in the draft report combines together as one unit analysis all of the alternative manure management practices currently incentivized by the California Department of Food and Agriculture (CDFA) under the state's Alternative Manure Management Program (AMMP). This is problematic. It is important to break down the GHG emission reductions by practice because not all practices offer the same level of GHG emissions reduction potential and, importantly, not all practices are evenly distributed across AMMP projects. For example, in 2019, CDFA awarded 50 AMMP projects, two-thirds of which included solid separation and composting of manure.[1] In contrast, we have seen no adoption of the grazing practices available under AMMP.[2]

In the CARB analysis, all of the AMMP practices are averaged together, which does not reflect the realities on the ground. Instead, the analysis of alternative manure practices should account for the adoption rates of practices by giving greater (not average) weight to those practices that have higher adoption rates (e.g. solid separation, compost, etc.). Moreover, the CARB analysis of alternative manure management practices should consider the GHG reduction benefits of combined practices - e.g. what is the GHG reduction potential of adopting solid separation AND composting of manure? Flush to scrape with solid separation? Etc. The realities of AMMP projects are the practices are often combined and as such have the potential for even greater GHG emissions reductions. But more analysis on the emissions reduction benefits of combined practices is needed.

Additionally, CDFA provides GHG emission reductions on AMMP projects by a 5-year timeframe and digesters projects by a different, 10-year timeframe. Are those differences accounted for in the draft report analysis?

[1] See: https://calclimateag.org/dairy-producers-turn-to-compost-as-climate-solution/

[2] The grazing-based practices offered under AMMP are very limited and do not include key practices like prescribed grazing. As a consequence, there is little incentive for producers to apply for the grazing-based practices under AMMP.

These and other questions on the alternative manure management practices must be answered to adequately assess progress made and options for scaling up the practices that are most effective in reducing dairy and livestock methane emissions and that work for the industry.

2. Additional AMMP Scenarios Needed

The lack of detailed alternative manure management analysis severely constrains the scenarios options for how the dairy and livestock sector may reach the 40 percent reduction goal. For most dairies and livestock operations in California, digesters are simply not an option. Most dairies and livestock operations are not large enough – they do no generate enough manure or have enough capital – to justify a digester. And unlike digesters, alternative manure management practices do not lock in producers to specific herd size but instead allows them the flexibility to change herd size depending on other factors like dairy price, water availability, and feed costs, and more. Regardless of the scale of operation, dairy and livestock producers can implement alternative manure management practices that support moving away from wet manure handling and storage, where methane emissions are generated, to dry manure handling and storage where methane emissions are greatly reduced.

Given that there are more than a dozen practices available under AMMP and that the practices are scale neutral, CARB should include scenarios that look at 50 percent, 75 percent, and 90 percent adoption of alternative manure management practices by the industry to better assess industry options for meeting the SB 1383 requirements. To do such an analysis, CARB should look at the types of AMMP practices that have been adopted to date and consider weighing the GHG reduction potential by adoption rates, as discussed above.

3. Better Exploration of Multiple Benefits of Alternative Manure Management Practices Needed

One of the significant benefits of alternative manure management practices is the production of compost. Based on anecdotal stories from producers, most dairy and livestock producers use most or all of the compost they produce on-site for bedding or pasture fertility, with only a handful of producers looking for markets for a portion of their compost. A survey of producers would be helpful to better understand how compost may be used by the industry before concluding - as the report does - that the lack of compost markets is a barrier to adoption. Such a survey could shed light on the numerous co-benefits of compost production that producers have reported, including reduced labor and fertilizer costs, lowered costs of waste hauling and bedding materials, improved fertigation efficiency, improved pasture health from the application of compost rather than wet manure, reduced odors, and more.

The report also lacks any discussion on the connections between compost and enhanced carbon sequestration. Under CDFA's Healthy Soils program, the purchase of compost is incentivized because the use of compost on farms increases soil organic matter, enhancing carbon stocks over time. By moving from wet manure handling and storage to dry manure handling and storage where most manure is composted, alternative manure management practices also offer the opportunity to support the state's efforts to increase carbon sequestration. However, this was never discussed in the draft report. Since the report does attempt to address multiple benefits, it must include in its analysis the linkage between scaled-up alternative manure management

practices and what that may mean for supporting the state's efforts to achieve enhanced soil carbon in agriculture.

Additionally, alternative manure management practices can improve water quality through the reduction in flushing of manure on operations. CARB should work with the State Water Board to better characterize the water quality benefits of these practices.

4. Review Progress Made on SB 1383 Subgroup #1 Recommendations

As part of SB 1383, in 2018, CARB convened stakeholder workgroups to review the opportunities and barriers to achieving dairy and livestock methane reductions, as required by the law. Among them was subgroup #1, which addressed alternative manure management practices. The subgroup, which included a diversity of industry, technical, university, and NGO stakeholders, put forward their recommendations on how the state could advance alternative manure management practices.[3] The draft report should build upon that work by reviewing the status of the subgroup's recommendations to better understand progress to date and how that might inform potential scenarios and additional areas of work.

5. Digester Scenario Needs Additional Analysis

The inclusion of the scenario in the report of the state paying for an additional 210 dairy digesters ignores whether or not there are 210 dairies in California that can suitably site a digester. As we and others have noted before, only the largest of the large dairies can successfully operate a digester.[4] Does the state have an additional 210 dairies that can successfully operate a digester? It is not clear from the report's analysis if CARB looked at this issue, which is critical to understanding whether or not the proposed scenarios are feasible.

Moreover, CARB is silent on the longevity of digesters. Those digesters that were installed in the 2014-2017 timeframe may need to be replaced by 2024-2027, given that some earlier models had shorter, ten-year lifespans compared to current models. Has CARB factored in replacement costs of digesters? Additionally, how long will current digester models last (20 years?)? What happens when those current models need to be replaced? Can we expect 100 percent replacement or will some digesters simply stop operation? What does that mean for achieving the state's methane emissions reduction goal? Has anyone spoken to or surveyed producer operators to hear directly from them what their plans are regarding their digesters? These questions must be addressed in the report to give the state a more complete picture of costs and barriers associated with the digester approach to this issue.

6. Unrealistic Enteric Fermentation Scenario Should Be Changed

The draft report includes a scenario of 100 percent adoption of methane-reducing feed additives such as seaweed to address enteric fermentation-related emissions. However, it is hard to find an example of 100 percent adoption of any on-farm management practice for any issue in

[3] See: https://ww2.arb.ca.gov/sites/default/files/2020-11/dsg1_final_recommendations_11-26-18.pd
[4] See: https://calclimateag.org/wp-content/uploads/2015/11/Diversified-Strategies-for-Methane-in-Dairies-Oct.-2015.pdf

California. This seems a very unrealistic adoption rate, especially given the uncertainty surrounding the efficacy of alternative feed, the cost and availability of the additives in light of the tight profit margins for dairies, and more. We suggest creating more realistic scenarios for changes in feed to address enteric fermentation, starting at 25 percent and going up to 75 percent to demonstrate a range of options and what would be needed (e.g. grower outreach and education, incentives, market development, etc.) to achieve the different rates of adoption.

Conclusion

The lack of rigorous analysis of alternative manure management practices and their multiple benefits, combined with inadequate analysis of digester constraints requires that much more work must be done to complete the final dairy methane emissions analysis report, as required by SB 1383. Without more rigorous analysis, the state is left without a clear roadmap for achieving its goals and it puts the industry at a distinct disadvantage at understanding the full depth and breadth of their options to both meet the challenges of SB 1383 and remain a viable and thriving industry. We look forward to discussing these issues further with you.