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The Interdepartmental Inclusive Science Initiative

Science Based Departments and Agencies Inclusive Science Guidelines

December 2025

Canada

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Executive Summary

The science enterprise has, for decades, not fully reflected the voices and experiences of historically marginalized groups. Its institutions have often perpetuated systemic barriers related to race, gender, identity, and ability—contributing to the exclusion of Indigenous Peoples, racialized communities, and persons with disabilities. This exclusion limits marginalized groups' access to resources and opportunities needed to achieve fair and equitable scientific outcomes. These longstanding gaps have impacted public trust and the perceived integrity of both scientific outputs and the policies they inform. Inclusivity is important in the science community to enhance creativity and the robustness of scientific work (Nature, 2018). In line with the Clerk of the Privy Council's renewed *Call to Action on Anti-Racism, Equity and Inclusion in the Federal Public Service*, 17 Science Based Departments and Agencies (SBDAs) developed the SBDA Inclusive Science Guidelines. The Guidelines present recommendations on how senior leaders, science programs managers, scientists, policy makers, and science employees across the federal SBDAs can apply an inclusive science and relational ethics lens in integrating Inclusion, Diversity, Equity and Accessibility (IDEA), Gender-based Analysis Plus (GBA Plus) and weaving Indigenous Knowledge Systems (IKS) in science. The Guidelines focus on four science priority areas. **Priority area one** encourages inclusivity in the design of scientific work offering tailored recommendations to guide the planning and implementation of science initiatives. **Priority area two** promotes inclusivity in the science environment and among all contributing partners. It outlines measures for inclusive recruitment, retention, capacity building, and mentoring opportunities for persons working on any scientific project. **Priority area three** discusses ways of reporting and disseminating findings of scientific work with an inclusive lens. Specifically, it outlines inclusive methods for accessible knowledge mobilization and reporting, including capacity building for scientists to foster inclusivity while disseminating findings from scientific work to participants and communities (both Indigenous and non-Indigenous). Finally, **priority area four** outlines specific recommendations for weaving Indigenous knowledge systems in all aspects of scientific work, including design, practice, reporting, and knowledge sharing, alongside Western scientific work protocols. This includes specific recommendations, protocols, and ethical considerations for fostering the co-development of scientific projects, building the capacity of Indigenous partners for specific science projects and respectfully weaving Indigenous methodologies and perspectives in science projects.

Application of the guidelines will support the creation of an environment where science reflects the viewpoints of all members of Canadian society. Federal SBDAs can tailor the guidelines to their needs as they ensure accountability in response to the Clerk's Call to Action. Within the context of the guidelines, the use of the words 'science' and 'scientists' encompasses all science activities and initiatives, including research and regulatory activities and the personnel who engage in these activities, respectively. Additionally, there is no consensus on the use of terms that represent population groups who face systemic barriers in Canada. The use of descriptions such as underserved, disadvantaged, marginalized, equity-deserving, equity-seeking, underrepresented and oppressed does not fully capture the detriments, aggression and barriers experienced by members of these groups. The term "equity-deserving" is used to represent populations that experience different forms of discrimination. Language is contextual and

evolves; what is appropriate in one setting may not be suitable in another. As such, readers are encouraged to use terminology that reflects the diverse lived experiences of the communities they serve in their discussions of inclusive science. The Guidelines provide tailored recommendations and best practices for stakeholders driving scientific work within the federal government. **To ensure effective reporting and accountability, stakeholders are encouraged to focus on the content assigned to them.**

The Deputy Ministers' Message

As Deputy Ministers, we are pleased to introduce the Inclusive Science Guidelines for the SBDAs. These guidelines reflect our government's commitment to answering the Clerk's Call to Action on Anti-Racism, Equity, and Inclusion in the Federal Public Service. Through this work, we are taking deliberate steps to address systemic barriers in scientific activities of the federal government. This includes activities within research and development (R&D) and regulation, as well as the administration of scientific programs (both internal and external) and related scientific activities. At the heart of the Guidelines is a recognition of the unique experiences of equity-deserving groups and the rights of and reconciliation with Indigenous Peoples. Guided by strong policy foundations, including the Truth and Reconciliation Commission's Calls to Action, the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration), Canada's 10 Principles for respecting our relationship with Indigenous Peoples and the Values and Ethics Code for the Public Sector, we are weaving Indigenous Knowledge Systems with our scientific activities. We are equally committed to advancing Inclusion, Diversity, Equity, and Accessibility (IDEA) and applying Gender-based Analysis Plus (GBA Plus) across all areas of science. These policy foundations call on us to strengthen public trust, advance reconciliation and build a science culture that is equitable, accessible, and inclusive of people living in Canada.

Science within the Government of Canada (GoC) must reflect the diversity of the communities it serves. Inclusive science is not only about equitable participation; it is about improving the quality and relevance of our work and acting on commitments and obligations to groups that have been less represented in scientific endeavours. Evidence shows that a diverse and inclusive science ecosystem produces more impactful and socially relevant outcomes, strengthening public trust and ensuring scientific advancements have the potential to benefit all people living in Canada (see Freeman & Huang, 2014).

The document provides high-level guidance that is intended to support individual departments and agencies in developing plans, strategies or frameworks with a consideration of inclusive principles within the conduct of science activities. The Guidelines are intended to be a key inclusive science resource for leaders, scientists, science managers and employees, policy makers, and staff across federal SBDAs. The Guidelines are developed to emphasize shared accountability, transparency, and a collective commitment to equitable scientific enterprises.

We invite all leaders and public servants within our federal science community to embrace these guidelines fully. By acknowledging and recognizing diverse knowledge systems, applying an inclusive and cultural humility lens to all our activities, and holding ourselves accountable to

meaningful change, we can ensure that the federal science environment reflects our shared values and the diversity of our society.

Acknowledgement

The leadership of the Interdepartmental Inclusive Science Initiative (IISI) would like to acknowledge that Canada is situated on First Nations, Inuit, and Métis territories, whose people have and continue to share physical, cultural and spiritual connections to their current and historical traditional unceded territories. The IISI is jointly led by the Natural Resources Canada (NRCan) and the Canadian Food Inspection Agency (CFIA) in collaboration with the Deputy Minister Science and Technology Community (DMSTC).

We are grateful for the support and contributions of Harpreet S. Kochhar, Deputy Minister (DM) of the Immigration, Refugees and Citizenship Canada (DM Champion - DMSTC); Caroline Xavier Deputy Minister of the Communications Security Establishment Canada (CSE) (DM Champion - Racialized Employees); Michael Vandergrift, Deputy Minister of the NRCan (DM Champion - Advanced Policy Analyst Program (APAP); Paul MacKinnon, President of the CFIA; Dr. Mona Nemer, Chief Science Advisor of Canada (OCSA); Glenn Hargrove, Assistant Deputy Minister (ADM) of the Canadian Forest Service (CFS), NRCan; and Dr. David Nanang, Vice President (VP) of Science, the CFIA. We are grateful to the Deputy Ministers/Presidents, Associate Deputy Ministers/Executive Vice Presidents and Assistant Deputy Ministers/Vice Presidents of contributing departments and agencies (see Appendix 4.4: Contributing Departments and Agencies) for their support and leadership in driving this initiative forward.

Dr. Effah Antwi and Michael Reid conceptualized and led the implementation of the IISI, as well as coordinated the activities of the IISWG Secretariat. The Leadership of the IISI appreciates their dedication, along with Mathieu Bergeron, for envisioning the initiative and guiding its successful implementation. Priscilla Toloo Yohuno (Apronti), Akua Nyamekye Darko, Genoa Debruin, and Kristina Strojin provided tremendous support to the IISWG Secretariat in achieving its set goals. We are grateful to Stuart Sykes, Holly Grenier, Brittney Whittaker, Danielle Noël, and Lindsay Hitchcock for their support in communicating with the DMSTC, as well as their support for the National Inclusive Science Dialogue (NISD). We recognize the dedication and contributions of the IISWG members who diligently drafted the Guidelines and organized the NISD. We are grateful for all the volunteers across the SBDAs who supported every aspect of the work and acknowledge the many valued contributions of authors whose work informed the content of these guidelines.

List of Abbreviations

AAFC	Agriculture and Agri-Food Canada	IIBA	Inuit Impact and Benefit Agreement
ADM	Assistant Deputy Minister	IISI	Interdepartmental Inclusive Science Initiative

AI	Artificial Intelligence
AIA	Algorithm Impact Assessment
ARiS	Anti-Racism in Science
CCAC	Canadian Council on Animal Care
CGC	Canadian Grain Commission
CFIA	Canadian Food Inspection Agency
CFS	Canadian Forest Service
CIHR	Canadian Institutes of Health Research
CTA	Call to Action on Anti-Racism, Equity, and Inclusion in the Federal Public Service
DFO	Fisheries and Oceans Canada
DM	Deputy Minister
DMSTC	Deputy Minister Science and Technology Community
DND	National Defence
DRDC	Defence Research and Development Canada
ECCC	Environment and Climate Change Canada
ECRs	Early Career Researchers
EDI	Equity, Diversity, and Inclusion
EE	Employment Equity
EETS	Energy Efficiency and Technology Sector
ESDC	Employment and Social Development Canada
GBA Plus	Gender-based Analysis Plus
GoC	Government of Canada
HC	Health Canada
IISWG	Interdepartmental Inclusive Science Working Group
IKS	Indigenous Knowledge Systems
IS	Inclusive Science
ISSAT	Inclusive Science Self-assessment Tool
I-STEM Cluster	Interdepartmental Indigenous Science Technology Engineering and Math Cluster Secretariat
NCR	National Capital Region
NISD	National Inclusive Science Dialogue
NRC	National Research Council
NRCan	Natural Resources Canada
NRI	Nunavut Research Institute
NSERC	Natural Sciences and Engineering Research Council
OCSA	Office of the Chief Science Advisor
OECD	Organization for Economic Cooperation and Development
PCA	Parks Canada Agency
REB	Research Ethics Board
SBDA	Science Based Departments and Agencies
SME	Small and Medium-Sized Enterprises
SSHRC	Social Sciences and Humanities Research Council
STEM	Science, Technology, Engineering, and Mathematics
TIPS	Tri-agency Institutional Program Secretariat
TRC	Truth and Reconciliation Commission
UN Declaration	United Nations Declaration on the Rights of Indigenous Peoples
UNESCO	United Nations Educational, Scientific, and Cultural Organization

IDEA	Inclusion, Diversity, Equity, and Accessibility	VP	Vice President

Intended Audience

The Inclusive Science Guidelines are written to guide different stakeholders employed within the scientific community of the federal government of Canada, including scientists, science managers, science employees, and policymakers. In addition, specific guidelines have been outlined to guide Deputy Heads of Departments and Agencies, Funding Units within Departments and Agencies, Federal Research Funding Agencies, Human Resources, Communication and Outreach Team, and Networks and Committees.

How to Read this Document

The Inclusive Science Guidelines are a non-prescriptive, flexible framework that presents recommendations to support inclusive science practices across the federal government. The Guidelines provide tailored recommendations and best practices structured to support specific stakeholder groups in advancing inclusive science. These groups should refer to the sections relevant to their roles for a comprehensive list of recommendations. To ensure effective reporting and accountability, stakeholders are encouraged to focus on the content assigned to them. Stakeholders should adopt the implementation of the recommendations to each department and agency's operational context.

The Guidelines are sectioned into three parts. Part I provides an introduction, background, purpose and justification for an inclusive science approach. Part II outlines specific role-based recommendations under the different priority areas, with sections specifically for weaving IKS and for highlighting the distinct role of federal research funding agencies. It is acknowledged that the federal research funding agencies (CIHR, NSERC and SSHRC), which solely provide extramural research funding support to researchers and trainees at institutions across Canada, are positioned uniquely relative to the SBDAs. Similarly, some IKS recommendations are distinct and, as such, grouped separately. Finally, Part III provides a brief description of the implementation plan, which is further expanded in a separate document to be used alongside the Guidelines. A list of resources, including tools and frameworks to support the adoption of the recommendations under the different priority areas, definitions of applied terms, a description of the creative process and a list of contributing departments and agencies have been made available in the Appendix. The authors further acknowledge that the practice of inclusive science will evolve as society evolves; as such, the Guidelines will undergo yearly review by the IISWG to ensure relevance, effectiveness, and alignment with evolving or shifting conditions within the scientific community.

Language Note

While we acknowledge that individuals may self-identify in diverse ways, the Inclusive Science Guidelines adhere to person identification terminology approved by the Government of Canada (GoC). This ensures consistency and alignment with federal standards across departments and agencies.

How to Reference this Document

Government of Canada (2025). Science Based Departments and Agencies Inclusive Science Guidelines. The Interdepartmental Inclusive Science Initiative.

1. Part I: Context and Background

1.1. Overview: The drive behind the Inclusive Science Initiative

Inclusive science implies science by all and for all, involving the creation of a scientific community that values diverse perspectives, experiences, and voices in identifying and addressing pressing structural and societal problems while providing platforms for the development and use of more inclusive tools and methods. The IISI emphasizes the recognition, distinction, and inclusion of long-standing GoC commitments of IDEA, GBA Plus, and Indigenous science principles within scientific activities that supports the advancement of governmental priorities and policymaking.

In 2022, (and later in 2023), the Clerk of the Privy Council renewed the *Call to Action on Anti-Racism, Equity and Inclusion in the Federal Public Service*, emphasizing that "our ability to innovate and solve complex problems comes from teamwork, which is underpinned by all colleagues feeling welcome, valued, respected, safe and included". This underscores the need to prioritize and apply inclusive science principles and practices in addressing complex structural and social challenges that hinder the proper design, implementation, and reporting of science. In response to the Call to Action, federal SBDAs have committed to supporting the GoC's vision of making the federal public service inclusive and representative of the diversity in Canada by developing the Inclusive Science Guidelines. These guidelines provide direction on applying an inclusive science and relational research ethics lens to science. It outlines concrete strategies and best practices that departments/agencies, funding units within departments and agencies, and federal research funding agencies[1], senior executives and management, policymakers, and science activity leads can adapt, tailor and implement to advance inclusion in the broader federal

[1] Content specific to the federal research funding agencies (CIHR, NSERC and SSHRC), who solely provide extramural research funding support to researchers and trainees at institutions across Canada, is captured in Section 2.6.

science community. This includes implementing recommendations for inclusive design, practice, knowledge mobilization, and reporting of scientific work.

The Inclusive Science Guidelines have been intentionally designed to include multiple knowledge systems and represent a tangible step toward advancing equity, addressing systemic barriers in science, and, in the case of Indigenous Knowledge, supporting Reconciliation. However, it is important to acknowledge that meaningful consideration of Indigenous science demands more than procedural inclusion; it requires a commitment to upholding the rights of First Nations, Inuit and Métis Peoples, and a foundational understanding and respect of Indigenous worldviews, governance systems, and ethical science practices. It requires real and sustained engagement and relationship building or maintenance with Indigenous Peoples, ethical collaboration, and the co-development of approaches that honour both Western and Indigenous science. Creating room for Indigenous science, knowledge, and experiences within conventional Western scientific practice supports self-determination, addresses systemic inequities, and enriches the science ecosystem. Only through meaningful engagement with Indigenous People can SBDAs ensure that science based decisions reflect the full spectrum of the knowledge and experience available. Weaving IKS with Western science is not just a best practice but a critical pathway toward reconciliation and scientific excellence.

1.2. Inclusive Science Policy Drivers and Principles: Connecting to Broader Inclusive Policies

As mentioned above, the Inclusive Science Guidelines are shaped by key policy drivers and principles that set the foundation for equitable science practices. This section explains how the Guidelines align with said principles. Central to this is the Clerk's Call to Action (CTA) on Anti-racism, Equity and Inclusion in the Federal Public Service. The CTA recognises both historic and contemporary "unjust treatment of Black People, other racialized groups, and Indigenous Peoples in our society" and calls for systemic changes in addressing all barriers and disadvantages faced by diverse populations (GoC, 2021). This Call is the driving force behind the development of these Inclusive Science Guidelines.

The CTA closely aligns with other adopted principles such as IDEA, GBA Plus, Truth and Reconciliation Commission's (TRC) 94 Calls to Action and the 10 Principles for respecting the GoC's relationship with Indigenous Peoples. **IDEA**, also referred to as diversity, equity and Inclusion (DEI), equity, diversity and Inclusion (EDI) and diversity, equity, inclusion and belonging (DEIB) within departments and agencies, is a framework that promotes equitable representation, reduces biases, and enhances innovation by ensuring science work environments reflect the diversity of Canada's population. **GBA Plus** is a federal analytical intersectional framework used to assess how different individual identity factors, such as gender, race, disability, and socioeconomic status, interact and intersect with each other and broader systems of power to shape our access to and participation in science, policies, programs, and initiatives (GoC, 2025). **Diversity** refers to the range of differences that describe the composition of a group of two or more people in a cross-cultural and multi-national context (see Guide on Equity, Diversity and Inclusion Terminology and The Guide on Equity, Diversity and Inclusion Terminology: an essential

tool! - Canada.ca). Within Canada (and at GoC SBDAs), it involves embracing and accepting differences in nationality, race, ethnicity, religion, beliefs, and values. **Indigenous Cultural Diversity** refers to the understanding that Canada is home to many distinct First Nations, Inuit, and Métis Peoples, each with their own cultures, languages, governance systems, and ways of knowing. Within and across these nations, there is deep diversity shaped by geography, history, and community. It is important to recognize that Indigenous Peoples have distinct approaches to applying Gender-based Analysis Plus (GBA Plus) and IDEA. These approaches are grounded in their unique historical, cultural, political and socio-economic realities, and reflect the governance structures, leadership models, and social norms of their communities. Supporting this diversity means respecting these differences and ensuring that government processes are responsive to them. The distinction between Diversity and Indigenous Cultural Diversity is not intended to create division, but rather to recognize and honour the unique rights, histories, and contributions of Indigenous Peoples in Canada.

In addition, **the Truth and Reconciliation Commission's (TRC) 94 Calls to Action** and the **10 Principles** emphasize a nation-to-nation relationship with Indigenous Peoples based on recognition of rights, respect, cooperation, and partnership. **Reconciliation** is central to the federal government's obligations under **Section 35 of the Constitution Act**, the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration) (United Nations, 2007, UN Declaration Act, 2021), and the 2021 **Speech from the Throne on Reconciliation**. Article 65 of the TRC and the 10 Principles emphasise the importance of Indigenous self-determination in research, urging the inclusion of Indigenous methodologies and Knowledge Systems in science (TRC, 2015). The **United Nations Declaration on the Rights of Indigenous Peoples** (UN Declaration) reinforces this by affirming Indigenous Peoples' rights to control and participate in research affecting their communities (UN, 2007). These frameworks underscore the importance of recognising the rights, histories, and wisdom of Indigenous Peoples and the responsibility of SBDAs to advance reconciliation by transforming how science is conducted, communicated, and governed.

