



Evaluation of the implementation of Gender-Based Analysis Plus at the Canadian Space Agency

Period from March 2017 to September 2020


Prepared by the Audit and Evaluation Directorate

June 2021



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Acronyms used in the report

ACEED	Advisory Committee on Employment Equity and Diversity
AO	Announcement of Opportunity
CIHR	Canadian Institutes of Health Research
CSA	Canadian Space Agency
CSPS	Canada School of Public Service
DRF	Departmental Results Framework
EE	Employment Equity
ESA	European Space Agency
GBA Plus	Gender-Based Analysis Plus
GoC	Government of Canada
G&C	Grants and Contributions
HQP	Highly Qualified Personnel
IIRB	Integrated Investment Review Board
ISS	International Space Station
JAXA	Japanese Aerospace Exploration Agency
JUS	Minister of Justice
MC	Memorandum to Cabinet
NASA	National Aeronautics and Space Administration
NSERC	Natural Sciences and Engineering Research Council of Canada
ODEO	Office of Diversity and Equal Opportunity
OECD	Organisation for economic cooperation and development
OGDs	Other government departments
PIP	Program Information Profile
PoCs	Point of Contact
PM	Performance Measurement
SISTER	Summer Institute in Science, Technology, Engineering, and Research
STEM	Sciences, technology, engineering and mathematics
TB	Treasury Board
TBS	Treasury Board Secretariat
UN	United Nations
VMN	Visible Minority Network
WSTM	Women in Science, Technology and Management Committee
WAGE	Women and Gender Equality Canada

1 Executive Summary

This report presents the findings of the evaluation of the Implementation of Gender-Based Analysis Plus¹ (GBA Plus) practices at Canadian Space Agency (CSA) since the CSA's *GBA+ Policy*² took effect in 2017. This is the first thematic evaluation at the CSA and it was carried out by the CSA's Audit and Evaluation Directorate between January 2020 and March 2021. This evaluation is included in the CSA's five-year Evaluation Plan and was conducted in accordance with the Treasury Board of Canada's Policy on Results (2016).

The concept of GBA Plus is not new to the federal government and has existed for decades through the principles of gender equality. In recent years though, the Government of Canada has placed a greater emphasis and commitment to advance equality and diversity and inclusion by closing the gaps between diverse groups of women, men and gender diverse people. As a result, GBA Plus is taking a more prominent place in the way the Government of Canada develops and delivers its programs. Federal departments and agencies have a pivotal role to play in ensuring that GBA Plus considerations are identified and that inequalities are corrected within the context of their respective programs and policies. As such, the CSA has the role and responsibility to promote these values to the Canadian space community and align itself with these priorities to make the Canadian space sector a more inclusive and diverse sector, and ensure its space projects and initiatives benefit diverse groups of Canadians equally and equitably to their best ability.

The purpose of this evaluation is to assess the relevance, effectiveness and efficiency of the CSA's GBA Plus practices and internal processes in support of decision-making. The evaluation applied a mix methods approach for gathering data which included a comparative study, a literature and document review, an online survey to CSA employees, and individual or group interviews with internal and external stakeholders.

Relevance

The CSA's vision and commitment to GBA Plus is well aligned with the federal government's GBA Plus priorities as evidenced through the development and implementation of the *CSA's Policy on GBA+* and the *Guide for Implementing GBA+* in 2017. The CSA's GBA Plus internal process, GBA Plus tools (template questionnaire and mandatory training), and governance structure (champion, internal advisors, and GBA Plus committee) were designed and implemented in a manner consistent with the *CSA's Policy on GBA+* and the department of Women and Gender Equality Canada (WAGE) advice for achieving sustainable use of GBA Plus. They were also designed to ensure that GBA Plus is well integrated in various activities and initiatives as per the government's directives and requirements, such as in Treasury Board Submissions, Memoranda to Cabinet, budget proposals, program evaluations, funding mechanisms, reports to

¹ Gender-Based Analysis Plus (GBA Plus) is an analytical process used to assess how diverse groups of women, men and gender-diverse people experience policies, programs and services based on multiple factors including race, ethnicity, religion, age, and mental or physical disability.

² Gender-based analysis plus has long been abbreviated "GBA+," which is why some internal agency documents refer to this abbreviation (e.g., GBA+ Policy). In 2021, the Department of Women and Gender Equality Canada (WAGE) modified the abbreviation to "GBA Plus" to emphasize other identity factors (in addition to gender). This evaluation report incorporates WAGE's new guidelines.

Parliament in support of decision-making. Furthermore, the GBA Plus roles and responsibilities are well-distributed between executives, employees and the GBA Plus Responsibility Centre to support the development of sound policies and programs and make decisions that promote diversity where any negative impacts are minimized on diverse groups of women, men and non-binary people.

Implementation

The process and governance structure has remained unchanged since it came into effect in 2017. The Chief, Audit and Evaluation Executive serves as the GBA Plus Champion as well as the champion of various other diversity-related committees at the CSA. Internal GBA Plus advisors, referred to as GBA Plus Points of Contact (PoCs) are identified within each CSA branch. To increase both efficiency and effectiveness of GBA Plus application, best practices include a GBA Plus Champion that is an executive member who is closely located to policy and programs with sufficient resources and capacity. Due to a lack of time and resources of the GBA Plus Responsibility Centre, certain inefficiencies have manifested themselves over the last few years, which have impacted GBA Plus awareness, buy-in and harmonization of GBA Plus practices across the CSA. The GBA Plus Steering Committee served as a useful resources for PoCs to share important information, outstanding issues, best practices, organize awareness activities, develop consistent GBA Plus practices across CSA branches, and improve GBA Plus tools and maintain the GBA Plus database accordingly. Due to the lack of regular GBA Plus Steering Committee meetings, the tools and resources were not revised and updated resulting in outdated documents and resources. The CSA is therefore called upon to resume the Responsibility Centre's main functions, tighten internal processes and address the current challenges identified in applying GBA Plus.

The main barriers cited by CSA respondents include 1) the lack of GBA Plus understanding and knowledge, 2) unclear vision and expectations from directors and senior management, 3) GBA Plus being done as an afterthought, 4) the lack of access to and availability of disaggregated data, 5) the lack of accountability, follow-up, monitoring of impacts and progress.

Based on best practices from the federal family and building on the momentum achieved from CSA's successes, such as CubeSat and Youth STEM initiatives, a concerted approach and will from the CSA senior management with the close involvement of directors and project management network is essential to achieve the objectives of the *CSA's Policy on GBA+*. Strong leadership and direction, robust and transparent processes, and knowledgeable in-house advisors are amongst the main facilitating factors identified by other government departments in the implementation of GBA Plus. The CSA made some notable strides advancing the principles of gender equality and equity set out by the federal government. These goals can be further achieved by leveraging the strong GBA Plus expertise already acquired by some employees, and by applying the project management principles which integrate GBA Plus as set out in the CSA's Investment Governance Management Framework (IGMF). The IGMF requires that a GBA Plus must be conducted at the beginning of an initiative. Starting early in the initiatives' lifecycle, identifying the gaps in diversity that exist in the space field, and making use of the internal expertise of advisors results in more comprehensive GBA Plus assessments that can be effectively used for decision-making, as seen in some initiatives. Finally, the CSA should continue to build on understanding the target groups needs through socio-economic

research, varied data collection methods, consultations with under-represented groups, and reach out directly to inform and support diverse groups to participate in the CSA's initiatives.

In light of the main findings and conclusions, the evaluation recommends the following actions to improve the CSA's GBA Plus practices in support of decision-making:

1. Determine the appropriate place for the GBA Plus Responsibility Centre within the CSA, encourage a regular rotation of GBA Plus PoCs who should not necessarily be women or from a minority group and resume the GBA Plus Committee meetings to ensure a regular dialogue for GBA Plus matters.
2. Compile and organize existing disaggregated data by gender and other identify factors for the space sector, generate analyses and render data and analyses accessible to all CSA employees. In doing so, consider centralizing GBA Plus related data compilation, where data collection and compilation could be administered centrally to increase the efficiency of program management. Data gaps identified should be addressed through additional efforts to acquire space-related disaggregated data.
3. Clarify the CSA's strategic direction and main objectives for GBA Plus by outlining what the CSA wants to achieve and how, and by defining the expectations with regards to applying GBA Plus in the CSA's activities and initiatives. Then, implement an internal mechanism to follow up on GBA Plus impacts, and to monitor and report on progress made.
4. Resume GBA Plus awareness activities across the CSA to demonstrate the importance, utility and concrete applicability of GBA Plus in the space sector. This will also allow to reiterate the CSA's commitment to diversity and inclusion within the CSA and in the space field across Canada.
5. In conformity with federal requirements and to enhance the CSA's capacity to monitor and report on its program impacts by gender and diversity, the CSA should further integrate GBA Plus in the Departmental Results Framework followed by integrating GBA Plus elements, such as performance measurement indicators, in the CSA's three Program Information Profiles.

2 Purpose and scope

This section discusses the purpose and scope of the evaluation, as well as the main issues that it addresses.

This thematic evaluation focuses on the implementation of GBA Plus practices at the CSA, since its Policy on GBA+ and Guide for Implementing GBA+ came into effect in 2017. The purpose of the evaluation is to ensure that the CSA's practices are aligned with the federal government's GBA Plus priorities and strategic directions, as well as to identify national and international best practices that can be drawn upon, where appropriate. To do so, the evaluation considers relevance, effectiveness and efficiency, as per the evaluation elements identified in the Policy on Results (2016). Specifically, it addresses the nine evaluation questions presented in Table 1 below.

The evaluation of the implementation (also referred to a formative evaluation) focuses on implementation, conceptual logic, activities, output generation, and ways to improve effectiveness and efficiency. Therefore, this evaluation does not focus specifically on the results from recent years, but rather on the CSA's implementation of GBA Plus practices between March 2017 and September 2020.

TABLE 1. EVALUATION QUESTIONS

Relevance	1. To what extent is the CSA's implementation of GBA Plus consistent with federal government priorities and requirements? 2. What are the roles and responsibilities of the federal government and the CSA with respect to implementing GBA Plus? 3. What are the needs of the CSA's target populations with regards to diversity and inclusion? 4. To what extent do the GBA Plus vision, implementation and resources address the needs of the CSA's target populations/clientele?
Effectiveness	5. To what extent has the implementation of GBA Plus led to results (i.e. what is the impact on GBA Plus target groups)? 6. To what extent is the implementation of GBA Plus integrated into the CSA's activities and consistent with GBA Plus requirements? 7. Has the implementation of GBA Plus resulted in any unintended impacts (positive or negative)?
Efficiency	8. Is the current approach the most efficient? 9. Were there any issues or facilitating factors during the various phases of the GBA Plus implementation life cycle?

3 Methodology

This section outlines the methods used to collect information and the methodological limitation.

Document review. The evaluation was based, among other things, on a detailed analysis of several information sources, such as public reports, national and international academic publications, government publications and internal CSA documents. The objective of this review was to document the relevance of GBA Plus, i.e., how GBA Plus addresses a demonstrable need and aligns with government roles and responsibilities, the implementation of GBA Plus, and the degree of efficiency of the processes.

Literature review. The literature review identified recurring interdepartmental issues with respect to the implementation of GBA Plus in the government. It was also useful in identifying and documenting other names assigned to this analytical tool, such as the Sex- and Gender- Based Analysis (SGBA) used by Health Canada, as well as tools similar to GBA Plus, such as *l'analyse différenciée selon le sexe* implemented by the Quebec government.

Comparative study. This method was used to analyze GBA Plus practices in similar organizations in order to identify best practices and draw inspiration from them. The analysis focused on federal science-based departments and agencies, and Canada's partner space agencies. The data collected came from Departmental Plans and Departmental Results Reports, information provided by central agencies (anonymized disaggregated data), government websites, evaluation reports, journal articles and publications from intergovernmental organizations. Interviews were also useful in completing the analysis. A total of 25 national and international organizations were examined in this comparative study.

Internal survey. An exploratory survey was conducted among CSA employees. This method proved to be very useful in collecting a wide variety of data from a large sample of respondents. This survey targeted all employees in a supervisor role, analysts and any other groups that may frequently incorporate GBA Plus into their work. It included a general section for all employees, and two sections dedicated respectively to GBA Plus signatories since 2017 and employees designated as GBA Plus PoCs since 2017 (i.e., current and former PoCs). A total of 334 employees were asked to complete the survey. Of these, 137 employees completed it in whole or in part (41%).

TABLE 2. NUMBER OF SURVEY RESPONDENTS BY CATEGORY

RESPONDENT CATEGORIES	NUMBER OF EMPLOYEES SURVEYED	NUMBER OF RESPONDENTS
GBA Plus PoCs	17	10
GBA Plus signatories	26	12
Other employees surveyed	291	115
TOTAL	334	137

Key informant interviews. Semi-structured interviews were conducted to develop, corroborate and clarify the information obtained through other data sources. They contributed to documenting the analysis of the processes, mechanisms and tools implemented, as well as the facilitating factors, the challenges faced by key stakeholders and the degree of efficiency of the CSA's efforts. A total of 35 individuals from different

stakeholder groups were consulted through 29 individual and group interviews. The distribution of interviews is shown in Table 3 below.

TABLE 3. NUMBER OF INTERVIEWS AND RESPONDENTS BY CATEGORY

RESPONDENT CATEGORIES		NUMBER OF RESPONDENTS	NUMBER OF INTERVIEWS
Internal	CSA sectors – Communications, Policy, Programs and Integrated Planning, Human Resources, Space Exploration, Space Utilization, Space Science and Technology	14	14
	CSA senior management	8	8
	Committee members and internal networks	8	3
External	Government of Canada central agencies	2	1
	Other Government of Canada organizations	2	2
	CSA partners	1	1
TOTAL		35	29

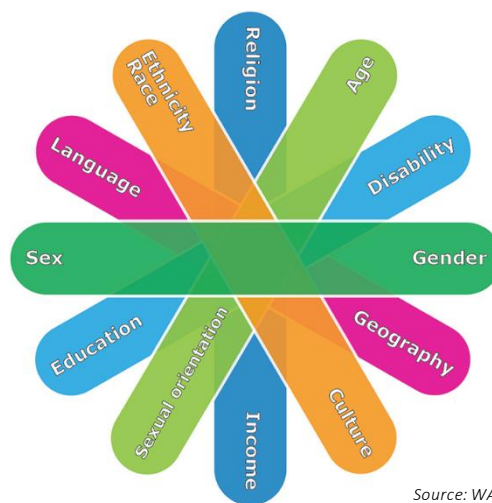
The only methodological limitation encountered during the evaluation was the response rate of the internal survey, whereby 137 of the 334 employees solicited responded to the survey in whole or in part (41%). While the scope of the survey was broad and the overall response rate was satisfactory, data triangulation helped to mitigate this limitation.

4. Relevance

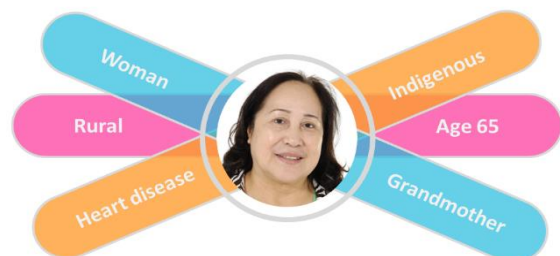
What is GBA Plus?

Gender-based Analysis Plus (GBA Plus) is an intersectional analytical process that identifies the potential impacts (positive and negative) of government activities on various groups of men, women and non-binary people who make up the Canadian population, and then takes appropriate corrective or mitigation measures, where necessary.

The “Plus” signifies that the analysis goes beyond biological (sex) or socio-cultural (gender) differences, and includes other intersecting identity factors, such as age, sexual orientation, education, income, place of residence, language, religion, ethnicity, culture or whether the person



Source: WAGE



Source: WAGE

is living with a physical or intellectual disability. Individual identity is determined by a multitude of factors in addition to sex and gender. Intersecting identity factors must be considered when developing, implementing and evaluating government activities, to be able to determine the impact of these activities on a segment of the population (WAGE, 2018a).

GBA Plus is a priority and a requirement of the Government of Canada, as it aims to reduce inequalities and enable more informed, targeted and effective government action. Therefore, to achieve its objectives, GBA Plus must be integrated into all phases of the life cycle of policies, programs and initiatives. It should not be an afterthought, nor should it be used by a single individual (FEGC, 2018a). In this regard, the federal government indicated in Budget 2019 that GBA Plus is best conducted in the early stages of policy or program development. In addition, GBA Plus requires working with communities and having access to disaggregated data.

GBA Plus and employment equity

Despite some similarities, GBA Plus should not be confused with employment equity (EE). The *Employment Equity Act* addresses disadvantages in the workplace experienced by four designated groups in Canada: women, Indigenous people, visible minorities, and people living with disabilities. Similar to EE, GBA Plus promotes the integration of equity, diversity and inclusion principles into federal government practices. Given that is an analytical tool, GBA Plus is broader in scope as it applies to all government activities (legislation, policies, programs and initiatives), and that it addresses the multiple facets of Canadians' identities (gender, age, income, etc.) and can be applied by all government employees. Nevertheless, EE facilitates the implementation of GBA Plus because a diverse public service is better equipped to identify the specific issues of various population groups.

