November 1, 2021

Commodity Credit Corporation, U.S. Department of Agriculture
1400 Independence Avenue, S.W.
Washington, D.C. 20250

Re: Docket No. USDA-2021-0010

Dear Sir or Madam:

United Egg Producers (UEP) welcomes the opportunity to offer these comments in response to the U.S. Department of Agriculture's (USDA) request for information on a planned "Climate-Smart Agriculture and Forestry Program." UEP provides industry leadership and member services related to animal well-being and hen housing, biosecurity and disease prevention, environment, food safety and government relations. UEP works at the direction of its farmer-members to deliver the best possible circumstances for egg farms to prosper while supplying high-quality eggs. These farmers have designed and built operations with their environmental responsibilities fully in mind. As a group and sector they have also invested heavily in the development and adoption of efficiency-enhancing practices throughout the egg supply chain. The egg sector has dramatically lowered its total greenhouse gas footprint even while increasing the total number of eggs produced to meet the continual growth in demand for eggs. In the process, US egg farmers have a footprint per gram of animal protein produced that is the envy of animal agriculture around the world. We offer the following comments from this perspective.

Summary of Major Comments

As a general matter, UEP welcomes and supports USDA's efforts to advance the development of climate smart agriculture and forestry (CSAF). To succeed, CSAF must make a meaningful contribution to our country's efforts to reduce greenhouse gas (GHG) emissions while serving in its indispensable role both in the US and abroad of providing for human nutrition and indeed survival. We support efforts that strike a balance between these two absolutely critical objectives. To these ends, we offer the following comments:

1. The best way to achieve these two objectives is for USDA to play the invaluable role of facilitating and enhancing, rather than replacing or substituting for, the private sectors and non-governmental organizations' (NGO) rapidly growing efforts in the CSAF space.
2. USDA's CSAF Program will have the greatest success if the pilots it undertakes have the primary purpose of supporting or facilitating the full range of possible private sector/NGO climate smart agricultural initiatives.
3. UEP can envision situations where egg producers might be uniquely positioned to take part in any one of the possible variants of the CSAF supply chain approaches that exist or are coming into being today.
4. It is prohibitively costly and impractical for many agricultural companies, including some egg operations, to create supply chains that preserve the identity of a climate smart commodity from the field to end user, and therefore the CSAF pilots must not be limited to such CSAF identity preserved supply chain efforts.
5. One of the greatest impediments to CSAF supply chain efforts is the prohibitively high cost of feed grain field verification of the use of CSAF practices. USDA should initiate pilots that further

the work of research communities and NGOs in this arena. USDA should not duplicate or replace those efforts with its own.

6. Studies of the US egg sector's supply chain environmental footprint, including its GHG footprint, have shown that the **total** amount of GHG emissions from the sector fell since 1960 even as it dramatically increased the number of eggs produced. Further progress is possible. USDA should support and encourage the development, testing and commercialization of new practices, techniques and technologies that will further mitigate GHG emissions in all agricultural sectors, including the layer industry.

Detailed Comments

Many industries and companies, including the US agricultural sector and many US agricultural companies and operations, are heavily engaged in various forms of CSAF, and this work is being done in close collaboration with NGOs. Many US companies are actively engaged in initiatives working in their external and internal supply chains to reduce their GHG life-cycle footprints, and in the process derive added value in the marketplace for their goods and services. Agricultural companies, or companies that sell agricultural and food products, are also engaging in such supply-chain based GHG footprint reducing efforts. Some of these initiatives involve the use of third-party consulting and service programs working with farmers and ranchers and utilizing GHG or carbon registries. Others involve a companies' own personnel in direct engagement with farmers or ranchers in their supply chain to compensate them, or get them compensated for, their GHG footprint reductions. Others involve companies engaging directly or through third-parties with their regional "supply shed" of farmers or ranchers where the participating producers can be compensated directly or through third party payment programs.

There is tremendous value in these private sector/NGO efforts working within supply chains. First, they allow for a flexible exploration and adaption of practices to make these systems work. All of them together are forms of natural experiments and the learning they are engaged in and the knowledge being developed is constantly taking place, growing and evolving. These efforts are also directly responsive to the marketplaces' forces of supply and demand, and therefore able to be directly plugged into the sources of information that are key to striking that critical balance between meeting human society's growing needs for agricultural goods and food and reducing our collective GHG emissions footprint. Private sector efforts also reflect, generally, the best understanding of the workings of individual supply chain. These companies or entities are in the best position to know what will work best or to learn from mistakes and subsequently adapt to find better, more efficient and effective solutions. They know when to bring in outside consultants to help them and the specific skillsets needed and are in the best position to determine whether or not these consultants are able to carry out their roles capably and professionally.

