The organic sector has been undergoing a national assessment of research priorities. While a full assessment is not yet complete, preliminary results of the research needs assessment have identified the following priorities that can help inform applications to Organic Science Cluster III, as a supplement to the Letter of Intent Guidelines for Researchers.

1. Increasing **competitiveness** through improvements in productivity, production stability and resiliency with climate extremes and/or quality of product, including:
   - Breeding - Developing/identifying crop cultivars and livestock that are: adapted to regional organic management, resilient to pest pressure, adapted to use nutrients/feed efficiently
   - Pest (disease and insect) management strategies - with an emphasis on prevention and cultural strategies, for:
     - horticultural crops (e.g. apple scab, blight, rots, nematodes, powdery mildew, wireworm, spotted wing drosophila, Colorado potato beetle, flea beetle, thrips, etc.),
     - cereals and pulse crops (e.g. fusarium head blight, seedling blight, root diseases, white mold, etc.)
   - Weed management strategies - cultural and mechanical practices for organic field and horticultural crops with emphasis on perennial weeds (e.g. Canada thistle, field bindweed); impacts and alternatives for plastic mulch use in horticulture
   - Cropping systems strategies – cover crops and green manures, intercropping, development of climate resilient systems, greenhouse systems
   - Soils, including:
     - effects of management practices on the form and quantity of soil organic matter,
     - practices to improve soil health; linking soil health with productivity, product quality and ecosystem services (e.g. clean air, clean water, water storage, etc.),
     - improved soil fertility management with crop rotation and soil amendments
   - Livestock feed - Alternative feed sources to reduce grain/concentrate use, including food waste, forages, insect protein; improved pasture management to maintain productivity and quality of feed while maintaining or improving biodiversity
   - Improving quality of organic products
     - improved nutritional value through management practices and cultivar selection,
     - evaluating and improving grain cleaning and storage practices
   - Development and application of new technologies to support organic production systems – including soil amendments (local resources/waste recycling), equipment, pesticides
   - Assessment of GE contamination risks to organic production systems, evaluating the effectiveness of mitigation practices and development of improved practices

2. Advancing **public good** through characterization and improvement of:
   - Agroecosystem function – nutrient cycling and movement, carbon life cycle and energy use analysis (whole system)
     - carbon balance of organic production systems in Canada
   - Ecosystem services – carbon sequestration, soil health, biodiversity, and pollination
     - soil health in tillage-based systems
     - using buffer zones to boost biodiversity – costs, impacts
   - Nutritional benefits of organic.
   - **Note:** Characterization of the environmental impacts of organic systems is a high priority, and is encouraged to be included as a component of all research projects as appropriate

3. Supporting organic sector **evolution** through:
   - Assessments of the sustainability of organic agriculture production systems and practices to improve sustainability
   - Application of holistic principles to find solutions that close nutrient/energy cycles - integration of crops and livestock, recycling of waste by-products (especially local/regional waste)
   - Improvement of animal welfare – optimizing outdoor access and housing