



FOOD WASTE REDUCTION CHALLENGE

Applicant Guide – Streams A and B Business Models Streams

Applicant Guide

This guide will:

1. Help you determine if you are eligible to participate under **Streams A and B (Business Models Streams)** of the Food Waste Reduction Challenge (herein referred to as “the Challenge”) funded by Agriculture and Agri-Food Canada (AAFC).
2. Provide you with directions and explanations to assist you in completing an application at Stage 1 of the Business Model Streams.

The Food Waste Reduction Challenge has been designed with four distinct streams. At this time, we are accepting applications to Stream A and B, and the majority of the Guide will be focused on these streams. Some information is included about the overall Food Waste Reduction Challenge, which also includes Streams C and D. The application intake period for Streams C and D will open in Spring 2021.

The challenge consists of three stages. Successful participants from Stage 1 will receive further reporting requirements and instructions for Stage 2, once selected.

Table of Contents

- 1.0 About the Food Waste Reduction Challenge 4**
 - 1.1 Challenge Objectives 4**
 - 1.2 Challenge Streams 5**
- 2.0 Applying to the Challenge Streams A and B 6**
 - 2.1 Eligible Applicants 6**
 - 2.2 Eligible Solutions 6**
- 3.0 Challenge Structure for Streams A and B 7**
 - 3.1 Stages 7**
 - 3.2 Prize Amounts 8**
- 4.0 Results and Assessment Process 8**
 - 4.1 Direct Results 8**
 - 4.2 Assessment Criteria 9**
 - 4.3 Selection Process 10**
- 5.0 How to Apply 10**
- 6.0 If You Are Selected 12**
- 7.0 General Terms and Conditions 13**
- 8.0 Contact us 15**
- ANNEX A – DEFINITIONS 16**
- ANNEX B – HOW TO COMPLETE THE APPLICATION FORM 18**

1.0 About the Food Waste Reduction Challenge

One third of all food produced globally for human consumption goes to waste. This food accounts for about one quarter of all water used by the agriculture sector each year, requires land area greater than the size of China, and generates around 8% of global greenhouse gas (GHG) emissions annually, largely from food waste decomposing in landfills. Approximately 31% of Canada's food supply is wasted annually, costing an estimated \$49.5 billion. Meanwhile, 1 in 7 Canadians suffer from food insecurity.

The economic, social and environmental footprint of food waste is too large to ignore. That is why the Government of Canada is launching the Food Waste Reduction Challenge, under the [Food Policy for Canada](#), an initiative which serves as a roadmap for a healthier and more sustainable food system for Canada.

For more details on the definitions of food waste, food supply chain and challenge prize competitions, please refer to Annex A.

1.1 Challenge Objectives

The challenge aims to support new innovations and solutions which can help address the problem of food waste and loss across the supply chain, thereby reducing the associated economic, environmental, and social costs of food waste. Collectively, these solutions will help increase food availability, save consumers and businesses money, reduce GHG emissions and improve the efficiency of the food sector.

The objectives of the challenge are to:

- Reduce food waste in Canada;
- Foster improvements in food waste measurement;
- Attract new ideas, partners and resources to invest in solving the complex problem of food waste;
- Prompt new collaborations among non-traditional partners and problem solvers;
- Increase awareness of food waste among Canadians;
- Contribute to improving food security and creating jobs;
- Build the capacity of new innovators and support their entry into the market;
- Support the development of new industries, services and value-added goods; and
- Increase economic profitability and competitiveness of the Canadian agri-food sector.

Results achieved through the challenge will also contribute towards Canada's achievement of the UN Sustainable Development target of 50% reduction in food waste by 2030 and contribute to GHG emission reductions along the product life cycle.

1.2 Challenge Streams

The Food Waste Reduction Challenge is composed of four different streams:

Stream A: Business Models that Prevent Food Waste (Open for applications in November 2020)

Stream B: Business Models that Divert Food Waste (Open for applications in November 2020)

Stream C: Technologies that Extend the Life of Food (Will open for applications in Spring 2021)

Stream D: Technologies that Transform Food Waste (Will open for applications in Spring 2021)

