Integrated Crop Agronomy Cluster

Request for Letter of Interest (LOI)
Due Date: February 8, 2017

BACKGROUND

Currently, AAFC and the agriculture industry are preparing for the follow-up to the Growing Forward 2 research funding model through the next Agriculture Policy Framework. The industry has very good experience with commodity-specific research in previous Growing Forward initiatives. The next Agriculture Policy Framework provides an opportunity to fill a gap in the area of *cross-commodity agronomic research through an Integrated Crop Agronomy Cluster.*

Funding organizations from across Canada are participating in the development of an Integrated Crop Agronomy Cluster for submission to the next federal Agriculture Policy Framework (APF), the successor to the current Growing Forward 2 programming. The next APF is expected to be accepting coordinated funding applications by the summer of 2017 and to be fully launched by April 1, 2018.

In preparation for this new Cluster, we are requesting Letters of Intent (LOI) from researchers to identify unique and strategic multi-crop agronomy projects that would provide significant benefits to the whole farm using a systems approach.

What could be included in an Integrated Crop Agronomy Cluster? Generally, commodity-specific research has very good support by levy and value-chain groups, whereas cross-cutting agronomic research is currently orphaned. Three themes that have emerged are Resiliency, Mitigation and Efficiency. See below for further description of examples including: soil health topics, input use efficiency, pest surveillance and management, and multi-disciplinary approaches to crop production systems including rotation studies. Where possible, carefully planned long term rotation studies from which multiple layers can be extracted to address many questions would be encouraged to tackle several of the research needs.

Potential funding organizations have met to discuss agronomic research issues of greatest importance to producers. The eligible research areas defined below are intended to provide researchers with the scope of research that is of interest for the Integrated Crop Agronomy Cluster.

SCOPE OF THE PROPOSED INTEGRATED CROP AGRONOMY CLUSTER

For the purpose of gaining an understanding of the intent of an Integrated Crop Agronomy Cluster, the following describes broadly what could be considered in and out of scope.

In scope (considered favorably for this Cluster):

1) Field crop production strategies from an integrated crop and whole farm perspective, with emphasis on cross-commodity benefit.
2) Producer long term sustainability issues, including soil, water, air, and economics.
3) Preference for a systems approach wherever possible, including multidisciplinary research.
4) Preference for a broad geographic coverage with multiple sites across regions, with the capacity for adaptation to reflect sub-regional differences. Western Canada coverage is an example of what is meant by 'regional'. There is potential for the concept of central, western and eastern Canadian regions.
5) Facilitate technology transfer through production of tools and activities.
6) Consider regional needs as a priority with potential for multi-region/national scope cluster if multiple regions' needs can be addressed.
7) Consider national needs as an opportunity for potential collective benefit where possible, practical and efficient.

Out of scope (ineligible under this Cluster):

1) Variety development, breeding, and marker development.
2) Single commodity agronomic issues that are best suited to commodity-specific approach.
3) Policy and regulatory-based activity.
4) Product-based sustainability metrics that are better suited to a sector approach.

THEMES: RESILIENCY, MITIGATION AND EFFICIENCY

The following examples broadly describe field crop production issues from an integrated crop and whole farm perspective, with emphasis on cross-commodity benefit. Outcomes are expected to have a positive impact on producers' long term sustainability from the perspectives of resources (soil, water, air) and economics. It is anticipated that a systems approach, including multidisciplinary research whenever required, across a broad geographic region with multiple sites, will be required to reflect sub-regional differences.

1) Resiliency and adaptation to climate change – i.e. when climate continues to change, what crop production practices will be recommended? Examples:
   a) Resilient cropping systems (to climate extremes)
   b) Improved soil water dynamics

c) Crop protection in a changing climate:
    i) Ability of crops to withstand an increased prevalence and change of insects and pathogens as a result of climate change
    ii) Disease surveillance, forecasting and alerts
    iii) Insect surveillance, forecasting and alerts
    iv) Weed surveillance
    v) Enhanced tools useful for surveillance and forecasting of weeds, diseases and insects
    vi) Insecticide, fungicide and herbicide resistance – monitoring, forecasting and management strategies
    vii) Multidisciplinary approach to insect, disease and weed control, including crop rotation management
    viii) Understanding and enhancement of function provided by 'beneficials'
    ix) Improved understanding and management of pesticides in the environment, including effects on following crops

2) Mitigating climate change. Examples:
    a) Agronomic methods to reduce greenhouse gas emissions from crop production systems
    b) Further development of agronomic practices, crop systems and rotations to increase carbon sinks. Quantification of carbon sink value of crop rotation and management combinations.
    c) Developing a thorough understanding of the economic and environmental benefits and/or detriments of different strategies for cropping systems, such as relay crops, intercrops, cover crops
    d) Soil Health aspects. Examples:
        i) Identifying soil health parameters and practices affecting crop resilience under various stresses
        ii) Identifying tillage and seeding systems that maximize yield, maintain soil health, and prevent soil erosion
        iii) Sustainable crop production practices that maintain or enhance soil health
        iv) Understanding and harnessing soil microbe-plant interactions

3) Production efficiency. Examples:
    a) Optimizing economics and plant use efficiency of nutrients, particularly macronutrients, identifying effective rates, placement, timing, and sources of nutrients
    b) Land, labor and equipment use efficiency – increasing profitability per acre through integrated crop production management strategies to fully exploit the genetic potential of seed inputs
    c) Explore and assess new agronomic research methods for enhanced producer benefit

LOI ADVICE and ENCOURAGEMENT

- A LOI submission will be most successful if it aligns with the eligible research areas, in-scope and out-of-scope concepts presented
- Eligible researchers include those in Canadian academic institutions, not-for-profit research institutions, and federal and provincial research organizations
- Research funding may be secured for up to five years from April 1, 2018 to March 31, 2023
- Concepts that involve broad regional and national collaboration are very strongly encouraged.

EXPECTED TIMELINE FOR SUBMISSION

- The process will be carried out in three stages: i) the LOI and ii) full proposal stage iii) consideration by AAFC through the Agriculture Policy Framework
- **LOI submission deadline: February 8th, 2017**
- Successful applicants will be notified of the decision by early March and asked to provide a full proposal for further consideration by mid-May
- Full proposals will go through a robust review process prior to final decisions

LOI SUBMISSION DETAILS

Please use the "Integrated Crop Agronomy Cluster Letter of Interest Template Form" and submit this by Wednesday, February 8th, 2017 in WORD format to:

IntegratedCluster@WesternGrains.com

All submitted LOI's will receive an email confirming receipt within 2-3 business days.

For more information, you are encouraged to contact:

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or

Matthew Czerwinski, Project Manager, CFCRA at mczerwinski@gfo.ca or 519-767-0212.