SUSTAINABLE DEVELOPMENT TECHNOLOGY CANADA

REQUEST FOR PROPOSAL (RFP)

Study on State of Salmon Aquaculture Technology

ISSUE DATE:

FEBRUARY 5, 2019

CLOSING DATE AND TIME:

6:00 PM EST, FEBRUARY 15, 2019

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1. Context and Project Overview

There is a strong interest from the government, industry, non-government organizations and Indigenous peoples to accelerate and facilitate technology development and innovation to minimize environmental impacts related to salmon farming in British Columbia while supporting rural economic development, employment and the security of Canada's food supply. In particular, closed containment technologies have been identified as an area of interest. Given this rising interest, a full examination of the wide range of alternative technologies for salmon aquaculture is necessary to advance sustainable economic growth of the aquaculture sector.

In January 2018, the BC Minister of Agriculture's Advisory Council on Finfish Aquaculture (MAACFA) Final Report made the following recommendation:

> *MAACFA Final Report Recommendation 5.2.: Conduct a study examining the feasibility of utilizing closed containment technology in B.C. (land-based recirculating aquaculture systems, advanced net-pen systems, near-shore floating containment and off-shore farming systems) as (i) an alternative to ocean-based open net-pens and (ii) an option for expanding the current salmon farming production.*

Certain aquaculture systems or technologies could significantly reduce interactions between aquaculture and the natural environment, such that all growth is contained within the production system and, in the case of land based systems, most water is continuously treated and re-used. Several other new methods of production are under development globally, including ocean-based closed containment (i.e., solid walled cages) and open-ocean (offshore) aquaculture systems, and may become more widely available in the short- to medium-term (2-5 years). The use of these production technologies along with innovations such as sensor technologies and data could further address potential environmental impacts, particularly for marine-based aquaculture operations.

Some economic, environmental and social implications of adopting these new technologies are unknown. Further investigation will be necessary to understand the potential benefits and costs associated with adoption.

Fisheries and Oceans Canada (DFO) in partnership with the Province of British Columbia and Sustainable Development Technology Canada (SDTC) is seeking a contractor to lead a study on the global state of salmon production technology with a focus on British Columbia's (BC) operating environment. It will analyze the global state of emerging salmon aquaculture production technologies, identify opportunities for full commercialization in Canada, assess potential environmental, economic and social implications for BC coastal areas and recommend potential pathways to enable the successful adoption of these technologies.

2. About Sustainable Development Technology Canada

Sustainable Development Technology Canada (SDTC) is a foundation created by the Government of Canada to support Canadian companies with the potential to become world leaders in their efforts to develop and demonstrate new environmental technologies. More information can be found on www.sdtc.ca.

While SDTC is an independent organization, it works to build and sustain networks of partners and stakeholders from private industry, academia and governments, at home and abroad. SDTC is working in partnership with Fisheries and Oceans Canada (DFO) to lead this project. DFO is the federal lead for safeguarding our waters and managing Canada's fisheries, oceans and freshwater resources. It supports economic growth in the marine and fisheries sectors, and

innovation in areas such as aquaculture and biotechnology. DFO helps to ensure healthy and sustainable aquatic ecosystems through habitat protection and sound science.

3. Objectives

The outcome of this project will be a "Study on the State of Salmon Aquaculture Technology" – a tool that can be used by government, industry, and other stakeholders to inform efforts to further advance the sustainable management and growth of salmon aquaculture in Canada.

Key objectives of the project/study include:

- Analyze the global state of emerging salmon aquaculture production technologies.
- Identify opportunities for full commercialization in Canada.
- Assess potential environmental, economic and social implications for BC coastal areas.
- Recommend potential pathways to enable the successful adoption of these technologies.

4. Scope of Work

4.1 Tasks and deliverables

The contractor will undertake a study on the global state of salmon production technology under development with a focus on the BC operating environment. It will analyze the global state of play of new salmon aquaculture production technologies, including state of commercialization, and obstacles to full commercialization in Canada, in addition to a brief overview of past technologies.

In order to develop this study effectively, it is expected that the contractor carry out the following tasks:

Task 1: Establishment of a work plan, team, and roles
Upon issuance of a contract, the contractor will firm up its work plan, team and roles for the project. It is anticipated that DFO/BC/SDTC will propose a kick-off meeting with the contractor to discuss the work plan and provide guidance.

Task 2: Methodology and Review of Technologies

The contractor will conduct an overview of technologies, existing and emerging, and description[1] of methodology. The methodology description should, at a minimum, include:

- How the readiness of different technologies will be determined and selected for in-depth review;

  This step is critical in determining the effort required in the following steps. Some technologies either will not have available or will not present enough information for a complete financial analysis, which should be noted where appropriate. In-depth analysis will only be performed on the technologies that are able to provide information on specific criteria.

- How the environmental, economic and social implications are to be determined, assessed and compared; and,

[1] The methodology will have been discussed and approved at contract issuance. This step is intended to be a final check should any preliminary findings change the scope of technology or have implications on the reach of the Study.

- An overview of the current state of technologies, existing and emerging, for salmon aquaculture production, including a broad analysis of the economics of these technologies.

Task 3: Environmental Impacts

- A qualitative analysis of the environmental impacts, at both local and global scales, of existing and emerging technologies, with a comparison to current net-pen aquaculture;

- A high-level analysis of how sensor technologies and data could further address potential environmental impacts.