These existing efforts are widely and extensively supported by a large and growing body of knowledge and standards of trade developed by NGOs, working with top scientists in the university and research communities, and often in direct collaboration with governmental entities. These systems have not been developed from the top down but rather from both the bottom up and horizontally, in response to project needs and market opportunities. The GHG and carbon accounting standards, while imperfect, are rapidly reaching a level of sophistication and functionality experienced in other industries whose own standards of identity and trade practices evolved with the development of markets and the players involved. We encourage USDA to utilize its climate smart agricultural authorities to find ways to support and facilitate the further development of these existing non-governmental standards and systems of trade.

With respect to egg farmers, UEP can envision situations where egg producers might take part in any one of the supply chain approaches discussed above; their circumstances, needs and interests of course will dictate which of these they might be part of, if any. The same is likely true of many other agricultural businesses. For this reason, we believe that USDA's CSAF Program will have the greatest success if the pilots it undertakes have the primary purpose of supporting or facilitating the full range of possible private sector/NGO climate smart agricultural initiatives. Such pilot initiatives could meaningfully include the full range of supply chain approaches discussed above, some of which will not involve the identity preservation of the climate smart characteristics of the commodity as it makes its way through the supply chain to the end user, some of which could involve such identity preservation through to the end product. In such case, it is possible the price paid by the end user for the finished product would include a premium for the climate smart characteristics of the underlying commodity; and where that value is passed through the supply chain back to the farmer or rancher.

In this latter case, it is critical to recognize that there are enormous costs to be borne by each node in the supply chain system to support identity preservation throughout the chain and to the end user. A key issue in developing markets for such identity preserved carbon-smart agricultural commodities is how they are to be differentiated in the marketplace from conventional commodities. Such differentiation is necessary in order for farmers to capture the benefits of carbon markets, however those markets are designed. But experience shows that such techniques as the identity preservation of specific lots of commodities (grain, beef, etc.) involves substantial costs which might largely negate the benefits of carbon-smart status. Many of the uses of and markets for commodities simply cannot generate the end use price premium needed to compensate the nodes of the supply chain for the added climate smart identity preservation costs. This is why it is critical that CSAF program support those supply chain initiatives that result in the adoption of climate smart agricultural practices but don't rely on identity preservation to return value to the participating farmers or ranchers.

UEP notes that one of the greatest needs to support a climate smart agricultural sector is the development of low cost but accurate tools to provide high quality verification of the use of CSAF in feed grain production. High costs of high-quality verification in row crops are one of the greatest impediments today to the development of truly CSAF supply chains. More practical, usable and universal set of soil carbon standards and tools with which to estimate the benefits of climate smart soil health practices are needed. We encourage USDA to work with the research communities and NGOs to increase the performance and standards of these tools as well as their ease of use. USDA should not duplicate or replace those efforts with its own, and instead support pilot projects that have the express purpose of identifying, testing, developing, validating or refining new verification methods and protocols to reduce their costs to affordable levels.

While supply chain participants will be in the best position to judge the skills and capabilities needed to help them support climate smart agriculture within their supply chain, there are informational and transactions costs to do so. In many instances those costs will be greatest for the farmers and ranchers involved. UEP supports reducing those informational and transactions costs through use of a certification systems. It may be practical for USDA to devise such a certification system and would support that if it proves the most efficient, cost effective and flexible approach. We suggest, though, that USDA consider also being the facilitator of the development of such a system through third parties, outside of government, possibly through an existing or new professional society that serve such a purpose.

As noted above, the egg sector has made enormous strides in reducing the GHG footprint of egg production in the US. In general, layer operations directly emit few GHGs because of the biology of the hen. Most GHG emissions from the industry are indirect, stemming from the production of crops that are processed into feed. This means that the supply chain efficiencies that have reduced the amount of feed needed to supply the US with eggs has made eggs an incredibly GHG efficient source of high-quality protein. For example, the EAT-Lancet commission identified eggs, on a per-serving basis, as making a smaller contribution than several other animal protein sources to (a) GHG emissions, (b) land use, (c) energy use, (d) acidification potential and (e) eutrophication potential (3).[1]

However, the egg sector could contribute positively to climate change mitigation through further improvements in efficiency and production practices. To date, the major comprehensive source of information on GHG emissions in the egg sector is a life-cycle analysis (LCA) comparing the egg sector's footprint in 1960 to that of 2010. The results of this study were published in 2014 in the Journal of Poultry Science.[2] This 50-year analysis considered multiple aspects of the environmental footprint of the supply chain of US egg production.

