



**NACSAA**  
NORTH AMERICA CLIMATE  
SMART AGRICULTURE ALLIANCE

Submission by Solutions from the Land

on behalf of the

North America Climate Smart Agriculture Alliance

In Response to Decision 4/CP.23

Koronivia Joint Work on Agriculture

Additional Views

September 27, 2020

The North America Climate Smart Agriculture Alliance (NACSAA) appreciates the respectful and welcoming environment that the Co-Chairs have maintained for observer entities and welcomes the opportunity to submit additional views and recommendations for consideration under the Koronivia Joint Work on Agriculture (KJWA).

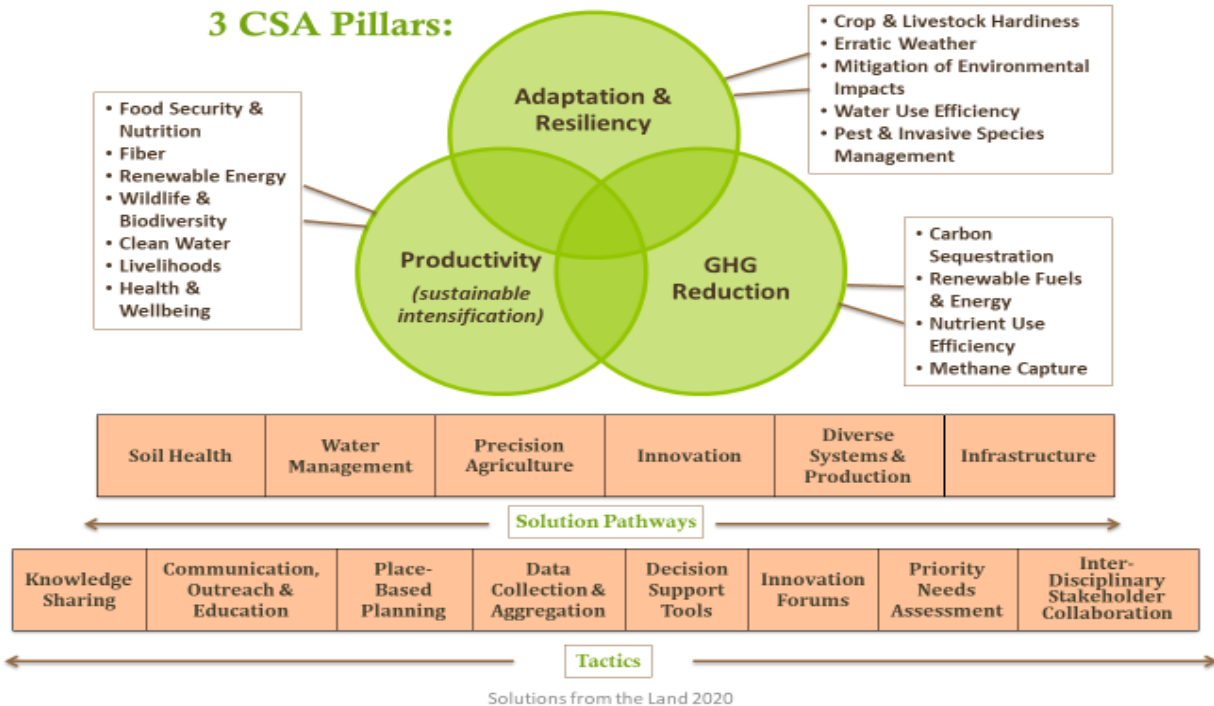
**Importance of Climate Smart Agriculture Framework**

NACSAA is a **farmer-led alliance** for inspiring, educating, and equipping agricultural partners to innovate effective local adaptations that sustain productivity, enhance climate resilience, and contribute to the local and global goals for sustainable development. NACSAA reflects and embraces all scales of agriculture in Canada, Mexico and the United States, ranging from small landholders to midsize and large-scale producers.

As we have noted in previous submissions, **the use of a Climate Smart Agriculture (CSA) framework is foundational to any agricultural climate strategy.** By enabling farmers to lead and focusing on the economic viability of farming operations as they respond to the changing climate, policymakers can encourage win-win scenarios in which agriculture presents a solution for climate impacts while improving environmental resilience, building strong rural communities, engaging consumers, and ensuring public health and access to nutritious food and supporting the attainment of other global sustainable development goals (SDGs).