The Inclusive Science Guidelines also align with the Model Policy on Scientific Integrity and Values and Ethics Code for the Public Sector. The GoC is committed to ensuring evidence-based decision-making. In support of this commitment, a Model Policy on Scientific Integrity was developed to complement the Values and Ethics Code for the Public Sector, the Directive on the Management of Communications, and the Directive on Conflict of Interest. The Model Policy outlines scientific integrity principles and elaborates on science virtues, including responsible conduct and ethics. Each SBDA adopts the Model to establish its respective guidance or policy. The **Values and Ethics Code for the Public Sector** outline the values and expected behaviours of public servants. It describes the need for respect for democracy and, by extension, a recognition of the right of Indigenous self-determination and respect for people regardless of race or identity. It mandates scientists to treat all people with respect, dignity, and fairness and ensure their activities, initiatives, and work recognize and honour the rights and values of people living in Canada.

Finally, within GoC and in alignment with the Inclusive Science Guidelines is the Accessible Canada Act. It outlines a mandate for scientists within the federal government that addresses the need to identify and remove barriers in areas such as employment, built environments, communication, transportation and in the design and delivery of programs and services, that

hinder the full and equal participation in society of persons with an impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment or a functional limitation.

Beyond GoC policies, the Inclusive Science Guidelines align with global frameworks such as the OECD's Science, Technology and Innovation Outlook, which highlight the role of diversity and inclusion in fostering scientific excellence and addressing societal challenges (OECD, 2021). In a similar way, the Guidelines aligns with the UNESCO Recommendation on Open Science, which advocates for the democratization of knowledge, emphasizing equitable access to research data, methodologies, and funding opportunities for equity-deserving groups (UNESCO, 2021).

1.3. Organizational Roles and Responsibilities

As applicable, departments and agencies are encouraged to:

- Identify/appoint appropriate departmental/agency representatives to oversee implementation of applicable recommendations.
- Develop a department or agency-wide action plan to address priority areas outlined in the Guidelines.
- Adapt the proposed reporting metrics in the Guidelines for monitoring and evaluating progress made at the department or agency level.
- Internally communicate the progress of implementing the department and agencies' action plan on the Guidelines.
- Prepare for the knowledge sharing section at the 2026 and subsequent annual National Inclusive Science Dialogue events to share progress made, challenges faced, and further recommendations for implementation.

1.4. Purpose and Scope of the Inclusive Science Approach and Guidelines

Canadian society is shaped by many systemic barriers that create real harm and trauma to individuals and communities. These include, but are not limited to, oppression, injustice, violence and discrimination due to racism, white normativity, sexism, misogyny, homophobia, transphobia, heteronormativity, cisnormativity, settler colonialism, and ableism. These barriers are often unseen by those who do not face them. They are found in institutional processes, policies, practices, cultures and organizational environments. Despite decades of efforts to address inequities in Canada's science ecosystem, systemic barriers persist and continue to cause personal and systemic harm. History demonstrates that these barriers do not naturally correct themselves. Concerted, innovative, and bold efforts by individuals at all levels in science, particularly those in positions of power, are required to identify, address, and mitigate these issues. These barriers have a significant impact on health, life expectancy, mental and emotional well-being, physical safety, upward mobility, financial security, housing, and job security. Throughout history and to the present day, these same barriers have permeated the science ecosystem and science activities.

By embedding IDEA, GBA Plus and IKS principles into scientific practice (e.g., through Departmental science strategies), the GoC aims to remove systemic barriers, promote equitable representation and participation in science, and ensure that scientific advancements benefit people living in Canada. This inclusive approach strengthens the integrity and impact of science that aligns with international efforts to create a more just and sustainable science ecosystem. Studies in equity in Science, Technology, Engineering, and Mathematics (STEM) also demonstrate that inclusive science teams produce more innovative and socially relevant scientific outcomes, highlighting the broader benefits of embedding IDEA principles in science (Nature, 2018). In addition, increased representation in the public service can lead to better policy outcomes for people living in Canada, as this can address broader societal problems and ensure that publicly funded science supports the advancement of governmental priorities.

The Inclusive Science Guidelines are intended to be a roadmap for the inclusive design, practice, and reporting of science within the GoC. Science activity design encompasses the planning and implementation of a science initiative, including setting the agenda, structuring the methodology, data collection, and analysis, identifying the benefits and impacts of the project or initiative, and planning and executing science based design policies, activities, and practices. Science based practice focuses on the work environment and diversity and contributions of those who work, collaborate, and contribute to science. Science reporting and knowledge mobilization also identify how scientific outcomes are managed, communicated, and implemented, as well as their implications for diverse populations. These guidelines encompass best practices for all the described aspects or priority areas of science with the following objectives:

- To equip SBDAs with relevant knowledge and resources to conduct scientific activities that supports the advancement of governmental priorities through an inclusive science and relational ethics lens.
- To develop standard indicators and measurements of Inclusive Science progress across the SBDAs.

2. Part II: Priority Areas of the SBDA Inclusive Science Guidelines

2.1. Guidelines-at-a-Glance

The Guidelines provide key recommendations and best practices for fostering inclusivity within federal SBDAs and propose performance and reporting indicators which help to track and assess progress toward advancing inclusive science. These indicators provide quantitative and qualitative information that enable departments and agencies to evaluate their initiatives, scientific and research activities, and programs, identifying strategies that work well and those that must be adapted to optimize resources, research and program outcomes.

within Departments and Agencies, Federal Research Funding Agencies, Human Resources, Communication and Outreach Team, and Networks and Committees, including Learning and Development teams. Figure 1 shows a summary of the different priority areas, principles of SBDAs inclusive science framework including implementation strategies.

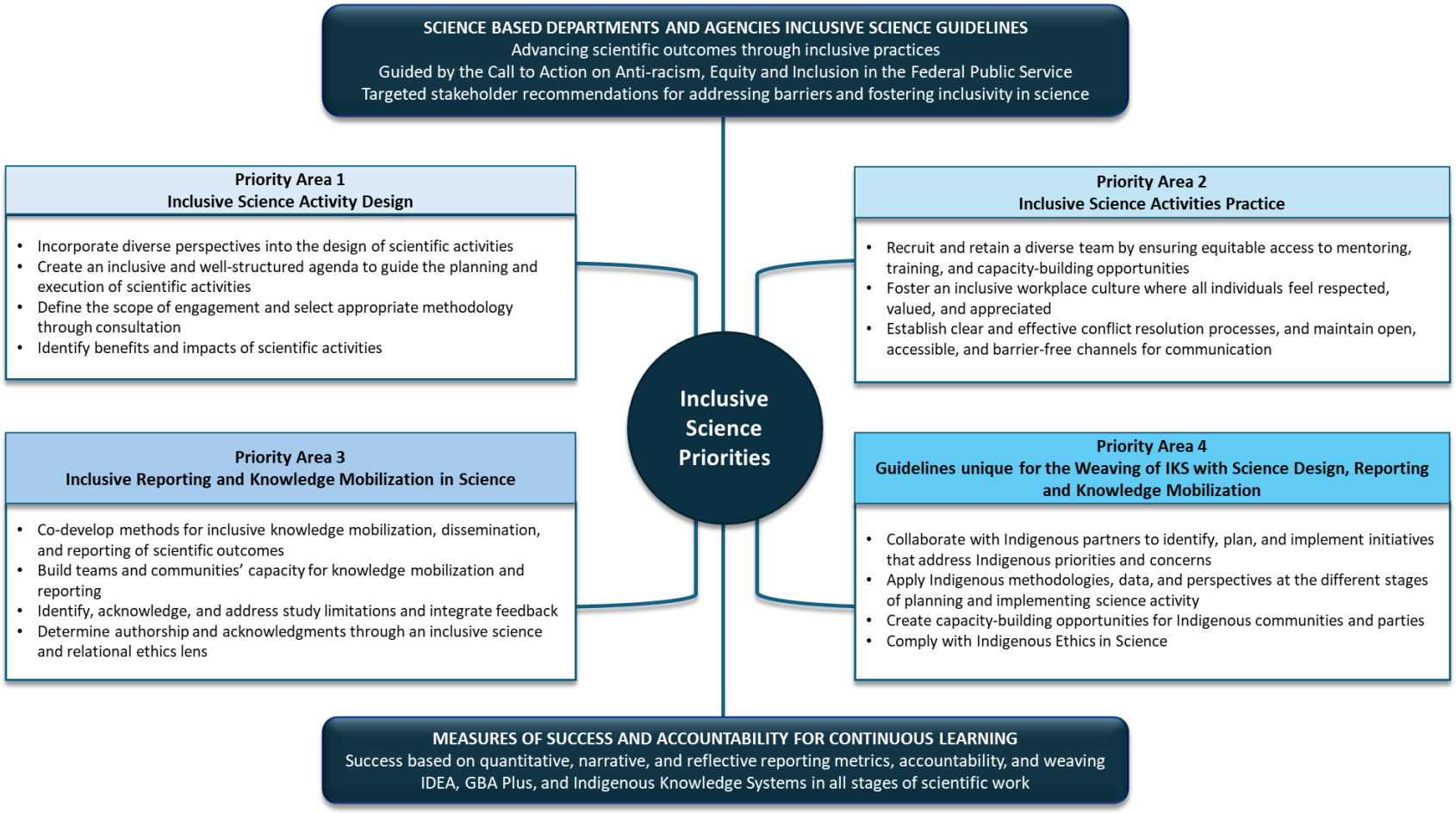

Figure 1: The Framework: SBDAs Inclusive Science Guidelines

The Guidelines address barriers across various aspects of the scientific process and outline four priority areas to enhance scientific outcomes through inclusivity, including IDEA, GBA Plus, and IKS. Specific recommendations and best practices are provided for each priority, targeting key stakeholders driving scientific work within the federal government. These stakeholders are Deputy Heads of Departments and Agencies, Science Activity Leads and Managers, Funding Units

2.2. Priority Area 1: Inclusive Science Activity Design

2.2.1. Context

This section provides recommendations and best practices on the roles and responsibilities for different stakeholders within GoC, that support the inclusion of IDEA, GBA Plus and IKS in the administration and design of scientific work. Science activity design covers the strategies used to plan and implement science that supports the advancement of governmental priorities. This involves proposal development, setting the agenda, structuring the methodology, data collection, and analysis; identifying the benefits and impacts of the study/project/initiative to achieve stated objectives; and planning and executing science activity design policies, activities, and practices. An agenda in a science activity is a structured plan that guides the conduct of a science initiative or activity over a specified period and sets the stage for the conduct of the scientific work. It outlines the focus and questions, the study design, the methodology for data collection, analysis, and interpretation and knowledge translation mobilization, dissemination and implementation science. An inclusive and accessible design process endeavours to involve diverse, interested parties, partners, and rights-holders, and perspectives in critical decisions, by promoting the validity and reliability of outcomes to make science more inclusive, respectful and ethical for all.

2.2.2. IDEA, GBA Plus and IKS Considerations in Setting a Science Activity Agenda

Why is it important?

Integrating IDEA, GBA Plus, and weaving IKS considerations in science activities improves the strategy, process and outcomes that inform programs, policies and services to people living in Canada by promoting inclusivity, responsiveness and fairness. When science is planned through an inclusive and ethics-informed lens, the activity can foster collaboration, promote sound practices, enable efficient resource allocation, enhance the integrity of outcomes, and inform effective decision-making. To improve public trust and compliance, we can ensure these considerations support and advance the Clerk's Call to Action.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with the relevant units to collaborate with Indigenous Peoples and equity-deserving groups to develop department and agency-wide guidelines, strategic plans (e.g. Departmental science strategy) and toolkits that focus on IDEA, GBA Plus, and IKS in the

departments or agencies' science activities. Where strategic plans already exist, take measures to incorporate IDEA, GBA Plus, and weave IKS into focus.

- Issue directives for the establishment of executive-level coordinating committees responsible for guiding and supporting the implementation of their department's or agency's IDEA, GBA Plus, and IKS action plan for inclusive science initiatives. This will ensure alignment and consistency between internal and external-facing IDEA, GBA Plus, and IKS initiatives.
- Equip relevant units to implement IDEA, GBA Plus and Indigenous engagement action plan so that inclusive science principles are addressed in calls for proposals, and scientists and science employees are aware of the requirements and actively develop strategies to advance inclusive science.
- Collaborate with relevant units to co-develop memoranda of understanding (MOU), Indigenous stewardship policies, reconciliation, IDEA, GBA Plus strategies with Indigenous partners and equity-deserving groups, and, where applicable, IKS charters to:
    - guide science activities and initiatives within and across departments and agencies.
    - advance opportunities to co-develop STEM activities, culturally sensitive science activities, and advance intercultural competency training, and opportunities for weaving knowledge systems.
- Collaborate with appropriate units to establish or increase diversity (e.g., gender, ability, experience, race) on management teams, science evaluation, ethics and review boards to:
    - review IDEA, GBA Plus, and IKS considerations in science activity design.
    - identify barriers and enablers to inclusive science practices in department or agency initiatives.
    - ensure that proposed science activities involving Indigenous Peoples (First Nations, Inuit, and Métis) and with Indigenous considerations adhere to established internal and external protocols and guidelines for ethical engagement. see Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2022) – Chapter 9: Research Involving the First Nations, Inuit, and Métis Peoples of Canada, the National Inuit Strategy on Research, and protocols from the Nunavut Research Institute (NRI-Making Research Work for Nunavummiut | StraightUpNorth.ca).
    - ensure that proposed science activities involving equity-deserving groups are shaped by the results of direct engagement with said groups and are subject to assessment by relevant ethics expertise.
- Ensure that the Artificial Intelligence (AI) ethics committees have representation processes in place to consult with Indigenous Peoples and equity-deserving groups, to align the system with the principles of fairness and inclusivity. The committee can be responsible for:
    - co-developing AI-related projects with populations affected by said projects.
    - setting standards and guidelines for the use of AI to align with inclusive science principles.
    - reviewing and approving AI projects and initiatives.
    - monitoring AI configuration data sources to ensure Indigenous and equity-deserving groups' perspectives are reflected and contribute meaningfully to scientific narratives.
    - establishing inclusivity and diversity standards to avoid systemic biases within the models.

    - developing training programs and resources to support the inclusion of Indigenous People and equity-deserving groups in the development and deployment of this technology.
    - developing training programs and resources to support the inclusion of Indigenous and equity-deserving groups in the development and deployment of AI.
    - ensuring the availability of simpler alternatives to AI-based projects. Recommend the use of the most effective tool to address the most pressing issues at hand. See PHAC's Strategy for Artificial Intelligence in Public Health as a guide.
    - committing to regularly reviewing and updating AI standards and training programs to meet emerging ethical considerations and societal concerns.
- Establish Indigenous Peoples and equity-deserving working groups of vertical and horizontal representation committees, internal officers, sectors, or networks to:
    - provide internal support and guidance on scientific activities and initiatives.
    - reinforce effective interagency or cross-department communication and coordination on IDEA, GBA Plus, and IKS priorities and initiatives to support consistent and forward-looking inclusive practices. This minimizes the duplication of effort and engagement fatigue.
    - provide tools and expertise that foster intentional relationships of mutual benefit with Indigenous People and equity-deserving groups, promoting long-term representation and decision-making authority in relevant projects.
    - build the capacity of employees to effectively engage in inclusive scientific activities through training, education on the history of Indigenous People, provision of resources and tools, and identification and elimination of obstacles to inclusivity.
- Collaborate with appropriate offices to adapt existing guidelines and directives for ethical engagement with Indigenous Peoples and equity-deserving groups, such as the National Inuit Strategy on Research, the First Nations Information Governance Centre's (FNIGC) Ownership, Control, Access, and Possession (OCAP®) principles, to each department and agency's unique environments and encourage the staff to use these resources.
- Collaborate with relevant parties to identify and adapt strategies to address systemic barriers that result in individuals from Indigenous backgrounds and equity-deserving groups receiving unequal access to or being excluded from participating in opportunities and funding processes for science activities.

Funding Units within Departments and Agencies

- Include IDEA, GBA Plus, and IKS considerations in funding requirements and peer review process for active advancement of inclusive science.
- Increase the representation of Indigenous specialists (e.g., Elders, knowledge keepers, etc.) and equity-deserving groups on funding approval boards and committees and ensure their voices and experiences are meaningfully and ethically welcomed and inform decision-making processes.
- Use a place-based review practice and ensure approval boards and committee members have a deep regional, cultural and linguistic context to:

    - enable greater alignment with local priorities and community needs.
    - enable adherence to scientific integrity principles for scientific applications and activities involving equity-deserving groups, Indigenous Peoples and with Indigenous considerations.
    - identify and remove systemic barriers faced by equity-deserving groups and Indigenous Peoples in the funding process.
    - enable adherence to established internal and external protocols and guidelines, such as the Tri-Council Policy Guidelines and protocols from the Nunavut Research Institute (NRI-Making Research Work for Nunavummiut | StraightUpNorth.ca) for research applications and science activities.
- When funding AI projects, promote representation of Indigenous and equity-deserving groups on the AI approval boards and committee to:
    - provide oversight and review of inclusive decision-making.
    - set and review funding standards and guidelines for AI project proposals to align with emerging ethical considerations and societal concerns.
- Where possible, support small and medium-sized enterprises (SMEs) that help organizations to diversify their workforce, retain diverse talent, and implement inclusive strategies.
- Where possible, fund educational institutions through targeted outreach to advance IDEA, GBA Plus, and IKS considerations.
- Introduce a voluntary self-identification questionnaire in application processes to support measuring and tracking progress related to inclusive science goals, charters, and frameworks. For self-identification involving Indigenous Peoples, see Ontario Human Rights Commission's advice on confirmation of indigenous self-identification claims.

Science Activity Leads and Managers

- Reflect on and apply outlined inclusive science principles at higher levels. Establish inclusive and ethical guiding principles within the science team and with all parties to ensure IDEA, GBA Plus, and IKS considerations are woven into the science activities.
- Collaborate with Indigenous right holders, equity-deserving groups and community specialists to establish specific Indigenous and equity-deserving advisory groups, to provide case-by-case direction on science and to encourage the application of IDEA, GBA Plus and IKS.
- Where possible, bring Indigenous partners and/or partners from equity-deserving groups together to create an inclusive and ethically appropriate team to co-develop science projects from the inception of the idea to its evaluation. This approach enables the effective inclusion of Indigenous and Western worldviews (using a Two-eyed Seeing approach), both for projects that deliver opportunities for enhanced benefits and projects that may have adverse or unintended impacts on them.
- Collaborate with Indigenous Peoples and equity-deserving groups, incorporating cultural competency resources and engagement planning tools to ensure that diverse knowledge systems are meaningfully and respectfully embedded and shared across all aspects of scientific activities, including design, risk assessment, and decision-making. This approach

ensures that every stage of the process is sensitive to and incorporates all cultural considerations.