GBA Plus steps

There are some fundamental considerations that need to be addressed at each phase of the life cycle of programs and initiatives. The steps presented in Figure 1 were developed by Women and Gender Equality Canada (WAGE) to help federal employees and organizations integrate GBA Plus into their work. Documenting the analysis and findings is essential (WAGE, 2021).

FIGURE 1. STEPS TO DOING A GBA PLUS



Source: WAGE

Alignment with Federal Government Priorities

The principles and values on which GBA Plus is based have been entrenched in the Canadian Constitution and specifically the *Canadian Charter of Rights and Freedoms* since 1982. However, the government's commitment to GBA Plus dates back to 1995, during the UN 4th World Conference on Women in Beijing, where it supported the Beijing Action Platform that ordered the member states to "seek to ensure that before policy decisions are taken, an analysis of their impact on women and men, respectively, is carried out." (WAGE, 2018a). To meet this commitment, it developed the Federal Plan for Gender Equality, in which it committed to implementing a gender-based analysis (GBA) for any new legislative or policy measure and new program. The Government of Canada has reiterated its commitment to GBA during the last few years. Appendix B of this report presents the main milestones of GBA Plus implementation at the Canadian Space Agency within the government context, from 1995 to date.

In response to the federal government's priorities, directives and requirements, the CSA appointed in 2014 a GBA plus Champion among its senior executives to lead the development and implementation of GBA Plus practices at the CSA. In 2017, the official *Policy on GBA+* was developed to ensure that, "Canadian values and government commitments on progress toward gender equality be reflected in the development and implementation of policies and programs at the CSA" (CSA, 2017a). Through this policy, the CSA commits to integrate GBA Plus into its decision-making processes, and requires for all CSA initiatives (e.g. policies, programs, projects, grants and contributions, budget proposals) that are new or which need re-approval to be subject to GBA Plus to ensure they do not have detrimental impacts on certain diverse groups of women, men and non-binary people.

"In the beginning, people focused more on employment equity than on GBA Plus. People were very gender-focused in their analysis, and at some point the analysis became more focused on the expected outcomes of the program in terms of benefits to Canadians. This culture shift happened gradually, as some directorate generals pushed on the content of the analysis, asking questions of their staff and points of contact, saying: It's great that there are men and women, but what is the impact of my project in terms of outcomes for Canadians? "

– Key Informant (interview)

As a result, GBA Plus has been integrated in program evaluations, project management practices, investment approval processes, funding mechanisms (grants and contributions and procurement), departmental reports and business plans, Memoranda to Cabinet, Treasury Board submissions and budget proposals. A governance structure and internal process were established with accompanying tools and resources to build the capacity within the CSA, as opposed to hiring external consultants to serve as GBA Plus experts. The CSA signed the Dimension Charter in 2020, committing itself to a set of principles to advance equity, diversity and inclusion and taking actions to counter systemic barriers.

Main needs of the CSA target groups

The CSA's mandate is to "promote the peaceful use and development of space, to advance the knowledge of space through science and to ensure that space science and technology provide social and economic benefits for Canadians" (S.C. 1990). To do this, it focuses its activities mainly on the academic, scientific and

industrial sectors, and more specifically on young people, students, researchers and companies working in the space sector, which is concentrated in the fields of science, technology, engineering and mathematics (STEM). However, as noted in the reviewed GBA Plus assessments, women, Indigenous People, visible minorities and persons with disabilities are under-represented in the STEM field. In addition, almost half of the respondents indicated that it was difficult to identify the needs of CSA target populations due to the lack of disaggregated data for the Canadian space sector. Nevertheless, the data collected highlighted the need to provide everyone with equal opportunities and benefits. Specifically, three main intersecting needs were identified in relation to this topic, namely (a) the need to inspire under-represented groups in STEM through GBA Plus, (b) the need to address prejudices and unconscious bias, and (c) the need to consider the social impacts of the CSA's activities. These needs are closely linked to the ultimate objectives outlined in the CSA's Departmental Results Framework.

In order to meet these needs, four conditions for success were repeatedly raised by the respondents and will be discussed throughout the report. These conditions are 1) awareness of gender and diversity issues among CSA employees, 2) clear guidelines and support from senior management, 3) reliable and accessible disaggregated data, and 4) a monitoring and reporting mechanism.

a) *The need to inspire under-represented groups in STEM through GBA Plus*

The evaluation found that the CSA must particularly focus on targeting groups that face specific obstacles with respect to taking interest in STEM. There is a social imperative to ensure equal opportunities and benefits; and a scientific imperative as "diverse perspectives aggregate creativity, reduce potential biases, and promote more robust knowledge and solutions," (UNESCO, 2017); and an economic imperative for the Canadian space sector to remain high-performing and competitive. The federal government has also indicated its commitment to increasing the number of Canadians from under-represented groups in STEM.

"Interest in STEM occurs and is expressed differently depending on gender, background and social class. These factors must be considered when initiatives are undertaken in order to be fair and to foster inclusion."

– Respondent (survey)

The CSA's efforts, to inspire Canadian youth to pursue studies in STEM and raise awareness about space sector careers, must take into account the factors that create or contribute to gaps between different segments of the population in this regard. In particular, the CSA should not overlook the influence of teaching staff and parents on young people's aspirations to pursue studies or careers in STEM, as well as the learning challenges caused by socio-economic status and location. For example, studies argue that girls' interest in STEM is stimulated by practical and social activities rather than theoretical and individual ones (UNESCO, 2017), or that Indigenous youth's interest increases when STEM activities are accessible and reflect their culture (NSERC, 2016).

b) The need to address prejudice and unconscious bias

Prejudice and unconscious bias are barriers to equal opportunities and benefits, and therefore need to be addressed.³ Despite its unintentional nature, unconscious bias can have a significant impact on the life and future prospects of an individual or population group. For example, “Small unconscious biases in peer review of career-boosting resources, likes grants, can make a big difference in the long-term career of an investigator” (CRC, NSERC, SSHRC, CIHR, 2019). Because the Canadian space sector is small, it is important to ensure that it is diverse and that each individual has an equal chance to experience the opportunities and benefits created by CSA activities.

Unconscious bias can be addressed through raising awareness and adopting open-minded behaviours (CRC, NSERC, SSHRC, CIHR, 2019). In addition to being beneficial to the personal development of individuals, this work benefits all segments of the Canadian population and contributes to excellence in research and technology development.

c) The need to consider the social impacts of CSA activities

The final need identified by the evaluation is to consider the social impacts of the CSA’s activities on the various groups that make up Canadian society. This need is the foundation of GBA Plus and the role that federal public servants perform “in serving Canadians, their communities and the public interest under the direction of the elected government and in accordance with the law” (TBS, 2011). Therefore, it is essential that all employees develop the reflex to think at all times about the social aspect of the activities they carry out, despite the workload and timeframes involved, to ensure that they have a positive impact on all Canadians.

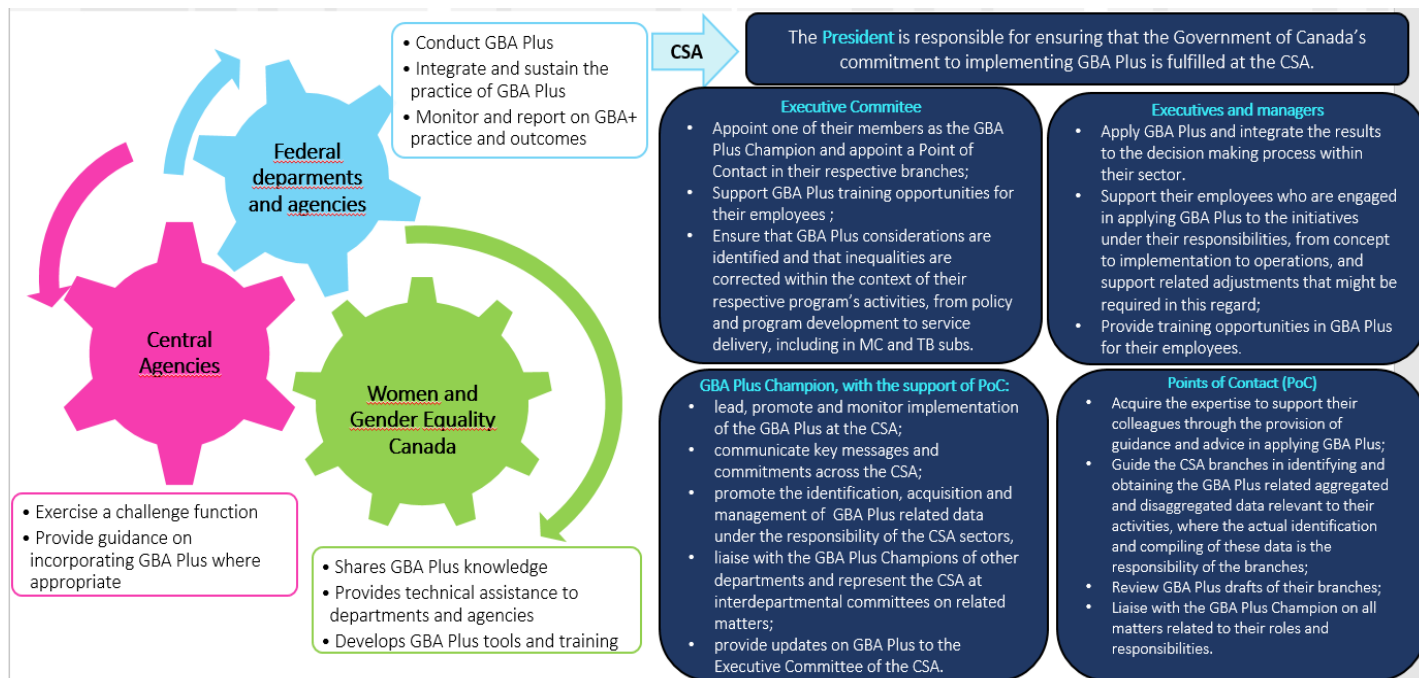
Roles and responsibilities

The commitment to GBA Plus is a shared responsibility across all federal departments and agencies. As such, all federal public servants should incorporate GBA Plus into their work by asking some basic questions and challenging personal assumptions about diverse groups of women, men and gender-diverse people. To ensure GBA Plus is incorporated throughout the Government of Canada, central agencies, WAGE, and federal departments and agencies play central GBA Plus roles. WAGE plays a leadership role in the government-wide implementation of GBA Plus. At the CSA, the *CSA Policy on GBA+* lays out the roles and responsibilities for the President, Executive Committee members, and CSA executives and managers. The *Guide for Implementing GBA+ at the CSA* describes the roles and responsibilities of the GBA Plus Champion and the designated GBA Plus points of contact (PoCs), which together, make up the Responsibility Centre for GBA Plus. The Responsibility Centre oversees the implementation of GBA Plus practices, promotes the awareness of GBA Plus and provides advice to the managers who are responsible for drafting assessments, and applying GBA Plus in their decision-making processes. Figure 2 illustrates the distribution of GBA Plus

3. Types of bias include gender bias, cultural bias, ageism, language bias and institutional bias (CRC, NSERC, SSHRC, CIHR, 2019).

related roles and responsibilities across the Canadian Federal Government and the specific roles and responsibilities of the CSA.

FIGURE 2. GBA PLUS ROLES AND RESPONSIBILITIES



Based on the document review, the CSA is aligned with federal roles and responsibilities with regards to the implementation of GBA Plus, with distinct roles for the various actors involved in integrating GBA Plus across the CSA corporate activities. However, survey and interview data indicate that roles and responsibilities need to be clarified in some cases, and better communicated with CSA employees. A majority of survey respondents (63% (59/93) agree that the roles and responsibilities are clearly defined and a little over half of respondents 51% (54/106) said that GBA Plus related roles and responsibilities are clearly communicated. The interviews reaffirmed these findings as several employees have identified some grey zones with regards to the roles and responsibilities. In particular, clarity is further required regarding the GBA Plus tools and documents reviewed as they do not specify who is responsible in the various situations illustrated here. Although some concerns and ambiguities arise with the complex nature of some programs, others can be easily addressed and included in the available GBA Plus documents and tools to better clarify respective roles. Upon clarifying the roles and responsibilities, it would be beneficial to reach out to the various sectors of the CSA to clearly communicate and inform CSA managers, directors and PoCs of their GBA Plus related roles and responsibilities.

5. Implementation of GBA Plus

Respondents pointed to more clarity in the following situations:

- Who should undertake and approve a GBA Plus assessment when there is an initiative where there are shared responsibilities (e.g., 2 DGs involved)?
- Who is responsible for coordinating the roles of GBA Plus between the CSA and Public Services and Procurement Canada?
- Who is responsible for doing what and when, about the plan for contracts over \$ 1 million (Canadian Space Agency, Employment and Social Development Canada, or Public Services and Procurement Canada)?
- Who is responsible for putting the approved GBA Plus assessment (signed by all parties) in the GBA Plus Livelink database?
- Who is responsible for maintaining the Livelink repertoires, such as ensuring the online tools and data inventory is maintained?
- Can a PoC contact WAGE directly for advice or input in a briefing note, Cabinet document, TBsub, or impact assessment?

The CSA' efforts to implement GBA Plus across the agency were evaluated with regard to (1) the CSA's degree of compliance with GBA Plus requirements and the extent of GBA Plus integration in the CSA's activities, including decision-making, (2) the CSA's implementation status based on WAGE's GBA Plus Framework for the systematic use of GBA Plus, and (3) the efficiency of the CSA's GBA Plus process. These core performance topics are assessed below.

Degree of compliance with GBA Plus requirements and extent of integration

Federal government requirements stipulate that GBA Plus must be integrated in the following activities:

Programs, policies,
federal government
laws and regulations

Memoranda to
Cabinet and Treasury
Board Submissions

Departmental Plans
and Departmental
Results reports

Performance
Measurement and
Program Evaluations

Extent of GBA Plus integration in the CSA's programs and policies

Funding Mechanisms

Grants and Contributions (G&Cs) : The CSA's Centre of Expertise (CoE) for G&Cs have integrated GBA Plus in the *Guide for Writing an Announcement of Opportunity* (CSA, 2019), which are used by all managers seeking to develop an announcement of opportunity (AO). In addition, the G&C CoE recommends that sufficient amount of time is given for the participants to produce original, quality proposals, work on collaborations, and also allow new or less frequent players or clients to participate in RFPs, all within the perspective to minimize the potential bias of discrimination. Finally, the CoE strongly encourages that AO ask applicants to disclose on voluntary basis whether they belong to one or more under-represented groups, supporting a diversified representation of candidates.

Procurement: A file review of completed GBA Plus assessments indicate that the CSA has integrated GBA Plus in its procurement activities through the use of diversity clauses in contracts and giving points in competitions related to diversity contractor workforce. An example used in space-related contracts is:

The contractor is encouraged to propose solutions that increase the representation and advancement of women in the space sciences and engineering, as one means to foster excellence in research and training. The contractor should strive for a balanced gender representation in the group of trainees and in their supervisors, role models and mentors. If the discipline of the proposed projects tends to have a gender imbalance in the trainee population, applicants are strongly encouraged to demonstrate that this imbalance has been considered and addressed in their plan for trainee recruitment.

This practice is encouraged and recognized by TBS as a major action the CSA has taken to promote diversity in the Canadian space sector. Furthermore, it was noted that many GBA Plus assessments included that Contractors will be subject to the Federal Contractors Program for Employment Equity, which ensures that contractors who do business with the Government of Canada implement employment equity in their workplace.

Best Practices in G&Cs at the CSA

- ❖ **2-step evaluation process** for candidate selection, for some initiatives. 1st step: Evaluating applications by CSA and external experts. 2nd step: Steering Committee conducts review based on the ranked list of successful proposals, and the selection is made considering diversity factors such as regional distribution, diversity of universities, diversity of Principal Investigators and opportunities for young professionals.