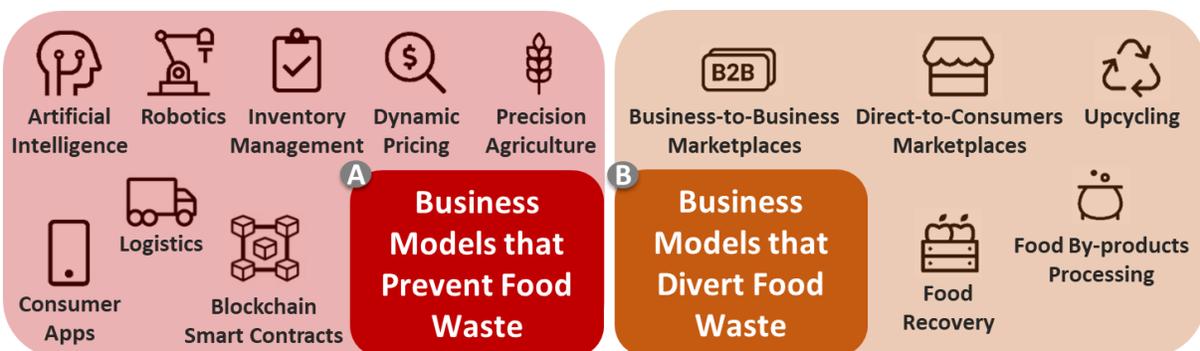
Stream A focuses on food waste prevention strategies, such as strengthening food systems, so that they do not generate food waste.

Stream B focuses on food waste diversion, such as rerouting food surplus or waste to new channels.

Streams A and B focus on solutions that are ready for commercialization and that provide an innovative “way of doing business” (i.e. business model) to reduce food waste across any or multiple stages of the food supply chain. It targets solutions in their early commercialization phase to accelerate their growth and scale-up in the market. Successful solutions will have a high impact in reducing the volume of food waste in absolute (total volume of food saved) or relative terms (percentage of food saved).

The field of innovation is vast under all streams. A non-exhaustive list of examples is provided below to illustrate the breadth of the solutions space for Streams A and B:

Figure 1: Streams A and B Solutions Space Examples (non-exhaustive)



Streams C and D, which will be launched in Spring 2021, will focus on investments in technologies that extend the life of food or transform food waste, and that are at the prototyping and testing phases to improve their effectiveness and make them ready for market within the next two years.

2.0 Applying to the Challenge Streams A and B

2.1 Eligible Applicants

Eligible applicants to the challenge include the following:

- Businesses or other for-profit organizations incorporated in Canada;
- Not-for-profit organizations incorporated in Canada;
- Indigenous organizations and groups located in Canada;
- Post-secondary/academic institutions located in Canada;
- Individuals or groups of individuals based in Canada (*see below for more info*);
- Non-Canadian individuals and entities (*see below for more info*).

Individual innovators or groups are encouraged to submit an application to the challenge, but in order to be eligible to receive funding, they will be required to establish a Canadian legal entity (such as a company or a corporation or a not-for-profit organization) capable of entering into binding agreements in Canada.

Non-Canadian individuals and entities are encouraged to submit an application to the challenge, but in order to be eligible to receive funding, they will be required to establish a legal entity (such as a company or a corporation or a not-for-profit organization) capable of entering into binding agreements in Canada. They may also be part of a partnership or consortium submitting a proposal as long as the applicant organization submitting the application meets the above criteria.

2.2 Eligible Solutions

Ideas and concepts can originate from anywhere globally, but applicants will be required to test, demonstrate, and deploy their solutions in Canada.

In order to meet the eligibility requirements, solutions must be aimed at leveraging innovation to achieve specific outcomes tied to reducing food loss and waste as identified in the following challenge statements:

STREAM A – Business Models that Prevent Food Waste

Accelerate and scale the deployment of innovative solutions that prevent food waste across the food supply chain.

STREAM B – Business Models that Divert Food Waste

Accelerate and scale the deployment of innovative solutions that create value from food waste, food by-products and/or surplus food.

Solutions need to meet the objectives of the challenge statements defined above. Solutions have to be scalable and applicable to numerous end users. Solutions that are limited to a specific end user (e.g. one organization developing a solution to exclusively reduce its own food waste) will not be accepted. If you have started working on your solution prior to this challenge, you are still eligible to apply, but your application should consider and reflect how you can improve the effectiveness, competitiveness and reach of your solution.

As part of the challenge, activities implemented by participants could include, but are not limited to: development, prototyping, piloting and demonstration of solutions that support the reduction of food waste; partnership building, customer acquisition, and market growth activities; capacity building activities; and any other implementation activities to meet the objectives of the challenge statements.

3.0 Challenge Structure for Streams A and B

3.1 Stages

The challenge follows a stage-gated approach. At each stage, different financial and non-financial incentives will be available to successful participants. At every stage, solutions will be reviewed against the assessment criteria, and selected winners will be invited to move to the following stage.

Figure 2: Streams A and B Stage-Gated Structure



Stage 1 – Concept Application: You complete an online submission describing your concept. In the application, you will need to show a deep understanding of the problem you are trying to solve and how your solution can meet the overall challenge objectives and the assessment criteria.

Note: This guide will help you complete an application at Stage 1. Once selected, successful participants from Stage 1 will receive further reporting requirements and instructions for Stage 2. The following information is provided to give you an idea of what would be required of you for Stage 2 and Stage 3 of the challenge, if you are selected as a semi-finalist at Stage 1.

