Name of your approach to	Theory-based evaluation
assess societal impact	Brian Belcher, Rachel Claus (Royal Roads University, Canada)
Approach description Please summarize your approach and its application context/options in a few sentences or bullet points.	Uses a Theory of Change (ToC) as the main analytical framework, defines data needs on the basis of the outcomes specified in the ToC (i.e. using an evidence table that documents each outcome, what evidence is currently available for it, and what evidence is needed). A ToC traces the contributions of a research intervention from activities to impact as a set of hypotheses and tests them empirically through semi-structured interviews, surveys, bibliometric data, and/or document review as determined appropriate for each outcome. Analysis is primarily qualitative and aims to qualify and assess the extent and how a project contributed to change.
Concepts used in the approach	Activities: Actions undertaken by the project/program e.g., background scoping, defining research questions, research
Please insert definitions for key concepts and components.	design, literature review, fieldwork, communications/engagement with relevant stakeholders or boundary partners (e.g., expert consultations, workshops, etc.) Outputs: The products, goods, and services of research and the research process e.g., knowledge contained in tailored products including publications, presentations, strategies and plans, popular media, training materials, and artistic representations. e.g. a forum or network, dialogues. Outcomes: A change in knowledge, attitudes, skills, and/or relationships, manifested as a change in behavior, that result in whole or in part from the research and its outputs. Answers the question: who is doing what differently as a result of the research? We distinguish between the following levels of outcomes: Intermediate Outcome: Changes in knowledge, attitudes, skills, relationships and/or behaviour (KASRB) that are observable during a project/program End-of-project Outcome: Changes in KASRB that are reasonable to expect within the timeframe and resources of the project/program and is observable at the conclusion of a project/program High-level Outcome: Changes in behaviour that would be observed after the conclusion of a project/program Impacts/ Realized benefits: A change in state or flow; a change in economic, social, or environmental conditions resulting in whole or in part from a chain of events to which research has contributed. Results: A collective term for outputs, outcomes, and impacts
Key challenges	 Not possible to reliably assess a counterfactual (i.e. what would have happened in the absence of the intervention): reliance on expert judgment and opinion

Please write down what you are struggling with concerning the application of your approach.	 for significance of the contribution and alternative explanations Ambiguity and lack of consistency in terminology in literature and common usage: outputs, outcomes, impacts frequently used and understood by researchers interchangeably. Difficulty in isolating outputs in terms of knowledge contributions and social process contributions. For example, researchers tend to point to publications as opposed to the contents of those publications. Difficulty in acquiring sufficient precision in certain components of the analytical framework for them to be measured or quantified.
Visualization and narratives Please add short information on whether and how you use visualization, narratives or other boundary objects in your approach.	Boxes and arrows can be used, as well as a spheres diagram to document what is within the sphere of control (activities, outputs), influence (outcomes) and interest (impacts). However, it is also important to have accompanying narrative. These are used as boundary objects to discuss with researchers to ensure that the analytical framework accurately captures the way in which the research aims to contribute to change. We can show some colour coded figures from case studies to indicate achievement and level of contribution.
Strengths and weaknesses From your own perspective: What would you consider as strengths and weakness of your approach?	 Strengths: Conceptual clarity: consistent application of precise definitions and terminology aims to address the challenge of lacking conceptual clarity. Precision: actor-specific outcome definition facilitates precise analysis of outcomes Deductive, hypothesis-testing evaluation approach fits well with scientific approach of the research we are evaluating. Participatory: while it is resource intensive, the method offers many opportunities for researcher and key informant engagement through inception and sensemaking workshops Evaluation and learning value: Formative and summative utility Weaknesses Time and resource intensive: high upfront investment in analytical framework development in particular. Reliance on researcher and informant access and buy-in.
Learn more If possible, please insert a link to a website, paper etc. where	Belcher, B. M., Davel, R. & Claus, R. (2020). A refined method for theory-based evaluation of the societal impacts of research.

details of your approach and its application can be found.	MethodsX. 7, 100788. https://doi.org/10.1016/j.mex.2020.100788
	Belcher, B. M., Claus, R., Davel, R., & Ramirez, L. F. (2019). Linking transdisciplinary research characteristics and quality to effectiveness: A comparative analysis of five research-for- development projects. Environmental Science & Policy, 101: 192-203. <u>https://doi.org/10.1016/j.envsci.2019.08.013</u>
	Theory of change: <u>https://researcheffectiveness.ca/wp-</u> <u>content/uploads/sites/7/2019/08/Theory-of-Change-</u> <u>Toolkit.pdf</u> <u>https://researcheffectiveness.ca/</u>