CAPI
THE CANADIAN AGRI-FOOD POLICY INSTITUTE

Agriculture and Agri-Food Canada

Synthesis Report of

CAPI-AAFC Workshop on

Strategies to Reduce Net GHG Emissions in Agriculture

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The Canadian Agri-Food Policy Institute (CAPI) and the Strategic Policy Branch of Agriculture and Agri-Food Canada (AAFC) organized a workshop with issue experts (the List of Participants is provided in Appendix 1) to seek views on the following:

a) Develop a shared understanding on the effectiveness of GHG mitigation strategies and barriers to the adoption of these strategies.
b) Consider forward-looking approaches to reduce emissions while improving agricultural productivity.
c) Provide related strategic and policy advice to CAPI and government.

While not intending to provide a consensus view, the following offers a synthesis of key ideas from that workshop. Broader engagement, dialogue and research is required to build on these ideas.

Synthesis:

Canada's advantage: Canada should respond to the GHG emissions challenge in a much broader context; that is, it needs to be part of an overall sustainability agenda for change. The reason: Canada can undertake a broader approach — unlike most other countries — because of its natural resource endowment, its geography, biomass potential, and the prevalence of extensive production practices. In short, Canada has the potential to deliver a robust stewardship agenda, unlike many other food producers/competitors.

> Advice 1: It is in Canada's national strategic interest to consider mitigation options as part of a broader sustainability agenda given the country's natural comparative advantages.

The Canadian brand opportunity: There is a national food branding opportunity to become a more reliable supplier in the face of climate change while meeting GHG commitments and delivering multiple benefits. That is, simultaneously advancing sustainability and increasing agricultural productivity because of Canada's relative advantage of low carbon intensity food production, being recognized by consumers and customers as "responsible and trusted environmental stewards," and continuing to be in a position to help "feed and fuel the world" with safe and nutritious food. Being a global leader in linking ecological and social co-benefits leverages Canada's opportunities. This is an ambitious call to action. Canada has demonstrated leadership in the past (e.g., zero-till farming) and Canada is displaying leadership on sustainability today (e.g., Canadian Roundtable for Sustainable Beef). Given its natural capital advantage and the increasing environmental stresses facing global food systems, Canada can take up a new leadership position to meet (if not exceed total GHG reduction targets) and deliver co-benefits in the areas of continuous improvement towards quality, productivity, sustainability and adaptation.

> Advice 2: It is in Canada's national strategic interest to present a vision for a Canadian carbon strategy linked to the agricultural sector and to deliver a series of related benefits as part of a broader, forward-thinking and global leadership agenda. This could include setting out an inspirational goal to drive alignment across the food system and bringing more attention to the co-benefits opportunities. Further consultation is required to specify that goal.

The global advocacy opportunity: In contributing less than 2% of global GHG emissions, it is acknowledged that Canada's actual emissions and GHG-reduction efforts will have a minor impact on the global GHG situation. Canadians need to do their part in this regard but Canada's bigger opportunity may be about helping to encourage a more concerted global response – and we need to demonstrate this in ways that ensure our competitiveness going forward. Given our natural advantages, we should be very strategic about how we implement our approach.

> Advice 3: Canada is a leader in some areas of agricultural carbon and nitrogen mitigation and we need to make more of this internationally. For example, we are one of the most carbon efficient producers of protein in the world and for the sake of the planet we need to make this a key element in measuring comparative advantage. Canada can use its position in international fora "to raise the bar on global competitors." Part of this includes an advocacy role for bringing external ecological costs into the full-cost calculation of producing food. That way, food production gravitates to regions/countries where required resources are available and used sustainably.

Understanding the science & required data: Mitigating greenhouse gas emissions while remaining productive and competitive is a complex matter. Doing so effectively requires a deep understanding of the science behind the issue. We need to better understand the potential opportunities for soil sequestration of carbon. Part of this includes understanding whether the carbon sink is approaching its full potential. We also need to understand the relative importance of that compared with the nitrogen and phosphate balances that are affecting sustainability and climate change. Understanding these issues and their limitations should shape policy decisions and, ultimately, the instruments being deployed to support them.