Stage 2 – Market Demonstration Results: In this stage, you will be required to pilot your solution by executing your business model idea and following an experimental method for testing and evaluating the effectiveness of your solution. You might need to work with at least one implementation partner of your choice (i.e. an agriculture or agri-food business across the supply chain such as a farm, food processing facility, grocery retailer or restaurant, as needed). This stage could involve the development of prototypes, tools, processes and partnerships

necessary for the execution of your solution. You will be required to rigorously test and evaluate the effectiveness of your solution by measuring and reporting against the assessment criteria. At the end of this stage, all participants should have achieved or exceeded Level 7 of the Technology Readiness Level scale (see Annex A for definition).

Stage 3 – Grow and Scale in Market: In this stage, you will be required to accelerate and scale up the commercialization of your solution by acquiring new customers or users for your solution and growing in the market. You will be required to report on the growth of the solution in the market and, similarly to Stage 2, you will be required to rigorously test and evaluate the effectiveness of your solution by measuring and reporting against the assessment criteria. At the end of this stage, all participants should have achieved or exceeded Level 9 of the Technology Readiness Level scale (see Annex A for definition).

3.2 Prize Amounts

Up to \$10.8 million in total will be awarded to semi-finalists, finalists and winners under Streams A and B of the challenge:

Table 1: Streams A and B – Structure and Prize Amounts

Stage	Stage duration	Number of winners per stage	Prize amount per winner
Stage 1: Concept Application	2 months	30 semi-finalists (15 per stream)	\$100K per semi-finalist
Stage 2: Market Demonstration Results	8 months	12 finalists (6 per stream)	\$400K per finalist
Stage 3: Grow and Scale in Market	1 year	2 grand winners (1 per stream)	\$1.5M per winner

Important notes:

The number of winners and prize amounts may vary depending on the applications received. Specific dates will be communicated through the challenge website at <http://impact.canada.ca>.

4.0 Results and Assessment Process

4.1 Direct Results

The direct results of Streams A and B are the volume of food waste reduction by solutions developed under the challenge. Moreover, solutions will be assessed along different dimensions (e.g. social, environmental, economic, and technical) as measured by the assessment criteria.

4.2 Assessment Criteria

Below are the overall assessment criteria for Streams A and B. Each of the eight criteria will be assessed at every stage of the challenge, with a different focus or weighting at each stage. At Stage 1, assessment will be based on the applicant’s online concept application. At Stages 2 and 3, additional information and data will be needed for assessment and will be communicated in time to participants who reach these stages.

Table 2: Assessment Criteria at Different Stages

	Assessment Criteria	Stage 1	Stages 2 and 3
1	Volume of food waste reduction	Potential for food waste reduction estimated using secondary data sources and modeling and simulation techniques	Direct measurement of food waste reduction using rigorous and scientific methodology and validated by third party
2	Food waste measurement methodology	Conceptual approach for food waste measurement to test solution effectiveness	Rigor and innovation in methodology for food waste measurement to test solution effectiveness
3	Scalability of solution	Coverage potential and applicability of solution (e.g. potential number of users, geographic coverage, extent of food supply chain covered)	Evidence of scalability of solution from operational environment, ability to expand use of solution across contexts
4	Innovation	Novelty of proposed solution, added-value over existing solutions, transformative potential of solution	Innovation in solution, implementation, and addressing challenges. Opportunities for the sector created by solution
5	Economic assessment of solution	Economic and financial benefits of solution, costs associated with solution	Direct measurement of economic return. Analysis of financial sustainability and profitability
6	Environmental assessment of solution	Environmental benefits and risks (including GHG emissions). Mitigation measures for environmental risks.	Measurement and monitoring of environmental benefits and risks (including GHG emissions)
7	Social assessment of solution	Anticipated social goods or risks. Potential impact on food security, job creation, and specific demographic groups. Opportunities of engagement for vulnerable demographic groups	Evidence of social goods created by solution. Mitigation of social risks. Consultations with vulnerable demographic groups
8	Commercialization	Plan for commercialization, market adoption, and customer acquisition	Implementation of commercialization plan, commercial and market growth

4.3 Selection Process

AAFC will convene an independent and voluntary external review committee composed of subject matter experts (e.g. representatives from private sector, stakeholder groups) to assist in the assessment of applications. The external review committee will review applications and provide recommendations to support AAFC in determining the semi-finalists, finalists and winners. Additional expertise from other government departments may be sought in the review process, based on application content.

AAFC will take the necessary measures to avoid conflict of interest for any external review committee members or others involved in the assessment process, and will execute non-disclosure agreements to protect proponents' information.

Further to the external review committee's recommendations, AAFC will select and announce the semi-finalists, finalists and winners, as applicable to each stage of the challenge. All of AAFC's decisions and selections will be final and not subject to appeal.

