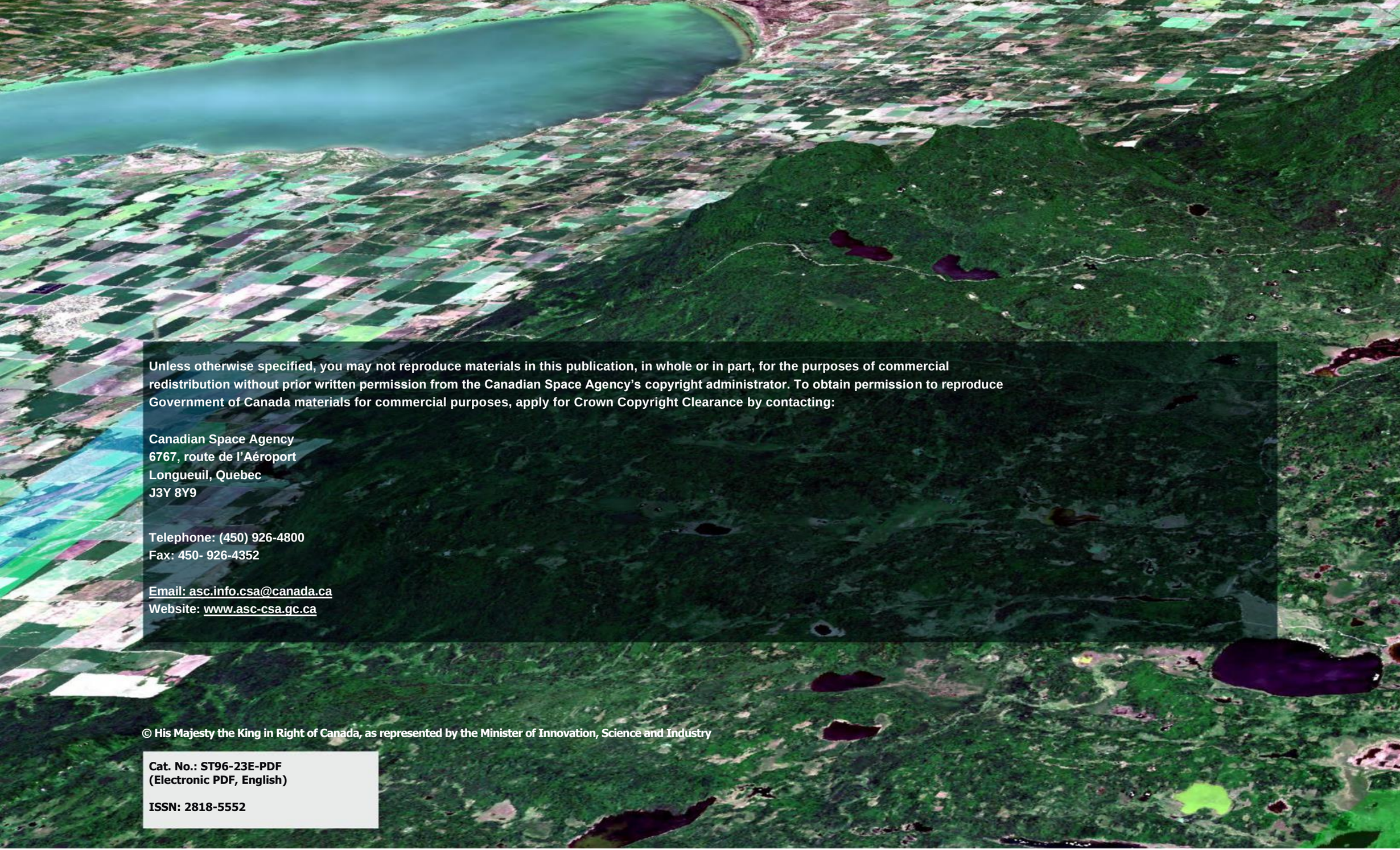
2023 to 2024 Departmental Sustainable Development Strategy Report

Canadian Space Agency | Agence spatiale canadienne

Canada



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Introduction to the 2023 to 2024 Departmental Sustainable Development Strategy Report

The 2022 to 2026 Federal Sustainable Development Strategy (FSDS) presents the Government of Canada's sustainable development goals and targets, as required by the *Federal Sustainable Development Act*. This is the first FSDS to be framed using the 17 Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda. The SDGs provide a balanced view of the environmental, social and economic dimensions of sustainable development.

In keeping with the purpose of the Act to make decision-making related to sustainable development more transparent and accountable to Parliament, this report describes progress related to the 2023 to 2027 Departmental Sustainable Development Strategy (DSDS) at the Canadian Space Agency (CSA) that was first tabled in the fiscal year 2023 to 2024. The activities described in the CSA's DSDS are designed to support the goals laid out in the FSDS.

The *Federal Sustainable Development Act* also sets out 7 principles that must be considered in the development of the FSDS as well as the DSDSs. They include the need to integrate environmental, economic and social factors in decision making, intergenerational equity, openness, Indigenous involvement, collaboration and a results-oriented approach. These basic principles have been considered and incorporated in the CSA's DSDS and 2023 to 2024 DSDS Report.