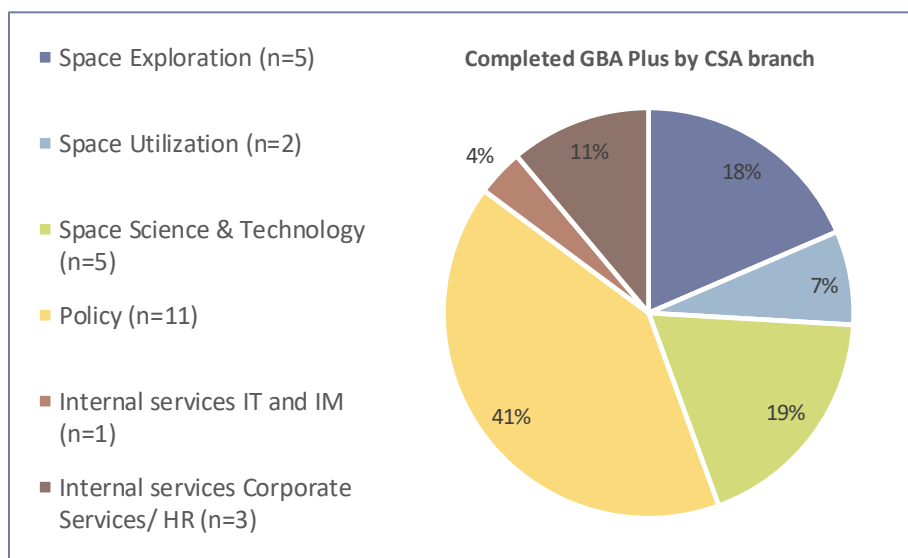
Best Practices in G&Cs in OGDs

- ❖ Dedicated initiatives for under-represented groups.
- ❖ Mechanisms to eliminate any potential conflict of interest in selection committees and resources to mitigate unconscious bias and increase selection committees' effectiveness in assessing merits of integrating equity and diversity in research teams and among trainees.
- ❖ Other departments offer additional financial incentives when researchers include people from under-represented groups in their funding proposal (ex.: people from the North, which can be used travel costs).
- ❖ Another best practice is to have funding applications demonstrate how they align with federal priorities and 20% of the score for applications is allocated to GBA Plus considerations.

Programs

The degree to which GBA Plus is integrated in the CSA's branches differs from sector to sector depending on the nature of their work. A review of completed and approved GBA Plus assessments and interview data from senior management suggest that GBA Plus is indeed integrated in one or more phases of an initiative's lifecycle. Moreover, there were GBA Plus assessments that were conducted across the CSA sectors, from programs to corporate initiatives, demonstrating the extent to which the CSA's *Policy on GBA+* was applied. Graph 1 illustrates the distribution of completed GBA Plus assessments throughout the CSA between 2017 and 2002.

GRAPH 1. COMPLETED GBA PLUS BY CSA BRANCH



Decision-making

One significant GBA Plus practice implemented at the CSA to ensure GBA Plus considerations are used for decision-making was incorporating GBA Plus in the CSA's Investment Governance and Monitoring Framework (IGMF), which serves as the CSA's directive for investment management and oversight. GBA Plus considerations related to the investment must be addressed through the completion of the GBA Plus assessments and presented at Gate 2 (planning phase) of the Integrated Investment Review Board (IIRB) for larger project or program investment amounts.

For smaller investments that can be made at the Program Investment Steering Committees, the use of GBA Plus considerations for deciding on projects varies depending on the nature of the work and the manager's discretion in applying GBA Plus. Several interview respondents pointed to the CSA's Project Management Network and Director's Committee as key players to integrating GBA Plus and to harmonize GBA Plus

practices across sectors. Further data analyzed reaffirmed that their buy-in is key for integrating GBA Plus and targeted outreach to these 2 committees were overlooked in the implementation process.

The sidebar includes best practices in decision-making identified in other government departments (OGDs) and the insights of the CSA interview respondents when asked how GBA Plus can be better integrated in decision-making processes. As mentioned earlier in the report, executives and managers are responsible for applying GBA Plus, and for integrating the results of the GBA Plus assessment into the decision making process within their sector. It is therefore imperative for directors and project managers to understand the importance and utility of applying GBA Plus in decision-making, whether it be when deciding on project funding at Steering Committees, IIRB presentations, Project Management Network discussions and Director's Committee meetings.

Extent of GBA Plus integration in Memoranda to Cabinet and Treasury Board Submissions

As per federal government requirements and the CSA's *Policy on GBA+* (TBS, 2016), the CSA has been integrating GBA Plus in all Memoranda to Cabinet and TB submissions since 2017. There are instructions provided by central agencies regarding how to incorporate GBA Plus considerations and findings in these documents. Interview data affirms that central agency analysts provide the necessary support to strengthen the integration of GBA Plus in both MCs and TB submissions. In addition, another available resource, that the CSA has at times used, is WAGE's advice and input to a GBA Plus in a briefing note, Cabinet document, TB submission or impact assessment. The CSA's GBA Plus Champion or any designated PoC can

"Typically, GBA Plus should be addressed in the Design, Delivery, and Implementation (DDI) section and the Results section of the TB submission. In DDI, the CSA should explain how GBA Plus has impacted the design of the initiative. In the Results section of the TB submission, the CSA should describe how the initiative will be monitored and evaluated in relations to its impact on different groups."

– TBS analyst (interview)

How to better use GBA Plus for decision-making at the CSA

- ❖ Include GBA Plus in socio-economic research to better assess the issues and needs of under-represented groups.

"Socio-economic studies must include aspects of GBA Plus to support the Analysis of Options phase of project proposals."

– Key informant (interview)

- ❖ Set up diverse teams when deciding on project (people from different educational background, professional positions, age, technical experience)
- ❖ Closely involve the Project Management community and Director's Committees

"The Director Network is a central point in change management. It's the key to change. If we have the directors' buy-in, it will go well. However, in order for them to start, there must be a convincing factor to help them act."

– Key informant (interview)

- ❖ Equip space companies and universities with GBA Plus knowledge for stronger applications and proposals
- ❖ Reach out, engage, and consult. More outreach to engage diverse groups, smaller companies and universities in remote regions of Canada

"Directly seek under-represented groups (e.g. French-speaking teachers and people living in remote areas) to show them the relevance of submitting projects to the CSA and then help them in the process of responding to announcements of opportunity."

– Key informant (interview)

- ❖ Apply consistent, objective criteria for funding applications
- ❖ Measure the direct and indirect impacts of initiatives on under-represented groups.

contact WAGE for additional advice or input upon drafting the GBA Plus for a document destined to a central agency.

Extent of GBA Plus integration in Reports to Parliament and CSA corporate reports.

Since 2017/18, a section on the CSA's GBA Plus governance, practices and results of GBA Plus in general has been included in the CSA's Departmental Plans and Departmental Results Report. Overall, the GBA Plus content in the reports to Parliament have improved considerably over the last three years, with more emphasis on how GBA Plus considerations are being applied. Also, GBA Plus has also been integrated in the Business Plan and in the State of the Canadian Space Sector Report. In the latter, disaggregated data on gender in the space sector new workforce is being reported as of 2018.

Extent of GBA Plus integration in Performance Measurement and Program Evaluations

As per the *Directive on results* (TBS, 2016), GBA Plus elements must be integrated into the Departmental Results Framework and Program Information profiles (PIPs). Since 2019, the CSA collects disaggregated data for two indicators in support of its Departmental Results Framework. Although GBA Plus is not yet integrated in the CSA's three PIPs, CSA senior management have recently agreed that with the upcoming review of the PIPs, GBA Plus will be integrated this year, including GBA Plus indicators, which will in turn support managers by providing clarity with respect to their branch's objectives vis-a-vis GBA Plus. Comparatively, in 2018/19, the majority (8/13) of science-based departments and agencies (SBDAs) reviewed in this evaluation have included GBA Plus indicators in their PIPs, whereas 4 including the CSA, have yet to include GBA Plus indicators in their PIPs⁴.

"PIPs should must consider and include considerations for ... sex, gender and other intersecting identifying factors in the description of the Program, the articulation of program outcomes, outputs and supporting indicators, and evaluation needs."

– TBS, [Interim Guide on Results](#), 2018.

Since the implementation of the *Directive on Results* (TBS, 2016) which requires that GBA Plus is integrated in program evaluations, 6 of the 7 program evaluations contained a dedicated GBA Plus section where, despite the relatively small amount of analysis and information, concrete examples of the integration of GBA Plus into program activities were documented⁵. The two most recent evaluations provided similar conclusions related to GBA Plus, namely that 1) in recent years, programs have integrated GBA Plus into the administration of their activities; 2) program activities do not appear to have had a negative impacts on diverse groups of women, men and non-binary people, and finally, 3) the integration of GBA Plus is an ongoing process that requires constant efforts, particularly with increasing awareness among team

⁴ One SBDA responded non applicable. The 13 SBDAs are 1) Canadian Institutes of Health Research, 2) Department of Fisheries and Ocean, 3) Environment and Climate Change Canada, 4) Health Canada, 5) Innovation, Science and Economic Development Canada, 6) National Research Council, 7) Natural Resources Canada, 8) NSERC, 9) Public Health Agency of Canada, 10) Social Sciences and Humanities Research Council, 11) Statistics Canada, 12) Canadian Nuclear Safety Commission, 13) Canada Energy Regulator.

⁵ The CSA evaluation that did not integrate GBA Plus began at about the same time the CSA was developing its *Policy on GBA+* in 2017.

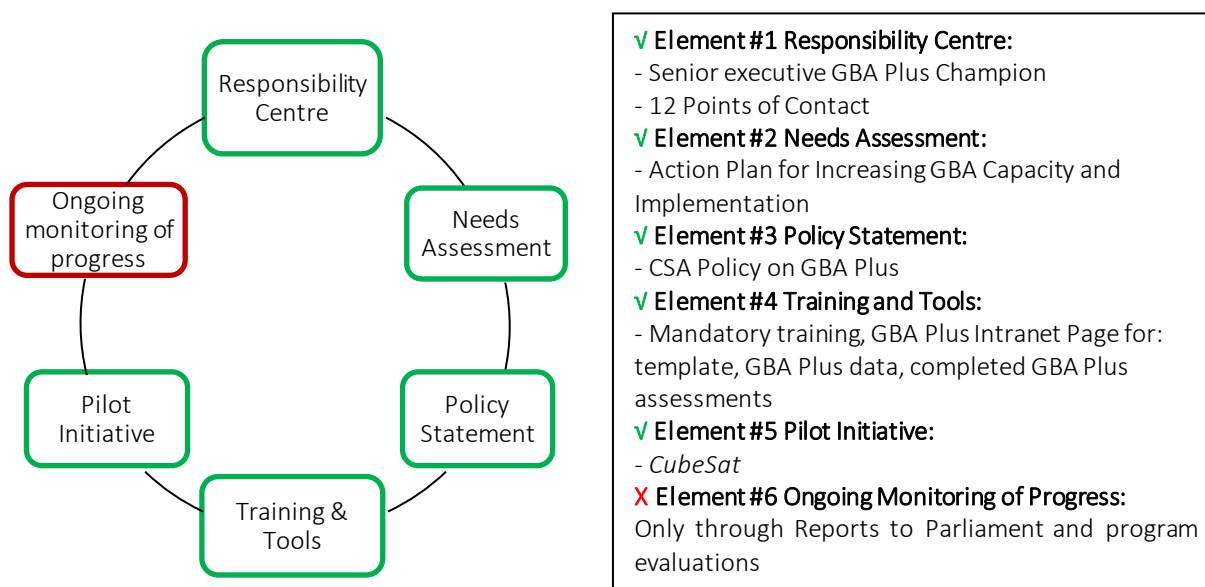
members. When comparing to SBDAs, in 2018/19 almost all SBDAs (11 of 13) integrate GBA Plus in the evaluation of their respective programs.

Summary Findings Compliance: The CSA is in compliance with the federal government’s requirements for integrating GBA Plus in federal programs, policies and regulations. The CSA ensures that GBA Plus is integrated in its Memoranda to Cabinet and Treasury Board Submissions, its funding mechanisms used across the CSA programs, Parliament reports, program evaluations, and is working towards integrating GBA Plus in Program Information profiles and their related performance indicators.

CSA’s implementation of GBA Plus practices based on WAGE’s GBA Plus Framework

This section examines the various elements the CSA has in place to achieve a strong foundation for the systemic use of GBA Plus based on WAGE’s *GBA Plus Framework for building a foundation for sustainable and systematic use of GBA Plus*. According to WAGE, all six elements, together, are necessary to ensure the systematic use of GBA Plus (WAGE, 2021b). The figure below illustrates the six elements of WAGE’s GBA Plus Framework with the accompanying practices, documents, and initiatives of the CSA.

FIGURE 3. CSA’S IMPLEMENTATION OF GBA PLUS PRACTICES BASED WAGE GBA PLUS FRAMEWORK



Element #1: A responsibility centre, to oversee the implementation of GBA Plus and provide internal advice and guidance.

Finding: The CSA has in place a responsibility centre which consists of the GBA Plus Champion and 12 Points of Contact that serve as internal advisors to their respective branches.

The Head of Audit and Evaluation was appointed GBA Plus Champion in 2014 and still holds this role at the time of the evaluation. Since 2017, the Points of Contact (PoCs) have been appointed for each branch of the CSA. An updated List of Designated GBA Plus Points of Contact for each Directorate is available on the GBA Plus Intranet page. As of June 2020, there are a total of 12 PoCs representing the various branches of the CSA. As per the *Guide for Implementing GBA+ at the CSA* (2017), the GBA Plus Champion is responsible to oversee the implementation of GBA Plus, provide internal advice, review and sign off on all GBA Plus assessments and the PoCs are the subject-matter experts that provide support, advice and review, but do not necessarily draft the GBA Plus assessments.

Data provided by survey respondents show that the CSA's GBA Plus Responsibility Centre was the most useful resource to carry out GBA Plus related duties. The majority of survey respondents (87%) reported that the GBA Plus Champion was the most useful resource tool, followed by the Points of Contacts (73%). The evaluation evidence suggests the responsibility centre has fulfilled and continues to fulfill its role in overseeing the implementation of GBA Plus and providing internal advice. CSA employees have confirmed that the GBA Plus Champion remains available for review of GBA Plus assessments and maintains strong communication lines with the Points of Contact by conveying key messages for GBA Plus. Furthermore, the evaluation found that the GBA Plus Champion built strong relationships and maintained regular interactions with the other GBA Plus Champions through the GBA Plus Interdepartmental Committee.

Nonetheless, a document review and interview data revealed that the GBA Plus Champion was not located in the most suitable nor appropriate location, namely within the Audit and Evaluation (A&E) branch. By its very nature, A&E is at arms-length from programs and policies to ensure its objective, neutral role. By contrast, GBA Plus is a large operational function that is closely linked to strategic planning, program implementation, G&Cs and contracts, and not within the scope and responsibilities of the A&E function. Comparatively, the most common location for GBA Plus Responsibility Centre in OGDs is the Strategic Policy Branch, given their role in drafting and reviewing documents destined for approval by a central agency (e.g. TB subs, MCs, budget proposals). Some departments opted to house their GBA Plus Champion and Responsibility Centre in Corporate Services, or Corporate Strategy and Performance Division.⁶ Furthermore, the large majority of GBA Plus Champions are senior executives, ranging from Assistant Deputy Ministers to Vice-Presidents of Research Programs, to DGs and Directors of Science. Also, depending on the size and breadth of the departments, some departments opted for a co-champion model.

With regards to the Points of Contact, a review of the List of Designated GBA Plus PoCs for each Directorate reveals that there has been little rotation of personnel, and there is a tendency to appoint women or visible minorities to the position. Women and visible minorities are often most sensitized and aware of gender and diversity issues in general, and therefore may play a stronger role in identifying GBA Plus considerations. Some survey respondents however pointed to the fact that white men may benefit more from these roles as they are generally less exposed to diversity and inclusion issues or barriers in the space sector and therefore may benefit from the training and understanding of GBA Plus issues. Some employees interviewed suggested that there should be a rotation of the GBA Plus Champion and Points of Contact,

⁶ Based on available data provided from the results of WAGE's 2018-19 Implementation Survey

primarily to encourage GBA Plus awareness. Generally, a regular rotation of PoCs, may help to increase CSA's employees' knowledge of GBA Plus through training offered, and help raise awareness throughout their sector. A best practice at the CSA that was mentioned by some survey respondents was to have more than one PoC per sector to increase the breadth and reach of GBA Plus at team meeting and Steering Committees, as is the case of the Space Exploration branch (SE) with 3 PoCs.

The Responsibility Centre also established a GBA Plus Committee where GBA Plus matters are discussed and best practices are shared among the PoCs. The committee held a handful of meetings in 2017 and 2018 but has remained dormant since, mostly due to time constraints of the GBA Plus Champion. Survey respondents stated that the GBA Plus committee was useful for the PoCs to have direct access to the GBA Plus Champion, coordinate awareness activities, and was regarded as important aspect to better understand their role and share key information, data and obstacles faced in each sector. Some survey respondents said that a meeting every 2-3 times a year would be greatly beneficial and would help harmonize GBA Plus practices across the CSA. Based on best practices in OGDs and the positive feedback from PoCs with regards to the value and utility of the GBA Plus Committee, it would be opportune to resume holding regular GBA Plus Committee meetings.

Element #2: An organizational needs-assessment, to determine what capacity and resources already exist in the organization, and to inform the creation of a work plan.

Finding: The CSA conducted a needs assessment at the onset of GBA Plus implementation and produced an *Action Plan for Increasing GBA Capacity and Implementation at the CSA* which is accessible through the CSA's GBA Plus internal webpage.

In 2017, the GBA Plus Champion spearheaded the development of an *Action Plan for Increasing GBA Capacity and Implementation at the CSA* aimed to assess and the GBA Plus capacity with a rating scale (low, medium, high capacity). Based on action plan, a *GBA Plus Communication Plan* was produced in alignment with CSA's Change Management guidelines and developed in collaboration with the Communications team to ensure the initial awareness campaign is clear and impactful. These two tools were put in place to increase awareness and knowledge of the requirements in applying GBA Plus across the CSA's policies and programs.