Please note that even if a solution meets all eligibility and assessment criteria, the submission of an application creates no obligation on the part of the Minister or of Agriculture and Agri-Food Canada officials to provide funding for the proposed project. The Minister retains discretion to determine whether an application will ultimately receive funding.

5.0 How to Apply

These application instructions apply to Stage 1 of Streams A and B of the challenge. For detailed step-by-step instructions on how to answer each question in the application form, please refer to Annex B. At this time, we are not accepting applications to Streams C and D (Technologies streams) of the challenge. Application instructions for Streams C and D will be made available once the application window for those streams is open, which will be in Spring 2021.

Streams A and B – Stage 1 Application

Only applications submitted through the Impact Canada website via the designated challenge application portal: <https://impact.canada.ca> will be accepted. **Applications must be submitted through the portal no later than January 18, 2021 at 11:59 PM Pacific Standard Time.**

Additional challenge information, including process, timelines, specific deadlines, prizes, and Frequently Asked Questions (FAQs), are available on the challenge website.

In order for an application to be considered for the challenge, applicants **must complete and submit** the following documents online by the closing date and time indicated above and on the challenge website. A complete application package consists of:

- Challenge application form:
 - Applicant details
 - Proposed solution details
 - Declaration
 - Survey (*optional*)
- Letters of support from partners (*if applicable*);
- Confirmation of legal entity and/or not-for-profit status (*if applicable*).

Incomplete applications will not be considered or assessed further.

Application Details

Challenge application form

Applicants must fill in the application form available online on the Impact Canada website. The form consists of the following four sections:

1. Section 1: Applicant details

This section of the form requests basic information on the lead organization applying to compete in this challenge and to receive funding if successful, as well as partner organizations supporting the development of the proposed solution.

2. Section 2: Proposed solution details

In this section, you must identify the challenge stream (A or B) to which you are applying to, provide details on your proposed solution and answer questions that relate to the assessment criteria for Streams A and B to allow for a thorough assessment of the solution against these criteria. Note that this is the main section that will be used by the external review committee in the assessment process. Make sure to include in this section all relevant information for the external review committee's consideration. For detailed step-by-step instructions on how to answer each question in the application form, please refer to Annex B.

3. Section 3: Declaration

In this section, you must review and accept the terms and conditions for the challenge, agree to the due diligence process as described below, and review and accept the Consent for Use, Disclosure and Copyright requirements.

4. Section 4: Survey (*optional*)

This section collects information on your experience with this challenge, information about your organization, as well as demographic information. Note that any data collected will be used strictly for administrative purposes to help us understand whether and how challenges are an effective tool and improve upon their design in the future. The data collected in this survey will be aggregated and no individual answers will be published. Your answers to this survey will not be used in the assessment process and will not affect your chances of success in this challenge or any other federal funding application.

Attachments (optional)

The following attachments are optional at this stage of the application and should be provided by applicants only when available:

Letters of support from partners (if applicable)

If the lead organization is partnering or collaborating with other organizations in the development of the proposed solution, applicants must provide information about partner organizations in Section 1 of the application form. Applicants may also provide letters of support from partners that include details on their role and engagement.

Confirmation of legal entity and/or not-for-profit status (if applicable)

This can be a copy of the status certificate, incorporation documents, patent letters, or articles of incorporation (if applicable). Note that the lead principal applicant is required to establish a Canadian legal entity capable of entering into legally binding agreements to receive grant funding. This requirement can be completed after submission of the application but prior to receiving any funding.

6.0 If You Are Selected

Stages

Following recommendation from the challenge external review committee, approximately 30 applicants will be selected in Stage 1 to be semi-finalists in the challenge. Semi-finalists will receive a prize amount in the form of a grant and will be invited to proceed into Stage 2 of the challenge. Semi-finalists should be committed to meeting the requirements of Stage 2 (Market Demonstration Results) which could involve the recruitment of at least one implementation partner of their choice (i.e. an agriculture or agri-food business across the supply chain, such as a farm, food processing facility, grocery retailer, restaurant, as needed) in order to test solutions in an operational environment.

Grant Agreement

In order to receive the prize amount at each stage, each successful semi-finalist, finalist, and winner will be required to enter into a grant agreement with AAFC.

Prior to entering into the grant agreement, all selected participants will undergo a due diligence process to confirm that they meet all requirements to receive Food Waste Reduction Challenge grant funding and that they have the capacity to undertake the work outlined in their concept application. The due diligence process may include, when applicable, the review of the following documents:

- Documentary proof of establishing that the lead applicant constitutes a Canadian legal entity capable of entering into legally binding agreements and may receive Food Waste Reduction Challenge grant funding;
- Financial information, such as financial statements;
- For Quebec-based participants, documentation confirming compliance with the Province of Quebec's M-30 legislation prior to entering into an agreement with AAFC.