Departmental sustainable development reports are a key part of coordinating action on sustainable development priorities across the Government of Canada. The CSA's departmental strategy reports on actions that contribute to Canada's progress towards implementing the 2030 Agenda and advancing the SDGs, supported by the Global Indicator Framework (GIF) and Canadian Indicator Framework (CIF) targets and indicators. The report also now captures progress on SDG initiatives that fall outside the scope of the FSDS.

Commitments for the Canadian Space Agency

GOAL 2: SUPPORT A HEALTHIER AND MORE SUSTAINABLE FOOD SYSTEM

FSDS Context:
Access to healthy food and a sustainable food supply is unfortunately not a reality for all Canadians. Food security is particularly difficult when the local supply of fresh food is limited or challenged by climate change, and when supplies need to travel long distances to remote regions at higher costs. Astronauts will face a similar challenge to their food supply on deep-space missions; limitations on space and the weight they can transport will require a sustainable way for them to cultivate food in space or in an alien environment such as the Moon. The CSA has explored ways to use space technologies to **improve access to fresh food across the country**. In 2023–24, the CSA has continued to participate in the **Naurvik initiative**, which translates to "place to grow" in Inuktitut. This initiative involved the creation of a hydroponic food production system in a small Nunavut community 250 km north of the Arctic Circle. The system is now operated by the resident Indigenous technicians who have been trained in hydroponics, controlled-environment food production and air conditioning systems to produce a variety of fresh, nutritious foods in harsh environments. The CSA has also been studying other opportunities to join Inuit-led initiatives to conduct technology testing and demonstrations for food production in space, while having positive impacts on food security in Nunavut.

As part of its ongoing efforts to advance food production technologies, the CSA has been working on the **Deep Space Food Challenge** in partnership with NASA. This collaborative competition, which ran from 2021 to 2024, aimed to foster innovation that maximizes the production of nutritious food with minimal input of resources. The anticipated outcomes are significant advancements in technology that will benefit both deep-space exploration and terrestrial agriculture. During the 3 stages of the challenge, a total of 10 Canadian organizations received grant funding for the technologies they developed, either as semi-finalists or finalists. The challenge contributed to the cultivation of knowledge and capabilities for a more sustainable agricultural future. The winner of this competition, announced in the spring of 2024, is Vancouver-based Ecoaction Innovative Solutions Inc. Their groundbreaking CANGrow Modular Indoor Food Production System uses an innovative approach to growing a variety of produce and high-quality protein sources with minimal resources, and may be the solution to food insecurity in isolated regions and outer space. As a direct result of the challenge, the winning team founded two companies based on their challenge solution and raised $2.3M in first-round investments to expand food production and accelerate its research and development activities.

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Support a healthier and more sustainable food system"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Help Canadian communities access healthy food.	Continue working with NASA on the Deep Space Food Challenge to develop sustainable, low-input food production systems here on Earth, particularly in remote environments such as Canada's North. **Program**: Space Exploration	**Performance indicator**: Number of Canadian space technologies adapted for use on Earth in the agri-food sector. **Starting point**: 0 **Target**: 2 space technologies adapted for use on Earth in the agri-food sector by 2026-27.	The Deep Space Food Challenge will encourage the modernization of food production systems to help make healthy food more accessible in remote and harsh environments. The technologies and systems that are created in this challenge can be implemented in remote Canadian communities, increasing access to nutritious foods. Moreover, since these systems will produce foods on-site, it can increase food options in those areas. By continuing to work with NASA in this Challenge, the CSA is supporting the development of a healthier and more sustainable food system. **Relevant targets or ambitions:** *CIF Ambition 2.1*: Canadians have access to sufficient, affordable, and nutritious food. *CIF Indicator 2.1.1*: Prevalence of food insecurity. *GIF Target 2.1:* By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious, and sufficient food all year-round. *GIF Indicator 2.1.2*: Prevalence of moderate or severe food insecurity in the population based on the Food Insecurity Experience Scale (FIES).	**Indicator result**: No Canadian space technology has been adapted for use on Earth in the agri-food sector in 2023–24. **Notes:** There is often a delay between the development of space technologies funded by the agency and their application for terrestrial purposes. The Deep Space Food Challenge concluded at the end of the 2023–24 period. However, the challenge-winning team founded two companies based on their winning solution and raised $2.3M in first-round investments to expand food production and accelerate research and development activities. Their system has also been considered for use in northern and remote communities. The CSA will continue to monitor those technologies for up to seven years after the funding has ended.

GOAL 3: SUPPORT MENTAL HEALTH AND ADOPT HEALTHY BEHAVIOURS

FSDS Context:

The unique, isolated and extreme environment of space provides research opportunities to find innovative solutions to healthcare challenges shared by astronauts and people living in remote communities. Throughout 2023–24, the CSA has continued to support a plethora of initiatives aimed at improving Canadian health and well-being. For example, under the **Health Beyond** initiative, the CSA has tasked five Canadian companies with the creation of a Connected Care Medical Module (C^2M^2). A C^2M^2 consists of an integrated system with state-of-the-art medical technologies incorporated into a mobile structure that could both equip astronauts to manage their health throughout long-duration missions and significantly improve the quality of remote healthcare. Prototypes of C^2M^2 were delivered in 2023–24, paving the way for deployment and testing in remote areas in the coming years.

