AGRICULTURE AND AGRI-FOOD CANADA
SCIENCE AND TECHNOLOGY BRANCH

EXTERNAL REVIEW EVALUATION CRITERIA
FOR RESEARCH PROJECTS

2017-2018
Document change history

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<td>Past versions of the criteria documents.</td>
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<td>Assessment instructions expanded. Removed section on Plant genomics.</td>
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Feedback and comments on the content, structure, and/or usability of this document are to be sent proposals_propositions@agr.gc.ca.
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Criterion #1 - Qualifications of the applicant(s)

Scientific excellence of the applicant(s) evaluates the ability of the applicant or the assembled team to accomplish the proposed research. The track record of the applicants (productivity, expertise, experience, etc.) must be viewed in context. The assessment of excellence is based on the expertise and track record over the past five years of the applicant and team members, focusing on their contributions to and impact on the field and profession. In the case of new scientists, less emphasis is placed on their track record; however, it is important that their potential for research be clearly demonstrated in the application.

Evaluate the proposal on the following sub-criteria.

1.1: Productivity in the proposed research area(s) of the research proposal

Productivity can be demonstrated in many ways and should be judged against the applicants' peers and the norms for the field of research. All applicants are expected to document their achievements in their Personal Data Form and describe their contributions as well as the excellence of these contributions. Contributions may take the form of any of the followings:

- **Dissemination of knowledge through the open literature**: refereed journal publications, conference proceedings, monographs, and books. Assessment must be based on the quality and impact of the publications, and not solely on the number of publications nor the journals in which they appear.
- **Evidence of specific application of knowledge and improvements to current practices**: advancement of knowledge, products, processes, services and designs, transfer of knowledge through technical and internal reports on new processes to practitioners, work on the establishment of national and international standards, and other contributions to the profession and impact on the discipline;
- **Evidence of the creation of novel products, processes and services that are or may become useful to society**: patents, technical licensing, technological innovation (e.g., development of new genetic lines from plant or animal breeding, development of innovative technology that is being implemented in farmers’ fields, commercial or industrial scales), innovative formulation of operational principles for the design of practical processes, development of viable spin-off companies, and joint ventures;
- **Other evidence of contributions to the profession or impact on the field**: membership on committees or advisory boards that influence the direction of the field and the profession, contributions to national or regional development, evidence of strategic management and planning, stature in the field, as
evidenced by invitations to lecture, write review articles, and chair conference sessions, extent to which the scientist’s work has advanced the field, i.e. created significant changes in thought within the research area and/or influenced the activities of users.

Please refer to the following key sections in the identified proposal documents:

- **Project Proposal Narrative**: Recent progress in activities and literature related to the proposal
- **Project Proposal Details**: Executive Summary
- **Personal Data Forms**: All

1.2: Ability of the applicant or the assembled team to accomplish the proposed research

Scientists who have branched into a new area of research must explain this change in their proposal and will be assessed based upon a combination of their past performance and their potential to undertake the new area of research. In the case of a team research proposal, appropriateness, complementarity, and synergy of expertise of each member of the group will be reviewed. The assessment should include the qualifications of the applicant(s) (training, experience and independence) and the appropriateness of the team to carry out the proposed research, in terms of complementarity of expertise and synergistic potential.

Please refer to the following key sections in the identified proposal documents:

- **Project Proposal Narrative**: Detailed Roles and Responsibilities of AAFC Participants and External Collaborators,
- **Project Proposal Details**: AAFC Human Resources, Non AAFC Collaborators, Students/Fellows
- **Personal Data Forms**: All

**Criterion #2 - Merit, originality and quality of the proposal**

This criterion is a composite of the following factors:

- **Originality**:
  - The novelty of the overall concepts and approach; and,
  - How the research relates to the current scientific and/or technical developments in the discipline.

- **Anticipated significance**:
  - The potential for developing new knowledge or technology, including innovative techniques, processes or products, and the expected contributions to the field of research and/or the agricultural and agri-food sector;
  - The extent to which new knowledge or technology is expected to impact on the field of research and/or the sector; and,
  - The significance of the scientific issues and technical challenges.

- **Focus and clarity of long- and short-term objectives**;

- **Suitability of proposed methodology**:
  - The appropriateness of the research methodology;
  - The justification of the approach, based on the background research; and,
Extent to which the scope of the proposal addresses all relevant issues, including the need for varied expertise within or across disciplines.

Evaluate the proposal on the following sub-criteria.

