



GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

INTEGRATIVE RESEARCH GROUP: United States Country Update

IRG representative:

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Activities/Accomplishment since last meeting

- For the U.S: A series of “global meet” webcasts were developed and presented to USDA personnel and Cooperative Extension Professionals to improve their climate science knowledge throughout the year. For Example:
 - Climate Change 101: The Foundational Science
 - Climate Effects on U.S. Agriculture and Forests
 - Climate Extremes in Agriculture and Forests
 - Climate Effects and Adaptation in Animal Agriculture
 - Climate Effects and Adaptations in Croplands
 - And 7 others now on YouTube.

Research and Capability Opportunities

■ Research Opportunities:

1. New Crosscutting Programs from USDA-NIFA for 2022: Extension, Education & USDA Climate Hubs Partnership; Rapid Response to Extreme Weather Events Across Food and Agricultural Systems (CAP Grants); and Regional Innovation and Demonstration of Climate-smart Agriculture for Future Farms (CAFF) (see https://www.nifa.usda.gov/sites/default/files/2022-09/FY22-AFRI-FAS-RFA-MOD2-09.19.2022_0.pdf).

■ Capability Opportunities: – *identify upcoming workshops and training or projects with potential for students*

1. Farmers.gov Resources for Climate-Smart Agriculture and Forestry. USDA offers voluntary programs and services to help agricultural producers and land managers build soil health, sequester carbon, reduce greenhouse gas emissions, enhance productivity and commodity marketability, and mitigate the impacts of climate change while building resilience to strengthen your operation (see tools at the bottom of <https://www.farmers.gov/conservation/climate-smart>).

Examples of how cropping system carbon neutrality is being advanced

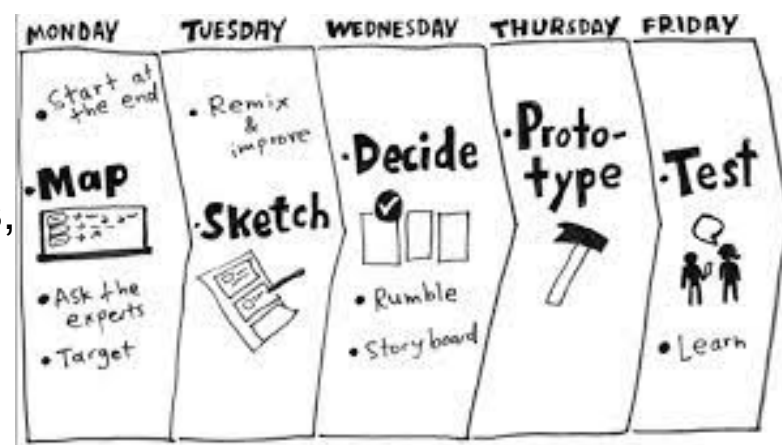
- Example 1: The Agriculture Innovation Mission for Climate (AIM for Climate / AIM4C) is a joint initiative by the United States and the United Arab Emirates. AIM for Climate seeks to address climate change and global hunger by uniting participants to significantly increase investment in, and other support for, climate-smart agriculture and food systems innovation over five years (2021 – 2025).



An innovation sprint is an increase in aggregate self-financed investment from non-government partners to achieve an outcome/output in agriculture innovation and for climate-smart agriculture and food systems to be completed in an expedited timeframe. AIM for Climate innovation sprint focal areas: Smallholder Farmers in Low- and Middle-Income Countries; Methane Reduction; Emerging Technologies and Agroecological Research.

The following organizing principles should be considered when developing an innovation sprint:

- **Bold idea:** Quantifiable, concise and ambitious, but achievable, outcome and/or output in support of the AIM for Climate objectives.
- **Foster innovation and cooperation:** Leveraging sector leadership, consortiums, and/or public-private partnerships to develop, demonstrate, and deploy innovative CSA tools and approaches.
- **Expedited timeframe:** Activity should establish an ambitious timeline to achieve outputs and outcomes, bounded no later than the end of the AIM for Climate initiative (end 2025).



Innovation Sprints should support Community Supported Ag innovation by increasing agriculture productivity while adapting and building resilience to climate change and/or reducing/removing greenhouse gas emissions.

Components of innovation sprints may include:

- *Increasing agricultural productivity*: Improving water and other resource use efficiency; developing optimized hybrids and varieties; advancements in digital and precision agriculture.
- *Adapting and building resilience*: Enhancing soil health; improving hybrids and varieties; improving water and other resource use efficiency; advancements in monitoring tools, biotechnology tools, and/or sustainable management practices to control pests, contamination, and diseases.
- *Reducing/removing greenhouse gas emissions*: Advancements in cold storage; improving traditional fertilizer management practices; advancing alternatives to traditional fertilizers; improving livestock genetics, feeding and management; improving soil carbon sequestration; advancements to reduce deforestation; scaling precision agriculture technology; advancements in sustainable land use practices; improving use of solar and other renewable agricultural technologies; and, advancements in green energy equipment.