Moreover, through the **Deep Space Healthcare Challenge**, the CSA called on innovators across Canada to develop novel healthcare solutions to support crews on deep-space missions and front-line healthcare workers here on Earth in effectively detecting and diagnosing medical conditions. After a competitive selection process in which 20 Canadian organizations received grant funding (as semi-finalists or finalists), the CSA selected MD Applications' solution, EZResus, as the challenge's grand prize winner in January 2024. It is already helping save lives on Earth and holds great potential for diagnosis and medical emergencies in space.

The CSA also continued to support health studies and the development of health-related technology that can improve health outcomes for Canadians. For example, health studies conducted on astronauts aboard the **International Space Station** (ISS) are improving our understanding of medical conditions on Earth, including health issues related to aging or inactivity. The **TBone2**, **SANSORI**, **Wayfinding**, **Space Health**, **Vascular Aging**, **Vascular Calcium** and **CARDIOBREATH** studies have continued to generate knowledge that could help doctors predict people at higher risk of bone fractures, determine the effects of cranial blood pressure on eyesight, provide relief to individuals with balance disorders, and better understand cardiovascular disease. New groundbreaking technologies are also prepared for testing at the ISS. One example is the **MicroPREP**, a portable "lab-on-a-chip" technology usable in both clinical and remote settings. MicroPREP can isolate several macromolecules such as DNA, proteins or rare cells, which makes it possible to assess the state of the immune system, inflammation, bone loss or the effects of radiation.

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Support mental health and adopt healthy behaviours"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Collect data and information to inform evidence-based decisions.	The Space Exploration program will continue the implementation of its wide range of health studies and health-related technology development through its participation in the International Space Station (ISS) and the Gateway outpost. It will also continue the Health Beyond initiative and finalize the Deep Space Healthcare challenge. **Program**: Space Exploration	**Performance indicator**: Number of Canadian space technologies adapted for use on Earth in the health field. **Starting point**: 0 **Target**: 2 space technologies adapted for use on Earth in the health field by 2026-27 **Performance indicator**: Number of scientific peer-reviewed publications	Canada's participation in the ISS and Gateway outpost provides a unique occasion to foster innovation, collect data and information to increase knowledge in the medical domain. Studying the effects of weightlessness in space provides insights into the impacts of reduced physical activity on Earth. It mimics accelerated aging and health problem caused by a sedentary lifestyle. Canadian scientists focus on studying bones, heart, blood vessels and the brain to address balance issues, osteoporosis, cardiovascular disorders, and diabetes. As	**Indicator result**: No Canadian space technologies adapted for use on Earth in the health field in 2023–24. **Indicator result**: There were 18 scientific peer-reviewed publications acknowledging Space Exploration Program (SEP) funding in the subfield of space health and life science in 2023–24.

		acknowledging Space Exploration Program (SEP) funding in the subfield of space health and life science. **Starting point**: 2 peer-reviewed publications acknowledging SEP funding in the subfield of space health and life science in 2022. **Target**: 30 peer-reviewed publications acknowledging SEP funding in the subfield of space health and life science between 2023 and 2027.	space missions become longer and more distant, crew autonomy in managing health becomes crucial. This need for autonomy also applies to remote and populations isolated from full medical care services. Improving telemedicine technologies and tools for autonomous medical care in remote communities will contribute to increasing health supports coverage in Canada. **Relevant targets or ambitions:** *CIF Ambition 3.8*: Canada prevents causes of premature death. *GIF Indicator 3.4.1*: Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease. *GIF Target 3.8:* Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. *GIF Indicator 3.8.1:* Coverage of essential health services.	**Notes:** There is often a delay between the development of space technologies funded by the agency and their application for terrestrial purposes. The CSA will continue to monitor those technologies for up to seven years after the funding has ended.

GOAL 4: PROMOTE KNOWLEDGE AND SKILLS FOR SUSTAINABLE DEVELOPMENT

FSDS Context:

Space exploration and the peaceful uses of outer space to benefit life on Earth spur the development of new technologies, industries and peaceful connections with other nations. Many CSA initiatives, such as the contribution of Canadarm3 to the Lunar Gateway and the first flight by a Canadian astronaut around the Moon, encourage youth to pursue education in STEM fields. The CSA supports related education through the creation of **Objective: Moon**'s curriculum-linked online resources, activities and speaker events, which support educators in promoting space and STEM learning among Canadian youth. With other toolkits, printables, digital games, activities, and experiments available online, the CSA has created a plethora of resources that teachers can use to inspire students.