Element #3: A policy statement, or statement of intent, that articulates the commitment to GBA Plus and provides a mandate for implementation.

Finding: A mandate to implement GBA Plus at the CSA was made through the development of a GBA Plus Policy which outlines the CSA's commitment to integrate GBA Plus into its decision making processes and to ensure that Canadian values and government commitments on progress toward gender equality be reflected in the development and implementation of CSA policies and programs.

In 2017, the CSA developed an official *Policy on GBA+* committing the CSA to integrate GBA Plus into its decision-making processes, and **requires for all CSA initiatives** (e.g. policies, programs, projects, grants and contributions, budget proposals) that are **new** or which **need re-approval** to be subject to GBA Plus to ensure they do not have detrimental

“There must be a corporate strategy with an operational aspect, not just theoretical (the why, the how, etc.).”

– Key informant (interview)

impacts on certain diverse groups of women and men and non-binary people. This is an all-encompassing policy that touches every initiative the CSA puts forth. Furthermore, the CSA’s commitment to diversity and inclusion practices has been increasingly conveyed through internal communications, President speeches to CSA employees and to various space-related communities, and by signing the Dimensions Charter in 2020. However, almost half of survey respondents (46%; 33/72) stated that the CSA does not have a clear vision of how it plans to promote GBA Plus and/or gender diversity and inclusion in the space field. This was further elaborated during interviews, where CSA employees expressed that there are unclear expectations of and from senior management and directors, and the absence of a long-term strategy that outlines the main objectives the CSA is trying to achieve with GBA Plus and how it intends to achieve them in response to the needs of the CSA’s target populations and under-represented groups.

When comparing with other federal science-based departments and agencies (SBDAs), the CSA’s GBA Plus vision is very similar to the majority of science-based departments reviewed as it shares the commitment to ensure its initiatives do not have detrimental impacts on certain diverse groups of women, men and non-binary people, and that gender and other identity factor considerations are to be identified and inequalities corrected. However, expectations and long-term strategy are well-defined with clear objectives for some notable departments such as NSERC’s [Framework on Equity, Diversity and Inclusion](#), and CIHR’s Action Plan which set out specific objectives, goals and monitoring processes to track the impacts. Having a clear strategic perspective on GBA Plus priorities would be strongly beneficial for the CSA’s decision-making and for those conducting a GBA Plus as it would better align their analysis and corrective measures, if any. This

“Strategic thinking must be developed based on the social advances that we can have with GBA Plus. It starts at the top. It is part of the Executive Committee’s objectives.”

– Key informant (interview)

strategic perspective of GBA Plus priorities and objectives must equally be communicated down clearly throughout the sector (from directors, to managers and staff). The CSA’s *Policy on GBA+* states that it will be revised, if needed, every 5 years. It would therefore be the appropriate time to consider reviewing it and keeping in mind that it would be beneficial to clarify the CSA’s vision in the Policy and include specific objectives related to target groups.

Element #4: GBA Plus training and tools, to facilitate buy-in, build capacity and inform different parts of the organization about GBA Plus.

Finding: A suite of GBA Plus tools and resources were developed and made available and accessible for all CSA employees to build capacity and support employees conducting GBA Plus assessments. The mandatory *Introduction to GBA Plus* training for all executives, managers and analysts continues to remain in effect. Tools and resources are due for revisions and updating.

WAGE recommends that training and tools be made available to facilitate buy-in, build capacity and inform different parts of the organization about GBA Plus. In 2017, the GBA Plus Champion led the development of various GBA Plus tools, which includes:

Guide for Implementing GBA+ : This guide sets out the roles and responsibilities of the GBA Plus Champion and the Points of Contact. It also contains a list of the tools and guides that are available on the CSA Intranet for the use of all employees who implement GBA Plus at CSA. It equally states that the tools and guides will be subject to continuous improvements and kept up to date as GBA Plus implementation progresses.

GBA+ Questionnaire : A template questionnaire for conducting a GBA Plus assessment for all CSA initiatives, is comprised of two main sections; data and impacts. The data section requires the data sources, gaps in available information and reminds the authors that they may need to take action to address the information gaps. The impacts section examines the potential demographic impacts of the initiative on the various groups of people considered, with 12 identity factors⁷ (or “diversity elements”) to be analyzed, where relevant, and allowing for an intersectional analysis. The questionnaire, however, does not contain a section on the follow-up on impacts. A significant number of CSA employees pointed to the lack of follow-up as a challenge to implementing GBA Plus.

A follow-up on impacts and results is an important part of a GBA Plus assessment and should be included in the next revision of the CSA’s template questionnaire. In addition, examples and links to data sources presented in the template are outdated and should also be updated. Finally, some CSA employees suggested to incorporate elements of Finance Canada’s GBA+ template as it includes clearer instructions regarding direct and indirect impacts.

“We complete a questionnaire, we see if there are any impacts, but if there are impacts, there is no action taken as a result. There is no follow-up, no action plan is issued. We just know that there are impacts.”

– Key informant (interview)

GBA Plus Data : A section in the CSA’s Information Management System (Livelink) was created with the intention to establish and maintain an evolving database of reliable and valid aggregated and disaggregated data, case studies and links to national and international studies about gender and other intersecting identity factors pertinent to CSA initiatives. As per the *Guide to Implementing GBA+*, the responsibility to maintain it rests with the sectors, and the GBA Plus Responsibility Centre is responsible for monitoring the database’s content. Although the *Guide to Implementing GBA+* appropriately identifies data as a central feature to GBA Plus and for conducting GBA Plus assessments, an examination of the CSA’s database for GBA Plus-related data and interviews with respondents have shown that the data stored in the Livelink repertoire does not meet the needs of those drafting the assessments. This finding is further confirmed by respondents

“The documents are old. They date back two or three years ... so, for, someone who fairly new, like me, and is looking ... well it does not look like there are really any data on it.”

– Key informant (interview)

⁷ The identity factors listed are: sex and gender, age, income, employment status, family status, education, language, Indigenous status, visible minority status, immigration status and country of birth, region of residence, disability status and other.

with comments that it is outdated considering that little or no new data was added since 2018. The evidence strongly suggests that there is a lack of useful and valid disaggregated data relevant to the space field in the GBA Plus data inventory. Some CSA employees have also stated that they would greatly benefit from knowing where to look for data, and without accessible data in one spot, much time is spent looking for data.

The evidence suggests that current practice of compiling GBA Plus data, storing them and maintaining the GBA Plus data inventory is not efficient or effective. The CSA would benefit from reviewing the roles and responsibilities of employees, and the Responsibility Centre to better coordinate the availability and maintenance of its GBA Plus data inventory.

“It would be so helpful to have information on where to find the data concerning the different groups that are mentioned in the GBA Plus assessment document.”

– Key informant (interview)

There are currently well-developed data collection mechanisms in place at CSA. Although not originally designed to collect specific GBA Plus data, they have served as the primary data sources in numerous GBA Plus assessments. These two data sources are the Principal Investigator (PI) Survey results and the State of the Canadian Space Sector Report, which most recently have begun to collect gender-related data. Due to a growing demand for data generally, and in support of GBA Plus, coupled with the need to fulfill requirements related to performance measurement, there have been some noteworthy efforts and progress made by the CSA Policy Directorate in collaboration with Integrated Planning and various program sector officials to refine elements of the CSA’s main data collection tools and explore additional avenues for acquiring GBA Plus related data, such as discussions with Statistics Canada for various custom analyses options.

Dedicated internal GBA Plus webpage: accessible through the main CSA intranet page, this webpage contains links to the two aforementioned tools, links to GBA Plus data sources, direct link to WAGE’s Introduction Course, and quick links to GBA Plus GCpedia and other external sources of interest to GBA Plus.

The CSA’s GBA Plus Internal webpage that was set up as a full service feature for CSA employee to access GBA Plus tools and resources and access external sites related to GBA Plus has been reported to be a useful and necessary tool, however certain elements and links were found to be outdated and can benefit from regular updating with relevant links, recent internal and external data sources, and new material to support PoCs and employees in their GBA Plus assessments. A close examination of the Intranet page indicates that it is easy to find, with its own heading, but it is still not a very used link, with only 38% of CSA survey respondents having consulted it.

GBA Plus Training: Since 2017, the *Introduction to GBA Plus* training course offered by WAGE is mandatory for all CSA analysts, managers, directors and executives, and recommended for all CSA employees. When comparing to OGDs, the trend is that departments are moving towards making GBA Plus training mandatory for one or more functional areas. Of note, some departments require all employees, regardless of their position, to take the *Introduction to GBA Plus* training course.

The *Introduction to GBA Plus* course allows for a general understanding of GBA Plus but employees have expressed that it is lengthy and does not offer the type of applicable understanding that is sought after among a majority of CSA employees. There are additional training courses available for GoC employees offered by the Canada School of Public Service (CSPS). In fact, a file review indicates that the GBA Plus Champion regularly provided the PoCs with updates on new training courses available, such as *GBA Plus Bootcamp* and other types of advanced training to ensure they maintain and increase their knowledge and expertise. As mentioned earlier in the report, it is within the roles and responsibilities of Executive committee members to support and encourage GBA Plus training opportunities for their employees, and within the roles and responsibilities of managers to provide training opportunities in GBA Plus for their employees (see Appendix C for links to additional training resources available, both micro learning videos from WAGE and OGDs and online courses offered by CSPS).

When asked if they took the *Introduction to GBA Plus* training, 70% of respondents (95/135) confirmed to have completed the training. Of the 85 employees with a supervisor role who answered the training question, 19 (22%) did not take the *Introduction to GBA Plus* training, despite it being mandatory.

Evaluation evidence shows that the GBA Plus Responsibility Centre undertook various activities in 2017/18 to promote the implementation of GBA Plus at the CSA, build capacity and increase the organizations' awareness of GBA Plus. These awareness activities consisted of informative capsules on the CSA corporate screens, lunchtime quizzes at the cafeteria and several presentations made by the GBA Plus Champion to various sectors of the CSA. However, between 2018 and 2020, there has been little awareness activities that have taken place mostly due to limited resources and increased time constraints on behalf of the GBA Plus Champion.

Element #5: GBA Plus “pilot” initiative to provide a concrete example of GBA Plus application.

Finding: The CSA put in place a pilot initiative designed to promote the participation and inclusion of youth, industry, and post-secondary organizations in every province and territory across Canada. The project was well-received by industry and academia alike and effectively demonstrated the concrete application of GBA Plus in the space field.

The CSA's pilot GBA Plus initiative is the *CubeSat* project where the main objectives were to promote diversity and inclusion of post-secondary students interested in space. More specifically, CubeSat aimed to include every province and territory to provide students with hands-on experience with skills development opportunities in STEM and access to Canadian space industry experts to optimize the success of each mission.

A document review revealed that the Canadian space sector welcomed such an initiative and regarded it as a refreshing departure from the traditional approach to satellite building. As one space media outlet put it, “while CubeSat development in Canada is not new, developing the skillsets across the country is relatively new” (SpaceQ, 2018). CubeSat was referred to as an “national endeavour [where] the importance of this project cannot be minimized” as 15 selected university teams are represented by every Canadian province and territory who worked closely with Canadian space industry and CSA experts (SpaceQ, 2018). The CSA

also made particular efforts to reach out to post-secondary institutions from various remote regions across Canada to provide support and to ensure their participation. See Section 6 on Success Stories for details on CubeSat.

Element #6: Ongoing monitoring of progress, to highlight successes, best practices, and to identify gaps and new priorities.

Finding: The CSA has not put in place a systematic monitoring or follow-up of impacts. Reporting is currently done via program evaluations and reports to Parliament. By integrating GBA Plus in the CSA's Program Information Profiles, CSA will enhance its capacity to monitor and report on its program impacts by gender and diversity.

The CSA's *Guide for Implementing GBA+* indicates that GBA Plus commitments are to be monitored and reported, through the initiative's progress reports, and on a regular basis thereafter. Then, the information collected through these monitoring tools will be used to highlight successes and weaknesses, share best practices, facilitate continuous improvement and demonstrate accountability (CSA, 2017b).

The evaluation however did not find any evidence of ongoing monitoring and there was no reporting being done in a systematic, consistent manner. There is no systematic monitoring or follow up of impacts that was put in place. Reporting is currently being done via program evaluations and reports to Parliament. Upon integrating GBA Plus in the CSA's Program Information profiles (PIPs), the CSA would enhance its capacity to monitor and report on its program impacts by gender and diversity. Based on WAGE's 2018-19 Implementation Survey results, 1 in 6 organizations had no monitoring or tracking of GBA Plus impacts in place. As mentioned earlier in this section, a follow-up on impacts and results in the GBA Plus template questionnaire would contribute to stronger monitoring capacity. The absence of an ongoing monitoring mechanism and the recommended course of action is treaded in more details in Section 5, "Effectiveness: Barriers to implementing GBA Plus".

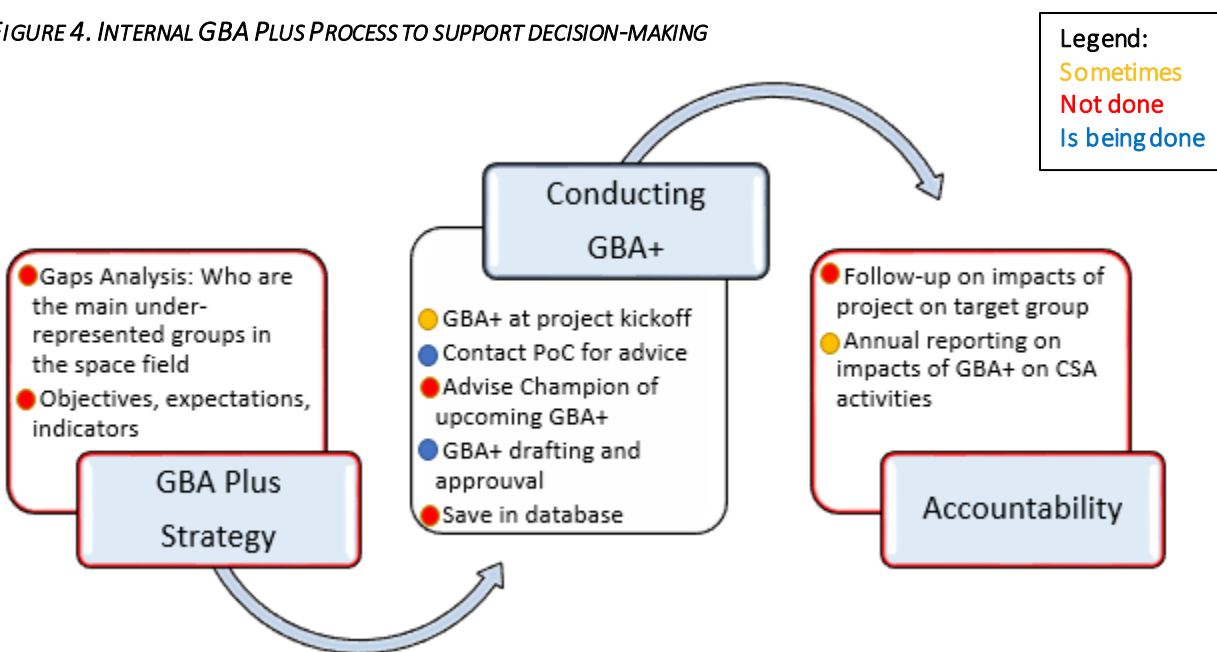
WAGE periodically surveys federal departments and agencies on their implementation of GBA Plus. The 2018-19 Survey showed that:

- While most GBA Plus training is non-mandatory, more organizations are making GBA Plus training mandatory in one or more functional areas.
- Most organizations had key elements of capacity in place, including a GBA Plus Champion, and tools and resources to support GBA Plus.
- GBA Plus is consistently applied in MCs (99%) and TB submissions (100%). However, other functional areas lag in the application of GBA Plus with the lowest application rate being in procurement (23%).
- Over three quarters of organizations reported lack of time or capacity, and availability/access to data as barriers to the application of GBA Plus
- One in six organizations had no monitoring or tracking of GBA Plus implementation or impacts in place.

Efficiency of the CSA's Internal GBA Plus Process

The CSA put in place a process for drafting and reviewing GBA Plus assessments to ensure GBA Plus is integrated in program design, delivery and to support decision-making. A more comprehensive internal GBA Plus process would result in more targeted impacts on the space field in Canada.

FIGURE 4. INTERNAL GBA PLUS PROCESS TO SUPPORT DECISION-MAKING



Procedure for completing a GBA Plus Assessment

According to *the Guide for Implementing GBA+*, the questionnaire must be completed to examine the impacts of an initiative on diverse groups of people, taking into account gender and other identity factors. A document review of the CSA's GBA Plus tools as well as a detailed search through the CSA's GBA Plus webpage did not provide any information on the process for drafting and approving a GBA Plus assessment. The process is not documented and remains unknown for any employee new to GBA Plus or tasked with conducting a GBA Plus assessment. The GBA Plus template questionnaire contains a few instructions on how to fill it out, such as to start early in the project's lifecycle and to preserve a copy of the completed GBA Plus, but otherwise, the CSA employee, as well as any newly assigned PoC, has little information regarding the overall process. The detailed drafting and approval process for GBA Plus assessments is presented in Appendix D.

