



Cornell University
College of Agriculture and Life Sciences
Cornell Institute for Climate Change and Agriculture

Dr. Michael Hoffmann, Associate
Dean College of Agriculture and
Life Sciences
mp5@cornell.edu

Dr. Allison Chatrchyan, Director
Cornell Institute for Climate
Change in Agriculture
amc256@cornell.edu

Julie C. Suarez, Assistant Dean
College of Agriculture and Life
Sciences
jcs433@cornell.edu

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New York State Energy Research and Development Authority
17 Columbia Circle
Albany, NY 12203

Re: Comments regarding the 2014 RGGI Draft Operating Plan - Proposal for a
Climate Smart Farmers Initiative

Via Email: rggiprograms@nyserdera.ny.gov

Thank you for the opportunity to attend the recent May 9, 2014 RGGI Operating Plan Stakeholder Meeting, held at the Department of Environmental Conservation headquarters. On behalf of the College of Agriculture and Life Sciences, we appreciated NYSERDA's inclusion of the College's ongoing research, funded by NYSERDA, into cow comfort and cooling by our Department of Biological and Environmental Engineering and our Pro-Dairy program. This is clearly a successful example of a partnership between research, extension and industry centering on cow comfort and cooling – an important issue for cattle health, milk production – which showcases how research into agricultural challenges can have the potential to assist in farm greenhouse gas emission mitigation measures.

On behalf of the College of Agriculture and Life Sciences, Dr. Michael Hoffmann, Associate Dean and Director of the Cornell University Agricultural Experiment Station, Dr. Allison Chatrchyan, Director of the Cornell Institute for Climate Change and Agriculture, and Julie Suarez, Assistant Dean for Government and Community Relations for the College, we offer the following proposal for funding consideration through the RGGI Operating Plan.

Background:

As you know, New York State is a leading agricultural state with 36,300 farms that produced \$4.7 billion in locally grown farm products in 2010. Yet, this is a sector of

the business community that is both a contributor to greenhouse gas emissions (GHGs), and uniquely vulnerable to the threats of increasing climate variability and change. For example, between 1958 and 2010, the Northeast saw more than a 70% increase in the amount of precipitation falling in very heavy events (defined as the heaviest 1% of all daily events,¹ causing flooding, soil erosion, and crop loss. The frost-free season length has increased by 10 days in the Northeast during the period of 1991-2012 (relative to 1901-1960), and this corresponds to similar increases in growing season length.² Farmers thus have an opportunity to plant longer-season varieties, and can potentially plant much earlier or later in the season, if the fields are not too wet. But they face challenges in determining how to manage these cropping changes given increasing weather variability. As the new National Climate Assessment notes, livestock and crop production will continue to be affected by heat stress, weeds, insects, and diseases that accompany changes in both average trends and extreme events, which can increase losses significantly. When combined with the normally risky environment of running a farm operation profitably, these changes are creating additional uncertainty and stress on New York's local farmers.

According to the US Environmental Protection Agency (EPA), in 2012, GHG emissions from agriculture in the United States accounted for approximately 9% of total U.S. GHG emissions³, although the percentage of agricultural GHG emissions in New York is much lower.⁴ There are numerous programs and tools to help farmers assess, and reduce, their net GHG emissions through management scenarios including reductions from more precise fertilizer application, management of livestock manure and waste, soil carbon sequestration, and increases in energy efficiency and renewable energy technologies. Many of these initiatives have co-benefits of energy or production costs savings on the farm, as well as adaptation benefits of better soil practices, yet farmers need support to assess their GHG emissions profiles and management options.

Climate Smart Farmers Proposal – First Phase – Research, Development, Extension

To address the twin challenges of assisting farmers in dealing with more variable weather conditions and reducing their GHG emissions, the Cornell Institute for Climate Change in Agriculture (CiCCA) is requesting an initial allocation of \$2 million from RGGI funds to develop a new Climate Smart Farmers (CSF) pilot program for New York State. CiCCA will leverage federal formula dollars, as well as existing private sector contributions that currently support the institute to bring its expertise and additional resources to this project. The synergies between the proposed Climate Smart Farmers concept and the existing Climate Smart Communities program are readily apparent. The extension of the Climate Smart Communities program to the state's farm community through a CSF pilot would

have the added benefit of on the ground participation locally based business GHG emissions reductions as a positive role model for change.

CiCCA proposes to work in collaboration with New York's Department of Agriculture and Markets, Department of Environmental Conservation (DEC), NYSEERDA, agricultural associations, and producers to develop a voluntary, incentive-based program, which would be the first of its kind in the United States. The goal of the program would be to encourage and support New York's farms to increase their adoption of climate mitigation and adaptation practices, while increasing profitability and resiliency. In its first phase, this pilot program would build on other successful voluntary programs with agriculture producers such as Cornell's Pro-Dairy Dairy Accelerator Program, and the NYS Agriculture Environment Management (AEM) Program. It would also build on current efforts of Cornell University and the NYS Soil and Water Conservation Districts to develop and pilot an AEM Tier 2 worksheet on Greenhouse Gas Mitigation Opportunities (currently in draft form).