As a founding member of the **International Space Education Board** (ISEB), the CSA is committed to working with other space agencies to increase STEM literacy and support the future space-related workforces. The **Space Strategy** describes Canada's efforts to create a diverse and highly skilled workforce, promoting digital skills and literacy, and attracting, training and retaining talent. As part of these efforts, the CSA provides grants to post-secondary institutions and students for a variety of hands-on training and developmental opportunities. One such example is the **CubeSats Initiative in Canada for STEM (CUBICS):** this initiative is designed to provide students with hands-on experience to complement their studies and make them excellent candidates for Canada's space workforce.

In line with the research and knowledge sharing theme, the CSA has continued to support Canada's response to climate change risks and extreme weather events by providing Earth observation (EO) data to help scientists, policymakers and stakeholders understand our planet's dynamic environment.

Furthermore, in support of its reconciliation efforts, the CSA is committed to open and transparent partnerships with Indigenous communities to co-develop solutions based on traditional knowledge that address community-identified needs. The 2024 edition of the National Forum on EO marked a milestone in the collaboration and participation of Canada's Indigenous EO community with discussions regarding the use of EO data to address Indigenous community concerns and co-develop solutions. The CSA will continue to pursue its existing partnerships to advance innovation in Canada's

North, enhance access to STEM careers, and bolster local economies by bringing the benefits of satellite EO technologies directly to northern communities and therefore promoting knowledge and skills for sustainable development.

Target theme: Training and skills in sustainable development

Target: By December 2025, Canada's pool of science talent grows by 175,000 science, technology, engineering and mathematics (STEM) graduates (Minister of Innovation, Science and Industry).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Other	Implement the CUBICS funding initiative, which provides post-secondary institutions across Canada with an opportunity to engage their students in a real space mission by supporting the design, development, launch, and operations of student CubeSats. **Program:** Space Capacity Development Program (SCDP)	**Performance indicator**: Number of students involved in the CUBICS projects. **Starting point**: New initiative (2022-09-14: Announcement of opportunity publication date). **Target**: 285 (number of expected yearly students involved from 2023-24 to 2025-26).	It is expected that, through this unique hands-on experience, students will develop invaluable skills to support their transition into the Canadian space workforce. The provision of professional and skills development programs such as CUBICS will introduce students to space-STEM fields, engage students in real space missions, and promote employment in the Canadian space sector. **Relevant targets or ambitions:** *CIF Ambition 4.1*: Canadians have access to inclusive and quality education throughout their lives. *CIF Indicator 4.2.1*: Post-secondary education attainment rate. *GIF Indicator 4.3.1:* Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex.	**Indicator result**: There were 502 students involved in the CUBICS projects in 2023–24. **Notes:** In 2023–24, 502 students were reported by the 9 CUBICS projects; 87.5% of these students are undergraduates.

Target theme: Research and knowledge-sharing

Target: By 2025, Canada's Average Relative Citation (ARC) in natural sciences, engineering, and life sciences ranks within the top 10 of OECD countries, increasing from a ranking of 18 in 2020 (Minister of Innovation, Science and Industry).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Work with partners on sustainable development and research initiatives	Ensure the continuous delivery of data from Earth observation (EO) satellites to national and international partners to increase scientific knowledge in Earth surface science, atmospheric science and, solar-terrestrial science to foster the understanding and management of climate change risks and extreme weather events. **Program**: Space Utilization	**Performance indicator**: Scientific peer-reviewed publications enabled by Space Utilization Program (SUP) funding in the Earth surface science, atmospheric science and solar-terrestrial science fields. **Starting point**: 1306 in 2021 **Target**: 1448 publications in 2025 (reporting year 2026-27)	Through the continuous delivery of Earth observation satellite data to Canadians and international partners, the CSA is sharing valuable information that is key to the fight against climate change. The use of this data by research institutions and researchers results in advancing scientific knowledge in the sustainable development domain. **Relevant targets or ambitions:** *GIF Target 4.7:* By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles.	**Indicator result**: There were 1158 scientific peer-reviewed publications enabled by Space Utilization Program (SUP) funding in the Earth surface science, atmospheric science and solar-terrestrial science fields in 2022. **Notes:** The CSA now collects data for this indicator in house. The number of publications fell slightly this year as much higher standards are now being applied. This means fewer publications could be counted this year.

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Promote knowledge and skills for sustainable development"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Support capacity in Indigenous communities.	In collaboration with NASA, deliver workshops and training on EO applications through the CSA's annual participation to the Indigenous Mapping Workshop (IMW). **Program**: Space Utilization	**Performance indicator**: Number of CSA participation to the IMW **Starting point**: 3 participations in the IMW as of 2023–2024 **Target**: 6 participations in 2026–2027 (Maintain CSA's annual participation to the IMW)	Led by the **Indigenous Mapping Collective**, the objective of the workshops is to give Indigenous peoples' access to the tools and technology they need to map their lands, share their stories, and support their rights and interests. **Relevant targets or ambitions:** *CIF Ambition 4.2*: Canadians have access to inclusive and quality education throughout their lives. *GIF Target 4.4:* By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.	**Indicator result**: The CSA participated in the Indigenous Mapping Workshop in Australia in June 2023, maintaining the CSA's annual participation as targeted. **Notes:** The 2023 **Indigenous Mapping Workshop** was hosted in Melbourne, Australia, from May 30 to June 2. The CSA and NASA co-developed and presented three sessions for the event. The objective was to highlight how optical and radar remote sensing data can be used for natural resource mapping and monitoring. It was also intended to engage in dialogue around observations of lands and waters towards explored pathways for braiding Indigenous knowledge and EO.