M-30 Act (for Quebec)

The Province of Quebec's M-30 legislation can only apply to Quebec-based applicants. It is the Act Respecting the Ministère du Conseil exécutif (R.S.Q., c. M-30).

More information on the Act is available online or by contacting the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ) at dpci@mapaq.gouv.qc.ca.

M-30 applies to various types of Quebec organizations; for example, organizations located in Quebec and receiving more than half of their financing from the Government of Quebec may be subject to the Act.

All Quebec-based organizations will have to address this matter and demonstrate their compliance with the Act during the project assessment process, and prior to entering into a grant agreement.

7.0 General Terms and Conditions

Applicants to the challenge agree to the following when submitting their application:

- Applicants agree to comply with all applicable laws.
- Applicants must be able to demonstrate ownership of or permission to use any intellectual property (IP) used in the challenge and provide necessary permission to AAFC for the purpose of administering this challenge.
- Applicants warrant that all information given in and with the challenge application form for this solution is, to the best of their knowledge, complete, true and accurate.
- AAFC has the discretion to cancel this challenge or any part thereof at any time.

Unpaid Debts to the Government of Canada

The recipient of AAFC funds must declare any amounts owing to the Government of Canada. Any amounts due to the recipient under AAFC programs may be set off against any such amounts owing to the Government of Canada under any agreement or any legislation with the Government of Canada.

Lobbying Activities

The applicant must ensure that any person lobbying on behalf of the applicant is registered and in compliance with the *Lobbying Act*. More information on the obligations in the *Lobbying Act* can be found on the website of the Commissioner of Lobbying of Canada.

Conflicts of Interest

Current or former public servants or public office holders are required to avoid conflict of interest situations while employed by the federal government and for a period of time following their service. The applicant acknowledges that any individuals who are subject to the provisions of the *Conflict of Interest Act*, the *Values and Ethics Code for the Public Sector*, the *Conflict of Interest Code for Members of the House of Commons*, any applicable federal values and ethics code or any applicable federal policy on conflict of interest and post-employment shall not derive any direct benefit resulting from this application unless the provision or receipt of such benefit is permitted in such legislation, policy or codes.

Privacy

Use and/or Disclosure

The personal and/or business information contained in, accompanying and/or submitted in support of this application is being collected under the authority of the [Department of Agriculture and Agri-Food Act](#) and may be used by AAFC or disclosed to third parties, including other government departments, to:

- assess and review the eligibility of the applicant and the solution under the applicable AAFC program;
- verify the accuracy of the information provided in or with the application form and additional documents;
- determine eligibility for other AAFC, Government of Canada or provincial programs from which the applicant might benefit;
- assess the efficiency of the challenge model in furthering departmental priorities; and
- evaluate the scope, direction and effectiveness of agricultural programming and research in Canada.

The applicant consents that the information may also be used for the purposes of contacting the applicant should additional information be required; validating the applicant's credentials; facilitating payment of the grant in the event the application is successful; performing program administration; and conducting evaluation, reporting, and statistical analysis.

Personal information will be treated and disclosed in accordance with the [Privacy Act](#). You have the right to access your personal information held by Agriculture and Agri-Food Canada and to request changes to correct personal information by contacting the AAFC Access to Information and Privacy Director at aafc.atip-aiprp.aac@canada.ca

For more information about AAFC's privacy practices, you may refer to the following Personal Information Banks: Public Communications PSU 914 and Outreach Activities PSU 938.

Business information will be disclosed only in accordance with the provisions of the [Access to Information Act](#).

Information on the *Privacy Act* and the *Access to Information Act* is available on the following website: <http://laws.justice.gc.ca>. For further information about these Acts, please contact the Access to Information and Privacy Director at aafc.atip-aiprp.aac@canada.ca.

Copyright permission

AAFC may disclose, reproduce and distribute any part of or the whole of the documentation provided in or with the application form, within AAFC and to its authorized third parties, including other government departments, for purposes consistent with the receipt, assessment and subsequent treatment of the application.

Intellectual property

Intellectual property created by a recipient will remain the property of the recipient.

Where it is to the advantage of Canadians, and not detrimental to the goals of the recipients, AAFC may negotiate the shared use of intellectual property developed by recipients or through a third party. The rights to use this material may include further use of data for research purposes and/or publishing the intellectual property online, in printed documents and in publications.

8.0 Contact us

For any questions or clarifications regarding The Food Waste Reduction Challenge, please contact the Agriculture and Agri-Food Canada Food Programs and Challenges Division team: aafc.fwrc-drga.aac@canada.ca

Telephone (in Canada): 1-877-246-4682

Telephone (outside Canada) : 1-204-926-9650

TDD/TTY: 613-773-2600

Updates will be provided on the challenge website, where applicants can review the FAQs and find out the latest news.