> Advice 4: We need to ensure that our scientific research better understands Canada's current and potential carbon sink status and emerging innovations which can alter the sink capacity and rate of sequestration. Better data and a coordinated research agenda are required to accomplish this. It is imperative to have the right data and metrics to measure and monitor change. It is also important to influence the way metrics are defined and used in the international fora (relevant to advice #3, above).

Policy & Instrument Design: Getting specific GHG-policy and instrument design right is important. Policies and instruments need to appropriately incent the desired behaviours and produce the expected outcomes. As well, they need to minimize unintended negative consequences. The *Specific Mitigation Opportunities Working Group Final Report* (November 2016), which was prepared for the First Ministers, has already analyzed various mitigation options for agriculture sector and indicated that, with the current technologies, the opportunities for further reducing GHG emissions in agriculture may be rather limited. Thus, innovation is a key component of further reductions. The participants of the Workshop concluded that a strategy of focusing on co-benefits to reduce GHG emissions has merit, in terms of addressing impacts on natural capital (biodiversity, water quality, soil quality, etc.) and enhancing competitiveness. This type of a strategy provides the means to a more systemic and integrated approach towards building a resilient and sustainable agriculture and food system.

Advice 5: When it comes to mitigation practices, both market and non-market instruments as well as sustainability co-benefits should be carefully considered. Cross-sectoral links between plant and animal agriculture as well as agriculture and non-agriculture interactions should be considered. In this context, four options should be given priority (the details of actions in support of these strategies are provided in Appendix 2):

- Research, development and extension for the adoption of new and better beneficial management practices.
- Development and implementation of verification and audit systems for sustainable practices.
- Development of efficient and effective offset markets.
- Consideration to cross-compliance to better understand its pros and cons as an instrument.

Scoping Out the Broader Set of Issues & Risks: The following issues were discussed in the context of facilitating the development of strategies to reduce emissions and to improve overall sustainability of the Canadian food system.

a. Getting credit for what we are doing, or for the sector's GHG status vis-à-vis other countries particularly in terms of relative C-intensity of Canadian products.

b. Enabling agricultural producers to get credit and fair compensation for reducing carbon intensity.

c. Developing effective, integrated environmental monitoring tools and data collection systems to monitor the environmental performance and progress of the sector.

d. Understanding how retail labelling and consumer behaviour shapes marketplace behaviour and can (or cannot) reward good stewardship practices.

e. Considering the degree to which investing in technology and biotechnology can help improve the GHG outcomes, including the impacts of the regulatory barriers to innovation that biotech for clean technology and the bio-economy faces.

f. Understanding the implications of the different methods for accounting for carbon sinks and emissions.

g. Remaining cognizant of the effort being undertaken by other sectors, such as forestry, fisheries, the bio-sector, and perhaps others to meet Canada's emission reduction targets.

h. Acknowledging and understanding how global agricultural subsidies perpetuate a model of agriculture that can continue to undermine ecosystems and undermine Canada's long-term competitive position.

i. Canada may not be as sustainable and progressive as we may think. There are increasing expectations on environmental performance and we are leaving opportunities and challenges off the table (phosphorous) and not fully addressing emerging issues.

j. We could be "too incremental" in our approach when there should be a sense of urgency. Canada risks being lackadaisical about the urgency/need to grab hold of our opportunities here.

k. Public trust is a growing issue for the agri-food sector here and abroad. As global food production undermines ecosystems (i.e., polluted water systems, ocean collapse, deforestation, species extinction, zoonotic diseases, etc.), consumers and society at large will want the agri-food sector (and regulators) to increasingly shift their practices. This has broad impacts for the sector, including diet changes, elimination of animal agriculture, and imposition of more restrictive practices, etc.