Initiatives advancing Canada's implementation of SDG 4 – Quality Education

The following initiatives demonstrate how the Canadian Space Agency's programming supports the 2030 Agenda and the SDGs, supplementing the information outlined above.

PLANNED INITIATIVES	ASSOCIATED DOMESTICS TARGETS OR AMBITIONS AND/OR GLOBAL TARGETS	RESULTS ACHIEVED
The CSA's Youth Learning initiative Through this initiative, the CSA is providing inclusive educational activities and resources for youth with the goal of inspiring them to stay in school and pursue careers in space-STEM fields. The CSA's Youth Learning activities focus on using the captivating nature of space to motivate Canada's pool of future science talent. The CSA's Youth Learning initiative contributes to the long-term advancement of space-STEM education, youth engagement with space, and careers in the Canadian space sector. Through this initiative, the CSA is making agency-wide efforts to advance Government of Canada priorities such as a diverse and highly skilled workforce; digital skills and literacy; and attracting, training, and retaining the talent.	*FSDS target:* By December 2025, Canada's pool of science talent grows by 175,000 science, technology, engineering, and mathematics (STEM) graduates (Minister of Innovation, Science, and Industry). *CIF target 4.2.1:* Post-secondary education attainment rate *GIF target 4.1:* By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes.	**Result:** 122,110 youths were reached in 2023–24 **Notes:** In 2023–24, CSA youth activities raised awareness of space STEM and involved in total 122,110 young Canadians from kindergarten to Grade 12 (Secondary 5 in Quebec).

GOAL 5: CHAMPION GENDER EQUALITY

FSDS Context:

Championing gender equality is a shared responsibility across the CSA. Since 2017, the CSA's GBA Plus Policy requires that all CSA initiatives (e.g., policies, legislation, projects, contracts, grants and contributions) that are new, or that need re-approval, be subject to a GBA Plus analysis to ensure that they do not reproduce or reinforce systemic disadvantages for equity-deserving groups. The overarching goal is to promote fairness and inclusion to ensure that the benefits of space can reach everyone in Canada.

To advance gender equality and empower all women and girls in the space sector,[1] CSA initiatives have focused on three key areas:

- Inspiring K-12 girls and other equity-deserving groups of youth to pursue careers in science, technology, engineering and mathematics (STEM);
- Providing hands-on job experience and training opportunities in the space sector to students, including women and other equity-deserving groups; and
- Encouraging the space sector to recruit and retain women and other equity-deserving groups.

The CSA's Speakers Bureau has carried out numerous events for the promotion of women and girls in the space sector, such as video conferences and in-person events hosted by female CSA experts or astronauts, and conferences on women in STEM. The Bureau has also continued to support female CSA engineers and scientists by helping them contribute to youth engagement as judges and mentors in various robotics competitions across Canada (e.g., Zone 01, FIRST Robotics).

Persistence and representation of women in science, technology, engineering and mathematics (STEM) programs is a critical issue, as women remain underrepresented in these fields. For instance, in 2015, women accounted for only 43% of STEM graduates or sixth-year students. As part of its efforts to

[1] The Canadian space sector is defined as organizations (private, public and academic) whose activities include the development and use of space assets and/or space data as defined in the Canadian Space Sector Survey.

address gender disparities in STEM, in 2023, the CSA co-hosted the fourth edition of the **Space4Women Expert Meeting** in Montréal alongside the United Nations Office of Outer Space Affairs (UNOOSA). The objective of the Expert Meeting was to build capacity to advance gender equality and empower all women and girls in the space sector. At the meeting, participants had the opportunity to review the first Gender Mainstreaming Toolkit dedicated to the space sector. There were 69 participants from 36 member States who attended the event, and their contributions throughout the Expert Meeting were key to the preparation of the first ever Gender Mainstreaming Toolkit (GMT) for the space sector.

The GMT was released at the sixty-seventh session of the Committee on the Peaceful Uses of Outer Space (UNCOPUOS) in June 2024. The GMT provides simple and practical measures, examples and tools to help people who are not gender specialists adapt gender mainstreaming efforts to their unique situations. In turn, this helps bring about meaningful improvements for gender equality in the global space community.

Girls of science and technology: the possibilities of careers in space are endless! What are **YOU** going to be?