- If relevant, identify and engage with external organizations and communities that may benefit or be impacted by the scientific activity and what their interests or needs are with respect to the proposed activity.
- Establish clear and practical objectives that align with the organization's mandate and community needs, ensuring that scientific efforts are targeted, relevant, and inclusive of diverse perspectives and knowledge systems, particularly when multiple people and cultures are impacted.
- Provide science support and the flexibility needed for effective participation of Indigenous Peoples and equity-deserving groups on projects and reciprocally beneficial activities.
- Collaborate with Indigenous People, governments, communities, their respective science review bodies and equity-deserving groups to:
    - identify and comply with all Indigenous Peoples and equity deserving group-specific data stewardship policies, science activity requirements, and protocols in data collection, use, and retention, as well as gathering and protecting information that guides scientific activities.
    - ensure that programs and science initiatives embed IDEA, GBA Plus and IKS considerations and laws and are conducted in culturally appropriate ways. See, for example, Social Sciences and Humanities Research Council (SSHRC) Policy on Transparency and Decision-making in Managing EDI Self-Identification Data and the First Nations Principles of OCAP® principles/data sovereignty.
- Work collaboratively with and respect Indigenous partners, right-holders and equity-deserving group-led collective and collaborative agreements and science activity requirements, guidelines, and protocols related to co-development and participatory methods, so Indigenous Peoples and equity-deserving groups have the power to influence and make decisions on science activities. See the collaborative arrangement founded on a Inuit Impact and Benefit Agreement (IIBA) signed in 2023 and Inuit-Crown Co-Development Principles as examples.
- When engaging in field work, co-develop emergency response guidelines and resources tailored to Indigenous Peoples and equity-deserving groups.
- When contracting out science projects to external contractors and collaborators, communicate the values and principles for engaging with parties from Indigenous communities and equity-deserving groups. Provide clear expectations on reporting to demonstrate adherence to inclusive science guidelines.
- Studies involving human participants are to:
    - adhere to established ethical guidelines and policies such as the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS 2).
    - adopt an intersectional GBA Plus approach (e.g., consideration for gender, age, sex, race, ethnicity, income level, culture, immigration status, disability, etc.), considering how the interactions between relevant identities influence the scientific work.

    - collaborate with relevant parties to identify the implications of the science activities on diverse groups with different identities and identify solutions to address negative unintended consequences.
- When using AI or machine-learning algorithms:
    - assess whether other options exist, and if so, consider why AI/algorithms are being used instead of existing mechanisms or methodologies.
    - assess how AI or the machine-learning algorithms are being used in science (e.g., data processing, decision-making, etc.) and the potential for impact on people living in Canada.
    - adhere to the GoC's Directive on Automated Decision-Making. This directive provides a framework for ensuring that automated systems are used responsibly, with particular attention to identifying and correcting biases that could affect decision-making processes. It includes the Algorithmic Impact Assessment (AIA) Tool, designed to help institutions assess and mitigate risks associated with automated decision systems.
    - equip science project teams with the necessary skills to identify and address inherent biases and factor the biases in recommendations or decision-making if they cannot be addressed.
    - commit to regularly reviewing and updating developed AI models (at least semi-annually) to ensure they are consistent with emerging ethical considerations and societal concerns.
- Collect and use disaggregated data to support the identification of inequities.

2.2.3. Key Performance and Reporting Indicators

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Equip relevant offices and sectors to:
    - assess the number of science projects, policies, and programs that include race, gender, ability, etc., in analysis, service delivery, and evaluation.
    - track the acceptance rates of proposals led by individuals from equity-deserving groups, Indigenous Peoples, persons with disabilities and racialized scientists, as well as the amount of funding received. These metrics help evaluate the effectiveness of GBA Plus considerations in the proposal evaluation process.
    - track the number and proportion of department and agency collaborations and partnerships with Indigenous partners, right-holders and equity-deserving groups.
    - track and report on inclusive scientific activities as part of a regular survey.
    - assess the experiences of Indigenous Peoples and equity-deserving groups who work with the department or agency and develop a culturally safe approach for collecting and managing these insights to ensure follow-up on any issues identified.
    - review the willingness of Indigenous Peoples and equity-deserving groups to continue to collaborate with the agency or department, including assessment of whether sufficient financial support is provided for their involvement.

- monitor the number of review boards or committees that are ensuring the weaving of IDEA, GBA Plus, and IKS in proposals to support the effort to be culturally appropriate and incorporate inclusive approaches.
- develop and apply an IDEA, GBA Plus, and IKS monitoring framework and metrics, to evaluate science projects or initiatives and identify and integrate performance indicators.
- monitor representation of Indigenous Peoples and equity-deserving groups in STEM classifications in the department or agency workforce. include equity-deserving groups in determining Key Performance and Reporting Indicators.
- compensation given to committee or board members and whether it differs between certain population groups.
- monitor the number of staff who have taken training on EDI, SGBA Plus or Indigenous related learning.

Funding Units within Departments and Agencies

- Work with bodies such as the Treasury Board Secretariat and Statistics Canada to leverage their statistical data on various parameters to better understand GBA Plus dimensions, principles, including the diversity in access and participation.
- Promote IDEA, GBA Plus, and Indigenous considerations in data collection by encouraging peer reviewers and participants to self-identify. For self-identification involving Indigenous Peoples, see Ontario Human Rights Commission's advice on confirmation of indigenous self-identification claims. This effort aims to monitor and improve the representation of equity-deserving groups in science activities.
- Monitor the application and award rate of proposals led by scientists, who are Indigenous Peoples and members of one or multiple equity-deserving groups and the amount of funding received. These metrics help evaluate the effectiveness of GBA Plus considerations in the proposal evaluation process.
- Monitor and report the number of peer review committee members who are from Indigenous and equity-deserving groups. Identify a threshold below which action must be taken to resolve gaps.
- Compensation given to committee or board members and whether it differs between certain population groups.
- Monitor and report the proportion of staff who have taken training on EDI, GBA Plus or Indigenous related learning.

Science Activity Leads and Managers

- Separately monitor the number of projects that have Indigenous communities and equity-deserving groups involved in the co-development and implementation of scientific activities. Assess trends over time and identify responsive actions to address systemic barriers.

- Evaluate the willingness and experiences of Indigenous partners, right-holders and equity-deserving groups to continue to work with the team or on the project.
- Work with Human Resources (HR) to monitor and report the number of service contracts or Letters of Agreement for training on OCAP®, with Indigenous Elders, National Indigenous Organizations, and other organizations.

2.3. Priority Area 2: Inclusive Science Activities Practice

2.3.1. Context

This section provides SBDAs with best practices and resources that support embedding IDEA, GBA Plus, and Indigenous science methodologies in the practice or implementation of science activities. Inclusive science practice focuses on the science environment and the diversity and contributions of those who work, collaborate, and contribute to the research. This ensures that users of these guidelines are intentional and proactive in:

- recruiting and retaining a diverse team who have equitable access to mentoring, training, and capacity development opportunities.
- creating an inclusive work environment where everyone feels respected, appreciated and valued.

2.3.2. Science Work Environment

Why is it important?

The work environment significantly impacts creativity, productivity, and the well-being of employees. Employees who feel included, valued and respected within their teams and at the workplace are more likely to be productive, engaged, and innovators of great solutions to societal problems. This is why much effort must be taken to eliminate microaggression, racism, ableism, inequity, and all forms of bias. Everyone has a role in being culturally humble, creating a collaborative, supportive, inclusive, and barrier-free work environment.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Establish sectors, branches, and offices focused on embedding IDEA, GBA Plus, and Indigenous values and ethics throughout the department and the agency's work. Examples are NRCan's Nòkwewashk and GBA Plus Center of Expertise; the I-STEM Cluster; ECCC's Indigenous Science Division and GBA Plus Center of Expertise; Ingenium's Truth, Reconciliation, Equity, Diversity, Inclusion and Accessibility (TREDIA) office; NRC's Indigenous Strategy and Engagement Team; CFIA's Indigenous Science Office (ISO); and AAFC's Indigenous Science Liaison Office (ISLO).

- Create IDEA, GBA Plus, IKS Action Plans, accessibility and anti-racism action plans, Indigenous Cultural awareness, and sensitivity roadmaps that include addressing barriers in the work environment.
- Establish working groups of vertical and horizontal representation and a diverse governance committee to serve as the principal engagement forums to:
    - inform and support the implementation and advancement of IDEA initiatives; and
    - discuss and implement anti-racism commitments and statements and improve institutional work culture.
- Actively collaborate with various unions, Indigenous partners, right-holders and equity networks, IDEA, GBA Plus and IKS planners to:
    - support training opportunities that raise awareness and understanding of challenges faced by Indigenous People and equity-deserving communities.
    - provide targeted programs and initiatives that resource, build the capacity and increase inclusion throughout their career cycle of equity-deserving groups.
    - address identified barriers and challenges to participation through IDEA, GBA Plus and IKS corporate reporting mechanisms.
- Create inclusive and accessible labs by removing physical barriers and ensuring the participation of everyone, particularly persons with disabilities. This can be done by, for instance:
    - implementing retrofits and accessibility enhancements on buildings such as accessible doors, improved signage, having a protocol for persons requiring assistance in an emergency evacuation, and software enhancements to meeting rooms; and
    - ensuring new buildings meet the requirements of the Accessible Canada Act.
- Empower employee networks to implement initiatives and inform policies that promote inclusive and accessible environments and provide members with safe spaces to share and work toward common goals, organize events and sessions, advocate and consult with senior management on new policies and proposals to ensure they consider a variety of perspectives before they are rolled out.
- Identify and empower leaders to play an important role in mobilizing management and employees toward change, embedding new ways of thinking into our workplace culture, establishing processes to assess uptake and compliance, and supporting the efforts of grassroots and department or agency-led initiatives to foster a healthy and inclusive work environment.
- Promote a culture of cooperation and collaboration that values and promotes both official language and Indigenous rights.
- Increase visibility and accessibility resources. For example, where absent, work with the communications team to develop dedicated accessible intranet pages for employee-led equity-deserving networks with an “accessibility icon” on staff’s desktop to provide a one-click access to the Intranet page.
- Develop in collaboration with subject matter experts, EE groups, and HR, resources such as IDEA toolkits, tools, training, and guidance documents to support and further managers’ knowledge and awareness of governmental and departmental IDEA priorities and responsibilities to build diverse workforces and create inclusive and accessible workspaces.

Refer to internal resources such as AAFC's Manager toolkit, NRCan's Inclusive Science Self-assessment Tool and Weaving Knowledge Systems Curriculum as examples.

- Work with relevant sectors to establish Indigenous Engagement Co-Champions to foreground Indigenous perspectives in leadership and decision-making. The co-Champions should play an essential role in mobilizing management and employees toward change, embedding new ways of thinking into the workplace culture, and supporting the efforts of grassroots initiatives to foster a healthy and inclusive work environment.
- Develop and launch a pay equity plan as required by the Pay Equity Act in consultation with employees. Establish strategies focused on enhancing inclusive practices within the department or agency, including targeted training to build awareness around accessibility, efforts to close representation gaps for persons with disabilities, and enabling accessible innovation in program delivery.
- Monitor responses to Public Service Employee Survey questions related to respect for individual differences and activities supporting a diverse workforce. This data helps identify strengths and areas for improvement in workplace inclusivity.
- Work with relevant offices to establish career progression frameworks that recognise and promote the weaving of IDEA, GBA Plus, and IKS principles.
- Publish annual reports outlining progress in implementing the workforce and workplace IDEA action plan, including mechanisms to consult employees on equity issues such as the CFIA's Employment Equity Annual Report and Multiculturalism Annual Report.
- Participate in interagency coordinating committees such as Interdepartmental Indigenous Science, Technology, Engineering, and Mathematics (I-STEM) Cluster to increase support for Indigenous priorities in scientific work and, share and transfer IDEA, GBA Plus, and IKS best practices.
- Establish Diversity and Inclusion (DI) Index Score systems to measure the department's progress in advancing inclusion objectives. Refer to AAFC's DEI Strategy's Diversity and Inclusion (DI) Index Score system for ideas.

Human Resources

- Increase awareness, understanding and access to internal employment equity data (e.g., salary differential, promotion rate, organizational level capacity) that help measure progress on departmental equity initiatives.
- Establish mechanisms such as the collection of self-identification information and promote data transparency through directorate and regional level quarterly updates to help monitor the equity performance of science programs, projects, and initiatives, as well as achieve greater diversity. The data can also be used to support targeted initiatives to increase the representation of historically marginalized groups.
- Establish policies that integrate a set of mandatory requirements for collecting, using, retaining, and disclosing self-identification data from EE groups.
- Promote the department and agency's accommodation policy to staff and encourage them to voluntarily use workplace accommodation resources such as the GC Workplace

Accessibility Passport and consult the Accommodation Centre of Expertise to address accommodation needs.

- Create safe and inclusive workspaces through employee resource groups, mentorship opportunities such as the National Mentorship Program "Mentors."
- Develop strategies and recommendations to address any changes to the linguistic requirements for positions with supervisory functions (see the Official Languages Act).
- Undertake science and education campaigns to integrate IDEA and GBA Plus and weave IKS considerations into the modernization of the HR process.
- Track and compare formal and informal reports of non-inclusive environments, harassment, and discrimination.
- Provide services for employees who are victims of harassment and discrimination and make sure mechanisms are in place to address these situations promptly.
- Invite employee-led equity-deserving networks to the onboarding of new staff to make the networks visible and provide community and support for equity-deserving employees.
- Develop and institutionalize policies that ensure individuals with career leaves or care responsibilities are not disadvantaged in employment or funding decisions.

Communication and Outreach Team

- Celebrate and promote bilingualism through various organizational-level messages, tools, resources, and events throughout the year. Support the reclamation, revitalization, maintenance and strengthening of Indigenous Language (see the Office of the Commissioner of Indigenous Languages for additional guidance).
- Promote all theme days such as National Accessibility Week, Bell Let's Talk Day, National Caregivers Day, Speech and Hearing Awareness Month, Black History Month, Women's History Month and National Day for Truth and Reconciliation.
- Promote organization-level IDEA placemat to staff via Intranet news, articles, email communication, advertisements or other department communication mechanisms. Highlight resources and information from sources like the Canada School of Public Service (CSPS).
- Provide staff with a list of significant cultural and religious periods that should be considered when scheduling meetings and events.
- Increase awareness and train staff on the appropriate language to be used on Indigenous topics.
- Develop policies and guidelines that support inclusivity, such as including Reconciliation, IDEA, and GBA Plus practices, and ensuring accessibility in communication and outreach efforts.
- Use several communication tools, such as a weekly newsletter or a monthly article, to encourage all employees to promote an inclusive, ethical, and accessible workplace. For example, AAFCs "This month in diversity".
- Obtain continuous informed consent to celebrate scientists and employees from diverse backgrounds on the department's social media outlet.

Networks and Committees

- Provide network and committee members with safe spaces to share and work toward common goals, organize events and sessions, and consult upon new policies and proposals to ensure they consider a variety of perspectives before they are rolled out.
- Organize events/activities that provide the space for all employees to identify and eliminate obstacles to inclusivity. This can lead to more profound cultural change while increasing IDEA, GBA Plus, and IKS considerations.
- Share best practices, raise awareness, and foster an inclusive culture within the department or agency and among teams.
- Build on the collective experiences of all staff in the department to inform policies and initiatives to create more inclusive and accessible environments.

Science Activity Leads and Managers

- Work with the team to set IDEA, GBA Plus, and IKS goals, establish a working group and identify an Indigenous Knowledge champion or IDEA and GBA Plus champion on the team to oversee the implementation of the goals.
- Adapt existing IDEA, GBA Plus, and IKS resources and capacity-building opportunities from internal and external sources to the teams' unique conditions to promote a high-performing and engaged team. For example, see section 2 of the NSERC guide on integrating equity, diversity, and inclusion considerations in science initiatives.
- Collaborate with involve Indigenous Peoples and people from other equity-deserving groups as partners in science by:
  - for example, co-develop and implement science activity agendas.
  - committing to science on land. Indigenous knowledge is often place-based and translated/shared through physical experiences. Engagement with Indigenous communities is strongest when able to meet and build relationships in communities.
  - seeking guidance from Indigenous Elders in residence to enrich existing engagements.
  - meaningfully engaging the team to oversee the goals for integrating IDEA and GBA Plus, and weaving IKS.
- Consistent with any other team member, involve Indigenous People and equity deserving team members in decisions regarding the functioning of the team and various aspects of the scientific work.
- Establish open, regular and meaningful communication with and among team members to:
  - ensure and reinforce a safe space and a positive sense of community.
  - have internal IDEA, GBA Plus and IKS discussions with the team to cultivate a culture of belonging and inclusion.
- Encourage team members to voluntarily use workplace accommodation resources such as the GC Workplace Accessibility Passport and consult the Accommodation Centre of Expertise for accommodation needs, so team members can perform barrier-free and excel in their careers.

- Provide the information and resources needed for effective and ethical participation of EE groups on teams, working groups, etc., to provide advice, highlight work environment barriers, and collaborate on IDEA, GBA, Plus, and IKS solutions and initiatives.
- Where available, provide culturally sensitive mental health supports to staff.
- Encourage team members to report any accessibility barriers in the building to the building management team and set a schedule for follow-up to make sure the problems are resolved in a timely manner.

2.3.3. Building an Inclusive Team (internal/external)

Why is it important?

Empirical evidence shows that science project teams with diverse backgrounds, identities, and experiences offer a variety of perspectives that enhance creativity and the robustness of scientific work (Nature, 2018). Implementing deliberate and proactive strategies to identify and address systemic barriers to recruiting and retaining Indigenous People and persons from equity-deserving groups is vital to attaining excellence. Critical thought should be given to how and where employment opportunities are posted, the criteria considered in selecting successful applicants, and the composition of the selection committee. Evidence, such as the outcome of the Many Voices One Mind Survey (GoC, 2017), revealed that specific job requirements limit Indigenous Peoples' ability to apply and qualify for available positions. Would support adaptive and active policies that address the nuanced priorities of each group, which are dynamic and can evolve over short periods of time.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with Indigenous and equity-deserving employee networks and groups to develop an Indigenous and equity cultural awareness and sensitivity roadmap and resources (see ECCC's Diversity, Inclusion, and Employment Equity Strategy, PHAC's Indigenous Cultural Competency Policy and Roadmap as examples) to identify and address barriers EE groups face and guide the departments' initiatives and hiring practices and inform continuous improvement.
- Where a cultural awareness and sensitivity roadmap already exists, review it to assess its effectiveness and promote continuous improvement.
- Work with HR and establish working groups to discuss and implement ways to increase diversity and set and enforce equity targets and IDEA corporate commitments with consequences on performance management for executives.
- Initiate employee sponsorship, mentorship and retention programs that support and equip Indigenous and other equity-deserving groups by fostering professional development, building networks, and supporting career advancement.