The graphic below presents a visual depiction of tactics and solutions pathways that will enable and scale agricultural contributions to SDG attainment.

## Strategies to Enable Agricultural Solutions to SDGs



### Guiding Principles for Agricultural Roadmaps to Achieve Climate and Other SDGs

NACSAA wishes to take the opportunity offered by its capstone submission to again reinforce and emphasize the importance of precepts that should be respected and followed by member states – as well as all non-state actors including business, academic, and farmer organizations and civil society partners – in the formation of roadmaps and action plans to address agricultural climate change challenges and opportunities. The following recently updated guiding principles underpin years of NACSAA’s work and insight into farmer-led climate initiatives. NACSAA unreservedly recommends them for adoption and use by member states and other parties.

- **Profitability for the farmer must be a paramount objective** for any roadmap to transform agricultural systems to meet climate and other sustainable development goals. If a farmer is not profitable, he or she will not be able to deliver the outcomes that society hopes or expects.
- **Farmers must be at the center of all discussions and decision-making;** significant input will be needed from a wide range of farmer and other producer organizations outside of typical policymaking structures.
- **There is no “silver bullet” solution for enhancing the resilience of agriculture;** policymakers must embrace a systems approach that recognizes the tremendous diversity of agricultural landscapes and ecosystems and enables producers to utilize the systems and practices that best support their farming operations.

- As affirmed in the communique from the 8th Meeting of G20 Agricultural Chief Scientists (MACS), **science-based decision making**, in conjunction with **farmer and indigenous innovation**, must be the foundation for the adoption of climate smart technologies and practices for sustainable agriculture and global food production<sup>i</sup>.
- Since crops, livestock and production forest dominate the world's land area, agricultural systems must be advanced that **increase both production and production efficiency** per unit of land and water; that **meet the food and nutrition needs of the future**; and that also **greatly enhance ecosystem health** by regenerating soils, watershed and habitat for biodiversity at scale, while serving as a critical sink for greenhouse gases<sup>ii</sup>.
- As reflected in the Sustainable Development Goals (SDGs) of the United Nations, we should **mobilize innovation across all elements and participants in the food and agriculture system**, unlocking solutions that meet the whole set of production, environmental and social well-being outcomes, rather than relying on predetermined technologies, production types or design components.
- **Adaptation strategies will require system approaches**<sup>iii</sup> that utilize a combination of improved efficiency, substitution (e.g. new crop varieties and breeds), and redesign/system transformation to reflexively respond to continuous short- and long-term changes in climate's impacts on cultivated and natural ecosystem conditions.
- Climate smart agriculture knowledge and recommendations from farmers, businesses and peer-reviewed academic research **must be integrated into processes and investments**.
- **Context-specific priorities and solutions** must be aligned with national policies and priorities, be determined based on the social, economic, and environmental conditions at site (including the diversity in type and scale of agricultural activity), and be subject to evaluation of potential synergies, tradeoffs, and net benefits<sup>iv</sup>.

### **Enabling Policy Recommendations**

The following climate change enabling policy recommendations were constructed from input gathered from NACSAA's members including agriculture, food production, equipment manufacturing, life science and conservation organizations. In developing these suggestions for the U.S. Congress, NACSAA produced a collective body of work which – though not every partner may endorse every item on the list – presents a composite consensus of important climate change enabling policies evolving from North America agricultural stakeholders. We offer these for the consideration of the Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technical Advice.

1. **Manage the Water Cycle:** Acknowledge and prioritize through funding, infrastructure and practices the extreme variations in the hydrologic cycle marked by drought, evapotranspiration, increased and more intense precipitation events, erosive runoff, sediment transfers to rivers and oceans, and increasing degradation of soil and water resources. Changes in the water cycle are iteratively driven by changes in weather and

climate, land uses and human land and water management leading to shifts in the timing, intensity and volume of rain and snow pack that in turn influence land surface erosion from flowing water, saturated and ponded soils, water storage capacity and flooding.