The contractor will be asked only to provide a summary of its main findings at this point. A full analysis will be required only at Task #4.

Task 4: Draft Report

The contractor will develop a draft report based on the research, analysis and findings of Tasks #2 and #3. The draft report should also include:

- Economic Analysis:
    - A financial assessment of existing and emerging technologies and/or other technologies as identified;
        - Including a sensitivity analysis on the main factors influencing the financial performance of those technologies; and
    - An analysis of social implications, including job creation, and impacts on coastal/rural communities.
- Integration:
    - A description of findings and trade-offs between environmental, economic and social impacts of technologies reviewed;
    - Recommendations to address potential barriers and/or obstacles to adoption of each of the technologies analyzed in the study, including consideration of how other producing regions are incenting the development of emerging technologies.

Task 5: Final Report

Upon receiving feedback from the Advisory Committee, the contractor will refine the draft report to establish a final report. **The final report is expected to be complete and submitted to DFO/BC/SDTC by May 31, 2019.**

The final report will be reviewed by the Advisory Committee and accepted by the Project Steering Committee.

DFO in collaboration with the Project Funding partners, SDTC and the BC Government will be responsible for the communications and public release of the report. They will inform the contractor of these plans as they are developed and finalized.

4.2 Specific Requirements and Standards

- **Contact/guidance:**
    - It is expected that the contractor work closely with DFO and BC (Department Representatives for the project) during the development of the study. The contractor will participate in e-mail exchanges and conference calls with DFO/BC/SDTC as needed.

    - The contractor may be required, when needed and in agreement with DFO's, BC's, and SDTC's Departmental Representatives, to liaise with departmental personnel and members from the Advisory Committee to obtain information and advice on the development of new content on Canadian aquaculture and techniques.

- **Tools:** The choice of tools and the format of documents to perform the work will be at the discretion of the contractor. However, when sharing documents with DFO/BC/SDTC, the contractors will be required to use formats that are technically compatible with Government of Canada and British Columbia programs (e.g. Word, Excel, PDF). All documents will be submitted using email.

- **Technical, operational, and organizational environment:** This work will be conducted independently by the contractor, not using DFO, BC, or SDTC sites or equipment.

5. **Travel:** It is not anticipated that significant travel will be required to carry out this project. Should travel be required, the contractor will need to seek prior approval. All travel must comply with guidelines established by Treasury Board.

A select group of qualified firms have been identified to submit a proposal. The total approved budget for the study is less than $150,000 including applicable taxes.

5.1 Payment Schedule

The payment schedule is as follows:

- 25% upon signing of contract
- 50% upon submission of draft report
- 25% holdback paid upon delivery of the final report and satisfactory completion of the project.

6. RFP Timeline

RFP distributed	February 5
Deadline for candidates to submit proposals	**February 15**
Selection of successful proponent and contract issuance	March 1

7. Proposal Requirements

Please send your confirmation of the intent to bid, and any questions that you have about this RFP to proposals@sdtc.ca by end of day on **Thursday, February 7, 2019.**

Bidders may use a format of their own choosing for their proposals. The proposal should be concisely worded with clearly defined objectives, activities, timelines and outcomes. The proposal should include a brief description of the Proponent's company and its relevant experience with similar projects. Please refrain from including excessive corporate information.

A task-cost breakdown and schedule must be included to illustrate the proponent's project plan. The proponent's cost estimate should detail the expected number of hours or days estimated to perform the services as well as the hourly rate for completion of specific tasks.

7.1 Proposal submission

All proposals should be submitted electronically to proposals@sdtc.ca, and should include:

- ❒ **One (1) Cover Letter** – This should be signed by an officer or equivalent with signing authority to bind the Proponent to the statements made in the proposal.

- ❒ **One (1) Electronic Copy** – The electronic copy should be submitted via email (in PDF and/or MS Word formats) to the following contact:

  Elisa Obermann
  Manager, Atlantic Partnerships
  Sustainable Development Technology Canada

8. Proposal evaluation matrix

Submissions will be evaluated based on the following criteria:

Criteria	Weight
Timeline: Proponent describes an achievable timeline with well-defined milestones and demonstrates the ability to complete the work on or before the desired completion date.	15%

Project Plan, Approach and Methodology: Proponent demonstrates a solid understanding of the project services requirements and has outlined a clear and effective work plan. Proposal describes the methodology, milestones and deliverables that will be used, and a sound approach in undertaking this project, including project and budget management processes. Communication format and frequency between the Contractor and SDTC/BC/DFO are clearly described.	35%
Experience and Knowledge: 1) Qualifications and capabilities of the company and project delivery team, including CV/résumés and identification of each team members role in delivering the project.	15%
2) Relevance and quality of case studies or past experience.	15%
Cost: The project will offer very good value for the proposed budget. The budget is complete and well described including billing rates.	20%
Overall assessment	**100%**

Scoring: 1 to 5 score on each of these criteria, with 1 being weak and 5 being outstanding. Overall score will be minimum 10, maximum 50.

9. Terms of engagement

Specific billing and contracting terms will be agreed upon with the successful contractor. Proponents will not be compensated for the cost of preparing proposals. SDTC reserves the right not to accept any of the proposals submitted, and to amend, cancel or re-issue the RFP for any reason, with no liability to SDTC or recourse by the proponent.

Please send any questions to proposals@sdtc.ca. SDTC reserves the right to share questions and responses with other proponents.