- Prioritize diversity and inclusivity, implement inclusive evaluation processes, and targeted hiring, training and career retention and progressive initiatives for Indigenous and equity-deserving groups.
- Collaborate with the relevant offices to provide training on unconscious bias and cultural competency and offer mentorship and leadership development programs to support career advancement for equity-deserving groups.
- Establish contracts with Indigenous service providers that focus on supporting the professional development of Indigenous employees, including language training.

Funding Units within Departments and Agencies

- Engage the Department and Agency's IDEA committees and implement IDEA measures within funding programs and competitions.

Human Resources

- Commit to promoting IDEA throughout the talent lifecycle by establishing and monitoring progress on multi-year hiring, representation, mentorship, promotion, and pay equity goals and targets for Indigenous students and workforce, members of visible minorities, women, and persons with disability, by occupational category, to amplify their voices in the decision-making in the department.
- Update multi-year hiring, representation, and promotion goals regularly based on the latest data, incorporate them into the departmental IDEA Strategy or Action Plan, make them accessible to all employees, and inform and engage heads and senior management through executive committees so they can work toward attaining the goals.
- Regularly revise recruitment practices and policies for building diverse science teams to support diversity growth in the team, including providing opportunities for candidates to request accommodation with input from equity-deserving groups internal to the departments and agencies.
- Increase diversity within selection boards by ensuring participation from equity-deserving groups.
- Work with senior management to formulate and implement policies around inclusive hiring practices.
- Provide the resources and tools to equip hiring managers to adapt inclusive hiring practices using structured interview processes, recruitment methods, an inclusive hiring checklist and outreach strategies such as Indigenous summer student programs/platforms, to attract candidates from equity-deserving groups.
- Establish mentorship and sponsorship programs for EE employees to support commitment to develop potential executive leaders from equity-deserving groups to increase diverse representation in senior management positions.
- Promote practices that promote IDEA, GBA Plus and IKS in scientific initiatives, that support a diverse and inclusive workplace that embraces varying perspectives, expertise, and experiences to drive scientific innovation.

- Develop a recruitment plan for executive feeder groups that supports EE, such as the Future Black Leaders Initiative led by the Federal Black Executive Network or the Indigenous Management Development Program (IMDP) led by Indigenous Services Canada.
- Conduct annual collective staffing, targeting equity-deserving candidates in occupational categories where multi-year numerical goals are identified e.g., Science and Professional; Administrative; Operational and executive positions.
- Share workforce availability information showing employment equity gaps at the branch, area, and occupational group levels with staffing advisors and hiring managers to inform their decision-making when recruiting and hiring.

Science Activity Leads and Managers

- Increase representation of Indigenous and employment equity (EE) groups on science teams to ensure their voices and experiences are welcomed, and meaningfully and appropriately woven to inform decision-making processes.
- Strengthen the team's intercultural competencies to collaborate effectively, ethically, and respectfully with all partners and rights-holders, particularly Indigenous and equity-deserving groups, on projects that concern and affect them through IDEA, GBA Plus, and IKS training, such as the First Nations Principles of OCAP®, and OCAS (Ownership, Control, Access, Stewardship) Principles for Métis data governance, and Inuit.
- Increase Indigenous representation and the representation of equity-deserving groups on science teams to ensure that their voices and experiences are welcomed and considered in governance/leadership tables where decisions are made and in priority setting processes.
- Actively partner with and engage Indigenous Peoples and equity-deserving groups to identify where scientific evidence is needed to address their questions, and on projects that concern, benefit and affect them.
- Make a conscious effort to foster inclusive research and regulatory science methods that build skills and value the inputs of "citizen scientists" through all stages of scientific projects.
- Work with Indigenous Peoples (e.g., Elders, Knowledge Keepers, etc.), to help weave their perspective, priorities, with decisions and actions.
- Meaningfully engage Black communities, including community leaders, elders, professionals, specialists and people with lived experiences to support bridging of Afrocentric knowledge systems with other ways of knowing.
- Make a conscious effort to reduce bias during the recruitment process to establish diverse (e.g., backgrounds, identities, and abilities) pools of qualified applicants.
- Make a conscious effort to maintain diversity within the team by hiring Indigenous Peoples and equity-deserving groups from pools of qualified applicants.
- Establish connections among equity-deserving groups and work with departments, organizational policies and practices, established IDEA, GBA Plus, and Indigenous human resource networks, Employment Equity plans, focused employment and community service organizations to:
    - review job requirements to recognize diverse abilities and highlight transferable skill sets and lived experiences that could be relevant to the project.

    - adapt job application instructions and requirements to make them inclusive and accessible.
    - obtain guidance to address gaps when filling vacant positions and improve the diversity on teams to include, for example, Indigenous scientists, students, and early career STEM professionals.
- Establish student, internship, mentorship, training and job opportunities for equity-deserving groups and use existing internal inventory and initiatives such as training and recruitment programs, employment programs for students with disabilities, visible minority selection programs such as the Federal Student Work Experience Program (FSWEP), and rehire inventory for student employment as well as external open-source inventories, such as Black North Initiative, First Nations and Inuit Summer Work Experience Program, Indigenous Student Employment Opportunity, Indigenous Student Employment Program, Aboriginal job boards, and Indigenous careers platforms.
- Allocate funds for employing and engaging with people from equity-deserving groups, including meeting accommodation requests, compensation for Indigenous advisors on the scientific work for their invaluable time and knowledge, and using Indigenous and other equity-deserving consultants, scientists, field technicians, or students.
- Address accommodation needs at various levels of the recruitment, hiring, and career progression as per the requirements under the Accessible Canada Act.
- Ensure that people from equity-deserving groups on the team are not concentrated in student, casual and temporary positions but are also employed as full-time, part-time, and permanent hires.

2.3.4. Mentoring, Training, and Capacity Development Opportunities

Why is it important?

Access to mentoring, training, and capacity development opportunities directly affects one's career progression and success, particularly for early-career scientists. Considering diversity and equity in access to these development opportunities ensures that barriers to the career advancement of equity-deserving groups, including those to management and executive positions, are identified and removed. In addition, access to cultural competence training for team members significantly contributes to a more inclusive environment where diverse perspectives are effectively and ethically engaged and involved.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Empower networks and committees to identify resources (i.e., funding) for internships, capacity development, leadership and mentorship programs with an initial focus on Indigenous employees and equity-deserving groups.to provide career guidance and critical competencies that support career advancement.
- Sponsor EE employees to the Manager Development Program (MDP) and Aspiring Directors Program (ADP) through sponsorship programs that aim to support the government's

ongoing commitment to develop potential executive leaders from equity-deserving groups and increase diverse representation in senior management positions.
- Offer official languages training opportunities for Indigenous and equity-deserving groups. Bring together staff working across various IDEA landscapes (e.g., Indigenous, GBA Plus) to effectively collaborate and share lessons learned to increase inclusivity and address challenges.
- Provide IDEA, GBA Plus and IKS capacity-building opportunities for policymakers and analysts, including senior executives and management, so that they can promote deeper cultural change toward inclusion.
- Equip senior decision-makers to become champions of equitable training initiatives and opportunities.
- Regularly report on the progress made on the roadmaps and action plans.
- Establish and maintain contacts with relevant stakeholders and partners to provide an alternative training program in place of an undergraduate degree so that Indigenous People and other equity-deserving groups can have a direct path to a graduate certificate.
- Work with relevant parties to review, and if necessary, develop or adapt existing Indigenous-specific cultural competency resources and best practices for inclusive science; undertake the IDEA, GBA Plus, and IKS research education campaign.
- Establish contracts with Indigenous service providers or other resources such as the Knowledge Circle for Indigenous Inclusion that focus on supporting the professional development of Indigenous employees and implement targeted hiring initiatives to recruit Indigenous science team members.

Funding Units within Departments and Agencies

- Organize hands-on mentoring programs for Indigenous students, build capacity among Indigenous peoples, and increase their involvement in the funding review and science activity conducted.
- Offer support for collaborative projects that enable teams applying for funding to work together on innovative solutions to national challenges.
- Provide funding to external organizations to support science and innovation initiatives, help build capacity in the science community and engage equity-deserving groups in STEM.

Human Resources

- Provide guidelines, training, learning activities and resources that equip employees, managers, and science staff with intercultural literacy and enable them to understand how IDEA considerations are relevant to the building of teams, to recruitment and retention.
- Implement hiring and mentorship initiatives to amplify the voices of Indigenous Peoples, members of visible minorities, women, and persons with disability in the department and agency.
- Develop an IDEA questionnaire, in addition to self-identification awareness, to facilitate the participation of equity-deserving groups in various departmental professional development

and apprenticeship programs. For self-identification involving Indigenous Peoples, see Ontario Human Rights Commission's advice on confirmation of indigenous self-identification claims.

- Develop an equitable access to training programs plan to ensure Indigenous employees, members of visible minorities, women, and persons with disability have equitable access to training, mentorship, and career advancement opportunities.
- Develop services and programs, such as career navigators, to identify and address systemic intersectional barriers and gaps in career development.
- Empower and equip Indigenous Peoples, members of visible minorities, women, and persons with disability with the necessary tools to further enhance their skills and knowledge, facilitating career progression and navigating the unique challenges they may encounter during their career development journey.
- Develop an Indigenous cultural awareness and sensitivity roadmap and equity-related action plans to:
  - outline key steps and milestones for increasing cultural awareness and sensitivity.
  - foster inclusive practices and promote ongoing education.
  - offer comprehensive guidance and training for those looking to deepen their understanding and respect for Indigenous cultures and histories.
- Offer training to delegated managers on the Duty to Accommodate policy and process, as well as sound management practices that support a mentally healthy workplace.
- Maintain an internal portal for IDEA information, tools, and resources, as well as Indigenous engagement and anti-racism, anti-ableism, anti-sexism and anti-homophobia guides.
- Work with relevant parties to offer and track the delivery of IDEA, GBA Plus and reconciliation with Indigenous Peoples training to:
  - raise awareness and understanding of challenges faced by equity-deserving communities.
  - enhance employees' skills in understanding diverse perspectives and promoting inclusivity in science.
- Identify and reduce barriers preventing individuals from participating in training opportunities (e.g., training only offered during field season).

Networks and Committees

- Offer opportunities for staff to participate in discussions and learning opportunities to foster an inclusive culture within the department and agency.

Science Activity Leads and Managers

- Work with team members, including students and postdoctoral fellows, to develop equitable, inclusive, accessible, and effective training plans to address individual unique needs, including career development, skill enhancement, cultural competency, and language training.

- Develop a deliberate strategy to celebrate successes and provide professional development opportunities for equity-deserving members of scientific teams.
- Identify and work with IDEA, GBA Plus, and IKS champions to:
  - provide clear, equitable, and transparent procedures for networking, leadership training, conference attendance, etc.
  - oversee inclusive practices, ensuring that mentoring and networking opportunities are available to all.
  - review who has and has not had access to mentorship opportunities.
- Build the capacity of team members to effectively engage in inclusive science by providing them with access to free and paid training, resources, mentoring initiatives, networks, platforms and tools, such as on-the-field learning opportunities; and have a discussion within the team on what has been learnt and how it can be applied to the scientific activity.
- Solicit feedback and address the barriers that prevent Indigenous and equity-deserving team members from accessing capacity-building opportunities.
- Strengthen the team's intercultural competencies to collaborate effectively, ethically, and respectfully with all partners and rights-holders, particularly Indigenous and equity-deserving groups, on projects that concern, benefit, and affect them through IDEA, GBA Plus, and IKS training, such as the First Nations Information Governance Centre's OCAP® principles.

2.3.5. Effective Management and Resolution of Disputes and Conflicts

Why is it important?

Conflicts and disputes may be inevitable when implementing a science activity that involves diverse interests and parties. To foster a science environment where innovation, creativity, and commitment thrive, there is a need to have in place and effectively communicate conflict management and resolution processes, create open lines of communication with accessible and barrier-free complaint processes, and advance intercultural competency. This will ensure everyone can equitably access and use established processes to resolve issues and prevent the abuse of power and victimization of individuals or groups.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with relevant sectors and offices, such as HR, to provide scientists, program managers, and other internal stakeholders with the needed training and resources to:
  - identify and address any conflicts with collaborators and communities.
- Develop cultural competencies and having a trauma-informed approach can help here to avoid conflicts.

Science Activity Leads and Managers

- Work with team members to consider and address how biases rooted in discrimination, privileges, and power imbalances could impact the participation of the team.
- Encourage science team members to use official department or agency complaint management, conflict resolution processes, and resources such as the Ombudsperson, where needed.
- In line with department and agency conflict resolution policies, work with the team to develop a team Charter that clarifies how conflicts will be resolved within the Team.
- Create an open line of communication within the team and with science and research communities and parties.
  Work with the team and relevant parties to develop cultural competencies and apply trauma trauma-informed approach to help here to avoid conflicts.

2.3.6. Key Performance and Reporting Indicators

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with relevant parties to develop and implement a diversity and Inclusion (DI) Index Score system. See AAFC's Diversity and Inclusion (DI) Index Score system for insight.
- Monitor the intercultural competencies of staff in departments and agencies by tracking the number of science staff members who have taken relevant courses and training.
- Work with relevant parties to identify and implement quantitative and qualitative evaluation metrics to measure the effectiveness of IDEA, GBA Plus, and IKS strategies. These progress report cards could include targeted employment for EE groups, how IDEA, GBA Plus, and IKS training influence the workplace dynamics, etc.
- Share progress report cards with EE networks and stakeholder committees and post them on the agency or department's intranet site for all staff, senior management, hiring managers, and branch planners.

Human Resources

- Monitor the number of job applications from EE groups of students and staff and the employment acceptance rate.
- Track the number of IDEA training sessions supported by different programs.
- Evaluate team and employees' participation rate in department-wide IDEA learning and awareness activities against set targets.
- Track equity-deserving groups' overall access to training and capacity-building opportunities.
- Monitor the equity-deserving employees' count in departmental professional development programs and evaluate it against set targets.

- Securely collect self-identification information to monitor the equity performance of employment and training programs, and design measures that achieve greater IDEA, GBA Plus and IKS considerations through targeted initiatives.
- Monitor the number of requests for Indigenous referrals to the Public Service Commission (PSC).

Science Activity Leads and Managers

- Track the number of Indigenous parties requesting training from specialists on the team.
- Track the proportion of staff who are interested in and have received mentorship.

2.4. Priority Area 3: Inclusive Reporting and Knowledge Mobilization in Science

2.4.1. Context

Reporting and knowledge mobilization within scientific work identify how the outcomes are managed, communicated, and implemented, and their implications for diverse populations. IDEA, GBA Plus, and Indigenous worldviews and methodologies should inform reporting and knowledge mobilization efforts in science. The guidelines, in addition, outline indicators to assess progress on integrating IDEA and GBA Plus in reporting and knowledge mobilization in science. These indicators are both qualitative and quantitative and will be assessed for improvements.

2.4.2. Accessible Knowledge Mobilization, Dissemination and Reporting of Scientific Results

Why is it important?

Knowledge mobilization and reporting inform how science based decision-making is managed, communicated, and implemented. These processes ensure that science activity findings are connected to real-world users, such as community partners and other decision-makers, and accessed by the widest possible audience. In addition to publication in a peer-reviewed journal and internal organizational platforms, knowledge mobilization should employ different audience-specific approaches and strategies relevant to the scientific work to maximize impact. Upholding these principles ensures that participants and collaborators in any scientific work have the power to decide how and what aspect of their information is analyzed and presented.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with relevant parties to develop and keep up-to-date internet platforms.
- Provide financial support for Open Access journal, publications and guidance on Open (scientific) Data (see Federal Open Science Repository of Canada.). Though some Indigenous considerations, such as ownership and rights over their data, diverge from GoC

provisions for the public service, including the requirement for open-access publications, it is still important to consider Open science upon discussion with Indigenous partners.

- Provide mechanisms, resources, and guidance on maximizing the use of social and new media platforms, taking into account how to balance protecting Crown copyright (guaranteeing the work is accurate and authentic, as well as demonstrating it was produced by or on behalf of the Crown) and providing the public access to information.
- Work with relevant offices to adopt an open science policy, such as the Tri-Agency Open Access Policy on Publication, Scientific Publications Policy for the dissemination of findings, including making all peer-reviewed articles freely available to the public.
- Engage employee committees to gather diverse perspectives and facilitate sharing lived experiences and recommendations, to avoid mis- and disinformation, informing organizational policies and practices around knowledge mobilization.
- Where applicable, work with other federal departments to integrate inclusive findings into science activity frameworks.
- Share best practices and align GBA Plus applications in policy and science decision-making.

Funding Units within Departments and Agencies

- Provide grants for the pre- and post-co-development components of science projects and ensure proposals are assessed by reviewers with expertise in participatory methods (including participatory knowledge dissemination), as well as lived experience and deep knowledge of the local communities and regions involved.
- Incorporate feedback from equity-deserving groups on funding priority areas for knowledge development.

Science Activity Leads, and Managers

- Work with relevant parties to critically evaluate the results of science activities to understand their outcomes, potential impacts on the communities, and any intended or unintended consequences, ensuring alignment with intended goals and mutual benefits.
- Review results and reports for inclusive language to reduce harm and incorporate feedback from all partners into the scientific work.
- Actively involve managers, the project team, and collaborators in defining the dissemination strategy for the findings. This will enable the integration of diverse perspectives in the selected approach for dissemination.
- Work with external organizations, community partners, policymakers, and industry to disseminate findings through relevant channels, ensuring findings reach and benefit all stakeholders, partners, equity-deserving groups, and rights holders as applicable.
    - For a wider reach, publish findings on non-traditional media platforms in addition to open-access journals publications.
    - Organize science dissemination workshops and engagement sessions or adopt the use of platforms such as Community of Practice (COP) to share findings to reach a broader audience.

    - Adopt other non-traditional methods, such as the use of social media platforms.
- Adopt an accessible, inclusive language approach such as using plain language summaries, multilingual summaries, and community-specific briefings. Incorporate the use of accessible visualization formats, such as graphics, videos, and images. This will ensure that the information is accessible and understandable for all partners, including community members.
- Create an accessibility action plan as required by the Accessible Canada Act to ensure that all dissemination materials meet the requirements of the Act. For dissemination tailored toward Indigenous partners involved in the scientific work, follow guidelines and customs on how to share the findings to ensure that the dissemination process among Indigenous Peoples is administered in a culturally appropriate way and respectful of linguistic diversity while maintaining Indigenous data sovereignty.
- It is important to share data and findings of scientific work first with the Indigenous community in which it was collected, before disseminating them at dialogues and platforms with a broader audience.
- Establish approaches that enable Indigenous People to lead the measurement of successful Indigenous Knowledge mobilization and utilization.