Advice 6: Moving forward requires assessing and addressing a variety of issues and risks, as indicated above.

APPENDIX 1: LIST OF PARTICIPANTS

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Drew Black, Canadian Federation of Agriculture

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APPENDIX 2: STRATEGIC DIRECTIONS PROVIDED BY THE WORKSHOP PARTICIPANTS

Four actionable strategies were identified by the participants: (I) Support/Fund the further development of Beneficial Management Practices and enabling systems for their adoption; (II) Develop the supporting structures and processes for verification and audit systems; (III) Prepare the institutional infrastructure required for efficient operations of offset markets; and (IV) Consider cross-compliance as a policy instrument to encourage the adoption of sustainable practices. The suggested actions in support of these strategies are listed below:

I. Beneficial Management Practices (BMPs):

BMPs are considered effective tools to reduce GHG emissions and promote sustainable production practices. There is more that could be done in this area, however, there is not enough information to evaluate their performance.

1. Develop a "policy learning network" to share information and evaluate the performance/ effectiveness of BMPs in reducing GHGs.
2. Rank BMPs based on their effectiveness to reduce GHGs by taking into account ecological co-benefits, and adjust the current system of incentives to reflect this ranking.
3. Develop effective ways to discourage Worst Management Practices (WMPs), e.g., bringing back marginal land into production based on short term profitability.
4. Identify BMPs and WMPs, and enable social networks and like mechanisms to encourage the adoption of BMPs and discourage WMPs.
5. Further develop BMPs for on-farm GHG reduction with a focus on co-benefits, particularly on their impacts on natural capital.
6. Fund research and innovation of new GHG mitigation options, support producers' and producer organizations' innovations.
7. Fund/support implementation and acceleration of biophysical research with broader social and ecosystem co-benefits.
8. Develop methods to measure the impact of BMPs and evaluate the progress over time.
9. Consider the adoption of BMPs on a landscape basis, provide spatial coordination networks or enterprises.
10. Develop metrics and processes to measure and evaluate progress.

II. Verification Systems and Audit

Some subsectors and industry organizations are developing sustainable practices for their respective sectors. The development of supportive structures could expand the application and marketability of these systems. What is the role of government in this context?

1. Enabler
    - Development and implementation of standards across value chains,
    - Development of measurement methods and data collection,
    - Labelling of verified standards,
    - Support the development of transparent systems and traceability,
    - Provide organizational support to farmer generated verification systems,
    - Use and share arrangements for the big data.
2. Audit function
    - Connect verified practices to outcomes.
3. Influence international standards of sustainability
    - Improve access of Canadian sectors to international markets that demand sustainability standards,
    - Support industry efforts to command price premiums and to improve profitability.
4. Demonstration of value proposition
    - Cost savings associated with sustainable practices,
    - Price premiums,
    - Improved market access,
    - Various public policy issues could be addressed; such as public trust, federal sustainability strategy, and country branding for recognized sustainable practices.

III. Offset Markets

Verification systems could provide the basis for effective offset markets, and in turn offset markets could provide economic incentives for producers to adopt BMPs and sustainable practices in general. What will be required for such markets to function successfully?

1. Study the past performance of carbon markets and derive lessons.
2. Develop trading platforms and make them simple enough for producer participation.
3. Develop measurement, accounting and verification systems.
4. Define offsets for a broader set of ecological services, not only for GHG emissions, and link them to co-benefits to natural capital.

IV. Cross-Compliance

Cross-compliance is a way to connect economic incentives to environmental practices. Advantages and disadvantages of cross compliance have been discussed in the past at various forums as an environmental programming tool. Both EU and the US are currently using cross-compliance. PEI has introduced premium rebates for crop insurance. Cross compliance could be assessed as a tool in encouraging certain practices with a focus on ecological co-benefits (e.g., improved land and water management), and with a focus on better understanding its pros and cons as an instrument.