- Review the roles of federal agencies in state water allocation procedures to avoid interference. Create a framework to better inform and defer to states, tribes and local government decisions regarding water allocation and use in light of changing climate impacts and uncertainties. Advocate for constructive ways in which the federal government can support and facilitate those decisions.
  - Evaluate the climate impacts to, and current and future capacity of, key or challenged reservoirs, levees and dams; rivers, floodplains and aquifers; wetlands and productive lands to respond to changing precipitation patterns and protect associated land uses.
  - Inventory and evaluate current infrastructure’s capacity to ensure safe, adequate, and reliable water supplies that can be conserved, reused, stored, treated, managed and distributed in a timely manner where they are needed.
  - Direct the Council on Environmental Quality (CEQ) to convene a broad-based stakeholder group to help develop a Federal climate change adaptation strategy for water resources that optimizes the authorities provided by the 2007 SECURE Water Act. Include strategies to develop and fund a body of climate-related, watershed-specific knowledge to inform planning and adoption of adaptive water management practices and infrastructure projects.
  - Provide state-forward coordination frameworks between federal agencies and states to monitor water resources and develop adaptive approaches to climate change and water management; to assess and offer grants and cooperative agreements to local water authorities, governments and universities; and to streamline and enable access, research, and development for to infrastructure solutions.
2. ***Financial Assistance and Incentives:*** Promote and assist voluntary, locally led, incentive-based conservation efforts which may vary by conservation district to avoid “one-size-fits-all” policies; especially support proven practices such as 4R nutrient stewardship, no-till and cover crops and on-farm technologies such as methane digesters.
- Double the nation’s climate resilience investments into farms made through the 2018 Farm Bill and/or through such programs as the Agricultural Conservation Easement Program (ACEP), the Conservation Reserve Program (CRP), the Conservation Stewardship Program (CSP), the Environmental Quality Incentives Program (EQIP), the Regional Conservation Partnership Program (RCPP), the Rural Energy for America Program (REAP) and the Watershed Planning and Flood Prevention Program (PL 83-566)

- Enroll an additional 100 million acres of farmland to federal working lands programs by 2030, with a focus on implementing sustainable practices to maximize ecosystem services and carbon sequestration as indicated by their outcomes in each specific geography.
  - Increase general funding for cost sharing of nutrient management, conservation tillage, cover crop, soil health and biogas programs administered through federal programming.
  - Create a Section 48 investment tax credit for nutrient recovery systems that can remove nitrogen and phosphorus particles from animal manure, and another, permanent investment tax credit for anaerobic digesters for multiple uses, as in the Agriculture Environmental Stewardship Act (H.R. 3744).
  - Expand federal tools, including the soil health provision in the 2018 Farm Bill, to incentivize and measure soil health improvements, improve protocols for measuring the gains in soil carbon from soil health improvements and support development of markets for soil carbon capture and storage.
3. **Technical Assistance:** Rebuild the capacity (both resources and staffing) of NRCS, state conservation agencies and local conservation districts to provide much needed technical assistance in writing and implementing CSA plans.
- Enable NRCS to expediently access technical knowledge available in the private sector to complement and expand staff reach and expertise.
  - Fully implement 2018 Farm Bill provisions intended to extend staff coverage, such as allowing qualified non-Federal entities to certify technical service providers.
  - Use contract representatives such as Certified Crop Advisors and agronomists to alleviate the backlog of requests for NRCS help.
  - Increase investments in NRCS and annual appropriations for the Conservation Technical Assistance (CTA) program and any other programs that help cost-share conservation practices for landowners.
4. **Investments in Infrastructure:** Catalog and facilitate priority repairs and upgrades to vital production and vulnerable inland waterways infrastructure, including levees, locks, dams, and other water systems as well as roads, bridges, waterways, rails, utilities and others. Enable the use of on-farm new technology through universal in-field wireless broadband connectivity.
- Invest in increasing the capacity of inland waterway infrastructure, including reservoirs, levees and dams; rivers, floodplains, wetlands and productive lands to respond to changing precipitation patterns and to meet the need for additional

floodwater storage capacity and protection of priority land uses. Inventory and evaluate current infrastructure's capacity to ensure safe, adequate, and reliable water supplies that can be conserved, reused, stored, treated, managed and distributed in a timely manner where they are needed.