Applicants are encouraged to follow us on social media for the latest developments.

ANNEX A – DEFINITIONS

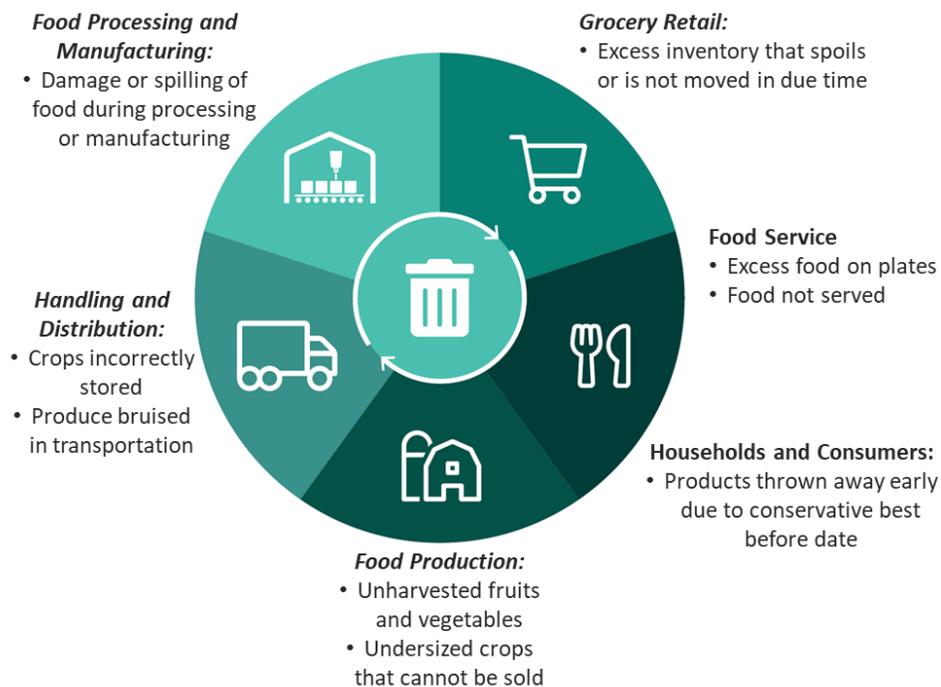
A challenge prize competition presents a clear problem or objective and offers a reward to the first or best solution to the problem, as judged by a panel of experts, based on a set of pre-determined criteria. Challenge prizes work best in addressing problems that are stuck or in domains that are new and emerging. In both scenarios, they serve to accelerate solutions and to bring new perspectives and approaches forward.

For the purpose of this challenge, ‘food waste’ is defined as inclusive of any type of food loss and waste that occurs at any stage of the food supply chain from farms to consumers. It refers to all food or part of food that is grown, harvested, processed, manufactured or prepared for human consumption, but never eaten by people.

The food supply chain is the network of actors and processes that describe how food moves from production to our tables. This network includes: farms and food production sites; post-harvest handling and storage; food processing and manufacturing facilities; distribution and transportation networks; grocery retail; food service industry such as restaurants and institutional canteens; and consumers at home.

Examples of food loss and waste across the food supply chain are illustrated in the figure below:

Figure 3: Examples of Food Loss and Waste across the Food Supply Chain



Technology Readiness Level (TRL) is a widely used indicator of degree of development of a technology toward deployment on a scale from 1 to 9 with 9 being fully deployment ready. For more information on Technology Readiness Levels, please visit <https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html>.

For Streams A and B in this challenge, there is no TRL requirement at the application stage (Stage 1). However all applicants are required to achieve or exceed TRL milestones at Stage 2 (Level 7) and Stage 3 (Level 9). The descriptions for those two levels are included below:

Level 7: Prototype ready for demonstration in an appropriate operational environment

Prototype at planned operational level and ready for demonstration in an operational environment. Activities include prototype field testing.

Level 9: Actual technology proven through successful deployment in an operational setting

Actual application of the technology in its final form and under real-life conditions, such as those encountered in operational tests and evaluations. Activities include using the innovation under operational conditions.

ANNEX B – HOW TO COMPLETE THE APPLICATION FORM

Detailed Application Instructions for Section 2 of the Application Form

Section 2 of the application form is the main section that will be used by the external review committee in the assessment process. Below are detailed instructions to help you submit a good quality application.

Q2.1 Stream Selection: Please make sure to correctly identify which stream (A or B) you are applying to. Remember that Stream A covers food waste prevention strategies that ensure food waste is not generated, while Stream B covers the diversion of surplus food, food by-products or food waste to new channels (such as new marketplaces, new uses, etc.)