2.4.3. Capacity Building for Knowledge Mobilization and Reporting

Why is it important?

Initial and continuous capacity building for public servants is required to build a strong knowledge base on the best practices for knowledge mobilization and reporting. It is important that federal science professionals make accurate science based information available to help inform decision-making among policymakers, partners and relevant stakeholders.

Roles and Responsibilities

Human Resources

- Require mandatory GBA Plus and IDEA training for science activity leads, supplemented with recommended complementary training on privacy protocols for access to and use of participant self-identification data and other scientific data that departments may collect.
- Provide cultural competency training in collaboration with relevant parties on respectful engagement and culturally appropriate dissemination practices in science management by integrating it into their onboarding and Practice Readiness e-Learning Program (PReP).
- Provide science communication training for scientists to build their capacity for outreach and results dissemination.

Networks and Committees

- Advise and provide recommendations to delegated authorities on initiatives, policies, processes, and capacity building related to knowledge mobilization and reporting.

- Propose new initiatives and collaborate for capacity building with the HR to identify barriers and support the achievement of the department and agencies' inclusive science strategic priorities related to knowledge mobilization and reporting.
- Develop and collaborate on awareness and learning tools for knowledge mobilization and reporting in science for members of the different networks and committees.

Science Activity Leads and Managers

- Train science project teams on the application of the Findable, Accessible, Interoperable, Reusable (FAIR) data principles (Statistics Canada, 2022). This ensures that the data and information collected are Findable (i.e., available, with high-quality metadata), Accessible (i.e., open, secure as necessary), Interoperable (i.e., shared, broadly applicable language), and Reusable (i.e., timely, well-described, minimal restrictions).
- Ensure all Science employees have expertise or access to training resources on FAIR data principles that are relevant to their domain.
- Train scientists to apply the CARE data principles (Carroll, S, et al. 2020). This ensures that data and information collected is for the **Collective** benefit of participants and scientists (i.e., any value created from Indigenous data should benefit Indigenous peoples), science participants have the **Authority** to control the use of data (i.e., Indigenous Peoples' rights and interests in Indigenous data are recognised), scientists practise **Responsible** management of usage (i.e., those working with Indigenous data are accountable for and transparent in how the data is used) and the **Ethical** use of information is adhered to (i.e., Indigenous Peoples' rights and well-being should be the most important concern throughout the data lifecycle).
- Train scientists to ensure that French-language scientific research produced in Canada is recognized, accessed, and effectively integrated into the development and mobilization of knowledge products.

2.4.4. Identifying, Acknowledging, and Addressing Study Limitations

Why is it important?

There are limitations in all scientific work. Therefore, it is important to be rigorous in identifying limitations to assess how they influence the interpretation of findings, and the validity and generalisability of new knowledge. Scientists and their teams must be transparent in sharing any identified limitations and determining how they can be addressed in future work. This provides essential context on the applicability of any scientific initiative and can help reduce the likelihood of the activity or its results being misused.

Roles and Responsibilities

Science Activity Leads and Managers

- Actively work to identify the unintended outcomes of a scientific work at the different stages of the science activity process and work with collaborators to amplify the positive outcomes and address the negative ones.
- Be transparent about the limitations of the science projects to the team and audience. Just as it is essential to communicate the findings to the target audience effectively, it is equally vital that appropriate approaches are used in sharing the limitations, as this has implications for how the analysis is used in decision-making and policymaking.
- Properly document the scientific methods used for data collection, literature reviews, and expert consultations to support replication and ensure equitable access to science in both French and English.

2.4.5. Collecting and Integrating Feedback to Inform and Shape Future Science Activities

Why is it important?

The goal of scientific work is to provide evidence-based information to guide decision-making, policies, and future initiatives. It is important that scientists take steps to transfer scientific work from research to a decision piece. This section provides guidelines on how to achieve this within inclusive science.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with relevant offices to establish platforms for collecting and integrating feedback from equity-deserving groups to improve scientific processes.
- Engage with employee networks and resource groups to obtain valuable insights, lived experiences, and feedback, contributing to the development of new programs and initiatives. Their active participation is crucial for advancing IDEA within the organization.
- Establish or work with existing ethics research boards to ensure that all science activities involving Indigenous Peoples align with principles of Ownership, Control, Access, and Possession (OCAP®) as well as established Indigenous protocols.

Science Activity Leads and Managers

- Create platforms such as Imagining Canada's Future to promote knowledge sharing for policy implementation and provide foundations for future interdisciplinary projects.
- Establish Indigenous and equity deserving groups Engagement Strategies at various levels (i.e., programs, projects, science centres, etc.) to ensure that opportunities and approaches for feedback are included within projects.

- Develop meaningful relationships and collaborate Indigenous People who provide independent advice on the overall strategic direction and priorities.
- Establish and maintain standing, ad hoc and multiple external advisory committees to understand the differential impacts of initiatives, projects, and programs and identify and effectively manage risks while preventing engagement fatigue.
- Proactively involve equity-deserving groups and advisory committees such as the Advisory Committee on Equity, Diversity and Inclusion, Advisory Committee on Accessibility and Systemic Ableism, Indigenous Advisory Circle and Employee Networks, and Scholars-in-Residence to weave their perspectives and provide strategic guidance and recommendations into the science activity processes to inform policies.
- Establish formal and informal feedback mechanisms that help the scientist identify the impact of the initiative and obtain and implement recommendations for improvement to continuously refine policies, processes, and scientific practices.
- Establish feedback procedures and mechanisms that enable equitable participation of equity-deserving communities in the official language of their choice.

2.4.6. Decisions on Authorship and Acknowledgements of Science Activity Outputs

Why is it important?

Clear guidelines around authorship, acknowledgement and ownership of scientific materials are needed to protect the intellectual property of all contributors and ensure mutual benefit from any scientific work. The following recommendations are made to help scientists ensure inclusivity in authorship, ownership and acknowledgement of contributions to science activity output. Discussion on authorship and acknowledgement is needed to come to a consensus on who is mentioned and what is credited to which party. An agreement should be reached before the scientific activity begins.

Roles and Responsibilities

Science Activity Leads, and Managers

- Discuss ownership of any intellectual property with collaborators (e.g., Indigenous partners, right-holders) and intellectual property experts to ensure everyone involved is acknowledged.
- Discuss the ownership structure for intellectual property until an agreement is reached that satisfies both GoC and Indigenous intellectual property requirements.
- Ensure scientists adhere to inclusive frameworks such as the ICS (Indigenous Cultural awareness and Sensitivity) Roadmap by prioritizing data sovereignty, ensuring communities retain ownership and control over their information.
- Identify and implement mechanisms for clear authority over data in collaborative activities or where individuals are involved.
- Use several strategies such as co-authorship, acknowledgement, and co-presenting of scientific findings to recognize the contribution of Indigenous partners and other

collaborators. Authorship can only be granted to those who meet authorship criteria. The model Scientific Integrity Policy includes requirements for authorship and acknowledgements.
- Scientists should structure their work in a manner that creates opportunities for Indigenous partners and other collaborators to qualify for authorship or have their contributions otherwise recognized.

2.4.7. Key Performance and Reporting Indicators

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Establish department or agency-wide standards for co-authorship.
- Work with the relevant units to track the number of government-led workshops organized for the dissemination of scientific data (publicly accessible vs. invitation-only).

Science Activity Leads, and Managers

- Track the number of arrangements where Indigenous groups lead the measurement of successful Indigenous Knowledge mobilization, utilization, and reporting.
- Track the number of community advisory groups identified as co-authors or in acknowledgements.
- Track the number of Open Access journal publications and the number of science data/knowledge/publication social media posts.
- Track the number of freely available Open Data datasets.
- Track the number of plain language summaries made available publicly (e.g., via departmental websites).
- Track the number of science communication tools (papers, plain language summaries, social media posts, etc.) that are published in more than two official languages and Indigenous languages.
- Track the number of publications or patents led by equity-deserving researchers, percentage of grant applicants and recipients from equity-deserving groups, percentage of panel reviewers/advisory board members from these groups, participation in science education and outreach programs.

2.5. Priority Area 4: Guidelines unique for the Weaving of IKS with Science Design, Reporting and Knowledge Mobilization

2.5.1. Context

Indigenous science is grounded in and guided by Indigenous Knowledge, including traditional and contemporary understandings, skills, and philosophies rooted in a deep physical, relational and spiritual connection to the natural world and a profound sense of responsibility. Indigenous

science uses culturally specific methods and protocols for applying Indigenous Knowledge, accumulating new knowledge, refining hypotheses, and changing practices based on First Nations, Inuit, and Métis Peoples' deep understanding of the natural world, while acknowledging the diversity and nuances of different Indigenous Peoples. Indigenous science is holistic and deeply braids, or weaves, new information over a longer-term perspective, while respecting expected codes of conduct and due diligence toward the collective benefit of all components, including humans, in ecosystems. Indigenous Peoples have used Indigenous science for thousands of years and continue to innovate today. It is important to note that Indigenous engagement and or collaboration is required if there is an expression of interest for conducting joint science, the science activity involves Indigenous People and or is conducted on Indigenous territory and reserves. Scientists' engagement should be guided by Indigenous Principles and federal government commitments, such as the Truth and Reconciliation Commission's 94 Calls to Action (2015), the UN Declaration on the Rights of Indigenous Peoples (2007), Canada's United Nations Declaration Act (2021), and Section 35 of the Constitution Act (1982). The following section provides recommendations to help departments or agencies respect, understand, and apply Indigenous interests and priorities to their scientific work. Recommendations provided apply to engagement with Indigenous Peoples as well as scientific and administrative work outside of those engagements. Scientists within departments and agencies are encouraged to work closely with Indigenous Peoples to learn about additional principles and processes that apply to the area or topic they are addressing.

2.5.2. Maintaining Mutually Respectful and Beneficial Relationships with Indigenous Peoples

Why is it important?

Collaboration with Indigenous partners, right-holders and parties, as with any other partner, should be grounded on respect for the mutual benefit of both parties. Respect builds trust, ensures transparency and facilitates the development of bonds for future collaboration.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Maintain active membership in the I-STEM cluster to allow the sharing of best practices across federal departments. By participating in these working groups, scientists stay informed about current strategies and approaches used to maintain mutually respectful relationships with Indigenous partners, right-holders and parties.
- Provide employees with guidance materials that specifically address collaboration with Indigenous partners, right-holders and parties. For example, request to see NRC's ISET Indigenous Engagement Planning Guide designed for scientists and including a series of reflective questions and exercises to equip teams with appropriate approaches for working with Indigenous partners, right-holders and parties.

Funding Units within Departments and Agencies

- Introduce partnership funding which supports science employees in pursuing opportunities to build and strengthen relationships with new and existing First Nations, Inuit, and Métis partners and catalyze the co-development of science activities and projects.

Science Activity Leads, and Managers

- Work involving Indigenous priorities and on Indigenous territories and resources requires sustained relationships. Ensure flexibility and sustained respectful engagement with Indigenous partners, right-holders and parties through regular engagements and ongoing collaborations, promoting their well-being and ensuring they benefit from the collaboration.
- Work with Indigenous partners, right-holders and parties to identify and implement Indigenous science protocols to ensure activities on Indigenous priorities or in Indigenous territories are done respectfully and in alignment with Indigenous ways of knowing and doing.
- Establish clear roles and responsibilities to ensure Indigenous perspectives are fully considered within all processes, protocols, and program developments. For example, in initiatives like Labs Canada, Indigenous viewpoints are woven in during the preliminary stages of design and the reorganization of spaces, ensuring that these perspectives are reflected in the planning and implementation phases.
- Collaborate with the respective Office of Intellectual Property and Commercialization (OIPC) to develop collaborative agreement templates purpose-built for engagement with Indigenous partners, right-holders and parties. These can serve as guidelines to ensure discussions on collaboration uphold the Section 35 rights of Indigenous Peoples, including data rights, and are in alignment with Articles 5, 25, and 34 of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Establish and effectively communicate conflict resolution processes and strategies to address conflicts or issues arising from science activities.
- Participate in Indigenous events, ceremonies, and activities to increase cultural awareness and strengthen relationships and collaboration.

2.5.3. Compliance with Indigenous Ethics

Why is it important?

Ethical engagement with Indigenous Peoples requires continuous relationship building with Indigenous partners, including right-holders or parties. This includes seeking continuous consent on using Indigenous preexisting data and negotiating intellectual property rights for science outcomes. It is important that scientists adhere to these ethical considerations to rebuild trust with Indigenous Peoples. Indigenous governance structures vary widely, and community-developed consent protocols may not always align with the legal definitions or procedural requirements used in federal systems. It is important to note that while departments and agencies should respect and follow Indigenous consent processes, they must also assess the type of authority being exercised when consent is granted and consult federal legal services or

appropriate experts when needed. This would support ethical and legal integrity; help prevent assumptions about governance structures and promote a more informed and respectful approach to continuous consent in science relationships.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Collaborate with the relevant offices to provide support to staff on the interpretation, contextualization, and implementation of the legal frameworks, Indigenous-related legal frameworks, to help incorporate Indigenous Knowledge when developing guidelines, policies, or plans that may impact or require engagement with Indigenous groups.

Science Activity Leads and Managers

- Develop collaboration agreements with the Indigenous partners, right-holders and parties in consultation with respective commercial or business and intellectual property offices, and where required, obtain permission for collaboration. Collaborative agreements establish the terms of reference for work and the relationship with Indigenous partners. They ensure that the science project team and the Indigenous partners, right-holders and parties understand their roles, responsibilities, and rights in the science activity. This helps strengthen respectful and ethical relationships and ensures that everyone benefits from the science activity.
- Ensure that informed consent is obtained from Indigenous partners, right-holders, before and during engagement of any scientific activity within their communities or on their territories. This means using various culturally specific communication mechanisms to engage early in the process and on an ongoing basis to ensure the engagement agreement is maintained.
- Develop agreements where departments or agencies communicate results to the Indigenous Peoples first and obtain approval before disclosing any results to the public.
- Coordinate with I-STEM to receive feedback from Indigenous employees and allies to improve the science activity processes.
- Adapt overarching principles (e.g., OCAP®, appropriate research licensing processes, and Indigenous-specific cultural competency and capacity-building guidance) tailored to the specific needs of partnering Indigenous groups, reflecting the diversity and individuality of their priorities and interests in the project's delivery to ensure continuous consent and data verification.
- Co-develop processes with Indigenous partners to interpret and represent science findings in ways that align with their knowledge systems, priorities, and protocols. Incorporate Indigenous Knowledge within science to inform guidelines, policies, and plans.

2.5.4. Identifying Indigenous Priorities and Concerns

Why are these important?

Indigenous Knowledge encompasses body, mind, emotions, and spirit, and is passed down through lived experiences rather than written records. Elders and Knowledge Keepers play a vital role in its transmission, using storytelling, ceremonies, land-based living, and interactions with nature, arts, and spiritual practices to convey both the wisdom and the responsibility tied to the natural environment. It is important to identify and understand Indigenous priorities and issues through Indigenous worldviews and methodologies for science activities involving Indigenous Peoples and their territories.

Deputy Heads of Departments and Agencies

- Work with relevant offices to initiate foundational steps to begin the training on Indigenous Science and awareness and recognition of the rights of Indigenous Peoples and the United Nations Declaration on the Rights of Indigenous Peoples (UN Declaration), by creating dedicated offices that effectively work toward identifying and weaving Indigenous priorities within science activities. As examples, see the CFIA Office of Diversity and Indigenous Policy (ODIP), ECCC Indigenous Science Division (ISD), Indigenous Science Office (ISO), Indigenous Liaisons, National Indigenous Reconciliation Working Group (IRWG), and Employment and Social Development Canada's (ESDC) Indigenous Strategy and Engagement Team (ISET).
- Collaborate with the relevant units to weave the principles of the United Nations Declaration on the Rights of Indigenous Peoples within the fabric of the science to ensure that Indigenous scientists have decision-making authority in projects that impact Indigenous Peoples.
- Facilitate the inclusion of Indigenous priorities across multiple engagements, ensuring that Indigenous perspectives are embedded throughout science activities.
- Require a set number of hours of mandatory Indigenous-related training in all staff's annual performance commitments.

Funding Units within Departments and Agencies

- Work with Indigenous partners, right-holders, through discussions, advisory boards, and targeted outreach to co-develop IKS goals that will guide the activities and initiatives of organizations that seek funding.
- Establish programs that apply Indigenous methods to solving pressing issues and provide grants or contributions to fund planning and the co-development of project proposals.

Human Resources

- Collaborate with organizations such as Indigenous Offices in the co-development and delivery of cultural literacy and cultural competency training, guidance, and tools to support

scientists in engaging and co-developing projects with Indigenous partners, right-holders and parties.

- Track representation and hiring data to identify gaps and measure progress. This data should be regularly reported to leadership and support transparent conversations and continuous improvement across teams.
- Provide opportunities for Indigenous staff to participate in discussions and learning opportunities to promote Indigenous-inclusive work environments.

Networks and Committees

- Support scientists to identify and weave Indigenous priorities and methodologies with science activities by first recognising and respecting IKS, and acknowledging the distinctive rights, needs, and priorities of First Nations, Inuit, and Métis Peoples.
- Co-develop with Indigenous experts and partners an evaluation tool that is applied to all science proposals involving Indigenous Peoples, which is intended to ensure that Indigenous traditional knowledge, Indigenous science and associated protocols and practices are respected and protected.
- Collaborate with the relevant units to weave the principles of UN Declaration Act (UNDA) and other commitments within the fabric of science practice to ensure that Indigenous Peoples have decision-making authority in projects that impact Indigenous Peoples.

Science Activity Leads and Managers

- Engage Indigenous liaisons (where available) early in the planning stage to support a rights-based approach to Indigenous science activity partnership. This also ensures a thorough understanding of community priorities, needs, and perspectives across the range of indigenous perspectives on a science issue. This approach helps streamline efforts, reduces redundancy, and mitigates engagement fatigue for Indigenous partners and rights-holders, fostering more effective and respectful collaboration.
- Co-define with Indigenous experts and partners the scope of Indigenous science initiatives. The definition must be grounded on two linked sets of requirements, including a goal of meaningful engagement with Indigenous Peoples, communities, societies, or individuals, and the goal of weaving IKS, wisdom, cultures, or experiences into the science. Review TCPS 2 (2018) chapter 9 and other resources like Nòkwewashk Policy on Ethics for Research Involving Indigenous Peoples and Territories (Ethics Policy) for additional guidance.
- Consciously foster interdepartmental and interdisciplinary collaboration and science based Indigenous engagement and partnerships to facilitate the weaving of Indigenous priorities and ensure Indigenous perspectives are embedded throughout the science activities. See Indigenous Science, Technology, Engineering, and Math (I-STEM).
- Involve Indigenous Peoples at every stage of the design process, from setting the agenda to validating and communicating the findings, particularly if the study concerns Indigenous Peoples or priorities or is conducted on Indigenous land.