The authors of this study state: "Per kilogram of eggs produced, the environmental footprint for 2010 is **65% lower** in acidifying emissions, **71% lower** in eutrophying emissions, **71% lower** in greenhouse gas emissions, and **31% lower** in cumulative energy demand compared with 1960. Table egg production was 30% higher in 2010; however, the **total environmental footprint** was 54% lower in acidifying emissions, 63% lower in eutrophying emissions, **63% lower in greenhouse gas emissions**, and 13% lower in cumulative energy demand compared with 1960. Reductions in the environmental footprint over the 50-yr interval considered can be attributed to the following: 27 to 30% due to improved efficiencies of background systems, which outweighed the declining energy return on energy invested for primary energy sources; 30 to 44% due to changes in feed composition; and 28 to 43% due to improved bird performance."

Thus, greater production efficiencies have allowed the egg not only to improve its GHG footprint on a per-unit basis, but also on an overall basis. Both of these metrics are important. Analyzing foods on a per-unit basis will facilitate a comparison of how climate-friendly the consumption of the foods is and permit people to make dietary judgments in line with their values while consuming nutrient-dense foods. However, the total footprint of an industry is also important to consider because it is the totality of emissions that has an impact on various planetary boundaries.

Work is currently underway to update the original 1960-2010 LCA comparison, and the new analysis will be published in due course. In addition, UEP and other organizations within the egg industry have joined the U.S. Roundtable for Sustainable Poultry & Eggs, whose goal is to "advance, support, and communicate continuous improvement in sustainability for the value chain."

Advancements in mitigating climate change may benefit from a range of workstreams. Producers may be incentivized to mitigate GHG emissions with technologies that are mature but may not be economical in the absence of programs such as USDA is considering. For example, the trade press has reported on

[1] Willett W et al. Food in the Anthropocene: the EAT-Lancet commission on healthy diets from sustainable food systems. Lancet 393.10170(2019): 447-492.

[2] Pelletier N, Ibarbaru M, Xin H. Comparison of the environmental footprint of the egg industry in the United States in 1960 and 2010. Poult Sci. 2014 Feb; 93(2): 241–255

relevant initiatives over the years, including gasification projects that utilize manure from laying operations.[3] The development of viable carbon markets may facilitate growth in the trading of credits, which may in itself encourage adoption of positive practices even in the absence of grants or other incentives.

Finally, additional research is needed to encourage the development, testing and commercialization of new practices, techniques and technologies that will further mitigate GHG emissions in all agricultural sectors, including the layer industry. Each sector has its own unique needs. For example, the growth in cage-free egg production has focused attention on how cage-free systems may differ from conventional cage systems in their climate impact. In this regard, improvements in production system design within both the cage-free and conventional segments may hold potential for further improvement. Notably, potential exists for improvement in (a) feed conversion, which can lead to the need for less feed over a constant number of hens; (b) mortality rates, which would reduce the per-unit industry GHG footprint; and (c) genetics, which by modifying bird behavior may lead to improvements in both the preceding areas as well as others. In addition, it is possible that the greatest opportunities for a smaller egg GHG footprint lie upstream, in the production of corn, soybeans and other feedstuffs. Indeed, improvements in row crop agriculture will tend to reduce the GHG footprint not only of those sectors themselves and the egg sector, but of all animal agriculture as well.

The US egg industry is not alone in the animal sectors where increases in feed use efficiencies will lead to further substantial reductions in the species' life cycle GHG emissions. UEP strongly encourages USDA to consider how its CSAF Program can actively work with university and private sector research and development communities to spur and support this class of innovations in support of our climate objectives.

UEP appreciates USDA's transparent and comprehensive approach to helping agriculture making further and substantial climate smart gains. Thank you for this this opportunity to provide you with these comments and suggestions, and we look forward to the good work to come.

Sincerely,

Chad Gregory

Chad Gregory,
President and CEO
United Egg Producers

[3] For example, see Kryzanowski T. Poultry manure gasifier to reduce nutrients flowing into Chesapeake Bay. Manure Manager. Nov. 30, 1999.