Credit: Canadian Space Agency

Target theme: Take Action on Gender Equality

Target: By 2026, at least 37% of employees in the environmental and clean technology sector are women (Minister of Innovation, Science and Industry).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Reduce systemic barriers to gender equality	Reduce systemic barriers to gender equality and diversity in the space sector through the application of a Gender-based Analysis Plus (GBA Plus) lens for all its initiatives. **Program**: Space Capacity Development Program Space Exploration Program Space Utilization Program	**Performance indicator**: Percentage of women in the Canadian space sector. **Starting point**: In 2021, 29% of the Canadian space sector workforce were women. **Target**: Have women represent 30% of the Canadian space sector workforce 2026-27.	By incorporating diverse perspectives and considering factors like race, ethnicity, age, and socioeconomic status in the CSA's policies, programs, and initiatives, GBA Plus aims to reduce barriers to gender equality in the space sector. **Relevant targets or ambitions:** *CIF Ambition 5.2:* Gender equality in leadership roles and at all levels of decision-making. *CIF Indicator 5.2.1:* Proportion of leadership roles held by women. *GIF Ambition 5.5:* Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life.	**Indicator result**: In 2022, women made up 31% of the Canadian space sector. **Notes:** The data for this indicator is collected through the CSA's voluntary Annual Space Sector Survey. It provides the best estimation we have of the gender composition of the space sector. That said, the data can vary based on the number of organizations that respond for the given year.

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Champion gender equality"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Disaggregate data	Update the CSA's data collection tools to gather more disaggregated data to monitor gender and diversity results and evaluate the CSA's impacts to inform decision-making and the design of GBA Plus specific initiatives.[2] **Program**: Space Capacity Development Space Exploration Space Utilization Internal Services	**Performance indicator**: Percentage of CSA programs reporting on gender results. **Starting point**: In 2021–22, 100% of CSA programs reported on gender results. **Target**: 100%	By updating its monitoring tools, the CSA will enhance its capacity to report on gender and diversity and will be better positioned to design key initiatives to address identified gender equality gaps within the space sector. **Relevant targets or ambitions:** *CIF Ambition 5.2:* Gender equality in leadership roles and at all levels of decision-making. *CIF Indicator 5.2.1:* Proportion of leadership roles held by women. *GIF Target 5.1:* End all forms of discrimination against all women and girls everywhere. *GIF Indicator 5.5.2:* Proportion of women in managerial positions.	**Indicator result**: In 2023–24, 100% of CSA programs reported on gender results. **Notes:** Work is ongoing to increase the quality of the data being collected.

[2] GBA Plus initiatives are activities that are designed to increase equitable access and representation among diverse groups of people (i.e., women, Indigenous peoples, persons with disabilities, visible minorities/racialized populations, 2SLGBTQI+ communities, rural or remote populations, etc.).

Initiatives advancing Canada's implementation of SDG 5 – Gender Equality

The following initiatives demonstrate how the Canadian Space Agency's programming supports the 2030 Agenda and the SDGs, supplementing the information outlined above.

PLANNED INITIATIVES	ASSOCIATED DOMESTICS TARGETS OR AMBITIONS AND/OR GLOBAL TARGETS	RESULTS ACHIEVED
UN/Canada Space4Women Expert Meeting The United Nations Office of Outer Space Affairs (UNOOSA) and the Canadian Space Agency (CSA) will co-host the 4th edition of the Space4Women Expert Meeting in Montreal in 2023. This year's theme is building capacity to promote and advance gender equality and empower all women and girls in the space sector. Meeting participants will take part in various activities, including working group sessions to prepare the first gender mainstreaming toolkit dedicated to the space sector. This toolkit will include best practices, guidance, and resources to support public and private institutions, and individuals to integrate gender and diversity considerations at various levels and in different contexts with the goal of advancing gender equality. The toolkit was published and disseminated by the UN at the 67th Committee on the Peaceful Uses of Outer Space in June 2024.	**The 2023 Expert Meeting aligns with two relevant domestic and global targets and ambitions:** 1. **SDG 4: Quality Education:** CIF Ambition 4.1: Canadians have access to inclusive and quality education throughout their lives. CIF Indicator 4.2.1: Post-secondary education attainment rate. GIF Indicator 4.4.1: Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill. 2. **SDG 5: Achieve gender equality and empower all women and girls:** *CIF Ambition 5.2*: Gender equality in leadership roles and at all levels of decision-making. *CIF Indicator 5.2.1*: Proportion of leadership roles held by women. *GIF Indicator 5.5.1:* Proportion of seats held by women in (a) national parliaments and (b) local governments; proportion of women in managerial positions.	**Result**: Sixty-nine participants from 36 member States participated into the Expert Meetings and 82% found that the event meeting met or exceeded their expectations. The CSA funded the participation of 24 participants from 21 countries. The CSA has also supported the development of the first Gender Mainstreaming Toolkit with the United Nations. The toolkit was published and disseminated by the United Nations at the 67th committee on the Peaceful Uses of Outer Space in June 2024. **Notes:** Throughout the 2023 Space4Women Expert Meeting, various topics were discussed including: • Measuring women in the space workforce; • How space technology can advance gender equality; • Gender mainstreaming in space policy; • Inspiring through storytelling; and • Working together to advance gender equality. The discussions, observations and recommendations offered by the 2023 Expert Meeting participants were highlighted in the UNOOSA Outcome Report, which was published in February 2024. For more details, consult the **UNOOSA Outcome Report**.