Interview data and survey results indicate that there are several issues with the current process. When asked the PoCs and signatories to rate the efficiency of the process, only 33% of respondents said it was efficient. 67% of respondents replied that minor or major improvements to process would be beneficial. These improvements are included in the drafting and approval process presented in Appendix D. In addition to these proposed improvements, the process should be documented and well communicated across the CSA branches. Despite a dedicated GBA Plus internal webpage where clear instructions should be clearly displayed, CSA employees were informally made aware of the process. Secondly, the GBA Plus Champion

often received a GBA Plus assessment with a request for review and approval within a tight deadline. Furthermore, some CSA employees explained that the review process was at times lengthy and were not aware of the expected workload associated with conducting a thorough GBA Plus, having it reviewed and signed off. Third, there is no follow-up on the impacts identified in the questionnaire leaving employees unsure how and who is responsible for monitoring the progress made or the effectiveness of the corrective measures put in place. The current template should be modified to include a section for the follow-up and monitoring of impacts to ensure GBA Plus expectations are managed, similar to risk management in projects, and to document the results of the invested efforts. Finally, the completed and approved GBA Plus assessment were not all stored in Livelink GBA+ Completed, leaving others from being able to consult concrete examples, and resulting in an inaccurate depiction of GBA Plus integration across the CSA’S programs. As mentioned above, the person responsible for the initiative is to save a final copy in Livelink GBA+ Completed.

“The questionnaire is too long, which limits many people to think things through.”

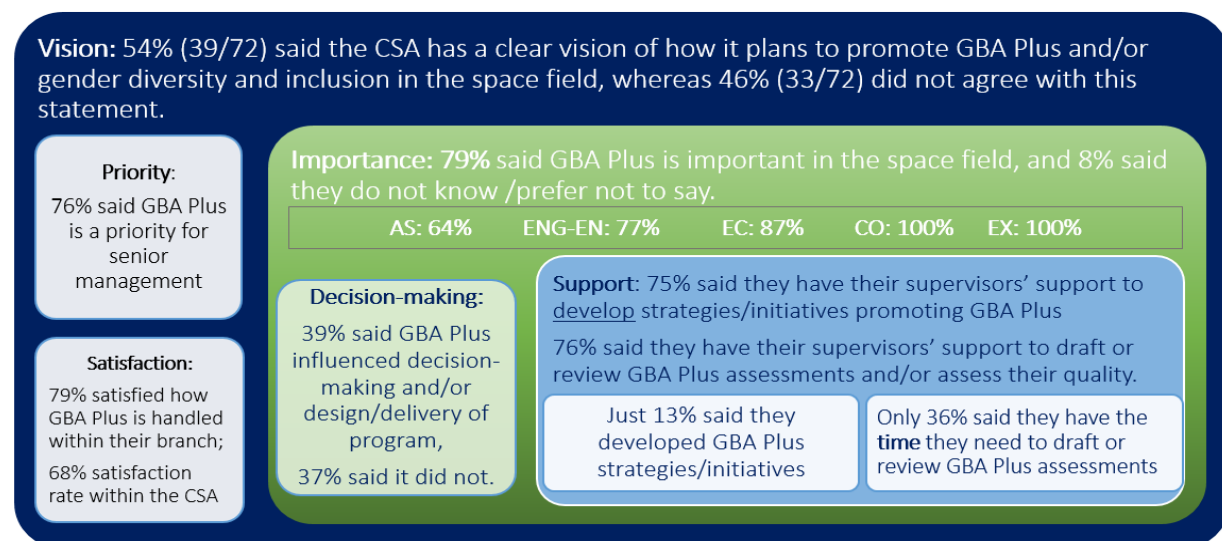
– Key informant (interview)

Summary Findings of the Internal Process: The current internal process for the completion and approval of GBA Plus assessments contain inefficiencies that result in unpredictable workload, difficulties in tracking GBA Plus assessments that are in progress or completed, and create ambiguity among employees regarding their role in the follow-up and accountability of the impacts. The GBA Plus Champion often receives a GBA Plus assessment with a request for review and approve within a tight deadline, and is unable to track all completed GBA Plus assessments as the final signed version is not always kept in the appropriate repertoire in Livelink for future consultation and effective reporting as required by the CSA’s *Policy on GBA+*.

Perspectives from CSA employees

In order to better gauge how GBA Plus is perceived by CSA employees, a series of questions pertaining to the CSA’s vision, satisfaction, priority, importance and support was asked in the survey. An overview of the perspectives from CSA employees is presented in the figure below.

FIGURE 5. OVERVIEW OF PERSPECTIVES FROM CSA EMPLOYEES



A large majority of respondents feel that GBA Plus is a priority for senior management, and attach a significant importance to GBA Plus in the space field. There are noticeable differences between the professional groups regarding the importance given to GBA Plus. Mostly notably, all executives and commerce officers said GBA Plus is important, whereas almost a quarter of respondents in the Engineering group did not feel GBA Plus is important in the space field. In terms of satisfaction, employees generally feel more satisfied with how GBA Plus is being handled within their branch. Their satisfaction falls slightly when asked about how GBA Plus is handled within the CSA as a whole. This reduced satisfaction rate can be because only half of respondents believe the CSA has a clear vision of how it plans to promote GBA Plus. The survey results also indicate that although employees feel they have their supervisor's support to develop initiatives promoting GBA Plus, only a small minority said they actually developed GBA Plus initiatives. It is therefore not surprising to see that GBA Plus was perceived to have little influence on decision-making.

Effectiveness: Facilitating Factors in the Implementation of GBA Plus

In order to gain a richer understanding about the overall effectiveness of GBA Plus, CSA employees were asked in the online survey and the interviews about the factors that have facilitated the implementation of GBA Plus at the CSA. Respondents identified three main factors that facilitated the implementation of GBA Plus: the support and advice received from the Responsibility Centre, the diversity-related committees at the CSA and, the values and commitment of certain CSA employees.

Responsibility Centre's Support and advice

The most frequently cited factor that facilitated the implementation of GBA Plus was the support and advice provided by the GBA Plus Champion and the PoCs. Survey respondents explained that the accessibility and support of the PoCs in both informing on the internal approval process and providing advice in their review of the GBA Plus assessments was particularly helpful. In addition, some respondents added that having a GBA Plus Champion who sits at senior management decision-making committee, such as the Executive Committee, help ensure that GBA Plus considerations are discussed at senior level committee and, as one interview respondent explains, *"where the GBA Plus Champion can pass messages to the Executive Committee without needing to be invited."*

Diversity-related committees at the CSA

There are various diversity-related committees at the CSA, namely the Women in Science, Technology and Management (WSTM), the Visible Minorities Network (VMN), and the Employment Equity and Diversity Consultative Committee (EEDCC) that indirectly work as GBA Plus facilitators as they bring awareness to the issues and challenges related to diversity and inclusion and undertake outreach activities and events. For example, the WSTM committee held a joint event with the *Ordre des ingénieurs du Québec* to promote Women in STEM. The VMN and the WSTM, together, provided CSA employees with a training in Unconscious Bias in 2020, and the WSTM routinely offers professional development opportunities for members. The EEDCC provided a learning series on people with disabilities and the challenges they face and the value they bring to a workforce. These three committees are all championed by the Head of Audit

and Evaluation and work closely in collaboration to build on each other's momentum and align their activities accordingly. Interestingly, one aspect mentioned during the interviews was that it would further benefit the implementation of GBA Plus practices to have a GBA Plus representative to sit at each of these diversity committees to further build on synergies, share information and work together to continue efforts in minimizing the gaps within the CSA and in the space field in Canada.

Values and commitment of certain employees

Part of the success of integrating GBA Plus into CSA activities is the result of the values and commitment of certain CSA employees who are aware of the gender diversity issue in the space field. Several interview respondents explained that there are CSA employees that take it upon themselves to undertake the GBA Plus assessments because they see the value in it and understand the concrete impact their efforts can make on particular under-represented groups. Furthermore, there are even some committed employees who seek to advance initiatives and practices related to gender diversity and inclusion, and in some cases, they succeed, with varying degrees of success, depending on the interests, priorities and support of their supervisors.

"In the past 10 years, we have seen many more women in engineering or in STEM fields. I think we are doing very well in terms of diversity at CSA. I think people see the value of diversity in a team, at least that's what I've noticed in my team. We are also setting a standard internationally, especially for women in STEM. We've been asked to speak about it at United Nations conferences, because there are a lot of other countries in the world that are not where we are at. Canada is definitely ahead of the game. That is a positive impact."

– CSA Member of WSTM committee (interview)

In the same vein, several interview respondents pointed to the current CSA President, as factor that has already played and believe will continue to play a pivotal role in promoting diversity and inclusion practices at the CSA. In September 2020, the CSA President mentioned in her welcoming speech that she is here to "help remove barriers" and will subsequently meet with the members of the Visible Minorities Network to gain a better understanding of the existing diversity issues at the CSA. As one senior manager put it, the commitment and leadership from the CSA President is recognized as an important factor in implementing GBA Plus with her *"undeniable support on the issues of inclusion and diversity"*.

When comparing to other government departments and agencies, a document review and interviews with OGDs found that the CSA and OGDs generally share similar facilitating factors. The following factors facilitating the implementation of GBA Plus were identified by OGDs:

- Competent and knowledgeable in-house Points of Contact, rather than external consultants
- Capacity and support
- Tailored training and resources (GBA Plus Premium course)
- Leadership and direction
- Support and interest from senior management
- The fact that GBA Plus is a requirement for TB Subs and MCs
- Robust processes and transparency

Effectiveness: Barriers to implementing GBA Plus

Similarly to investigating the factors that facilitate the implementation of GBA Plus, the online survey and interviews asked CSA employees to indicate the barriers to implementing GBA Plus at CSA. Results showed that the five main challenges that make the GBA Plus process difficult and cumbersome for CSA employees are as follows:

- Lack of knowledge and understanding of how to apply GBA Plus in the space sector
- Unclear vision and expectations from directors and senior management
- GBA Plus being done as an afterthought
- Shortage of disaggregated data (microdata)
- Lack of accountability and follow-up and monitoring of impacts and progress

Lack of GBA Plus knowledge and understanding of how to apply GBA Plus in the space sector

Although a large majority of CSA employees including senior management see the importance of GBA Plus and understand the theoretical definition and applicability of GBA Plus and believe the CSA has an important role with regards to GBA Plus considerations, there remains a significant number of CSA employees who are still struggling with fully grasping the purpose, definition and how it should be properly applied in their day-to-day work. Of those who responded to this question (61/91) in the online questionnaire, 67% of CSA employees indicated the lack of knowledge of employees and management in GBA Plus as a barrier to implementing GBA Plus at the CSA. Many still do not know what it concretely means to integrate a GBA Plus analysis in their initiative and have expressed a need for more expert guidance, some concrete examples, with a clear and concise definition. Some understand GBA Plus applicability for social programs where a service or initiative is directly received by a Canadian, but its use in the space field still appears elusive to many.

Another impact of a lack of GBA Plus knowledge mentioned by some interview respondents is that without a clear understanding of what GBA Plus is and how it can be concretely applied, there is a disinterest to conduct a GBA Plus. A large majority of interview respondents expressed the need for space-related concrete examples of how to conduct a thorough GBA Plus assessment and better understand how GBA Plus considerations have an impact on, or benefit, a particular group. Many managers who are involved in conducting GBA Plus assessments said they would greatly benefit from having access to previously completed GBA Plus assessments to better understand how the benefits and impacts to various groups were analyzed and presented.

A call for increased awareness and training was also mentioned by a majority of respondents in response to lack of knowledge and understanding. Increased awareness was brought up throughout the online questionnaire and interviews as a necessity to achieve better integration of GBA Plus practices at the CSA. A little over half of CSA employees (52%) who answered this question in the online questionnaire (49/95) identified the lack of GBA Plus awareness on behalf of CSA employees and management as a main obstacle to implementing GBA Plus practices at the CSA. Furthermore, those who are closely involved with drafting GBA Plus assessments expressed the need for more time for, and access to, hands-on training to increase

their capacity to conduct a thorough GBA Plus. For this, there are some more in-depth trainings offered by the Canada School of Public Service.

In the first year of implementing GBA Plus practices at the CSA, the Responsibility Centre organized various initiatives and events to increase awareness at the CSA, such as informative messages on the CSA corporate screens, lunch break quizzes at a booth in the cafeteria, and dissemination of news from WAGE to PoCs which included information on new courses and training available. The GBA Plus Champion also gave general GBA Plus presentations in some sectors at their request to better understand how to apply GBA Plus in their projects. However, since 2018-19, these activities have diminished extensively, mostly due to lack of resources (i.e. time) despite the growing need for more awareness. Interview respondents' suggestions to increase awareness are presented in Appendix C.

Interviews (including those with senior management) often suggested that the key to integrating GBA Plus in sector-level decision-making is to reach out and actively involve the Directors Network and the Project management Network as they are the key agents who bring forth and manage the bulk of CSA projects, whether it is through contracts or G&Cs. Efforts to demonstrate the importance and applicability of GBA Plus should be focused in these two networks as their reach and influence on project managers and supervisors is extensive. Many senior managers suggested that by better communicating the relevance, value and concrete applicability of GBA Plus considerations and increasing their understanding through concrete examples and corrective measures used elsewhere or in the past at the CSA, it could be expected that there will have an improvement to the integration and harmonization of GBA Plus practices across the CSA.

Unclear vision and expectations from directors and senior management

In addition to concrete space-related examples of GBA Plus, access to previous GBA Plus assessments as a reference point, and access to more trainings, many respondents stated that a clearer vision and expectations from senior management is necessary to routinely apply GBA Plus. 54% of those who answered this question in the online survey (43/79 respondents) said that the lack of clear guidelines, expectations from directors, and vision from senior management was a barrier to implementing GBA Plus. This finding was reiterated in the interviews. When asked to further explain, interview respondents explained that the strategic thinking and vision, and objectives the CSA is trying to attain should be clarified, as well as the expectations from senior management towards their employees in integrating GBA Plus in their initiatives.

“There needs to be a willingness and a clear vision on the part of senior management. This is a government priority. Let’s act accordingly. The desire needs to come from the top, with requests for results, monitoring and reporting.”

– Key informant (interview)

GBA Plus being done as an afterthought

The interviews provided some insight on the impacts of the lack of knowledge, understanding and expectations of GBA Plus. A large majority of interview respondents stated that the most significant impact of lack of GBA Plus knowledge and expectations is that the GBA Plus discussions, assessments and corrective measures are thought about after the project or initiative has been designed and approved. Due to a lack of comprehensive understanding, the GBA Plus assessment is often dealt with at the 11th hour and perceived as another bureaucratic hurdle subject to internal approval process. This results in a GBA Plus that is done later in the project's lifecycle as opposed to its original purpose to be done at the onset of a project or initiative being put in place.

Being done after the fact defeats the purpose of the analysis and results in employees searching for relevant data that could support their GBA Plus statements to fulfill this requirement. There are mechanisms in place to support managers to think of GBA Plus considerations at the onset of the project, such as requiring a completed GBA Plus assessment to present at Gate 2 of the IIRB. With more oversight expected from the IIRB Secretariat, the GBA Plus assessment will have to be fully completed and approved prior to presenting a proposed project.

"GBA Plus is often seen as a process carried out after-the-fact, rather than a process started at the onset."

– Key informant (interview)

Shortage of disaggregated data (microdata)

The most cited challenge to implementing GBA Plus is the difficulty to find GBA Plus related data to support GBA Plus assessments, where 71% of survey respondents (47/66) and the majority of interview respondents pointed to the shortage of space-related disaggregated data for the main CSA target groups. These respondents have detailed the length of the time it takes them to search through outdated data sources on the CSA's GBA Plus webpage, and often have to resort to two main credible data sources at the CSA: the Annual Space Sector and PI surveys, which have some but very limited gender-related data. The efforts from the Policy team to make modifications to the PI Survey and the Annual Space Sector Survey over the last few years is beneficial and demonstrates the need for more GBA Plus related data. Many managers also expressed that they face a lack of time to conduct a thorough GBA Plus assessment, which becomes all the more problematic in a context where there is lack of knowledge and accessibility to GBA Plus related data. A significant number of managers have also expressed that it should not be their role to dig and spend a lot of time looking for data and that it is time-consuming and can often lead to very little significant data.

Socio-economic studies and consultations with under-represented groups are other data collection methods that can present a richer understanding and illustrate a more accurate picture of the demographic makeup of the Canadian space sector and identify needs and gaps of the under-represented groups.