- Expand and fully fund the existing USDA Rural Utilities Service programs such as the Broadband ReConnect Program, the Rural Broadband Access Loan and Loan Guarantee Program, and the Community Connect Grant Program. As examples of expansion, adding a planning grant section in the ReConnect program would help buy down the cost of application in irrigation districts where costs provide barriers to entry, and USDA, NRCS, and FSA could use its Pilot Program to incorporate tech trials and precision agriculture infrastructure into existing farm funding or loans.
  - Catalyze public-private partnerships between Internet providers, research institutions, data managers and precision ag technology providers to fully utilize modern agricultural equipment to minimize inputs and maximize productivity.
  - Explore strategies to provide relief for the approximately \$7 billion in outstanding Rural Utilities Service loans supporting coal power plants if rural electric cooperatives agree to shut down those plants and invest in renewable energy generation. Offer funds through reauthorization and revision of the Section 1603 “grants in lieu of tax credits” program that ran from 2009 to 2011 as part of the American Recovery and Reinvestment Act.
  - Provide for local-level participation in the development of adaptation strategies. Include the message "the means and resources necessary for agricultural self-sufficiency, including water supplies and related infrastructure for irrigated agriculture, must be protected and enhanced to enable them to adapt to and withstand the impacts of climate change" in any national climate change adaptation or implementation strategy.
  - Expand the United States Department of Energy's 242 program to provide a production incentive for all community-scale renewable energy projects, the revenue from which would be used to invest in modernizing irrigation water delivery systems (currently limited to hydropower); significantly increase funding for this program.
5. **Research:** Support and encourage system-level, integrated science research on climate risks; adaptation innovations; the economic value and effectiveness of CSA production practices; decision-making at farm and landscape level management, and methods to align market incentives with desired environmental practices and outcomes.
- Involve farmers and stakeholders in continuous purposeful multi-directional stakeholder-research-outreach-extension relationships to ensure research reflects

the dynamic nature of shifting agricultural systems under climate change and stakeholder real-life priority challenges and opportunities.

- Invest in research for technology and management tools aimed at more efficient application of fertilizers and other crop inputs, such as precision equipment and 4R nutrient stewardship; research in animal feed that is aimed at reducing livestock emissions; public breeding programs to provide farmers with regionally adapted seeds and practices; and towards energy and emissions reduction practices and technologies.
- Expand the Conservation Innovation Grant through USDA NRCS and/or create other programs to support data collection to establish the impact of conservation practices on soil health and farmer economic sustainability.
- Assess potential mitigation and adaptation practices for agricultural lands, with a focus on soil health, and work to determine their economic viability, potential to maintain or intensify agricultural production, and carbon sequestration potential.
- Pursue new climate mitigation options for livestock producers including manure analysis and the use of manure to sequester carbon and improve soil health, as well as new approaches to livestock feed management and feed amendments that can reduce enteric emissions and subsequently reduce greenhouse gas emissions from livestock production.

6. **Risk Management:** Adaptation to changing weather and climate entails a suite of management strategies based on short and longer term production and conservation goals and perceptions of uncertainty and risk associated with changing conditions<sup>v</sup>. Adjust federal crop insurance programs to incentivize and expedite adoption of CSA practices to mitigate uncertainty and risks.

- Adopt crop insurance system changes to incentivize and reward growers for adopting and utilizing conservation practices and strengthen data management systems at USDA, enabling more comprehensive understanding of best management practices for risk mitigation.
- Require the Risk Management Agency and Federal Crop Insurance Corporation at USDA to consider the climate impact of practices when establishing policies and premiums. Recognize climate-smart practices with proven effectiveness in the relevant geography (such as cover cropping, crop rotation, alley cropping, integrated livestock-crop systems, etc.) as “good farming practices” that are “generally recognized” by agricultural experts.
- Offer discounts to federal crop insurance users whose practices offer de-risking opportunities. Allow financial regulators to use conservation practices (i.e. practices which indicate a foresighted manager) as a benchmark for determining the risk weighting of a borrower.

- Programmatically treat carbon-reduction practices as risk reducing.

7. ***Decision-making and Capacity Building:*** Integrate the results of research, farmer experiences and their articulated needs, and technology investments to develop accessible, pragmatic, and affordable decision-making approaches that utilize the range of low, mid, and high-tech tools and strategies, and effectively connect land managers at farm and landscape scales with data, knowledge and resources.