Q2.2 Short description/pitch of your solution: Please provide a short description of your solution which can be used publicly to present or pitch your solution. This description might be used by the Government of Canada for communications purposes in publicly accessible materials and channels. Do not include in this description any confidential or non-public information about your organization and/or solution.

Q2.3 Describe the problem you are trying to solve. What exact food waste problem is targeted by your solution?

This question seeks to establish a clear understanding of the exact food waste problem you are trying to solve. In your description of the problem, make sure to identify the type(s) of food you are targeting, the segment(s) of the supply chain where the problem exists and where you plan to work, and the main causes of food waste that you are trying to solve.

Q2.4 Describe your solution in detail. How does your business model work?

This question asks for a detailed description of your solution and how it works. Your description needs to be clear and well defined using simple language. You should make sure to explain in detail what the solution is, what technology/tools it employs, how it works, what conditions it needs to work, how it specifically tackles the causes of food waste you identified in your problem description (In question Q2.3), and what changes are introduced to the existing “way of doing business” in the supply chain. When considering your problem and solution, please make sure to think about how they interact across multiple segments of the food supply chain (for example: are you transferring the problem from one segment to another?). Solutions that are more holistic in nature, taking into consideration food waste across multiple segments of the supply chain, will be preferred and encouraged.

Q2.5 [Scalability] What is the applicability of your solution across contexts and end users, including geographic coverage and extent of the food supply chain covered?

The response to this question will be used to evaluate the assessment criterion on scalability. Scalability is defined as the capability of the solution to cope and perform well under an increased or expanding workload or scope. It is a key criterion in this challenge and solutions that are limited to a specific end user will not be selected. Please explain how your solution can

cope with an increasing number of end users and how your solution could extend its coverage across contexts, geography (national, international coverage), and across the food supply chain.

Q2.6 [Innovation] The following questions are related to the assessment criterion on innovation.

Q2.6.1 Describe how your solution is different from existing solutions addressing this problem.

Innovation is defined as the application of ideas and methods that are novel and useful. It is not limited to new technology. For this question, first identify the space of existing solutions that are similar to your proposed solution, then identify the limitations of existing solutions and how your solution is better at addressing the same problem. Make sure to clearly explain what is novel in your solution compared to existing solutions. If you have started working on your solution prior to this challenge, make sure to explain what new elements you are planning to introduce to your solution to improve its effectiveness and reach.

Q2.6.2 How does your solution open up new opportunities for the sector?

In this question, you should consider potential opportunities to expand the scope of your solution in the future and look beyond the direct application of your solution. Will your solution trigger any transformation or change to food systems and the food sector? If so, identify how you envision this potential for transformation and change to materialize.

Q2.7 [Volume of food waste reduction] The following questions are related to the assessment criterion on volume of food waste reduction.

Q2.7.1 In absolute terms, how much food waste does the problem you are trying to solve generate per year? Include both weight figures in metric tonnes and CAD dollar values. Explain how your figures are calculated.

At Stage 1, your solution will be assessed based on potential impact on food waste reduction. In this question, you need to quantify the size of the problem you are trying to solve (as described in question Q2.3). Make sure that you properly reference all figures and data and explain your reasoning and calculations. Sources can include literature reviews, primary data collected by your organization, secondary data acquired from partners, early testing data if available, etc. You will need to include food waste data using both weight figures, expressed in metric tonnes, and monetary values, expressed in CAD dollar values. Use one year (12 months) as the time unit for your data (i.e. food waste per year).

Q2.7.2 What percentage of this food waste can be saved by your solution? Explain how your figures are calculated.

In this question, you will need to quantify the potential impact on food reduction of your solution by estimating what percentage of food waste calculated in question Q2.7.1 can be saved by your solution. Make sure that you properly reference all figures and data and explain your reasoning and calculations. Sources can include literature reviews, primary data collected by your organization, secondary data acquired from partners, early testing data if available, etc. You will need to include food waste data using both weight figures, expressed in metric tonnes, and monetary values, expressed in CAD dollar values. Use one year (12 months) as the time unit for your data (i.e. food waste per year).

Q2.8 [Food waste measurement methodology] How will you measure food waste reduction when your solution is used?

In Stages 2 and 3, you will be required to directly measure the volume of food waste reduction (expressed in both weight figures in metric tonnes and CAD dollar values) to evaluate the effectiveness of your solution using a rigorous and scientific methodology. At Stage 1, for this question, please discuss your approach and plan to integrate measurement of food waste when your solution is put to use. Include any potential support, techniques, methods, and technology you will need.

Q2.9 [Economic assessment of solution] The following questions are related to the economic assessment of your solution.

Q2.9.1 What are the economic and financial benefits from using your solution?

In this question, you should identify and describe the type of economic value created by your solution. This economic value might be directly linked to savings from food waste reduction, but there could be other economic benefits generated by your solution to end users and to food systems in general. Try to quantify those financial returns to end users and other stakeholders in the food system, as applicable.