2.1: Merit and originality of the research proposal
For this criterion, original research is defined as research that will yield new knowledge. Typically, this refers to research that has not been carried out previously. However, there are times where replicative studies will yield new knowledge that may be crucial to progress within a field, for example, by conclusively verifying or refuting a central or novel hypothesis. In these cases, applicants should not be penalized for a perceived lack of originality. In addition, originality as defined here should not be equated with innovation. While AAFC encourages innovative research, many important research questions can still be addressed with existing technologies and methodologies. It is the originality in how these technologies and methodologies are applied that is important. Please refer to the following key sections in the identified proposal documents:

- **Project Proposal Narrative**: Detailed Description of the Proposed Project (5 sections)
- **Project Proposal Details**: Objectives, Milestones

2.2: Quality of the research approach
This criterion concerns the description of the research plan and can encompass whether the writing style facilitates understanding of the plan (clarity of the research question). **Clarity of rationale for the research approach and methodology** refers to whether the reasoning behind the overall strategy is clearly presented. **Appropriateness of the research design** refers to whether the best strategy was chosen to yield the desired knowledge and whether alternative approaches to the research question(s) were considered. **Appropriateness of the research methods** refers to whether the methods chosen were consistent with the research design and the best methods were selected for achieving the desired research outcomes.

Please refer to the following key sections in the identified proposal documents:

- **Project Proposal Narrative**: Detailed Description of the Proposed Project (5 sections)
- **Project Proposal Details**: Objectives, Milestones, Students/Fellows

Criterion #3 - Feasibility and potential to achieve objectives and deliver results
The feasibility and potential to achieve objectives and deliver results are assessed on the following points:

- Breadth and depth of team expertise in the proposed fields of activity (scientists who have opted to submit a research proposal addressing issues in a new area of research will be assessed based upon a combination of their past performance and their potential to undertake the new area of research);
- The coherence of the activities and deliverables;
- The probability of achieving the objectives in the proposed timeframe;
- The appropriateness of the roles and time commitment of the scientists and the collaborators;
- The need for the funds requested and the justification of the line items in the budget section;
- The plans for collaboration and communication among the scientists;
- The details of how the team and the proposed research will be managed (appropriate to the complexity of the proposed research);
- Anticipation of difficulties that may be encountered in the research and plans for risk management;
- If applicable, the linkages or overlaps with other AAFC projects, extramural-funded projects, etc.

Please refer to the following key sections in the identified proposal documents:
- **Project Proposal Narrative**: Proposed approach and methodology, Feasibility, Risk identification and mitigation strategies, Justification of Technical Support, Justification of Non-Pay Operating and Service/Facility Requirements
- **Project Proposal Details**: Objectives, Milestones, Cost by Category

**Criterion #4 - Contribution to innovation, industry and/or public good**

AAFC Science and Technology Branch is a publicly funded research organization, and its research focuses on “public good” research or research that could have a transformative effect on the sector. In most cases, no other research performer has the facilities and/or expertise to conduct the research, the research does not fall within the mandate of another organization or no funding is available to perform the research in other organizations. There is also significant risk in not conducting the research. The time frame may also be too long for other sources of research funds. The research output provides benefits to Canada broadly, not a single stakeholder or single individual organization.

Evaluate the proposal on the following sub-criteria.

**4.1 Impact or potential impact on the scientific community, industry, professional or society**

Emphasis is on the innovative content of the research program and the potential to make a significant contribution. Consideration is given to the potential for technological impact and the degree to which the proposal addresses present or future needs. Applicants should discuss the importance of the specific problem being addressed and the potential applications of the research. This criterion refers to the ability of successful outcomes of the research to meaningfully impact on the current state of knowledge. It also asks the question of whether the proposed research is significant, in terms of the need or gap addressed and the contribution to the body of agricultural, agri-food or agri-product research knowledge. To have an impact, research results must be disseminated; thus, an evaluation of the impact must also include an evaluation of the knowledge dissemination plan. Methods for disseminating results can vary greatly according to the field of study. For many fields, an adequate knowledge dissemination plan is simply the publication of results in peer-reviewed journals. For other fields, dissemination plans need to include relevant knowledge users. Knowledge dissemination does not necessarily imply or require commercialization of results.

Please refer to the following key sections in the identified proposal documents:
• **Project Proposal Narrative**: Proposed approach and methodology, Impact and significance of the work to the stakeholder and clients of the agriculture and agri-food sector, Risk identification and mitigation strategies
• **Project Proposal Details**: Objectives, Students/Fellows

4.2 Will open new lines of research/significantly advance knowledge (Transformative in nature)

Transformative research is defined as "research that has the capacity to revolutionize existing fields, create new sub-fields, cause paradigm shifts, support discovery, and lead to radically new technologies."

Please refer to the following key sections in the identified proposal documents:
• **Project Proposal Narrative**: Proposed approach and methodology, Impact and significance of the work to the stakeholder and clients of the agriculture and agri-food sector
• **Project Proposal Details**: Objectives, Milestones

Contact Information

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