The CSF program could provide producers with a common platform for walking through a step-wise approach to becoming a certified "Climate Smart Farm," providing incentives, facilitation, technical assistance and expertise for implementing farm-level practices and planning. These voluntary steps could include: setting goals, inventorying energy use and GHG emissions on the farm, and planning for adoption of new practices; engaging in farm business planning to support energy and GHG emission reduction practices; decreasing farm energy use, which could contribute to cost savings; increasing farm use of renewable energy as applicable; reducing greenhouse gas emissions through the use of climate-smart agriculture practices (e.g. low-till or no-till), nutrient management, and land-use tools; supporting practices such as on-farm recycling, solid waste and nutrient management practices; adopting practices that will increase farm adaptation and resilience to increasing climate variability and change; supporting local food and climate smart initiatives in the surrounding farm community; and informing and inspiring other farmers through peer-to-peer information exchange and recognition.

Facilitated through CiCCA, the CSF program will build on Cornell's strengths in providing climate data (through the Northeast Regional Climate Center (NRCC) at Cornell University which maintains long-term weather and climate data), applied agricultural and climate change research, and new decision-tools, to help farmers make more informed decisions to manage climate risk and remain profitable. Cornell has an on-the-ground network of trained educators working through the Cornell Cooperative Extension Regional Agriculture Teams and Cornell Cooperative

Extension county associations who can assist farmers through every step of program implementation.

Specific funding deliverables will be determined in partnership with New York State, but could include funding for research, development, and pilot testing of management practices and decision tools specifically tracked to the dairy and field crops industry. The program will build on current climate change and agriculture research and outreach efforts, providing farmers with decision-tools to appropriately gauge risk of operations in an uncertain climate, conducting appropriate research and piloting of metrics for New York's diverse farms to inventory their GHG emissions, and identifying and training key Cornell Cooperative Extension, Soil and Water, and private sector partners to walk farmers through the process. Deliverables will also include the development of extensive technical assistance materials for farmers and service providers, webinars, and other tools to ensure an effective, practical effort occurs throughout the state of New York to certify farmers as "Climate Smart".

In addition to increasing climate change mitigation and adaption on farms, the CSF initiative will contribute to better baseline understanding of current and predicted impacts of climate change to the agriculture sector in New York - how these risks can be cost-effectively managed and minimized, and the opportunities related to farming in a changing climate. In contrast to other regions, with its abundant water and longer growing seasons, New York is positioned to expand and diversify agriculture and take advantage of large consumer markets in the northeast, but producers need to be armed to take advantage of those opportunities.

Climate Smart Farmers Proposal – second phase – On-Farm Implementation

If funding is available over the long term, CiCCA would anticipate requesting an additional \$3 to \$5 million in RGGI funds to assist farmers by providing an incentive to implement identified CSF mitigation practices once the farms have gone through the assessment process. It is clear from success of programs such as the Department of Agriculture and Markets Agricultural Environmental Management program (which offers grants for agricultural non-point source reduction implementation measures), as well as Governor Cuomo's more recent establishment of the Cornell University Pro-Dairy Dairy Accelerator Program (which aims to boost the state's milk production in an environmentally sustainable way), that voluntary incentives, with a required farmer match, go a long way in achieving strong environmental benefits in the agricultural sector. Depending upon the success and adoption by the farm community of the Climate Smart Farmers tiered assessment process, CiCCA would estimate that additional RGGI funds for voluntary implementation assistance

would serve to further mitigate greenhouse gas emissions in New York's important agricultural sector.

We would be happy to discuss this proposal with partners at the Department of Agriculture and Markets', NYS DEC, and NYSERDA at any time. Please recognize that we have not had sufficient time to fully develop the baseline assessment or implementation plan for the proposed program, but believe strongly in the value of conducting a comprehensive and targeted program that will meaningfully contribute to significant GHG reductions from the agriculture sector.

Ultimately, we believe that the success of RGGI should be judged by the extent to which its initiatives help bring about long-term, systemic reductions in GHG emissions from the business, municipal, and residential sectors. The Cornell University College of Agriculture and Life Sciences and CiCCA believe that a new Climate Smart Farmer program would contribute to substantial GHG reduction in the agriculture sector. We believe that the initiative, which would need to be further refined and developed in partnership with agencies and stakeholders, could serve as a model of the type of program needed to bring about GHG reduction in other industry sectors.

Please feel free to contact us for any further information.

Sincerely,

Dr. Michael Hoffmann, mph3@cornell.edu

Dr. Allison Chatrchyan, amc256@cornell.edu

Ms. Julie Suarez, jcs433@cornell.edu

¹ Groisman, P. Y., R. W. Knight, and O. G. Zolina, 2013: Recent trends in regional and global intense precipitation patterns. *Climate Vulnerability*, R.A. Pielke, Sr., Ed., Academic Press, 25-55.

² Walsh, J., et al., 2014: Ch. 2: Our Changing Climate. *Climate Change Impacts in the United States: The Third National Climate Assessment*.

³ US EPA, *Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2012*, April 2014.

⁴ New York State Climate Action Council, *Climate Action Plan Interim Report*, November 2010.