When asked to elaborate on the effects of the data shortage, CSA employees most often pointed to the need for defining the main identity factors to focus on given that not all identity factors are necessarily relevant to collect in some situations. Based on a review of the completed and approved GBA Plus

assessments, "sex and gender" is the most frequently considered identity factor (100%), followed by Aboriginal identity (92%). The third most cited identity factor is geographic location (88%) followed by disability and visible minority status, which are both found in 80% of the GBA Plus assessments analyzed.

Another impact of insufficient GBA Plus related data identified in the interviews is the difficulty to predict or demonstrate the impact of an investment, project or program when we do not have data on our target populations or particular groups of Canadians in general. Some managers explained that it is imperative to first have available, valid data to understand if there is really a differential impact on various groups.

"How do we know if our project meets the needs of Canadians if we don't have any data? We don't know. If we had more data, we could better identify the population's needs."

– Key informant (interview)

With sufficient GBA Plus data, the CSA can better identify the needs of target populations, assess the impact and benefits of project on target groups, and implement the necessary corrective measures to address the gaps. Therefore, it would be useful to have a centralized database, accessible to all employees. In fact, a CSA manager even specified that this could be the main work task of a student internship, where the data would be updated once a year. It would be a plausible solution, because at the same time, the CSA would offer a great work experience to a student.

Lack of accountability, follow-up and monitoring of impacts and progress

One inherent obstacle of GBA Plus is that it is everyone's responsibility, there is no direct accountability that is drawn. According to the *Guide for Implementing GBA+*, it is not the Responsibility Centre's role to monitor the impacts of the GBA Plus assessments. Rather, project managers are responsible to track and monitor the impacts of the GBA Plus assessments and the corrective measures, if any.

Although mentioned in the *Guide for Implementing GBA+* that an ongoing monitoring will take place, employees have expressed that GBA Plus is perceived as a futile exercise because there is no follow-up of impacts and no results that can be reported on. A majority of interview respondents reported that there is a need for a systematic follow-up when impacts are identified in a GBA Plus.

Some managers who put in considerable efforts in GBA Plus assessments expressed their concern, and at times frustration, with the lack of accountability and follow-up. After spending time to develop a comprehensive GBA Plus and searching for data to support their GBA Plus, it gets approved and then there is no oversight, follow-up, monitoring or reporting on the impacts of the issues identified. Unless it is done on an individual level within the good project management practices, the GBA Plus remains a documented effort, and not an output or outcome that is managed.

"We are asking people to document – we are not asking them to manage. Documenting is completing the form. By managing – people will go beyond the required questionnaire because you are managing expectations."

– Key informant (interview)

The monitoring and reporting of the impacts of GBA Plus is a requirement. Currently, there is no systematic way to monitor and report the impacts of GBA Plus, with the exception of some recent evaluation reports, which managed to elaborate on the various initiatives that contained significant and concrete GBA Plus considerations or corrective measures. In addition, there are no guidelines or approved method in place at the CSA that managers and directors can apply to follow-up with the impacts. Some interview respondents pointed to the need to establish clear accountability of GBA Plus within the organization and guidelines that set out how impacts are followed up on and monitored. They explained that without a clear indication from senior management on the importance of conducting and monitoring GBA Plus, its purpose will remain undermined and superficial. A transparent and robust reporting mechanism is among WAGE's six key elements required for sustainable use of GBA Plus within an organization.

"It would be helpful if we knew the results of our efforts and how they contribute to the objectives we are trying to achieve."

– Key informant (interview)

Other challenges

The evaluation determined that the majority of CSA respondents are aware of the current gaps in the STEM fields and that they support corrective action to increase diversity and inclusion. However, the internal survey data and interviews carried out with CSA employees indicate that, sometimes, biases are a challenge to the implementation of GBA Plus at the CSA. It is important that the CSA continues its awareness efforts with regard to the relevance and importance of GBA Plus.

Summary Findings of barriers at the CSA: With increased efforts to collect more relevant GBA Plus data, and clearer vision and expectations of and from senior executives and directors, coupled with increased knowledge and understanding and reducing barriers, it may result in a behavioural shift, from simply documenting to managing GBA Plus corrective measures and impacts they have on a project.

Other government departments and agencies have equally faced similar barriers to implement GBA Plus practices. The following challenges to implementing GBA Plus were identified by OGDs:

- Lack of time or capacity to conduct a thorough GBA Plus
- Lack of access to/availability of data/evidence
- Lack of knowledge, training and availability of tools/resources
- Lack of internal mechanisms to ensure GBA Plus is applied to the development and implementation of initiatives (e.g. monitoring and accountability mechanisms)
- Lack of organizational directives to implement GBA Plus/departmental action plan

6 Results

Success Stories demonstrating the application of GBA Plus to initiatives

The CSA has applied GBA Plus to some projects by refining some elements of the design or delivery, which resulted in more inclusive projects and ensured that there were no detrimental impacts on diverse groups of women, men and non-binary. The following examples demonstrate how the CSA established concrete objectives and/or actions to reach out and include under-represented groups in the project's results and positively impact diverse groups of men, women, and non-binary people.

CubeSat Project – Space Science & Technology Branch

Often considered as the CSA's GBA Plus pilot initiative, the CubeSat project was conceived to give post-secondary students from each provinces and territory the opportunity to design, build, launch and operate their own miniature satellites (hence CubeSat). By its very nature, its objectives were to promote diversity and inclusion for post-secondary students interested in space. More specifically, CubeSat aimed to include every province and territory to provide students with hands-on experience with skills development opportunities in STEM and access to Canadian space industry experts to optimize the success of each mission. The CSA undertook female student recruitment efforts to encourage more diverse teams within post-secondary institutions. In addition, targeted outreach to the territories and direct assistance to potential candidates was also done to ensure they were properly informed and supported to submit proposals and participate in the process. Consequently, Yukon and Northwestern Territories received grants of \$150,000 for their projects. In sum, the CubeSat project resulted in 15 projects, all Canadians provinces and territories (except Nunavut despite efforts), where more than 500 students were involved, including 22 colleges and universities.

Grants Award Students NASA 12 Summer 2020 – Space Science & Technology Branch

In 2020, the SS&T sector presented to the IIRB the list of 12 candidates selected for a grant under the "Grants Award Students NASA 12 Summer 2020" initiative. The presentation indicates that regional representativeness and designated groups were taken into account in the selection of candidates (based on the self-declaration of candidates), in addition to criteria related to academic excellence.

Polar Communications and Weather Mission (PCW) – Satellite Communications sector of the SU branch

The Polar Communications and Weather mission's primary goal was to provide reliable 24/7 high data rate communication services in the High Arctic, to better monitor weather in that region, and to enhance the monitoring of space weather while ensuring that the communications needs of isolated communities in Canada's North could be addressed. By promoting and supporting access to proper communications in these regions, which in some cases are still under-served (by the absence of services or by the prohibitive costs associated with such services), the CSA played an important role in ensuring that Canadians in remote regions can access and benefit from technologies (CSA, 2018).

Astronaut recruitment campaign – Space Exploration Branch

GBA Plus considerations were applied to the last Astronaut Recruitment Campaign in 2017, which resulted in the addition of Jennifer Sidey-Gibbons and Joshua Kutryk to the Canadian Astronaut corps. Primarily, all members of the recruitment committee received training on GBA Plus before carrying out their work. The CSA also ensured that all regions of the country, women and visible minorities were directly targeted by the recruitment campaign. There were consultations on this topic with the department of Women and Gender Equality Canada. In addition, efforts were also made to engage northern communities and Indigenous communities in light of the consultations undertaken with Crown-Indigenous Relations and Northern Affairs Canada. The CSA's recruitment campaign also included promotional activities in professional fields that are not traditionally associated with the space exploration program, such as the field of nutrition, medicine, dentistry and nursing to have a larger more inclusive pool of qualified candidates.

AO for Investigating Spaceflight Health Risks on the ISS – Space Exploration Branch

The purpose of this AO was to select up to 11 scientific investigations that would benefit from the presence of the Life Science Research Systems (LSRS) on the International Space Station (ISS), consisting of a significant proportion of the Canadian ISS utilization. Selected investigations involved academic scientific teams including students and postdocs and generated scientific publications on health risks of space missions. The GBA Plus assessment identified the need to increase opportunities for young students to be part of the proposed teams. Consequently, an encouragement to recruit young students was included in the announcement under the form of a training plan. To broaden the age distribution of personnel involved in these investigations, the evaluation of a student training plan was added to the evaluation criteria. This would therefore increase the score of applications demonstrating an intention to recruit and train young students.

AO for Flights and Fieldwork for the Advancement of Science and Technology (FAST) – Space Science & Technology

The Announcement of Opportunity for the Flights and Fieldwork for the Advancement of Science and Technology (FAST) has a two-step evaluation process, where step 1 consisted of evaluating applications by a jury composed of CSA and external experts. The evaluation was based on a point rated evaluation criteria with a minimum of 70% to pass. Step 2 of the process consisted on a review of the candidate files selected in step 1 by the STEDIA DG Steering Committee. At this final stage, strategic priorities for the CSA were considered and based on the ranked list of successful proposals, the selection was made considering the following factors:

- Alignment with identified priorities
- Balance between research disciplines
- Regional distribution
- Diversity of universities
- Diversity of Principal Investigators
- Opportunities for young professionals

Communications Initiatives

The most visible application of GBA Plus is being carried out by the CSA's Communications team, where there are specific initiatives targeted to diverse groups of young girl and boys. Gender, diversity and inclusion is embedded in the strategic planning and execution of initiatives that directly reach the Canadian public. To better understand the needs of their program's target populations and to plan their initiatives accordingly, the Communications directorate commissioned a study in 2017. The White Paper entitled *Leveraging Space for STEM* (CSA, 2017c) identifies the opportunities in Canada where CSA can advance awareness in STEM initiatives for Kindergarten to Grade 12 students. The study provides an analysis of the equity gaps in enrolment and achievement in post-secondary students in STEM programs with a particular focus on diverse groups' needs, broken down by socio-economic status, gender and ethnic groups (CSA, 2017c). The CSA's Youth STEM initiatives were designed to target groups that are under-represented in STEM, such as girls and Indigenous youth.

The CSA's Communications team led the development and approval of an internal planning document entitled the CSA's STEM Strategy (CSA, 2020) that outlines CSA-wide efforts to advance Government of Canada priorities such as a diverse and highly skilled workforce, and that aims to guide the development and implementation of tools, experiences and training for the next generation of Canadians to learn and succeed. Of note, the STEM Strategy's guiding principles in the design and delivery of STEM activities include working with partners and leverage existing programs to reach as many learners as possible and to diversify the opportunities available, and promoting equality, diversity, and inclusiveness to reach youth and students from diverse backgrounds.

Junior Astronauts

The Junior Astronauts is an initiative for Canadian youth and educators that features free online activities related to science and space for educators in schools, organizations, youth and their families. The CSA undertook particular efforts to reach Indigenous youth with the Junior Astronauts campaign where they put in place a contract to review the related activities and provide recommendations to tailor the delivery of the material to girls and Indigenous youth in grades 6 to 9, extend the reach to northern Canadian regions (Territories) and to provide additional support to youth in remote communities for the registration process. Moreover, the activities were divided into different streams (STEM, fitness & nutrition, teamwork & communications) to reach youth with varying interests. The CSA also collaborated with organizations such as Aurora College (and Aurora Research Institute) in the development of the activities to ensure the material was appropriate for Northern communities.

Moon on Earth

The Moon on Earth is a planned initiative that will involve hands-on activities for youth linked to the health and nutrition of astronauts on future long-duration missions. They will be designed with a special focus on under-represented groups and youth from Indigenous communities and in the North.

Speaker's Bureau events, Digital content and Other Activities to encourage under-represented groups

The CSA's Speakers Bureau carries out numerous events for the promotion towards women and girls. For example, between April 2018 and January 2020, it offered 54 videoconferences hosted by female CSA experts, 3 videoconferences and 5 in-person events hosted by CSA astronaut Jennifer Sidey-Gibbons, 8 conferences (virtual and in person) about Women in STEM or specifically aimed at girls, and continues to support CSA female engineers to volunteer as judges and mentors every year in various robotics competitions across Canada (e.g. Zone 01, FIRST Robotics).

In terms of digital content, the CSA produced an infographic featuring young women with various space careers for International Day for Women and Girls in Science. Also, the Humans of CSA campaign started in 2015 to highlight CSA women in STEM for International Women's Day. While male scientists and engineers are now featured, 70% of the profiles are of women and other under-represented groups.

There are also CSA grant opportunities to support the development of activities for youth, where beneficiaries are encouraged to reach out to, and engage with youth from under-represented communities.

Summary Findings of Success Stories: The CSA has achieved some notable successes in its application of GBA Plus with positive impacts on under-represented groups. The evaluation found that CSA is well-positioned to take more concrete action to promote diversity in the space sector and fund or select initiatives that are targeted to a particular group or greatly impact a particular group.

What others think of our GBA Plus

In the course of the evaluation, the opinions and feedback regarding the CSA's efforts in promoting diversity in the space sector and its GBA Plus assessments were solicited from other government departments. The way the CSA is perceived by central agencies with regards to the quality of GBA Plus assessment in Memoranda to Cabinet and Treasury Board Submissions is important for the CSA's reputation and for the successful implementation of funded projects and programs.

Increased Importance of GBA Plus

As mentioned in the relevance section, and reiterated through various legislative acts, GBA Plus is a priority of the government and it's being treated with great importance and significance. The TBS analysts' role is to thoroughly review and seek clarification on the GBA Plus through a series of questions and comments is indicative of the importance placed on GBA Plus.

"CSA should expect to get questions from TBS about GBA Plus for all submissions, not just those with a stronger GBA Plus focus. This is because GBA Plus is a priority for TB and the President of Treasury Board is to make analysis of impact of programs on gender and diversity publicly available annually" (Section 5 of the Canadian Gender Budgeting Act).

– TBS analyst (interview)

Some CSA employees have reported that the thorough review and questions from TBS on the quality and tracking of GBA Plus considerations is a reflection of the importance and momentum being attributed to GBA Plus. Some CSA employees who interact regularly with central agencies have pointed to the discrepancy between the level of importance placed on GBA Plus.

“To an extent, there is still a mismatch between the level of importance that central agencies like TBS and Finance put on GBA Plus, they put a high level of importance in terms of the quality of the GBA Plus, while at CSA it’s still like an apathetical annex incorporated directly in the project, which is a challenge because ... each project mission focus on “we have to build something” and not “we need to support people.”

– Key informant (interview)

CSA’s progress to promote diversity in the space sector

As described in the Success stories section of the report, there are some significant efforts that were made by the CSA to promote diversity in the space sector. Several initiatives are solely focused on a particular group and other initiatives include some elements that directly promoted diversity and resulting in a more inclusive process. TBS recognized good practices in two main areas, Youth STEM programming and diversity clauses in procurement and giving points in competitions related to contractor workforce.

Identify where the CSA is best positioned to promote diversity

Given the increased importance of GBA Plus and the federal departments roles and responsibilities to put into place measures and initiatives to equalize the playing field, and the unique role the CSA plays in the space sector, it is strongly encouraged to explore what more can be done to make the space sector a larger, more inclusive and diverse sector.

Some CSA employees have pointed to the Class G&C program as a place where the CSA could put in place more targeted initiatives, as is the case in OGDs. The Centre of Expertise discuss with managers how diversity can be incorporated and as a result AOs include a diversity clause and statement, but it is not applied systematically. Given the success and positive feedback from the CubeSat project, there is a leadership role to play in putting in place projects with the objectives of promoting diversity in the space sector.

Areas to improve GBA Plus

TBS provided some insight as to how the CSA can build on the quality of its GBA Plus assessments and pointed to three areas specifically where the CSA can improve its GBA Plus assessment within TB submissions.

Primarily, the CSA could improve the way it explains who benefits from its initiatives. While direct benefits to the space sector are very important, TBS mentions that it is also important to have a strong understanding of the indirect benefits. Some examples of questions to explore more in depth include:

- Who benefits from the scientific research conducted on the ISS, and soon the Lunar Gateway?
- Who benefits from the collection of satellite data?
- How are these benefits distributed?
- Will the benefits be evenly distributed?

The second area identified for improvement by TBS relates to the shortage of disaggregated data. As seen previously in the report, the lack of disaggregated data is a significant challenge for the CSA to produce quality GBA Plus assessments. TBS is well-aware of the shortage of data on the demographics of the space sector and recognizes the steps taken to improve the situation, but there is a need to increase efforts for generating analysis based on disaggregated data. Some suggestions provided by TBS are to include more questions on its annual survey about identity (ethnicity, age), not just about gender, and be asked less often than annually as long as it is asked on a regular basis or ask respondents to be able to link their answers to Statistics Canada data.

Finally, with a better sense of the gaps in diversity that exist in the space sector, TBS suggest that the CSA should devise a logical list of identity factors to consider on CSA submissions, which can be adjusted as needed depending on the issues the submission addresses.