GOAL 8: ENCOURAGE INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH IN CANADA

FSDS Context:

By focusing on high-value-added and labor-intensive sectors, the CSA aims to stimulate economic growth and create opportunities across various industries, leveraging space-based technologies and research to drive innovation and productivity to solve next generation challenges. Two examples are given to support SDG 8.

The CSA's **smartEarth initiative** is anchored in the document "**Towards Canada's 2030 Agenda National Strategy,"** which describes Canada's priorities and commitments towards achieving the SDGs. The smartEarth initiative intends to address Canada's most pressing challenges, such as resilient infrastructure, agriculture, ecosystems and pollution monitoring. By stimulating the uptake of space-borne data, the initiative aims to develop capacities within the industry and academia to accelerate innovation in the delivery of space-based applications to answer global environmental challenges. In January 2024, 17 new proposals were approved under the **Enabler track** of this initiative. Harnessing both domestic and international satellite data, those projects will optimize productivity and innovation across industries, while effectively addressing climate change and related challenges with evidence-based decision-making and a prepared, forward-thinking approach. The creative solutions stemming from these space-based applications will generate sustainable growth by enhancing the competitiveness of the Canadian space sector, while also developing a highly qualified workforce. Ultimately, these proposals will ensure Canada's leadership in leveraging satellite data to support scientific excellence, innovation and economic development.

The Canadian Space Agency's **Space Technology Development Program (STDP)** continues to support innovation and growth in the Canadian space industry with a focus on small and medium enterprises (SMEs). It also aims to reduce technological unknowns in future space missions. By providing initial funds to support the development of innovative technologies with strong potential and enhance the competitiveness and capabilities of the Canadian space industry, the STDP encourages inclusive and sustainable growth in Canada.

Initiatives advancing Canada's implementation of SDG 8 – Decent Work and Economic Growth

The following initiatives demonstrate how the Canadian Space Agency's programming supports the 2030 Agenda and the SDGs, supplementing the information outlined above.

PLANNED INITIATIVES	ASSOCIATED DOMESTICS TARGETS OR AMBITIONS AND/OR GLOBAL TARGETS	RESULTS ACHIEVED
smartEarth initiative The funding offered by this initiative will enable more organizations and highly qualified personnel to engage in projects that encourage the development of space-based solutions to environmental challenges. The targeted nature of this program will create higher levels of economic productivity and support Canadian workers in sustainable development areas.	*CIF Ambition 8.1*: Canadians have access to quality jobs. *CIF Indicator 8.2.1*: Proportion of 15+ employees earning less than 66% of the median hourly wage of permanent full-time 15+ employees. *GIF Target 8.2:* Achieve higher levels of economic productivity through diversification, technological upgrading, and innovation, including through a focus on high value added and labour-intensive sectors. *GIF Indicator 8.2.1:* Annual growth rate of real GDP per employed person.	**Result:** Sixty-five projects were funded under the smartEarth portfolio in 2023–24, supporting the industry and academia in developing applications using space data. In addition to directly supporting quality jobs and a dynamic, innovative space sector, all funded projects supported at least one of the SDGs and addressed most of them overall, demonstrating the diverse range and enormous potential of using spatial data to achieve the SDGs. **Notes:** As part of smartEarth, the **smartWhales initiative** was an opportunity for Canadian industry to team up with academia and non-governmental organizations to advance innovative solutions, using SEO data, that could help enhance the Government of Canada's ability to protect North Atlantic right whales (NARW) in Canadian waters by detecting and monitoring their presence and predicting their movements. smartWhales included five multisectoral consortia, more than a hundred highly qualified personnel, Indigenous knowledge considerations, Canadian fishing and shipping industries, whale experts from national and international academic, government and non-government organizations to significantly advance the use of SEO to detect and monitor the NARW. The smartWhales initiative generated a number of overarching achievements for the sponsoring organizations and program participants, that included the following accomplishments: • It created a unique community of practice among like-minded organizations with a focus on preserving the North Atlantic right whales

PLANNED INITIATIVES	ASSOCIATED DOMESTICS TARGETS OR AMBITIONS AND/OR GLOBAL TARGETS	RESULTS ACHIEVED
		(NARW) and inspired the whale's community in its efforts to develop meaningful ways to protect the whales; • It has become a recognized innovative collaboration model by the governmental partners; • It has been the most advanced innovation research program to date dedicated to the welfare of the NARW using Satellite Earth Observation (SEO) data and given Canadian industry an opportunity for a leadership role; • It has introduced new AI methods into the international NARW community resulting in improved analytic tools for the detection of the whales and the modelling of their habitat; • It has contributed new information into the knowledge base about the NARW populations and their behaviour patterns; and • It has enriched the growth of the Canadian capacity in building state-of-the-art analytical methods with potential to be applied to the wider populations of large marine mammals.
<u>Space Technology Development Program:</u> The objectives pursued by this initiative are to support innovation for the growth of the Canadian space sector and to reduce the technological unknowns of future space missions while also developing the expertise required for the future. The initiative provides support through contracts and contribution agreements with Canadian organizations that are selected based on their capacity to advance the development of specific space technologies.	*CIF Ambition 8.1:* Canadians have access to quality jobs. *CIF Indicator 8.2.1:* Proportion of 15+ employees earning less than 66% of the median hourly wage of permanent full-time 15+ employees. *GIF Target 8.2:* Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors. *GIF Indicator 8.2.1:* Annual growth rate of real GDP per employed person.	**Result:** At least 500 highly qualified persons (HQP) were working on STDP-funded projects in 2023–24. **Notes:** HQP are defined as employees in positions that required at least a bachelor's degree.