- Incentivize the development of tools, technologies, information and training that enables farmer decision makers to address complex farm-level and landscape-scale challenges (exacerbated by climate risks) and balance management for production, profitability and ecosystem integrity.
- Put in place institutional processes for governments and other bodies to reevaluate and adjust policies and regulations based on producer input<sup>vi</sup>. Create effective feedback mechanisms to alert policy makers to changing conditions, conflicting and ambiguous regulations, and unduly burdensome bureaucratic paperwork, and expedite policy updates that improve farmer decision making and uptake of innovative sustainable production approaches.
- Involve and incentivize government, the private sector, and civil society collaborations to encourage agriculture and its value-chains to innovate and develop efficient, effective products in support of agricultural and ecosystem co-productivity.
- Empower USDA's network of Climate Hubs to work with land grant university extension offices and other USDA agencies and partners. Fund these partnerships sufficiently to develop and deliver science-based, region-specific information and technologies to enable climate-informed decision-making by agricultural and natural resource managers.
- Provide additional federal support to help states develop and implement comprehensive adaptive management and ecosystem service action plans to sustainably intensify production, enhance the resilience of agriculture and improve soil, water and other environmental resources and services.

8. ***Carbon Pricing Mechanisms:*** Support a carbon pricing mechanism that also provides payments to farmers for carbon fixation in their soil, with valuation contingent on science-based evidence for time length of capture (i.e. higher values for fixation 12 or more inches below the soil surface).

- Permit lenders to use carbon credits as part of a borrower's cash flow statement, allowing producers to include net GHG emission credits as income when applying for loans.



- Quantify the carbon sequestration benefits of CSA practices such as manure injection to enable cover crop growth; further quantify the balance between greenhouse gas emissions and potential carbon sequestration in the agricultural sector.
9. ***Payments for Ecosystem Services:*** Support the development of quantified ecosystem benefits and a voluntary, market-based, private-sector funding mechanism/incentive for ecosystem services.
- Move to adjust U.S. agricultural cost assistance (via combined international support, public good investments, payments to producers, international trade policy in a carbon-conscious future market, and other mechanisms) towards incentivizing climate adaptation and mitigation in agriculture and the broader food system. Take forward recommendations for scaling up and mainstreaming CSA, improve opportunities for leveraging further agricultural investments.
  - Provide tax incentives for farmers who adopt conservation Best Management Practices (BMPs) and other emission and runoff mitigation practices on farm.
  - Authorize tax incentives or federal transferable tax credits between landowners who own the land and farmers who lease the land for farming. Allow for an exchange of tax credits for climate mitigation best management practices.
  - Revise the provisions of the USDA Conservation Reserve Program’s 7 CFR § 1410.63 “Permissive Uses” to clearly articulate that “the sale of carbon, water quality, or environmental credits is permitted by CCC,” instead of the current provision that indicates they “may be permitted.”
  - Permit the sale of ecosystem credits generated by farmer or rancher actions on federal lease land resulting from private actions.
10. ***Clean Energy:*** Pursue the reduction of carbon through market adjustments and production diversification opportunities to expand bio-based fuels for transportation and electricity production.
- Establish a national Low Carbon Octane Standard for light duty vehicle fuel (minimum 98 RON E25) resulting in -30% GHGs relative to baseline gasoline. Support the move to alternative fuels such as higher-level blends of ethanol (E20+) and B20 biodiesel for efficiency and air quality purposes.
  - Make clear that all ethanol blends with gasoline are permitted under the Clean Air Act and require DOE to produce, within 90 days of enactment and in consultation with EPA, recommendations from the Co-Optima program on optimal liquid fuel blends for climate change, air quality, and public health.

- Uphold the integrity of the RFS to further reduce emissions in the transportation sector.
- Direct USDA to collaborate with the Department of Energy to develop regionally appropriate renewable energy sources and technologies; feed stocks for biofuels and other biomass energy sources; engines that run solely on ethanol; uses for distillers' grain; and production of fuels and fertilizers from renewable energy sources.
- Expand operational renewable natural gas production and methane recovery (either direct as scrubbed biogas to pipeline quality or generation of electricity) from livestock operations, crop production and other industries which produce organic waste. Mechanisms available include making further funding and educational opportunities available through EPA/USDA's AgSTAR program, enabling ag/energy industry partnerships and adding compliance targets for organic waste to renewable energy portfolio standard laws.