3 areas of improvement in TB Submission

1. Improve explanation of who benefits from initiatives
2. Necessity to increase efforts with data collection
3. Develop a logical list of identity factors to consider on CSA submissions

Best Practices

There are some notable best practices in implementing GBA Plus that were identified at the CSA and in other government departments through literature review, interview and survey data. This section also examines efforts being made by other space agencies to promote diversity and inclusion in their respective space sector. Considering that GBA Plus is an analytical tool developed by the Canadian federal government, it is impossible to specifically assess the practices relating to GBA Plus within Canada's other partner space agencies in the ISS (NASA, ESA, JAXA and Roscosmos). Nonetheless, the diversity and inclusion practices, organizational structures and management techniques promoting diversity were reviewed.

CSA Best Practices

- Having more than one Points of Contact assigned to one Directorate. This enabled information sharing for GBA Plus matters, a harmonized approach within the Directorate, and it alleviated some time constraints for reviewing draft GBA Plus assessments. Respondents also mentioned that it helped convey the key messages.
- Having an internal GBA Plus webpage for employees. Interview respondents said that although it needs updating, it was a good starting point for those who were new to conducting a GBA Plus assessment.
- Establishing a 2-step process for evaluating G&C applications where step 1 is based on a point rated evaluation criteria with a minimum passing score (e.g.: 70% or 80%), and step 2 included a review selection based on various diversity factors, such as but not limited to, regional distribution, diversity of universities, diversity of Principal Investigators and opportunities for young professionals.

- Include provisions in procurements and contributions which encourage firms to actively consider women and under-represented groups in their recruitment plans.
- Ensuring that contractors will be subject to the Federal Contractors Program for Employment Equity.

Best Practices in Other Government Departments

Vision and GBA Plus objectives: Establishing diversity and equity (or GBA Plus) framework, strategy or action plan that sets out concrete objectives and embedding GBA Plus in departmental priorities and strategies.

GBA Plus assessments: The quality and rigour of GBA Plus assessments was found to be improved through enhanced accountability and greater access to disaggregated data by including “other ways of knowing” via qualitative research and integrating applying a GBA Plus lens in socio-economic studies.

GBA Plus Responsibility Centre: Most common location for GBA Plus Champion is Strategic Policy Branch, Corporate Services, and Vice-President.

Training: The trend is moving towards mandatory *Introduction to GBA Plus* training for one or more functional areas. Some OGDs have made this introduction course mandatory for all employees.

Programs: There are departments that have developed dedicated programs for under-represented groups such women, visible minorities, youth, and indigenous groups. Encouraged by federal government, and recognized as an efficient practice in implementing GBA Plus, many departments partner and collaborate with other organizations, as there are high costs to administer specialized initiatives.

Engagement and Outreach: Put in place various outreach activities to engage diverse groups.

Grants and Contributions:

- Some departments requires applicants to integrate sex and gender in all funding applications, where appropriate, and reviewers are required to provide an assessment of the integration of sex and/or gender into research proposals.
- Some departments require that AOs request applicants to explain how sex and gender are taken into account in research design. This aspect could be particularly of interest to the CSA’s Life Sciences team for ISS utilization.
- Ensure diversity of members in the selection committees and require that reviewers receive training on unconscious bias.
- Direct engagement with communities and target under-represented groups to increase the number of potential applicants, such as what was done in the case of *CubeSat* with the post-secondary institutions in the Canadian Territories.

Gender-related targets and indicators, and disaggregated data:

Some departments have take some significant steps in collecting GBA Plus relevant information and data to support their PIPs and to report on the impacts of their programs on under-represented groups. Here are a few examples of some ways to collect GBA Plus information:

- Ask applicants to identify which under-represented groups will benefit from the program / funding and, if willing, to indicate whether these groups are Indigenous, youth, women, visible minorities, official language, minority populations and/or persons with disabilities.
- The programs whose ultimate beneficiaries is a particular group (i.e. CSA's Youth STEM initiatives), collect data on the youth's status in terms of under-represented groups (Indigenous, visible minorities, persons with disabilities, women) and it can be cross-tabulated with postal codes / geographic location.
- Asks for information about the mandate of the corporation or organization in relation to their efforts in diversity, inclusion and under-represented groups, including recruitment plans.
- Purchases custom data analyses from Statistics Canada to report on indicators such as the "percentage of space-related firms that are majority owned by women"
- Make use of *GC InfoBase* as several GBA Plus related indicators are made public in that platform. CIHR, for example, monitors and report on the indicator "# and diversity of researchers and trainees supported" across all of its programs.

Other Space Agencies

National Aeronautics and Space Administration (NASA)

NASA has an Office of Diversity and Equal Opportunity (ODEO). While primarily focused on providing services to NASA employees, ODEO also partners with internal and external stakeholders, such as universities and other research organizations, to promote inclusion, respect for civil rights and non-discrimination at institutions that receive funding from NASA and the US federal government (NASA, 2019). NASA has seven Special Emphasis Programs, each focusing on a group to which the principles of inclusion and diversity apply: the Women's Program; the Lesbian, Gay, Bisexual and Transgender and Queer Program; the Disability Employment Program; the African American / Black Program; the Hispanic Employment Program; the American Indian / Alaska Natives Program; and the Asian / Pacific Islanders Program. One of the objectives of these various programs is to develop and maintain beneficial partnerships with communities, professional and national organizations, as well as colleges and universities related to these target groups.

NASA also works with various sectors, such as the film industry, to promote STEM to young women. One of the best-known examples of this is NASA's partnership with 20th Century Fox in 2016 to produce the film *Hidden Figures* about Mary Jackson (the first African-American aeronautical engineer), Katherine Johnson (an African-American mathematician, physicist and space engineer who played a key role in sending the first American astronauts into space, as well as the Apollo 11 program that sent the first astronauts to the moon in 1969) and Dorothy Vaughan (a mathematician and computer scientist who contributed greatly to the beginnings of the US space program and was the first African-American woman to hold a management position at NASA). One of the goals of this partnership was to inspire young American women to pursue careers in STEM.

NASA is also involved in creating or funding programs and initiatives focused on women and visible minorities in STEM. Examples include the NASA Summer Institute in Sciences, Technology, Engineering and Research (SISTER) Program (NASA, 2015), which aims to introduce young women to STEM through a variety of activities such as mentoring, visiting facilities and participating in scientific experiments (see Appendix E

for examples of initiatives and programs created or funded by NASA to increase women's involvement in STEM). The CSA and NASA share similar values with respect to diversity and inclusion, as demonstrated in the CSA's Success Stories section, such as initiatives targeted to youth.

European Space Agency

The European Space Agency (ESA) is composed of 22 Member States, many of which have their own national space agencies. ESA has a Chief Diversity Officer (UN, 2017a) whose role is to support and advise the Director General on diversity and inclusion, so that these considerations can be embedded in the ESA's policies and practices. Diversity at the ESA takes many forms (VAUDO, 2019), including gender identity, sexual orientation, age, geography and people living with disabilities. These diversity factors bear close similarities to intersectionality approach of GBA Plus where various factors intersect with sex and gender, such as age, sexual orientation, location and living with a physical or intellectual disability. Within this lens, ESA and CSA share a similar vision of diversity and inclusion.

ESA's commitment to diversity and inclusion is carried out through partnerships with the industry and different organizations that result in the creation of several outreach activities, as well as in their participation in promotional events related to diversity and gender equality. Once again, there appears to be a great deal of similarity between ESA and CSA practices, as the vast majority of the CSA's initiatives and programs are primarily based on activity sectors rather than groups of individuals, with the exception of initiatives focused on young people and students.

The ESA also works with the United Nations (UN). One of the objectives of the United Nations Office for Outer Space Affairs (UNOOSA) is to increase women's participation and leadership in the space sector (UN, 2017b). In addition, UNOOSA participated in the first International LGBTQ Plus STEM Day on July 5, 2018, (VAUDO, 2019), and worked with the OECD on stereotypes in science, as well as with the European space industry to promote collaborative actions to combat stereotypes in aerospace-related jobs (ESA, 2019). UNOOSA also worked with Mattel to create a Barbie doll of Italian astronaut Samantha Cristoforetti as part of the Dream Gap Project, to inspire young girls and encourage them to believe in themselves by providing them with role models of inspiring women who have made great achievements.

In 2005, the ESA worked with the CSA, NASA and the French National Centre for Space Studies (CNES) on the WISE Project presented in the box below. This project aims to learn about the impact of long-duration

WISE STUDY

The Women's International Space Simulation for Exploration (WISE) study involved the collaboration of 12 scientific teams from 11 countries, i.e., Canada, Germany, Belgium, Denmark, USA, France, Italy, the Netherlands, the UK, Sweden and Switzerland (RC, 2005). The purpose of the study was to assess the physiological and psychological effects of long-duration space missions on women and to see how these effects can be reduced through exercise and nutrition (RC, 2005). To do this, the volunteers from 8 European countries spent 60 days "lying in bed at an angle of 6 degrees below horizontal, so that their heads were slightly lower than their feet. Remaining in this head-down, tilted position results in physiological changes that also occur in astronauts during spaceflight" (ESA, 2005). The data collected in the WISE study will be highly useful in adequately preparing female astronauts for future Lunar Gateway missions to Mars (ESA, 2005).

spaceflight on women, which is consistent with the objectives of GBA Plus. It is now known that human space flight affects the bodies of men and women differently, and there is less data collected to date for women.

7 Gender-Based Analysis Plus

In line with the requirements set out in the *Directive on Results* (TBS, 2016) and *CSA's Policy on GBA+* (CSA, 2017a), this section looks at how the evaluation project integrated GBA Plus in the various stages, with a particular focus on how this initiative impacts diverse groups of women, men and non-binary people in Canada. In practice, this section should be about how the evaluated program has taken into account diversity and inclusion in its activities, and its impacts on different groups of men, women and non-binary people. However, considering the nature and subject of this evaluation, where this information is addressed throughout the report, we focused on how the evaluation itself incorporated diversity and inclusion.

The **planning phase** of this evaluation included the following elements:

- The survey contained two socio-demographic questions to acquire disaggregated data for analysis purposes and to ensure that a representative cross-section of respondents is selected for the follow-up interviews. One question asked whether the respondent belongs to one or more of the four designated EE groups (women, Indigenous person, visible minority, and person with disabilities). The other question asked the respondents age group. In both cases, the respondent could choose not to answer.
- Careful reflection was made when selecting the members of the evaluation consultative group to ensure a diverse group of CSA employees, and external members (employees of WAGE and TBS). The consultative group membership is on a voluntary basis and included people from various professional occupation levels and groups, different age groups, members of EE groups, members of diversity committees and GBA Plus PoCs.
- The interviews contacts were also diverse in terms of gender, age, position level, ethnicity, and place of residence (Canada, Europe).

Impacts - *How does this evaluation have an impact on diverse groups of women and men and non-binary people?*

From within the CSA, this evaluation will increase the general awareness and profile of GBA Plus and provide useful information to upper management and to employees who will undertake a GBA Plus assessment and develop GBA Plus initiatives. The best practices identified in this evaluation will also provide CSA managers with new ideas and approaches to integrate GBA Plus in their work which will result in more targeted actions with a greater impact.

The diverse groups of women, men and non-binary people who are expected to benefit from this evaluation are the main under-represented groups of the Canadian space sector, namely, Indigenous youth, girls,

women in advanced STEM studies, visible minorities, people with disabilities, and people residing in remote regions of Canada. These under-represented groups will now see what is being done at the CSA to integrate GBA Plus and equalize the playing field, and will also shed light on the issues and challenges that currently exist alongside the CSA's commitment to tackle these challenges and promote diversity in the space field. This evaluation will indirectly impact these groups by opening a dialogue with CSA managers and external stakeholders about the CSA's priority towards promoting more diversity in the space sector and putting together more S&T teams.

Delivery: The dissemination of the evaluation report is accessible to everyone, in both official languages, through the CSA website. Graphs and tables includes a script for those with visual impairments. Also, the evaluation team sends a personalized email with the accompanying report to members of the consultative group, those who have participated in the evaluation's interviews (internal and external respondents), information gathering efforts, and signatories of the Dimensions Charter to ensure a targeted dissemination effort to key audiences and stakeholders.

Monitoring progress: The evaluation function undertakes the continuous follow-up of the management action plan in response to the recommendations, and will therefore be able to assess the level of implementation on the recommended actions for improvement. The progress will also be assessed at the next evaluation of the CSA's GBA Plus practices.

8 Conclusion and recommendations

Overall, the CSA has been successful in implementing GBA Plus practices across the CSA, with a GBA Plus Policy, mandatory GBA Plus training for some functional areas, and the establishment of a Responsibility Centre, with a Champion and 12 Points of Contact representing the CSA sectors. The GBA Plus Champion has played a pivotal role in developing and implementing the CSA's GBA Plus governance structure, processes, tools and resources. However, the internal process for the completion and approval of GBA Plus assessments contain inefficiencies that results in unpredictable workload and creates ambiguity among employees regarding their role in the follow-up and accountability of the impacts identified in their respective GBA Plus assessments. Moreover, the Responsibility Centre is currently housed in an unsuitable location given 1) the neutral function of Audit & Evaluation and 2) the operational nature of GBA Plus in general, as it relates closely to program planning and implementation.

The CSA's commitment to GBA Plus and promoting diversity and inclusion is evident through a GBA Plus Policy that calls for a GBA Plus to be conducted for all new initiatives and those requiring renewal, the numerous diversity-related committees at the CSA, and the CSA's signing of the Dimensions Charter. However, there are unclear expectations of and from senior management and directors, and the absence of a strategy or action plan that outlines the main objectives the CSA is trying to achieve with GBA Plus and how it intends to achieve them in response to the needs of the CSA's target populations / under-represented groups in the space sector. This can be achieved with an analysis that identifies the gaps in diversity that exist in the space field. Then, building from the successes of CubeSat and Youth STEM initiatives and following suit of best practices seen in other federal departments, it would be opportune for

the CSA to consider a funding mechanism for dedicated initiatives targeted to under-represented groups in the space field.

Through the past four years, the CSA has developed some strong in-house expertise in GBA Plus who clearly understand the importance, utility and applicability of GBA Plus and serve as indispensable resources for those conducting GBA Plus assessment. Nonetheless, the lack of understanding and knowledge of how to routinely apply GBA Plus in the space context is resulting in employees expressing the need for more assistance and time, and it is having a negative impact on the GBA Plus analytical process, rendering it as another bureaucratic hurdle and diminished importance. In addition, with the increased emphasis and priority placed on GBA Plus from central agencies and expectations, the CSA would benefit from increased awareness activities and training opportunities, as well as regularly discussing GBA Plus considerations in key planning and decision-making forums.

The CSA has achieved some significant successes with some projects in terms of applying GBA Plus which have resulted in adjusting certain criteria in the requirements to minimize a negative impact on a particular group of Canadians, where a small adjustment had a big impact. But for various reasons such as a lack of understanding of the concrete applicability, unclear expectations from supervisors, coupled with time constraints and a shortage of GBA Plus data, the GBA Plus is at times completed posteriorly, defeating the purpose of the GBA Plus. Discussing GBA Plus considerations and completing the GBA Plus assessment well into an initiative's lifecycle results in GBA Plus that is treated as an aspect to document but not to manage. In fact, GBA Plus considerations and associated corrective measures, direct and indirect impacts on the target groups should be documented and tracked from kick-off and throughout the cycle of an initiative.

The CSA is fulfilling the majority of its GBA Plus requirements, where GBA Plus is integrated in all Cabinet documents, TB subs, in the majority of CSA evaluations and in the IGMF where a GBA Plus assessment must be completed before Gate 2 of the IIRB. The CSA must still integrate GBA Plus in its PIPs with indicators and data that will help support the capacity to report and monitor the impacts of GBA Plus on CSA programs. Some key players have been overlooked and not fully involved in the implementation of GBA Plus, namely the CSA's Director Committee and Project Management Network. In addition, regular GBA Plus discussions at project planning and design phases may contribute to greater integration of GBA Plus in sector-level decision-making forums.

In light of the main findings and conclusions, the evaluation recommends the following actions to improve the CSA's GBA Plus practices in support of decision-making:

1. Determine the appropriate place for the GBA Plus Responsibility Centre within the CSA, encourage a regular rotation of GBA Plus PoCs who should not necessarily be women or from a minority group and resume the GBA Plus Committee meetings to ensure a regular dialogue for GBA Plus matters.
2. Compile and organize existing disaggregated data by gender and other identity factors for the space sector, generate analyses and render data and analyses accessible to all CSA employees. In doing so, consider centralizing GBA Plus related data compilation, where data collection and compilation could be administered centrally to increase the efficiency of program management. Data gaps identified should be addressed through additional efforts to acquire space-related disaggregated data.

3. Clarify the CSA's strategic direction and main objectives for GBA Plus by outlining what the CSA wants to achieve and how, and by defining the expectations with regards to applying GBA Plus in the CSA's activities and initiatives. Then, implement an internal mechanism to follow up on GBA Plus impacts, and to monitor and report on progress made.
4. Resume GBA Plus awareness activities across the CSA to demonstrate the importance, utility and concrete applicability of GBA Plus in the space sector. This will also allow to reiterate the CSA's commitment to diversity and inclusion within the CSA and in the space field across Canada.
5. In conformity with federal requirements and to enhance the CSA's capacity to monitor and report on its program impacts by gender and diversity, the CSA should further integrate GBA Plus in the Departmental Results Framework followed by integrating GBA Plus elements, such as performance measurement indicators, in the CSA's three Program Information Profiles.

