Leadership and Innovation Award in Climate Smart Agriculture

White Paper (version July 13, 2016)

By Charles Stanier[1] and Debbie Reed[2]

[1]University of Iowa; [2]Coalition on Agricultural Greenhouse Gases (C-AGG)

White Paper Audience

All potential stakeholders, including but not limited to USDA, Potential Applicants, USDA Agricultural Air Quality Task Force, Potential review panel members, White House Council on Environmental Quality, USEPA, C-AGG Members

The Idea – A New Voluntary Awards Program

The US agriculture sector is responsible for 6-9% of annual US emissions of greenhouse gases (GHG)[iii] (depending on whether energy use and above and below ground carbon sequestration are included in accounting methods). In states high agricultural output, the fraction of GHG attributable to agriculture can exceed 25%.[iii] Livestock, grasslands and pasturelands, crop production and on-farm energy use are important contributors to US GHG emissions. While US agriculture is one of the most efficient and productive in the world, increased efficiencies and new techniques and innovations can contribute to US efforts to mitigate climate change. The agriculture sector is positioned to play a leading role in reducing GHG emissions and delivering multiple ancillary high-value co-benefits to society. These co-benefits include: enhanced ecosystem, habitat and biodiversity benefits; improved water quality and quantity; and increased food security in the face of climate change impacts.

A high visibility annual awards program for innovators and leaders in Climate Smart Agriculture is critically needed in the United States. Such a program would help to publicize and spread successful innovative practices that reduce the climate impact of food and fiber production.

A set of 12 awards was given by the White House through its "Champions of Change" program in October 2015.[iv] However, we believe that a program dedicated to Climate Smart Agriculture is needed, with input and steering from USDA, industry, state governments, and academia. An analog exists for the Climate Smart Agriculture Awards – the Presidential Green Chemistry Challenge Awards.

In 1995, the US EPA received support from President Bill Clinton to establish an annual awards program highlighting scientific innovations in academia and industry that advanced Green Chemistry. This created the annual Presidential Green Chemistry Challenge Awards, which are managed by the US EPA with input from the Green Chemistry Institute, an arm of the American Chemical Society (ACS). The ACS brings in the voices and expertise of academia and industry through its 185,000 members.

A panel of technical experts convened by the ACS Green Chemistry Institute judges entries. "Throughout the 20 years of the awards program, EPA has presented awards to 104 winners. Since its inception, in 1996, EPA has received over 1,500 nominations. By recognizing groundbreaking scientific solutions to real-world environmental problems, the Presidential Green Chemistry Challenge has significantly reduced the hazards associated with designing, manufacturing, and using chemicals." (Green Chemistry Awards program website[v])

We argue that a similar program would be highly valuable to US efforts at economically efficient, effective, and scalable GHG mitigation activities, techniques, and innovative approaches. Such a program would ideally be managed by the USDA, with a multi-stakeholder group such as the Coalition on Agricultural Greenhouse Gases (C-AGG) taking the role taken by the ACS Green Chemistry Institute in the Green Chemistry Awards. Having a non-governmental partner to the awards program broadens the management of the awards program to a wider group of experts, reduces the work load to government employees in managing the program, and provides sustained focus over time.

Such a program would foster competition within the agricultural sector to secure awards. For example, if one prominent producer won awards in the inaugural year of the program, other producers would likely submit in subsequent years to show their competitiveness. Just as is the case for the Green Chemistry Awards program, the record of past winners would become a valuable showcase of innovation and progress in sustainable technology. Furthermore, the records of award winners would be a useful tool for new award applicants, and for educators, college students, extension agents, and K-12 students researching sustainable food production.

The selection of the award name, and the potential categories for awards, will be important for the success of the program. We list some potential categories and award names in the tables below, and invite feedback from reviewers.

Categories

Group A awards have broad eligibility criteria – we expect to recognize products, services, research outcomes, programs and producer implementations of climate smart ag. One award per category in Group A is anticipated. Applicants could include producers, trade groups and cooperatives, agribusiness, non-profit organizations, academic researchers and institutions, government employees (either individually, as teams, or as agencies or branches of agencies). **Group B** awards have narrow eligibility criteria – they are limited to agricultural/forestry producers. Multiple group B awards will be selected, recognizing the diversity of sizes and types of producers.

Group A

- **Soil health.** Recognizing ways to improve soil health, including but not limited to increasing soil organic matter and sequestering carbon in soil. Consistent with the climate focus of the award program, the climate or GHG co-benefit should be demonstrated in the award application.
- **Land stewardship.** Recognizing natural lands preservation and/or restoration (e.g. grassland, rangeland, wetland preservation or restoration and avoided conversion to agricultural or urban use)
- **Nutrient utilization.** Recognizing GHG emission reductions, particularly N_2O, through efficient timing, type, placement, and quantify of nutrients.
- **Biofuels.** Practices and innovations that reduce the GHG footprint of biofuels production, including both biomass production or refining stages.
- **Resiliency.** Recognizing leading efforts that improve resiliency of agricultural communities and crop, rangeland, and forestry systems to changing climate.
- **Greenhouse gas.** Products, practices, and implementations that reduce GHG footprint of food, fiber and forestry operations but do not fit into the above categories. Examples would

include yield increases, manure management practices, energy efficiency, water savings, use of crop residues, etc.

Group B

- **Grower implementation.** Highlighting exemplary implementation or leadership with respect to climate smart agriculture practices.

Potential Award Names

Presidential Leadership and Innovation Award in Climate Smart Agriculture
Presidential Innovation Award in Climate Smart Agriculture
Presidential Leadership Award in Climate Smart Agriculture
Climate Smart Agriculture Awards Program

Questions for White Paper Audience

1. Overall impression of the idea
2. Is this a truly novel idea, or does it duplicate any existing program
3. Areas for improvement
4. Thoughts on the name of the award
5. Thoughts on categories
6. Other potential reviewers or advocates
7. Thoughts on structure (USDA administers with input from C-AGG?)
   How to foster producer participation

Revision History
4/30/2016. Version 1 created by combining the idea overview (Stanier) with the category ideas (Reed). Sent for further review by Reed.
5/3/2016. Edits and additions by Reed.
5/12/2016. Read through and minor edits by Stanier. Distribution to informal reviewers as word document and pdf.
6/28/2016. Making a list of reviewer comments (Stanier)
7/1/2016. Modifying categories based on reviewer comments, USDA climate smart ag building blocks, and more refined thinking about implementation (Stanier)
7/13/2016. Streamlining document for C-AGG meeting

[i] https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2016-Chapter-5-Agriculture.pdf
[ii] http://www.usda.gov/oce/climate_change/AFGG_Inventory/USDA_GHG_Inv_1990-2008_June2011.pdf
[iii] http://www.iowadnr.gov/Environmental-Protection/Air-Quality/Greenhouse-Gas-Emissions
[iv] https://www.whitehouse.gov/blog/2015/10/27/acting-climate-through-sustainable-agriculture-white-house-champions-change
[v] https://www.epa.gov/greenchemistry/information-about-presidential-green-chemistry-challenge