These 10 priorities, developed from collective dialogues among US farmers and their value chain partners, have huge potential **to increase agricultural sustainability and resilience to climate disruptions and the inevitable shocks to productivity, ecosystems, markets, livelihoods and global food systems**; all goals more relevant than ever in this time of global change.

NACSAA once again thanks KJWA's Co-Chairs for their proactive consideration – both today and during each of the previous calls for submissions – of the collective experience of the North America agricultural value chain while formulating the final report to the Conference of Parties.

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<sup>i</sup> G20 Japan. *8<sup>th</sup> Meeting of Agricultural Chief Scientists (MACS) Communiqué* [Press Release]. (2019). Retrieved from <http://www.affrc.maff.go.jp/docs/press/attach/pdf/190427-3.pdf>

<sup>ii</sup> Campbell, B. M., Thornton, P., Zougmore, R., Van Asten, P., & Lipper, L. (2014). Sustainable intensification: What is its role in climate smart agriculture? *Current Opinion in Environmental Sustainability*, 8, 39-43.

<sup>iii</sup> Tittone, P. (2014). Ecological intensification of agriculture—sustainable by nature. *Current Opinion in Environmental Sustainability*, 8, 53-61.

<sup>iv</sup> North American Climate Smart Agriculture Alliance (2015). *A platform for knowledge sharing and application of climate science to agriculture* [Report]. Retrieved from: [https://www.sfldialogue.net/files/sfl\\_formation\\_plan\\_2015.pdf](https://www.sfldialogue.net/files/sfl_formation_plan_2015.pdf)

<sup>v</sup> Morton et al. 2015. Upper Midwest Climate Variations: Farmer Responses to Excess Water Risks. *Journal of Environmental Quality* 44:810-822

<sup>vi</sup> Glass, L M and J Newig. 2019. Governance for achieving the Sustainable Development Goals: How important re participation, policy coherence, reflexivity, adaption and democratic institutions? *Earth System Governance* 2:100031



## North America Climate Smart Agriculture Alliance Partners (2020)

- 25x'25 Alliance
- Advanced Biofuels USA
- Agricultural Retailers Association
- American Coalition for Ethanol
- American Farm Bureau Federation
- American Farmland Trust
- American Seed Trade Association
- American Society of Agricultural and Biological Engineers
- American Society of Agronomy
- American Soybean Association
- Association of Equipment Manufacturers
- Association of Public and Land-Grant Universities
- Bayer
- Biotechnology Innovation Organization
- Business for Social Responsibility
- Canadian Federation of Agriculture
- Canadian Forage and Grassland Association
- Council for Agricultural Science & Technology
- Cater Communications
- Center for Climate and Energy Solutions
- Conservation Technology Information Center
- Cornell Institute for Climate Smart Solutions
- Crop Science Society of America
- CropLife America
- Cultivating Resilience
- EcoAgriculture Partners
- Environmental and Energy Study Institute
- Environmental Defense Fund
- Farmers Conservation Alliance
- Family Farm Alliance
- Farm Foundation
- Farm Journal Foundation
- Farm Management Canada
- Fertilizer Canada
- Field to Market
- Florida Climate Institute (FCI)
- Genscape Inc. Un of Illinois Chicago
- ILSI Research Foundation
- Innovation Center for U.S. Dairy
- Iowa Soybean Association
- Iowa State University
- Irrigation Association
- Kellogg Company
- National Association of Conservation Districts
- National Corn Growers Association
- National Farmers Union
- National FFA Foundation
- National Pork Producers Council
- Native Pollinators in Agriculture Project
- OCP North America, Inc.
- Ontario Federation of Agriculture
- Soil and Water Conservation Society
- Soil Health Institute
- Solutions from the Land
- Southeast Climate Consortium (SECC)
- Sustainable Corn Coordinated Agriculture Project
- Syngenta
- The Fertilizer Institute
- The Mosaic Company
- The Samuel Smith Noble Foundation
- The Toro Company
- United Nations Foundation
- United Soybean Board
- University of Florida
- U.S. Department of Agriculture
- U.S. Farmers & Ranchers Alliance
- Western Growers Association
- World Business Council for Sustainable Development
- World Wildlife Fund