- Establish collaborative science agreements that explicitly recognize and support Indigenous rights to self-determination in science, access to and control over data collected and results within their communities and adhere to existing principles and guidelines.
- Increase familiarity with distinctions-based Indigenous policies and frameworks such as the Inuit Nunangat Policy, the National Inuit Strategy on Research, and Métis-specific data sovereignty frameworks to foster identification of Indigenous priorities, respect for unique data governance approaches, and support distinctive culturally appropriate practices.
- Engage Indigenous Peoples in the development of science projects to promote capacity building, encourage shared learning, and the co-production of knowledge.

2.5.5. Applying Indigenous Methodologies, Data, and Perspectives at the Different Stages of the Scientific Activity

Why is it important?

Indigenous methodologies, data, and perspectives are required to shape scientific work that involves Indigenous parties. Indigenous Knowledge is holistic and must be inclusive of Indigenous Peoples to maintain context. Ensure Indigenous Peoples remain the experts on their own knowledge systems and retain control over how the knowledge is interpreted and applied. Decision-making processes need to recognize and make space for this. It is therefore important to engage communities early to avoid missteps. These methodologies must be applied at different stages of designing and implementing the scientific work.

Roles and responsibilities

Deputy Heads of Departments and Agencies

- Work with organizations committed to producing evidence-based information that contributes to Indigenous Peoples achieving data sovereignty in alignment with their distinct worldviews. An example is the First Nations Information Governance Centre (FNIGC), which is an incorporated, nonprofit organization that trains and educates on data rights, indigenous data sovereignty, and the First Nations Principles of OCAP®.
- Establish Indigenous-focused portfolios or roles to help strengthen Indigenous Knowledge and methodologies within the departments or agencies upon verification of Indigeneity and competence (see the Policy statement on Indigenous-specific hiring | Ontario Human Rights Commission informs employers of the need to confirm self-indigeneity claims by Indigenous people).
- Review policies that could hamper engagement goals (e.g., any travel caps should strategically prioritize Indigenous Engagement activities).
- Provide resources for collaborative agreements implementation that are adapted to the Indigenous context (e.g., not boilerplate but co-developed agreements, etc.).

Human Resources

- Promote awareness and training on OCAP® principles to enhance understanding of data sovereignty and the use of Indigenous methodologies.
- Establish programs, develop models and deliverables for programs such as Indigenous scholar-in-residence to build the capacity of scientists to advance the weaving of Western and Indigenous science.

Science Activity Leads and Managers

- Develop engagement plans and use multiple culturally sensitive and appropriate engagement methodologies to meet the distinctive First Nations, Inuit, and Métis People's needs and expectations. These include workshops, direct communication with Indigenous partners, right-holders, engaging existing Indigenous networks within the department and agencies, collaborating with colleagues that have existing experience and having an Indigenous advisory committee, or similar body (e.g., Elder Circle), for the scientific work.
- When the science activity directly concerns Indigenous Peoples, seek to weave Indigenous methodologies and perspectives by engaging Indigenous scientists on the teams, and consulting Indigenous Peoples, networks, and literature.
- Set Performance Management Agreement (PMA) goals to prioritize time spent on outlined IDEA, GBA Plus and IKS recommendations and training.

2.5.6. Creating Capacity-Building Opportunities for Indigenous Partners, Right-holders and Parties

Why is it important?

Mutual benefits of any scientific work include building the capacity of the Indigenous partners, right-holders and scientists on all components of the scientific work to ensure maximum participation and engagement. By building the capacity of Indigenous people, they can contribute better to any scientific work.

Roles and Responsibilities

Deputy Heads of Departments and Agencies

- Work with the relevant offices to operate sponsorship and mentorship programs that support Indigenous employees. These initiatives should strengthen retention by fostering professional development, building networks, and supporting career advancement.

Human Resources

- Design specific capacity-building programs for GoC Indigenous scientists for professional development and career advancement in the areas they desire, leading to better retention, such as the BIPOC Language programs and Indigenous Career Management for Employees (ICME) Program.

- Engage an Indigenous Recruitment Advisor to support the recruitment, training, and retention of Indigenous students and employees.
- Establish an Indigenous Career Navigator Program (ICNP). This program allows Indigenous employees to serve as Career Navigators, offering culturally relevant advice and guidance to fellow Indigenous students and employees. These Navigators assist with public service recruitment processes, provide information about HR programs and services, and help employees develop the skills and knowledge needed to navigate their career paths. Additionally, they support managers in recruiting Indigenous Peoples and assist existing employees in achieving their career goals.

Science Activity Leads and Managers

- Acknowledge that collaborating with Indigenous partners, right-holders, and parties requires that science activities respond to their needs, priorities, and their preferences in terms of scientific format, sharing of knowledge, capacity and timeline. This may involve contributing to the enhancement of community capacity and skills, exploring opportunities for reciprocal learning, design, authorship and transfer of skills and knowledge between the community and the science team. It may also involve supporting a community in maintaining their culture, language, or identity, as well as supporting their self-determination.

2.6. The Distinct Roles of the Three Federal Research Funding Agencies

The Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council Social Sciences and Humanities Research Council (SSHRC) of Canada (hereafter "the agencies in this section") provide grants and awards to support research, research training and innovation in Canadian postsecondary institutions. Collaboration between the agencies enables the support of cross-cutting, multidisciplinary research initiatives designed to address important scientific opportunities and problems that matter to Canadians.

The agencies are committed to excellence in research and research training. For over a decade, the agencies have undertaken several initiatives to foster a more equitable, diverse and inclusive science ecosystem in Canada. The agencies have been involved in the development of the SBDA Inclusive Science Guidelines by providing their expertise and by sharing their best practices. Since the agencies do not conduct research and do not have researchers as employees, the guidelines in this document do not apply in the same way to agency-supported researchers in the postsecondary research enterprise.

The agencies acknowledge that despite the initiatives put in place over the last decade, much more needs to be done. In order to achieve world-class research, the agencies must address systemic barriers that limit the full participation of all talented individuals. The agencies aim to create a culture where embedding GBA Plus, IDEA and IKS considerations into all aspects of research is second nature.

The agencies believe that achieving a more equitable, diverse and inclusive Canadian research enterprise is essential to creating the excellent, innovative and impactful research necessary to advance knowledge and understanding, and to respond to local, national and global challenges.

With these goals in mind, the agencies are committed to:

- Supporting equitable access to funding opportunities for all members of the research community.
- Promoting the integration of equity, diversity and inclusion-related considerations in research design and practices.
- Increasing equitable and inclusive participation in the research system, including on research teams.
- Collecting the data and conducting the analyses needed to include equity, diversity and inclusion considerations in decision-making.

Through these means the agencies have been working with those involved in the research system to develop the inclusive culture needed for research excellence and to achieve outcomes that are rigorous, relevant and accessible to diverse populations. Under the leadership of the Canada Research Coordinating Committee (CRCC), the agencies have developed an action plan that guides initiatives and decisions to contribute to a system-wide transformation. The Tri-Agency Equity, Diversity and Inclusion Action Plan outlines measures to increase equitable and inclusive access to granting agency funding opportunities. It also details how the granting agencies can influence the achievement of an inclusive post-secondary research system and culture in Canada.

Beyond efforts targeting equity-seeking groups, the agencies recognize that First Nations, Métis and Inuit are rights-holding as First Peoples of Canada, and initiatives should be developed through distinctions-based approaches, as found in the strategic plan Setting new directions to support Indigenous research and research training. The agencies will adapt to new realities and insights gained through feedback, literature and national and international promising practices. It is the foundation for a concerted long-term commitment to enhancing IDEA in the Canadian science ecosystem. The agencies will continue to listen to and engage with the community to support concrete change. The agencies will continue to report on their progress on IDEA through their respective mechanisms such as the Departmental Results Reports, interactive dashboards and the CRCC annual reports. The agencies will also continue to engage with their SBDA colleagues in sharing their expertise, best practice and knowledge of the post-secondary science ecosystem.

3. Part III: The Way Forward

3.1. Implementation Strategy

To ensure the successful integration of the Inclusive Science Guidelines into SBDA practices, a phased approach is recommended. This includes initial awareness and training, embedding guidelines into policy frameworks, and ongoing monitoring and refinement. Knowledge sharing

is essential for building capacity and sustaining Inclusive Science practices across SBDAs. By promoting open access to resources, training programs, and collaborative platforms, departments can facilitate the exchange of ideas and expertise. Workshops, seminars, and mentorship programs provide opportunities for staff to enhance their skills in integrating IDEA, GBA Plus, and weaving IKS into their work. Recognizing and celebrating innovative approaches through awards and recognition programs further motivates continuous improvement. Through these collective efforts, the federal science community can build a resilient and inclusive science environment that benefits people living in Canada. Departments and agencies will be encouraged to develop action plans, policies, guidelines, and engagement plans tailored to their specific contexts, ensuring alignment with broader federal priorities on inclusion, diversity, and reconciliation. Departments will also be encouraged to embed IDEA principles, including GBA Plus and weaving Indigenous Science, into their respective departmental science strategies and to make linkages to these guidelines. Refer to the **SBDAs Inclusive Science Guidelines Implementation Strategy,** a supplementary document that provides guidance on implementing the guidelines.

3.2. Overarching Guiding Principles for Implementation of the Guidelines

- **Transparency**

Transparency involves open and honest communication. Transparency can be further broken down into the following components:

  - Open Communication**:** Transparency involves sharing information openly and honestly, including positive and negative outcomes.
  - Informed Decision-Making: It ensures parties have the necessary information to make informed decisions and participate in the process.
  - Building Trust: By being transparent, organizations and individuals can build trust with their partners.

- **Accountability**

Accountability ensures individuals and entities are accountable for their actions. This is crucial for ethical engagement, fostering trust and promoting responsible conduct in a scientific environment. It can be broken down into the following components:

  - Responsibility: Individuals or entities are liable for the consequences of their actions, whether positive or negative.
  - Promoting Ethical Behaviour: Accountability acts as a deterrent against unethical behaviour and encourages responsible conduct.

- **Reciprocal and Ethical Engagement**

Emphasizes mutual benefit and respect in interactions, particularly within science activity settings. It involves prioritising the welfare of all participants and fostering a relationship built on trust and shared learning. This approach is crucial for ensuring that the science activity is conducted ethically and that community involvement is meaningful and beneficial for all. Engaging Indigenous people in science activities requires a commitment to reciprocity, ensuring

that Indigenous Knowledge is valued and that outcomes of the science activity benefit the community (Bourassa, et al., 2020). While collaborative agreements are an ethical best practice and reflect the spirit of OCAP®, consent, reciprocity, etc., they must comply with departmental, agency and Treasury Board policies. It is also essential to involve legal services and relevant departmental business units when federal scientists are signing agreements that may deviate from template language that has been reviewed by legal services or departmental intellectual property business units. Reciprocal Engagement can further be broken down into:

- Mutual Benefit: Creating situations where all parties benefit, whether through knowledge exchange, shared resources, or positive social change.
- Respect and Trust: Building trust and fostering respect for diverse perspectives are essential for ethical engagement.
- Shared Learning: Reciprocal engagement encourages a learning environment where everyone contributes knowledge and experiences.
- Ethical Considerations: Prioritizing the welfare of participants, minimizing risks and ensuring informed consent are crucial ethical aspects of engagement.

- **Diverse Representation**

This refers to the inclusion of individuals from various backgrounds, identities, and experiences in decision-making bodies and institutions. It encompasses a range of differences, including but not limited to gender, race, ethnicity, sexual orientation, socioeconomic status, and disability (Perez-Sepulveda, et. al., 2025).

- **Cultural Competence**

This refers to the ability to interact effectively with people from different cultural backgrounds. It involves understanding, appreciating, and respecting cultural differences, which can be achieved through knowledge, skills, and attitudes. In essence, it's about being able to function effectively within diverse cultural contexts. In a science activity context, it means the scientists are able to understand and respect the cultural diversity of the populations they study, ensuring their activities are conducted ethically, effectively, and with sensitivity to cultural differences. This involves considering cultural factors in the design, data collection, analysis, and interpretation, ultimately leading to more relevant and impactful findings (Sue, 1998).

- **Ethical use of Technology and Data**

This involves considering the moral implications of how information is gathered, stored, and used, focusing on individual rights, privacy, and fairness. This includes respecting individual ownership of personal information, ensuring transparency about data collection and usage, and prioritising data security to protect against unauthorised access and misuse. This involves ethical data management and communicating results in a transparent way (Wiltshire et al., 2022).

- **Continuous learning and Improvement**

This is crucial for science activities as they ensure scientist stay current with advancements, refine methodologies, and enhance the quality of their findings. This continuous process helps to

maintain relevance, drive innovation, and improve the overall impact of on society. (Open and Universal Science Project, 2023).

- **Values and Ethics Code for the Public Sector**

These include Respect for Democracy, Respect for People, Integrity, Stewardship, and Excellence.

- **Reconciliation**

Reconciliation, as upheld by the GoC, is the ongoing process of establishing respectful relationships with Indigenous Peoples by addressing the legacy of colonialism and supporting self-determination, rights, and cultural revitalization. This includes responding to the Truth and Reconciliation Commission's Calls to Action and co-developing policies in partnership with First Nations, Inuit, and Métis communities. Adhering to reconciliation principles can further enhance inclusive science goals.

3.3. Measuring Success and Accountability for Continuous Learning

Measuring the success of the Inclusive Science Guidelines involves tracking progress through clear, quantifiable metrics and fostering a culture of accountability. Performance indicators will assess the weaving of IDEA, GBA Plus, and IKS within the design, practice and reporting of scientific activities. Regular reviews, feedback mechanisms, and self-assessment tools are recommended and will support departments in identifying gaps and areas for improvement. Continuous learning is reinforced by creating opportunities for sharing best practices, ensuring that lessons learned inform future iterations of Inclusive Science policies. Success is not static but an evolving process that reflects the growing commitment to equitable and impactful science.

3.3.1. Example of Reporting Metrics

The Guidelines provide quantitative, narrative and reflective reporting metrics to aid successful implementation (see Table 1 for detailed reporting metrics for the Guidelines).

Quantitative Focus

- This reporting metric emphasizes measurable metrics to track the implementation of Guidelines within SBDAs. Key performance indicators (KPIs) may include:
  - **Diversity Metrics:** Percentage of equity-deserving groups in teams.
  - **Engagement Metrics:** Number/percentage of reciprocal engagement activities with Indigenous and other partners.
  - **Cultural Competency:** Participation rates in cultural awareness and GBA Plus training programs.
  - **Knowledge Mobilization:** Content and number of publications, presentations, or policy changes weaving IKS and IDEA principles.
- Annual reporting will consolidate these metrics, highlighting trends, identifying gaps, and proposing action plans to enhance inclusivity.

Narrative and Reflective Focus

- This approach incorporates qualitative reporting to capture the context and stories behind the numbers. Departments can include:
    - **Success Stories:** Case studies demonstrating effective integration of Inclusive Science practices.
    - **Challenges and Barriers:** Insights into obstacles encountered and strategies used to overcome them.
    - **Lessons Learned:** Reflections on what worked, what did not, and how these experiences will inform future efforts.
    - **Community Impact:** Testimonials and feedback from Indigenous partners, right-holders and parties emphasise real-world impact.