9 Management Response and Action Plan

RECOMMENDATIONS	RESPONSIBILITY BRANCH	MANAGEMENT RESPONSE	ACTION PLAN	DEADLINE
<p>RECOMMENDATION 1</p> <p>Determine the appropriate place for the GBA Plus Responsibility Centre within the CSA, encourage a regular rotation of GBA Plus PoCs who should not necessarily be women or from a minority group and resume the GBA Plus Committee meetings to ensure a regular dialogue for GBA Plus matters.</p>	Chief Audit and Evaluation Executive with the support and approval of the Executive Committee.	<p>CSA senior management agrees with this recommendation.</p> <p>The Executive Committee will determine the location of the GBA Plus Responsibility and name a new Champion based on the recommendations from the current GBA Plus Champion, the Chief Audit and Evaluation Executive and Senior Officer Responsible for Disclosure of Wrongdoing.</p>	<p>The current GBA Plus Champion will prepare and present to Executive Committee various options for the GBA Plus Champion and Responsibility Centre with a recommendation for approval by the Executive Committee.</p> <p>Executives of each Directorate will ensure a rotation of GBA Plus Points of Contact periodically (e.g.: every 2 years), upon receiving a reminder issued by the GBA Plus Responsibility Centre.</p>	September 2021
<p>RECOMMENDATION 2</p> <p>Compile and organize existing disaggregated data by gender and other identify factors for the space sector, generate analyses and render data and analyses accessible to all CSA employees. In doing so, consider centralizing GBA Plus</p>	Director General of Policy and the Executive Director of Performance and Integrated Planning with the support of the Programmatic branches and	<p>CSA senior management agrees with this recommendation.</p> <p>The CSA must first take stock on its existing disaggregated data and studies that contain key information and data of the space sector in Canada. Then,</p>	<p>Existing and relevant disaggregated data, information and analyses will be collected, compiled and centralized for easy access to all employees.</p> <p>We will continue to collaborate with Statistics Canada and/or</p>	December 2022

RECOMMENDATIONS	RESPONSIBILITY BRANCH	MANAGEMENT RESPONSE	ACTION PLAN	DEADLINE
<p>related data compilation, where data collection and compilation could be administered centrally to increase the efficiency of program management. Data gaps identified should be addressed through additional efforts to acquire space-related disaggregated data.</p>	<p>the GBA Plus Responsibility Centre.</p>	<p>the CSA can place its efforts for generating analyses based on disaggregated data. Policy and Programs and Integrated Planning will work closely with the programs to compile and centralize all relevant and existing data in support of GBA Plus.</p>	<p>other organizations, and reserve funds to obtain disaggregated data for the Canadian Space Sector.</p> <p>Cost for collecting disaggregated data will be considered in the overall cost of a project or program.</p>	
<p>RECOMMENDATION 3</p> <p>Clarify the CSA’s strategic direction and main objectives for GBA Plus by outlining what the CSA wants to achieve and how, and by defining the expectations with regards to applying GBA Plus in the CSA’s activities and initiatives. Then, implement an internal mechanism to follow-up on GBA Plus impacts, and to monitor and report on progress made.</p>	<p>GBA Plus Responsibility Centre with the direction of Executive committee, and the support of Executive Director of Performance and Integrated Planning.</p>	<p>CSA senior management agrees with this recommendation. First, the Executive Committee will set out clear objectives and expectations. Then, building on the successes of CubeSat and Youth STEM initiatives and following suit of best practices, the CSA could consider various funding mechanisms for under-represented groups.</p>	<p>Executive Committee members will outline in the CSA’s main GBA Plus objectives and how it intends to attain them. The GBA Responsibility will then:</p> <p>a) Revise and update the CSA’s Policy on GBA Plus to include clear objectives (e.g.: promote a more diverse, inclusive space sector, reach out to under-represented groups / organizations, and ensure consultations are open and inclusive), and specify the expectations from senior management and directors in</p>	<p>June 2022</p>

RECOMMENDATIONS	RESPONSIBILITY BRANCH	MANAGEMENT RESPONSE	ACTION PLAN	DEADLINE
			<p>the CSA's Guide for Implementing GBA Plus.</p> <p>b) Put in place a systematic process for tracking and reporting impacts, and monitoring progress</p> <p>c) Identify the gaps in diversity that exist in the space sector and then devise a logical list of identity factors for the GBA Plus questionnaire template which can be adjusted as needed depending on the issues an initiative addresses.</p> <p>d) Revise and update the various GBA Plus tools and resources, including the GBA Plus internal webpage, template questionnaire to include a section on follow-up on impacts, and process for tracking completed GBA Plus assessments.</p>	

RECOMMENDATIONS	RESPONSIBILITY BRANCH	MANAGEMENT RESPONSE	ACTION PLAN	DEADLINE
RECOMMENDATION 4	GBA Plus Responsibility Centre	CSA senior management agrees with this recommendation. Senior executives and directors will continue to convey diversity messages at all-staffs, students welcome meetings, and at external forums where members from the space sector participate.	GBA Responsibility Centre will organize and delivery in-house presentations to sectors, networks, and committees.	June 2022
Resume GBA Plus awareness activities across the CSA to demonstrate the importance, utility and concrete applicability of GBA Plus in the space sector. This will also allow to reiterate the CSA's commitment to diversity and inclusion within the CSA and in the space field across Canada.				
RECOMMENDATION 5	Executive Director of Performance and Integrated Planning and Program Director Generals responsible for Program Information Profiles with the support of the GBA Plus Responsibility Centre.	CSA senior management agrees with this recommendation.	GBA Plus objectives and indicators will be further integrated in the DRF. The programs will update their Program Information Profiles to integrate GBA Plus in the needs section, objectives section and, indicators and targets section.	September 2022
In conformity with federal requirements and to enhance the CSA's capacity to monitor and report on its program impacts by gender and diversity, the CSA should further integrate GBA Plus in the Departmental Results Framework followed by integrating GBA Plus elements, such as performance measurement indicators, in the CSA's three Program Information Profiles.				

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APPENDICES

Appendix A: Example of GBA Plus in the space sector

This example was published in the GBA Plus appendix of the 2019 Federal Budget. It is an example of how GBA Plus is applied to STEM, and more specifically to the space sector (GC, 2019).

GBA+: Chapter 2
Building a Nation of Innovators

Canada Reaches for the Moon and Beyond

- \$2.05 billion over 24 years, to ensure that Canada continues to be a leader in space robotics.

Canada is an internationally recognized leader in space robotics and is well-suited to providing next-generation robotics for the NASA-led Lunar Gateway. It is also well-positioned to contribute robotics and rover technologies to other space-faring nations' space missions. The know-how that is generated through these investments, particularly investments in a next-generation Canadarm, will permit Canadian companies to lead in the emerging commercial space market.

The space sector is a science, technology, engineering, and mathematics (STEM) intensive sector -- as a result, the anticipated increase in these types of jobs is expected to directly benefit men more given that they are more likely to have pursued studies and be employed in these areas. For example, approximately 20 per cent of workers are women in the aerospace products and parts manufacturing sector, which includes both space and non-space aerospace manufacturing.

The potential applications of these investments on Earth are also considerable; for example, the development of previous Canadarm technology led to the creation of the world's first robot capable of performing surgery inside magnetic resonance machines. The unique laboratory environment that the Lunar Gateway provides can also be used as a platform to study the effects of ageing in an accelerated fashion. This is expected to benefit both elderly men and women, as health studies have in the past examined changes in bone and marrow density, cardiovascular health, eyesight, and diabetes.

Canada's investment in the next generation of space robotics and applied artificial intelligence will open opportunities for additional space flights for Canadian astronauts, serving as inspiration for young Canadians to chose STEM as a field of post-secondary study. This investment will also include a youth promotion program to inspire young Canadians to pursue studies in STEM so that the next generation can contribute to Canada's activities in space.

GBA+ was performed: Mid-point

Target population: All Canadians; Space sector companies and employees

Expected Direct Benefits (gender):

Gender composition of benefiting group

Predominantly Men
○
●
○
○
○
 Predominantly Female

Expected Impacts (income, age distribution):

Income distribution

Benefits High Income
○
○
●
○
○
 Benefits Low Income

Intergenerational impacts

Benefits Youth
○
○
●
○
○
 Benefits Seniors

GBA+ Responsive Approach

Evaluations conducted at the Canadian Space Agency are now required to look at program results through a GBA+ lens. Findings and conclusions of evaluations may include gender, diversity and inclusion related recommendations that will be used to inform program design and delivery.



Appendix B: Detailed history

This appendix provides a summary of the Government of Canada and the Canadian Space Agency's GBA Plus commitments.

1970: *Report of the Royal Commission on the Status of Women.*

1971: Creation of a Minister responsible for the Status of Women in Canada.

1995: Government of Canada Commitment to GBA: Federal Plan for Gender Equality.

2000: Adoption of the Agenda for Gender Equality (AGE).

2007: Mandatory GBA consideration in Treasury Board Submissions.

2008: Mandatory GBA consideration in Memorandum to Cabinet.

2009: First Auditor General report on GBA implementation, Departmental Action Plan on GBA and launch of annual GBA reporting to Parliament.

2011: SWC-led rebranding of GBA to GBA "Plus."

2014: Identification of a GBA Plus Champion and three designated points of contact at the CSA.

2015: Second Auditor General report on GBA implementation. Due-Diligence and Evidence-Based Analysis Tool for Memoranda to Cabinet.

2016: Status of Women Canada, Privy Council Office and Treasury Board of Canada Secretariat Action Plan on Gender-based Analysis (2016–2020).

Release of the Report of the Standing Committee on Public Accounts on Implementing GBA+ in the Government of Canada. Government's response to 2016 Report of the Standing Committee on Public Accounts.

Mandatory integration of GBA Plus into performance measurement at the CSA, including PIPs.

Mandatory GBA Plus training for all CSA supervisors, managers, executives and analysts.

2017: Adoption of the CSA's *Policy on GBA+* and *Guide for Implementing GBA+*. Each branch must designate one or more GBA Plus Points of Contact.

Equal opportunity: Budget 2017 Gender Statement.

Progress report on implementing GBA+ in the Government of Canada submitted to Standing Committees on Public Accounts and the Status of Women. The *Policy on GBA+* and the *Guide for Implementing GBA+ at the CSA*.

2018: Creation of the GBA Plus page on the Canadian Space Agency's intranet site.

Second round of gender budgeting and introduction of the Gender Results Framework.

Status of Women Canada becomes a federal department named Women and Gender Equality Canada (WAGE).

Adoption of the *Canadian Gender Budgeting Act*.

Adoption of the *Gender Equality Week Act* and celebration of the first Gender Equality Week.

2019: Publication of the first Gender Report in the 2019 federal budget.

2020: Signing of the Dimensions Charter: Equity, Diversity and Inclusion Canada by the CSA.

Evaluation of the implementation of GBA Plus practices at the Canadian Space Agency.



Appendix C: Additional Resources

WAGE:

- Microlearning videos: 1) [GBA Plus: Step by Step](#) 2) [Top Ten Don't of GBA+](#)
- [GBA Plus Research Guide](#)
- [GBA Plus Research Checklist](#)
- [Additional GBA Plus resources from WAGE](#)

Partnership between the Canada Research Chairs, NSERC, the CIHR, and the Social Sciences and Humanities Research Council of Canada:

- [Unconscious Bias Training Module : Bias in Peer Review](#)
- [Establishing Equity and Diversity Targets in Research institutions](#)

TBS: [Modernizing the Government of Canada's Sex and Gender Information Practices: summary report](#)

Finance Canada: [GBA Plus Assessment Template](#)

Statistics Canada: [Gender, Diversity and Inclusion Statistics](#)

Some of the most frequently suggested awareness and training activities that could benefit CSA employees in applying GBA Plus practices include:

- Invite speakers, ideally from the private sector, whose presentation is focused on the concrete benefits of diversity rooted in proven studies.
- Informative capsules and continued messaging on Corporate Screens with GBA Plus definition and short, important facts and results.
- Encourage staff to complete additional GBA Plus trainings, such as GBA Plus Premium courses offered by the School of Public Service.
- Consistent messages of definition and commitment to GBA Plus at All-Staff meetings and Student welcome meetings.
- GBA Plus discussions at the Executive Committee on a regular basis, about expectations and results, and discussing each sector's barriers and best practices.
- GBA Plus discussions at the DG Investment Steering Committee meetings and at IIRB meetings about how certain projects can be adjusted in its design and delivery to minimize any negative impact on a particular group or increase the benefits of an under-represented group.
- Regular presentations (or short, directed discussions) to various groups throughout the CSA demonstrating the concrete application of GBA Plus, including to Steering Committees, Project Management Network and Director's Network.

Appendix D: Drafting and approval process for GBA Plus assessments

The process below represents the expected process, and the improvements to the process are in *italic bold*.

Step 1: Begin at initiative's planning phase. Contact the sector PoC to discuss project's objectives and seek advice and guidance from PoC regarding GBA Plus considerations. The person responsible for the initiative and the GBA Plus assessment should then advise the GBA Plus Champion of an upcoming GBA Plus assessment.

A type of numerical ID (identifying the Directorate and the project file number) is recommended to facilitate tracking.

Step 2: *A gap analysis should be conducted to determine who the main under-represented groups are in the space field, or a sub-field (i.e.: life sciences, space astronomy, etc.). The gaps analysis can be done through various ways, such as research studies, consultations with OGDs, post-secondary institutions, and industry. The CSA can also make use of the various networks and consultation committees with the science community to gather key information for the gaps analysis.*

Step 3: Complete GBA Plus template questionnaire and save the draft version in Livelink GBA Plus In progress. Then, PoC conducts the first review of draft version and comments addressed.

Step 4: The person responsible for the initiative sends draft GBA Plus assessment to GBA Plus Champion for review. Upon addressing the comments, it is returned to GBA Plus Champion for final approval and sign off by manager of initiative and DG sponsor.

Signature boxes should be displayed in the order of expected signoff, first the GBA Plus Champion, then the manager, and the final signatory should be the sponsor DG.

Step 5: Upon completed sign off and approval, the person responsible of the initiative saves a final copy in Livelink GBA Plus Completed.

Step 6: *Follow up on impacts, results and corrective measures through project progress reports and closing reports, or any other related report.* GBA Plus related data and other relevant information collected and tracked should be reported and integrated in the revisions of the respective PIP.

Appendix E: Examples of initiatives and programs created or funded by NASA to increase women's involvement in STEM

Programs/ Initiatives	Target Populations	Objectives	Activities
SISTER (NASA Summer Institute in Sciences, Technology, Engineering and Research)	Young women in junior high school	<ul style="list-style-type: none"> ▪ Introducing students to a technical work environment ▪ Familiarizing students with the Goddard Missions ▪ Raising awareness of educational programs and internship opportunities ▪ Providing examples of projects developed by women at Goddard 	<ul style="list-style-type: none"> ▪ Mentoring ▪ Multicultural experiences ▪ Visiting facilities ▪ Participating in scientific experiments ▪ Gaining experience in written communication ▪ Developing interpersonal skills
ASPIRE 2 INSPIRE	Young students, especially girls	<ul style="list-style-type: none"> ▪ STEM Career Awareness 	<ul style="list-style-type: none"> ▪ Presenting short digital films that feature women in the early stages of their careers at NASA
NASA GIRLS and BOYS	Young women in junior high school	<ul style="list-style-type: none"> ▪ Developing knowledge of STEM ▪ Raising awareness of NASA ▪ Inspiring young women through mentoring with NASA employees (e.g., female engineers, astronauts, coaches and mission controllers) 	<ul style="list-style-type: none"> ▪ Virtual mentoring via Skype or Google chat ▪ Online learning sessions
Tech Trek	Young women in junior high school who are representative of the region's diversity	<ul style="list-style-type: none"> ▪ Developing interest in mathematics and science ▪ Developing self-confidence 	<ul style="list-style-type: none"> ▪ Visiting the facilities ▪ Operating a pressurized suit ▪ Flight simulation ▪ Participating in a career panel with female employees ▪ Interacting with women engineers and student interns at the Armstrong Flight Research Center
BESG (Goddard Big Explosion Strong Gravity)	Girl Scouts	<ul style="list-style-type: none"> ▪ Allowing Girl Scouts to spend a day learning about astronomy from female scientists and engineers 	<ul style="list-style-type: none"> ▪ Participating in astronomy-related activities (e.g., spectroscopy, supernovae and black holes) ▪ Mentoring by women scientists and engineers
MSP (Minority University Research and Education Program Small Projects)	Students, teachers, professors and researchers from under-represented and underserved communities in STEM	<ul style="list-style-type: none"> ▪ Funding innovative STEM projects that address NASA's Minority University Research and Education Program (MUREP) priorities or will strengthen the higher education portfolio 	<ul style="list-style-type: none"> ▪ Funding innovative STEM projects