Q2.9.2 What are the costs associated to develop and deploy your solution?

In this question, you are asked to quantify and estimate costs associated with your solution. These cost values will not be used to determine funding amounts from the challenge, but are important for the purpose of assessing the economic and financial feasibility, profitability and sustainability of your solution. You need to determine two types of costs: 1) costs associated with the development and commercialization of the solution that you, as a solution developer will bear, and 2) costs associated with acquiring and using your solution that end users are expected to bear. Try to compare those costs with the financial returns identified in question Q2.9.1 to justify the business and economic case for your solution.

Q2.10 [Environmental assessment of solution] The following question is related to the environmental assessment of your solution.

2.10.1 What environmental benefits and/or risks are expected to be created by the solution? How will you mitigate environmental risks, if any?

In this question, you should concisely summarize the environmental impact assessment of your solution, discussing both benefits and risks to the environment that are directly associated with the use of your solution. Most environmental benefits will directly stem from the reduction of food waste, but there could be other environmental benefits that you can identify. You can use your data on food waste reduction from question Q2.7 to estimate the impact of your solution on greenhouse gas (GHG) emissions, water usage, and other environmental indicators, as applicable. Please explain how you calculated these numbers and include any assumptions and coefficients used. In addition to environmental benefits, please discuss environmental risks and quantify them when possible. Discuss how you can mitigate those risks.

Q2.11 [Social assessment of solution] The following questions are related to the social assessment of your solution.

Q2.11.1 What social goods and/or risks (e.g. food security, job creation, impact on vulnerable populations), if any, are expected to be created by the solution? How will you mitigate social risks, if any?

In this question, you should concisely summarize the social impact assessment of your solution. It is important that you consider how your solution affects specific social processes and demographic groups. In particular, you should discuss potential impacts on food security, as well as on jobs in the food sector. It is preferred to quantify those impacts, if possible. If there are social risks, make sure you identify them and discuss how they can be mitigated.

Q2.11.2 If you have consulted with any specific demographic groups (e.g. farmers, women, Indigenous groups, northern, remote or vulnerable populations), please discuss how the outcomes of those consultations affected your proposed design.

In this question, please indicate if you have conducted any consultations or engagements with specific demographic groups, such as farmers, women, Indigenous populations, northern or remote populations, food-insecure and vulnerable populations, etc. Summarize the main findings of those engagements and discuss how they affected your proposed solution.

Q2.12 [Commercialization] The following questions are related to the assessment criterion on commercialization.

Q2.12.1 What is the current level of readiness of your solution (for example, include information on [Technology Readiness Level](#)) and what do you need to do for your solution to be ready for commercialization (include timeframe)?

At Stage 1, applicants might have solutions at different levels of readiness: some might be at the idea/conceptual stage, and others might already be in the market. In this question, please describe the status and level of readiness of your solution. It is helpful if you also include the Technology Readiness Level (TRL) of your solution. For more information on Technology Readiness Levels, please visit <https://www.ic.gc.ca/eic/site/080.nsf/eng/00002.html>. While there is no TRL requirement at the application stage (Stage 1), all applicants are required to achieve or exceed TRL milestones at Stage 2 (Level 7) and Stage 3 (Level 9).

Having those TRL milestones in mind, please concisely describe your plan, with a high-level timeframe, to commercialize your solution and grow your solution in the market.

Q2.12.2 What types of challenges to market adoption do you anticipate and how can you facilitate adoption of your solution by end users?

In this question, identify any barriers to commercialization that might arise and how you will address them. Commercialization might involve behavioral change. Please discuss how you will manage this change to facilitate adoption of your solution by end users.

Q2.12.3 Are there regulatory considerations to your solution? What are they and how can you address them?

You need to consider and identify any potential regulations that are pertinent to the implementation of your solution in Canada. Discuss how you will meet regulatory requirements

and describe your plan for compliance. Below is a non-exhaustive list of examples of national Acts and regulations that might impact your business. Note that there are also municipal, provincial, and territorial regulations that you may need to consider.

<https://www.inspection.gc.ca/about-cfia/acts-and-regulations/list-of-acts-and-regulations/eng/1419029096537/1419029097256>

<https://www.inspection.gc.ca/food-safety-for-industry/toolkit-for-food-businesses/sfcr-handbook-for-food-businesses/eng/1481560206153/1481560532540?chap=0>

<https://www.agr.gc.ca/eng/food-products/processed-food-and-beverages/trends-and-market-opportunities-for-the-food-processing-sector/canada-s-regulatory-system-for-foods-with-health-benefits-an-overview-for-industry/?id=1274467299466>

<https://laws-lois.justice.gc.ca/eng/regulations/sor-2003-196/>

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