Table 1. Inclusive Science Guideline Reporting Metrics

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
Inclusive Science Activity Design	Setting the Scientific Agenda	• Number of scientific activities that adhere to established protocols and ethical guidelines	• Funding applications • Project review	*Deputy Heads*	Annually in line with Call for proposals	
		• Percentage of equity-deserving groups on science teams	• Employee data sources • Internal team inventories	*Human Resources* *Science Activity Leads and Managers*	Annually in line with Call for proposals	
		• Level of involvement of equity-deserving groups in science teams	• Internal team inventories	*Science Activity Leads and Managers*	Biannually	
		• Level of representation of equity-deserving groups on committees, boards and management teams	• Human Resources Data	*Human Resources*	Biannually	
		• Frequency of AI standards and training programs review	• Departmental/agency AI review committees and processes	*Networks and Committees*	Annually	
		• Percentage of equity-deserving group members involved in developing equity-related resources	• Record of meetings, reports, and engagements	*Human Resources*	Biannually after every policy and resource creation process	
		• Number of grassroot working groups and networks actively supping inclusive scientific activities	• Record of meetings, reports, and engagements	*Science Activity Leads and Managers*	Annually	
		• Availability and use of Inclusive Science resources	• Department/agency resources data base • Frequency of visits, and records of downloads	*Communication and Outreach Team, Science Activity Leads and Managers*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Number of funding calls that require Inclusive Science considerations	• Call for funding applications • Call for proposals	*Funding Units within Departments and Agencies,* *Deputy Heads*	Annually in line with Call for proposals	
		• Number of funding applications that embed inclusive science principles	• Funding applications • Proposal submissions	*Funding Units within Departments and Agencies* *Deputy Heads*	Annually in line with Call for proposals	
		• Presence of executive oversight body for inclusive science initiatives	• Department/agency record of committee and working groups	*Human Resources*	Annually	
		• Number of teams that have set up inclusive science goals	• Internal team records and documentations	*Science Activity Leads and Managers*	According to project life cycle	
		• Number of team members trained in intercultural competence	• Record of training certificate	*Science Activity Leads and Managers*	Annually	
		• Number of projects that identify, report and address biases in AI and algorithms	• Internal team records • Project Funding reports • Project publications	*Science Activity Leads and Managers*	Annually in according to project life cycle	
		• Number of AI projects adhering to ethical protocols	• Project Funding reports • Internal team records and documentations	*Funding Units within Departments and Agencies, Science Activity Leads and Managers*	Annually in according to project life cycle	
		• Success rate of funding proposals from equity-deserving groups	• Project Funding reports	*Science Activity Leads and Managers* *Funding Units within Departments and Agencies*	Annually in line with Call for proposals	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• The experiences of Indigenous Peoples working with department or agency	• Funding records • Annual funding reports	*Science Activity Leads and Managers*	Annually	
		• Willingness of Indigenous communities to continue to collaborate	• Experience survey • Direct communication	*Science Activity Leads and Managers* *Funding Agencies and Organizations*	Annually	
		• Level of representation of equity-deserving groups in STEM classification	• Employment data • Self-declaration data	*Deputy Heads* *Human Resources*	Annually	
		• Presence of elders in residence supporting inclusive science activities	• Department/agency websites and specialised offices	*Deputy Heads* *Human Resources*	Annually	
		• Number of senior leaders endorsing inclusive science	• Department/agency events, publications and communications	*Deputy Heads* *Human Resources*	Biannually	
Inclusive Science Activity Practice	Team Composition	• Availability of co-develop Indigenous and equity cultural awareness and sensitivity roadmap	• Department/agency resources data base	*Human Resources* *Communication and Outreach Team*	Annually	
		• Frequency of Indigenous and equity cultural awareness roadmap review	• Department/agency review reports	*Human Resources*	Annually	
		• Use of targeted inclusive hiring and promotion strategies	• Department/agency hiring policies and programs	*Deputy Heads* *Human Resources*	Annually	
		• Presence of employee sponsorship and mentorship programs for equity-deserving groups.	• Department/agency websites, communications and announcement	*Deputy Heads* *Communication and Outreach Team*	Annually	
		• Number and utility of trainings on inclusive science principles available for all staff	• Department/agency training resources data base • Records of downloads/ Frequency of visits	*Human Resources* *Communication and Outreach Team*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Presence and use of recruitment and promotion plan for equity-deserving groups into executive positions	• Internal data from Training leads Department/agency hiring policies and programs	*Science Activity Leads and Managers* *Human Resources*	Annually	
		• Percentage of equity-deserving groups in science teams	• Hiring data • Internal team composition data	*Science Activity Leads and Managers*	According to project life cycle	
		• Diversity of platforms used for job postings •	• Department/agency hiring data and policy • GoC hiring policies	*Deputy Heads* *Human Resources*	Annually	
		• Positions of equity-deserving groups on the team	• Department/agency hiring data • Internal team data/information	*Human Resources* *Science Activity Leads and Managers*	According to project life cycle	
		• Availability of career advancement opportunities	• Department/agency programs and initiatives	*Human Resources* *Science Activity Leads and Managers*	Annually	
		• Number of job applications from individuals from equity-deserving groups	• Human Resources hiring data • Internal data from hiring managers	*Human Resources* *Science Activity Leads and Managers*	Annually	
	Scientific Work Environment	• Presence and use of diversity focused action plans and roadmaps	• Department/agency strategic policy plans • Diversity and Inclusion surveys	*Deputy Heads*	Annually	
		• Number of complaints/conflict applications filed	• Department/agency conflict resolution data base and application portal	*Human Resources*	Annually	
		• Number of accessibility complaints received	• Department/agency accessibility request data base and application portal	*Human Resources*	Annually/fiscal year	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Engagement level of equity-deserving groups in inclusion policy development.	• Record of policy development meetings • Record of engagements and consultations	*Deputy Heads* *Human Resources*	Biannually after every policy and resource creation process	
		• Number of language training opportunities available to equity-deserving employees	• Department/agency language training policies and programs	*Deputy Heads* *Human Resources*	Annually	
		• Presence and use of pay equity plans and inclusive career progression frameworks	• Department/agency pay and career progression policy and strategies	*Deputy Heads* *Human Resources*	Annually	
		• Use of existing data e.g., PSES to inform departmental/agency policies	• Record of policy making processes and discussions	*Deputy Heads* *Human Resources*	Annually in link with survey	
		• Use of Diversity and Inclusion (DI) Index Score systems to measure progress	• Inclusive program and strategy evaluation reports	*Human Resources*	Annually	
		• Availability of accommodation and mental health support	• Department/agency communications and announcements • Internal team communications	*Communication and Outreach Team* *Science Activity Leads and Managers*	Annually	
		• Level of messaging on theme days within the department or agency	• Department/agency communications and announcements • Internal team communications	*Communication and Outreach Team* *Science Activity Leads and Managers*	Annually	
		• Presence of dedicated roles such as accessibility champions	• Department/agencies policy strategy and communications	*Communication and Outreach Team* *Deputy Heads*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
	Mentoring, Training and Capacity Development Opportunities	• Number of internship, mentorship and capacity development opportunities available to equity-deserving groups	• Program descriptions and communications • Program evaluation reports • Records of application and award	*Deputy Heads* *Human Resources*	Annually	
		• Number of sponsorship opportunities available for equity-deserving groups to executive levels	• Program descriptions and communications • Program evaluation reports • Records of application and award outcomes	*Deputy Heads* *Human Resources*	Annually	
		• Number of official languages training opportunity available to individuals from equity-deserving groups	• Program descriptions and communications	*Deputy Heads* *Human Resources*	Annually	
		• Availability of training opportunities for managers and policy makers to promote cultural change	• Program evaluation reports • Records of application and award	*Science Activity Leads and Managers*	Annually	
		• Number of projects that build capacity within equity-deserving groups	• Project proposal details • Project conclusion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Use of training plan to monitor for equitable access	• Internally developed training plans	*Science Activity Leads and Managers*	Annually	
		• Number of Indigenous parties requesting training	• Department/agencies records • Record of referral request	*Science Activity Leads and Managers*	Annually	
	Management an	• Availability of conflict resolution training and resources	• Department/agency resources data base	*Communication and Outreach Team*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
			• Frequency of visits and downloads records	*Science Activity Leads and Managers*		
		• Presence and use of trauma informed conflict resolution approach	• Department conflict resolution policy and communications	*Human Resources* *Science Activity Leads and Managers*	Annually/fiscal year	
		• Collaboratively developed conflict resolution team charters	• Internal team documents	*Science Activity Leads and Managers*	According to project life cycle	
		• Use of progress report cards to assess inclusive science efforts	• Departments/agencies progress reports	*Human Resources* *Deputy Heads*	Annually	
Inclusive Reporting and Knowledge Mobilization in Science	Science Knowledge Mobilization, Dissemination and Reporting	• Use of diverse mediums such as open access journal, opinion pieces etc. to publish scientific findings	• Department/agency publication data base	*Science Activity Leads and Managers*	Annually	
		• Number of open-access publications and open data from department s or agencies	• Report from Intellectual property divisions and science libraries in departments/agencies	*Deputy Heads*	Annually	
		• Number of plain language summaries from science activities	• Internal science communications • Department/agency publication data base	*Deputy Heads* *Science Activity Leads and Managers*	Annually	
		• Number of science activity outcomes published in more than the two official languages	• Department/agency publication data base	*Science Activity Leads and Managers*	Annually	
		• Presence and use of open science policy, inclusive science framework etc.	• Departments/agencies policy documents	*Deputy Heads*	Annually	
		• Number of projects that identify and address intended and unintended outcomes	• Project proposals • Project conclusion and evaluation reports	*Science Activity Leads and Managers*	According to project life cycle	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Diverse representation in decision making on science findings dissemination strategies	• Project proposal description • Project completion and evaluation reports • Internal project implementation strategy	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Level of adherence to knowledge dissemination protocols of equity-deserving groups	• Project proposal description • Project conclusion and evaluation reports • Internal Project implementation strategy	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of science Activity Leads trained on FAIR and CARE principles	• Record of training certificate	*Science Activity Leads and Managers*	Annually according to project life cycle	
	Capacity building for Knowled ge Mobi	• Presence and use of knowledge mobilization, awareness and learning tools	• Department/agency resources data base • Frequency of visits and downloads records	*Communication and Outreach Team* *Science Activity Leads and Managers*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Number of projects addressing unintended outcomes	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
	Identifying and Addressing Study Limitation	• Number of projects that identify the limitations of science activities	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of science projects that use feedback mechanisms	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
	Feedback Collection and Integration	• Presence of strategies to gather feedback for project improvement	• Project proposal description • Project completion and evaluation reports • Record of Internal Project engagement strategy discussion	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Presence of ethics research boards and advisory committees to vert all science activities for inclusivity	• Department/agency policies and strategic decisions	*Deputy Heads*	Annually	
		• Presence of internal and external platforms for knowledge dissemination	• Department/agency communication platforms	*Communication and Outreach Team*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Number of science activities with intellectual property agreements	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
	Acknowledgement and Authorship of Scientific Outputs	• Number of science projects that adhere to established frameworks and collective agreement with collaborators	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of science projects that acknowledge collaborators	• Project proposal description • Project completion and evaluation reports • Details in publications	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Presence and use of department and agency science integrity policies	• Department/agency policy document • Project proposal description • Project completion and evaluation reports	*Deputy Heads* *Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of Departments/agencies that led workshops for knowledge dissemination (publicly accessible vs. invitation-only)	• Department/agency event communications and announcement	*Deputy Heads* *Science Activity Leads and Managers*	Annually	
		• Number of projects that co-develop success criteria for knowledge mobilization with collaborators	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually according to project life cycle	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
			• Record of internal project knowledge mobilization strategy discussion			
		• Presence of dedicated offices/sectors supporting Indigenous priorities in science initiatives	• Department/agency websites and sector mandates	*Deputy Heads*	Annually	
Guidelines for Bridging IKS in science	Identifying Indigenous Priorities	• Availability of mandatory Indigenous-related training (e.g., cultural literacy)	• Department/agency websites, communications and announcements	*Deputy Heads* *Human Resources*	Annually	
		• Presence of co-developed Indigenous Knowledge goals for teams	• Internal team discussions, records and documentations	*Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of Indigenous Peoples on boards and committees	• Record of meetings and engagement	*Human Resources Networks and Committees*	Annually	
		• Number of Indigenous Peoples employed within STEM fields	• Department/agency hiring data and policy • GoC hiring policies	*Deputy Heads* *Human Resources*	Annually	
		• Presence of Indigenous focused evaluation tools for science activity proposals	• Department/agency resources database • Frequency of visits and download records	*Communication and Outreach Team* *Science Activity Leads, and Managers*	Annually	
		• Number of science projects using a rights-based approach to Indigenous partnerships	• Project proposal details • Project conclusion and evaluation reports • Internal Project engagement strategy	*Science Activity Leads, and Managers*	Annually, according to the project life cycle	
		• Number of science activities involving Indigenous priorities or territories	• Project proposal details • Project implementation and evaluation reports	*Science Activity Leads and Managers*	Annually, according to the project life cycle	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
			• Internal Project reports			
		• Presence and adherence to collaborative science agreements with Indigenous parties	• Project proposal details • Project implementation and evaluation reports • Internal project reports	*Science Activity Leads and Managers*	Annually, according to the project life cycle	
		• Number of science projects that collaborate with Indigenous organizations	• Project proposal details • Project implementation and evaluation reports • Internal Project reports	*Science Activity Leads and Managers*	Annually, according to project life cycle	
	Applying Indigenous Methodologies, Data and Perspectives	• Availability of programs that build the capacity of scientists to weave Western and Indigenous science	• Department/agency websites, communications and announcements	*Deputy Heads Networks and Committees*	Annually	
		• Availability of Indigenous engagement plan	• Department/agency websites and communications • Project proposal description • Project completion and evaluation reports • Internal project implementation strategy	*Human Resources Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of Indigenous Peoples on teams working on Indigenous priorities or in Indigenous territories	• Employee data sources • Internal team inventories	*Human Resources Science Activity Leads and Managers*	Annually, in line with the call for proposals and funding	
		• Presence of Indigenous-focused performance management goals (PMA)	• Performance management policies and assessment criteria	*Deputy Heads Human Resources*	Annually	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
		• Availability of support to weave Indigenous regulations in policies and guidelines	• Department/agency websites and sector mandates • Department/agency training resources data base	*Deputy Heads* *Human Resources*	Annually	
	Compliance with Indigenous Protocols and Ethics	• Number of science activities that adhere to Indigenous science protocols and collaborative agreements	• Project Funding reports • Internal team records and documentations	*Funding Units within Departments and Agencies* *Science Activity Leads and Managers*	Annually according to project life cycle	
		• Number of science activities to obtain informed consent to work on Indigenous priorities and in Indigenous territories	• Project proposal description • Project conclusion and evaluation reports • Internal project implementation strategy	*Science Activity Leads and Managers*	Annually in line with call for proposals and funding	
		• Number of science activities that obtain and incorporate feedback from Indigenous bodies and communities	• Project proposal description • Project conclusion and evaluation reports	*Science Activity Leads and Managers*	Annually in line with call for proposals and funding	
		• Number of science activities to comply with existing Indigenous protocols and science ethics	• Project proposal description • Project completions and evaluation reports • Internal team project reports	*Science Activity Leads and Managers*	Annually in line with call for proposals and funding	
		• Number of Indigenous-focused science projects allowing Indigenous verification of data and findings	• Project proposal description • Project completion and evaluation reports	*Science Activity Leads and Managers*	Annually in line with call for proposals and funding	

Priority Area	Category	Key Indicators	Data Sources	Responsible Party	Reporting Frequency	Status /Notes
			• Internal team project reports			
		• Number of inter-department and agency collaboration on Indigenous STEM	• Department/agency communications and collaboration report	*Deputy Heads*	Annually	
		• Availability of guidance material on collaboration with Indigenous Peoples	• Department/agency resources database	*Deputy Heads* *Science Activity Leads, and Managers*	Annually	
	Maintaining Respectful and Mutually Beneficial Relationships	• Availability of partnership funding to support relationship building with Indigenous Peoples	• Call for funding applications • Call for proposals	*Funding Units within Departments and Agencies, and Deputy Heads*	Annually, in line with the call for proposals and funding	
		• Availability of mentorship and sponsorship programs for Indigenous science employees	• Department/agency websites, communications and announcements	*Deputy Heads* *Communication and Outreach Team*	Annually	
		• Availability of Indigenous career advancement and navigator programs	• Department/agency programs and initiatives	*Deputy Heads* *Human Resources*	Annually	
	Capacity Building among Indigenous People	• Presence of an Indigenous recruitment advisor	• Department/agency hiring strategies	*Human Resources*	Annually	
		• Number of science activities that provide opportunities for capacity building among Indigenous Peoples	• Project proposal description • Project conclusion and evaluation reports • Internal Project reports	*Science Activity Leads and Managers*	Annually according to activity life cycle	

4. Appendices

4.1. Informing the SBDA Inclusive Science Guidelines

4.1.1. Collaboration and Creative Process

1. Terms of Reference (TOR) development and SBDAs Invitation: The Terms of Reference to guide the engagement process of the Interdepartmental Inclusive Science Working Group (IISWG) were drafted, and an invitation to participate was sent to seventeen (17) SBDAs through their Science ADM/Vice President.
2. To kick-start the engagement process, the initiative and its TOR were shared with the Chief Science Advisor, Dr. Mona Nemer; Champion for Racialized Employees, DM Caroline Xavier; and DM Harpreet Kochhar, Champion for Deputy Minister Science and Technology Community.
3. Share and Review IS best practices: The IISWG reviewed the TOR, outlined tasks, determined the engagement approach, timelines, and deliverables. Primary among its tasks was to present IS best practices for discussion.

4.1.2. Summary of the Development Process and Timeline

- In April 2024, NRCan and CFIA initiated the IISI. The initiative assembled a working group of 17 representatives from federal SBDAs to share Inclusive Science best practices, to inform and develop Inclusive Science guidelines, and organize a national Inclusive Science dialogue to promote Inclusive Science.
- In September 2024, the Inclusive Science Guidelines structure was developed, and four sub-working groups were created from within the IISWG to review the structure, collect feedback from their departments on best practices and identify inclusive science gaps. Each sub-working group focused on one of the four priority areas of the guidelines.
- The selection of the priority areas guiding the development of the Guidelines was also informed by results from the NRCan Inclusive Science Research Study that serves as the base literature for this initiative. The Internal NRCan Inclusive Science Research Study was developed in response to the Clerk's Call to Action. It used evidence-based research and internal/external stakeholder engagements to identify the impacts of inequities on science and scientists. Additionally, the study proposes frameworks and best practices for weaving IDEA and Indigenous science with Western science.
- In January 2025, the NVivo software was used to develop a narrative synthesis of the feedback received from the various departments, and this analysis was compiled to form the structure and categories of the Inclusive Science Guidelines.
- The Guidelines went through a series of reviews by the IISWG and IISI ADM Champions to ensure all submitted contributions were captured and in line with various departments and agencies' inclusive science best practices.
- The IISI ADM Champions shared the Guidelines with deputy heads, the Science ADMs/VPs representing the IISWG, DMSTC, and DMSTC Champion in May 2025 to inform the NISD.

- After the NISD: The Guidelines were shared with the SBDAs for review. Feedback received from the NISD and the SBDAs review were incorporated in this version of the SBDA Inclusive Science Guidelines.
- Timeline of the detailed activities of the IISWG until the organization of the NISD and planned activities for the IISI can be found in Figure 2A and 2B respectively.

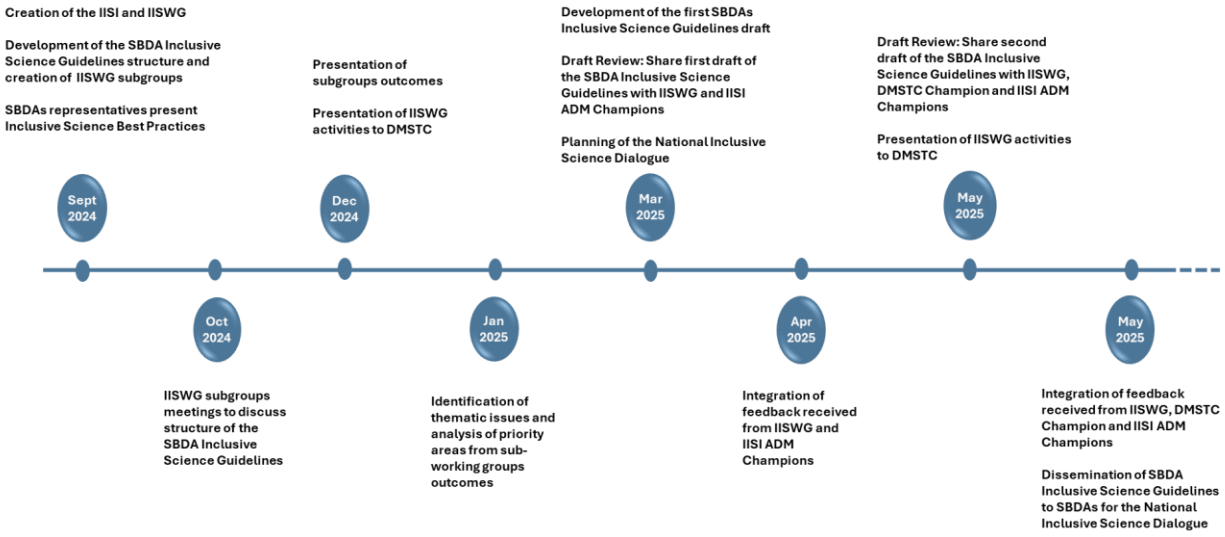

Figure 2A: Timeline of IISWG activities leading to the Inaugural 2025 National Inclusive Science Dialogue and implementation of the SBDA Inclusive Science Guidelines

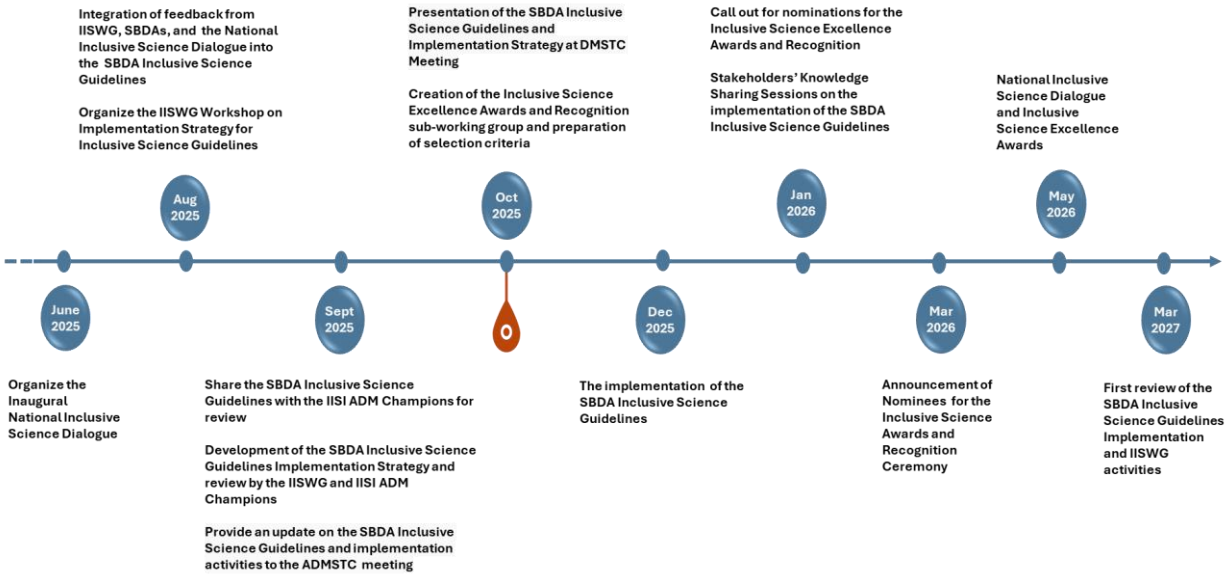

Figure 2B: Timeline of IISWG activities after the Inaugural 2025 National Inclusive Science Dialogue leading to the implementation of the SBDA Inclusive Science Guidelines

4.2. Glossary

1. **CARE Data Principles**[2]

- **Collective Benefit:** Data ecosystems shall be designed and function in ways that enable Indigenous Peoples to derive benefit from the data.
- **Authority to Control:** Indigenous Peoples' rights and interests in Indigenous data must be recognized, and their authority to control such data must be empowered.
- **Responsibility:** Those working with Indigenous data have a responsibility to share how those data are used to support Indigenous Peoples' self-determination and collective benefit.
- **Ethics:** Indigenous Peoples' rights and wellbeing should be the primary concern at all stages of the data life cycle and across the data ecosystem.

2. **Cultural Competence**[3]

- The ability to understand, communicate with, and effectively interact with people across cultures, recognizing and respecting cultural differences.

3. **Data Sovereignty**[4]

- The right of Indigenous Peoples to own, control, access, and steward data about their communities, lands, and culture. Information management and data collection strategies must be distinctions based and align with the practices and culture of the Indigenous populations who are represented in the data. Data sovereignty also means that Indigenous individuals and communities are partners in the research process rather than subjects.

4. **Equity-Deserving Groups**

- A group of people who, because of systemic discrimination, face barriers that prevent them from having the same access to the resources and opportunities that are available to other members of society, and that are necessary for them to attain just outcomes. In Canada, groups generally considered to be equity-deserving groups include women, Indigenous Peoples, people with disabilities, people who are part of 2SLGBTQI+ communities, religious minority groups and racialized people.

5. **Employment Equity (EE) groups**

- An equity-deserving group whose members face systemic barriers in employment, and for whom measures are put in place to increase their representation and eliminate the barriers. In Canada, under the Employment Equity Act, the four-employment equity designated groups are women, Indigenous Peoples, persons with disabilities and members of visible minorities.

[2] CARE+Principles_One+Pagers+FINAL_Oct_17_2019.pdf
[3] Cultural competence - Definition and Explanation - The Oxford Review - OR Briefings
[4] Indigenous data sovereignty | SFU Library

6. **FAIR Data Principles**[5]

- Findable: Metadata and data should be easy to find for both humans and computers.
- Accessible: Metadata or data can be accessed.
- Interoperable: metadata or data can be integrated with other data and interoperates with applications or workflows for analysis, storage, and processing.
- Reusable: metadata and data should be well-described so that they can be replicated and/or combined in different settings.

7. **Gender-based Analysis Plus (GBA Plus)**[6]

- An analytical, intersectional framework used to assess how different individual identity factors – such as gender, race, disability, and socioeconomic status – interact and intersect with each other and broader systems of power to shape our access to and participation in responsive and inclusive policies, programs, and initiatives.

8. **Inclusion, Diversity, Equity, and Accessibility (IDEA)**[7]

- **Inclusion:** The practice of using proactive measures to create an environment where people feel welcomed, respected and valued, and to foster a sense of belonging and engagement.
- **Diversity:** The variety of identities found within an organization, group or society. Diversity is expressed through factors such as culture, ethnicity, religion, sex, gender, sexual orientation, age, language, education, ability, family status or socioeconomic status.
- **Equity**: The principle of considering people's unique experiences and differing situations and ensuring they have access to the resources and opportunities that are necessary for them to attain just outcomes.
- **Accessibility**: The quality of an environment that enables a person to access it with ease.

9. **Indigenous Data Sovereignty**[8]

- The concept of Indigenous Peoples governing the collection, ownership, and use of data related to their territories, reserves, communities, and cultures. This concept is closely tied to the principles of **Ownership, Control, Access, and Possession (OCAP®)**, and The National Inuit Strategy on Research which emphasize Indigenous Peoples' authority over their data.

10. **Indigenous Science**[9]

- Indigenous Science is a distinct, time-tested, and methodological knowledge system that can enhance and complement Western science. Indigenous Science is about the knowledge of the environment and the knowledge of the ecosystem that Indigenous Peoples have. It is the knowledge of survival since time immemorial and includes multiple systems of knowledge(s) such as the knowledge of plants, the weather, animal behaviour and patterns, birds, and water, among others.

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[5] FAIR Principles - GO FAIR
[6] What is Gender-based Analysis Plus - Canada.ca
[7] Guide on Equity, Diversity and Inclusion Terminology
[8] Indigenous Data Sovereignty (DDN3-A11) - CSPS
[9] Indigenous science - Canada.ca

11. Indigenous Knowledge Systems (IKS)[10]

- Indigenous Knowledge Systems reflects the unique cultures, languages, values, histories, governance and legal systems of Indigenous Peoples. It is place-based, cumulative and dynamic. IKS involve living well with, and being in relationship with, the natural world and has been passed down since time immemorial. IKS build upon the experiences of earlier generations, informs the practice of current generations, and evolves in the context of contemporary society (see Indigenous Knowledge - Canada.ca).

12. OCAP® Principles[11]

- Principles that assert the rights of Indigenous Peoples to own, control, access, and possess information from, about, and on First Nations territories and resources". See Indigenous Data Sovereignty.

13. Open Science Policy[12]

- Policies that promote the open sharing of science activity and data to enhance transparency, collaboration, and innovation.

14. Science Based Departments and Agencies (SBDAs)[13]

- Federal departments and agencies that are involved in research and development (R&D) activities, the administration of scientific programs, and related scientific activities such as data collection and analysis. These departments and agencies employ a significant number of scientists who conduct scientific activities essential for the well-being, safety, security, and prosperity of people living in Canada.

4.3. Resources: Tools, Frameworks and Departmental Policies to support the Implementation of the Inclusive Science Guidelines

The sections below provide selected resources available at the time of drafting the guidelines to enhance the processes and structures that support successful implementation.

4.3.1. Implementation of Priority Area 1

- Gender-based Analysis Plus in NSERC Programs: Summary Report 2024: This document summarises GBA Plus conducted by NSERC on its funding opportunities.
- The Health Portfolio SGBA Plus Policy supports the integration of inclusive science into science-related policies, programs, and initiatives. PHAC is advancing this policy through its SGBA Plus Action Plan Framework and Implementation Strategy for 2025–2028.

[10] Frequently asked questions on Indigenous Knowledge in federal impact assessments - Canada.ca
[11] The First Nations Principles of OCAP® - The First Nations Information Governance Centre
[12] Open science | UNESCO
[13] The Federal Science Workforce: An Overview

- SSHRC Guide to Addressing Equity, Diversity and Inclusion Considerations in Partnership Grant Applications (three specific subsections address EDI-R&D): It is mandatory that scientists incorporate these considerations into their application for this program, as research design is explicitly incorporated into two of the evaluation criteria (Challenge and Feasibility).
- SSHRC Definition of Indigenous Research: While not specific to research design per se, it provides a wider context understanding of weaving Indigenous perspectives.
- SSHRC Guidelines for the merit Review of Indigenous Research: Although it does not specifically reference research design, it provides a great deal of information around how to co-develop research initiatives and weave Indigenous worldview into Indigenous Research Projects.
- Council of Canada's Academics' Equity, Diversity, and Inclusion in the Post-secondary Research System: Chapter 5 EDI in the research process covers both EDI in research practice and EDI in research design. Setting new Directions to support Indigenous Research in Canada: The agencies, with SSHRC in the lead put this strategic plan in place until 2026. Note that the section on Supporting research priorities of Indigenous Peoples talks about how to respectfully work with Indigenous Peoples in research.
- NSERC guide on integrating equity, diversity, and inclusion considerations in research: This guide provides the science communities served by NSERC with information and resources to help include EDI considerations in their research. It consists of the following two sections:
    - Section 1: Equity, diversity and inclusion considerations at each stage of the research process provides guidance on how to apply a critical EDI lens through the planning of research at each stage of the research process. It focuses on the research itself.
    - Section 2: Equity, diversity and inclusion considerations for research teams provides guidance for building and maintaining a high-performing diverse team that will be engaged in completing the research. It focuses on how the science work environment can be made more accessible and inclusive, and how to provide equitable opportunities for all members of the team to engage with the work being conducted.
- NSERC Guide for Applicants: Considering equity, diversity, and inclusion in your application: This guide from NSERC for Applicants document provides applicants with resources regarding what equity, diversity and inclusion mean in natural sciences and engineering research teams and research design and how their incorporation contributes to research excellence.
- Tri-agency Institutional Programs Secretariat (TIPS) Creating an Equitable, Diverse and Inclusive Research Environment: A Best Practices Guide for Recruitment, Hiring and Retention: This guide is provided as a tool for individuals and institutions as they determine how best to address areas for improvement identified when assessing their recruitment practices and work environment.
- SSHRC Best Practices in Equity, Diversity and Inclusion in Research for the New Frontiers in Research Fund: The guide is intended to provide a general overview of systemic barriers that exist in the science ecosystem and suggest best practices to foster proactive considerations of EDI in research by principal investigators and their team members.

- NSERC Dimensions: equity, diversity, and inclusion Canada: This NSERC program invites post-secondary institutions to take part in a transformation to increase EDI and help drive deeper cultural change within the science ecosystem by identifying and eliminating obstacles and inequities. Institutions signing the charter and applying for a Dimensions recognition.
- CIHR Gender-based Analysis Plus Framework seeks to build GBA Plus organizational capacity and sustain the practice of GBA Plus through CIHR's funded research, funding system and workplace. GBA Plus in the CIHR-Funded Research aims to ensure that CIHR Plus is considered in research design, methods, analysis, and interpretation and/or dissemination of findings. It is operationalised through CIHR's Sex- and Gender-Based Analysis (SGBA) in Research Action Plan by providing guidelines, tools and resources to help researchers and reviewers better account for sex and gender in health research. CIHR expects that all research applicants will integrate sex and gender considerations into their research designs, methods and analyses and interpretation and/or dissemination of findings when appropriate. CIHR's College of Reviewers have also developed learning modules and skill builders for reviewers (e.g., bias in peer review and sex and gender integration).
- Department of Justice Canada Principles respecting the GoC's relationship with Indigenous peoples.
- This resource provides additional information about how the GoC works in consultation and cooperation with Indigenous Peoples under the United Nations Declaration on the Rights of Indigenous Peoples Act.
- Indigenous Languages: This resource provides information on how to strengthen efforts towards the reclamation, revitalization and maintenance of Indigenous Language (see https://commissionforindigenouslanguages.ca/about/#mandate for additional guidance).
- The Policy statement on Indigenous-specific hiring | Ontario Human Rights Commission informs employers of the need to confirm self-indigeneity claims by Indigenous people.
- For definition of Indigenous Knowledge see Indigenous Knowledge - Canada.ca.
- For more information on GBA Plus see PHAC's internal resource, PHAC Inclusive Language Guide Manuals.

4.3.2. Implementation of Priority Area 2

- Women and Gender Equality Canada Gender-based Analysis Plus (GBA+): This page provides resources on GBA Plus from the GoC.
- Listen, learn, act: AAFC's 2022-25 Diversity, Equity and Inclusion Strategy: Agriculture and Agri Food Canada's DEI strategy includes a managers' diversity, equity and inclusion toolkit developed in collaboration with various subject matter experts in HR, provides a collection of resources designed to support and further managers' knowledge and awareness of Government and departmental DEI priorities and responsibilities.
- Health Canada Anti-Racism in Science (ARiS) Action Plan, launched in June of 2024: The Action Plan fosters inclusive leadership by focusing on making science based positions more accessible to employees from equity-deserving groups. The Action Plan also includes

opportunities to enhance local leadership through the Scientists Taking Action on Racism in Science (STARS) ambassador initiative.

- NRCan: The Inclusive Science self-assessment tool developed through NRCan's Inclusive Science research study is a tool available to science based employees to self-reflect on their practices and provide them with resources and suggested best practices for Inclusive Science: NRCan Launches Inclusive Science Self-Assessment Tool - The Source.
- The IDEA training manual is another tool available for use at NRCan.
- Checklist of practices on how to integrate intersectionality in quantitative health equity analysis (developed by PHAC-SPIB-HED-EAPR): https://www.canada.ca/en/public-health/services/publications/science-research-data/how-integrate-intersectionality-theory-quantitative-health-equity-analysis.html.
- Key considerations for applying intersectionality theory to partner and stakeholder engagement in public health: https://link.springer.com/article/10.17269/s41997-025-01023-7.
- ECCC's DIEE Strategy is the culmination of a renewed commitment to make diversity and inclusion foundational to ECCC as a great place to work.

4.3.3. Implementation of Priority Area 3

- Best practices in equity, diversity and inclusion in research practice and design is a guidelines document created by the Tri-Agency, to provide general guidance on research and specific examples of questions to consider in ensuring equity-deserving groups can influence decisions on communicating and disseminating research findings.
- Self-identification Data Collection in Support of EDI webpage provides additional information on the self-identification questionnaire used by the Tri-Agency to collect data on the diversity of the applicant pool and funded population, as well as on the population participating on selection/review.
- Advisory Committee to Address Anti-Black Racism in Research and Research Training, Advisory Committee on Accessibility and Systemic Ableism and Indigenous Advisory Circle are equity-deserving groups who counsel the Social Sciences and Humanities Research Council (SSHRC) on ways to break down existing barriers, ensure equitable access of funding, and amplify the voices and visibility of Black scholars in SSHRC research and research training programs, including Tri-Agency programs managed by SSHRC.
- Imagining Canada's Future Ideas Lab is a platform used to promote knowledge sharing and provide foundations for future interdisciplinary projects.
- Knowledge Synthesis Grants and Guidelines for Effective Knowledge Mobilization are resources that provide additional information on how to mobilize, communicate and ensure the uptake of research findings by policymakers.

4.3.4. Implementation of Priority Area 4

- College and Community Innovation (CCI) guide for Research Involving Indigenous Peoples and Communities provides comprehensive information on initiatives, concepts, principles, and protocols and support for Indigenous research.
- Setting new directions to support Indigenous research and research training in Canada (SIRC) provides additional information on the Tri-agency strategic plan.
- IPCA knowledge basket document on Beyond Conversation: A toolkit for respectful collaboration with Indigenous Peoples.
- Bridging Indigenous and Science-Based Knowledge (BIAS-K) and the Federal Open Access Repository are platforms for publishing Indigenous research.
- ECCC Science Strategy 2024-2029. It demonstrates how to bridge, braid, and weave Indigenous science and Indigenous leadership to the entire spectrum of science practice to support Canada's commitments to renew nation-to-nation relationships and reconciliation with Indigenous Peoples.
- Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2022) – Chapter 9: Research Involving the First Nations, Inuit, and Métis Peoples of Canada.
- What We Heard: A Report from the Three Federal Research Funding Agencies' Ad Hoc Working Group on Indigenous Citizenship and Membership summarises research funding principles and guidelines to better understand and manage issues relating to Indigenous citizenship and membership.
- Tri-Agency Policy on Indigenous Citizenship and Membership Affirmation provides additional information on how to ensure continuous consent, data verification and funding for Indigenous partners, right-holders and parties.

4.4. Contributing Departments and Agencies

Departments and Agencies	**Representatives**
Agriculture and Agri-Food Canada	Louise Bissonnette, Gillian Knowles,
Canadian Food Inspection Agency	Michael Reid, Michelle Benoit, Stuart Sykes
Canadian Grain Commission	Aaron Macleod, Esther Salvano
Canadian Institutes of Health Research	
Environment and Climate Change Canada	Tanuja Kulkarni, Robyn McLean
Fisheries and Oceans Canada	Kim Houston
Health Canada	Matthew Hou

Innovation, Science, and Economic Development Canada	Kuyee Tenzing
Interdepartmental Indigenous STEM Cluster secretariat (I-STEM Cluster)	Christina Mulvena, Kadri Pearce Lawrence
National Defence	Leon Cheng
National Research Council	Charmaine McPherson, Jessica Verbruggen
Natural Resources Canada	Adrian Majeski, Thomas White
Natural Sciences and Engineering Research Council of Canada	
Parks Canada Agency	Emily Turgeon-Brunet, Aaron Osicki
Public Health Agency of Canada	Apondi Odhiambo, Heidi Wood, Lina Al-Karkhi
Social Sciences and Humanities Research Council	Marie-Lynne Boudreau

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