GOAL 10: ADVANCE RECONCILIATION WITH INDIGENOUS PEOPLES AND TAKE ACTION ON INEQUALITY

FSDS Context:

Recognizing and celebrating First Nations, Inuit and Métis Peoples and all their contributions to STEM and to the studies of stars, the CSA seeks to build sustainable, mutually beneficial relationships with Indigenous Peoples, based on the principle of co-development and to increase Indigenous Peoples' participation in space-related activities. Building on previous successful collaborations and existing relationships, the CSA will continue to expand its engagement with First Nations, Inuit and Métis Peoples to increase their participation in CSA programs. This includes using the unique appeal of space to inspire Indigenous students to pursue careers in Canada's space workforce, fostering Indigenous participation through specific initiatives and projects, and increasing the number of Indigenous Peoples hired by the CSA.

The CSA is committed to renewing and strengthening its economic relationships with Indigenous entrepreneurs and communities. Through the Procurement Strategy for Indigenous Business (PSIB), the CSA will harness procurement planning to capitalize on existing buying power and the empowerment of Indigenous business capacity in relevant commodities, including contracts issued on behalf of the CSA. Ultimately, the PSIB aims to increase the number of Indigenous businesses in the space and research and development (R&D) sectors. In accordance with government directives, the CSA also plans to award 5% of its eligible contracts to Indigenous businesses and, in collaboration with the space sector,

This patch was created for Canadian Space Agency astronaut Colonel Jeremy Hansen in honour of the historic Artemis II mission to the Moon by Anishinaabe artist Henry Guimond of the Turtle Lodge.

Its shape and the animals are a reference to the Seven Sacred Laws, a traditional First Nations teaching selflessly shared with Jeremy in preparation for his journey around Grandmother Moon. This is but one example of the many rich teachings found in the diverse cultures of Indigenous Peoples, the first explorers. (Credit: Canadian Space Agency)

Indigenous businesses and Indigenous Services Canada, co-develop long-term strategies to increase Indigenous involvement in general over time. Additionally, through the Grants and Contributions Program and targeted youth-focused activities, the CSA encourages Indigenous youth to take an active interest in space with the aim of increasing the number of Indigenous employees and entrepreneurs in Canada's space workforce.

The CSA is committed to attracting and retaining top talent and being a diverse workforce. The CSA has adopted inclusive hiring practices that will create a makeup of the workforce that reflects labour market availability. The CSA's three-year recruitment strategy includes targeted processes to increase Indigenous representation, including at the management and executive levels, while also aiming at increasing the hiring of Indigenous students. The CSA's **Accessibility Plan** aims to increase access to employment and promotional opportunities for employees and job seekers with disabilities so they can contribute to their full potential and consider the CSA as an employer of choice. Furthermore, there is currently a review of the CSA's human resources employment systems. The review seeks to identify ways to improve support and remove potential barriers to accessibility for women, Indigenous persons, persons with a disability and members of a visible minority. After reviewing human resources systems to identify barriers for members of a visible minority in executive positions, the CSA will extend the exercise for every equity group at all levels of the organization.

Target theme: Advancing reconciliation with First Nations, Inuit, and the Métis communities.

Target: Between 2023 and 2026, and every year on an ongoing basis, develop and table annual progress reports on implementing *the United Nations Declaration on the Rights of Indigenous Peoples Act* (Minister of Justice and Attorney General of Canada).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Implement the *United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) Act.*	Increase the participation of Indigenous Peoples in Canada's Space Program. **Program**: All CSA programs and Internal Services	**Performance indicator**: Number of initiatives fostering Indigenous participation. **Starting point**: 6 in 2022-23. **Target**: 10 in 2026-27.	The implementation of the UNDRIP Act will cement the government's commitment to advancing reconciliation with Indigenous peoples. The advancement of Indigenous participation in Canadian space programs will further engage Indigenous peoples in the space	**Indicator result**: There were 13 initiatives fostering Indigenous participation in 2023–24.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			sector and result in the establishment of new, long-standing relationships. **Relevant targets or ambitions:** *CIF Ambition 10.1*: Canadians live free of discrimination and inequalities are reduced. *GIF Target 10.2:* By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	

Target theme: Taking action on inequality

Target: Each year, the federal public service meets or surpasses the workforce availability for women, Indigenous persons, persons with a disability, and members of a visible minority (President of the Treasury Board).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Advance gender equality in the Government of Canada.	Renew and implement the CSA's recruitment strategy to ensure that the representation rate of women in the workforce and in senior leadership positions meets or surpasses their workforce availability (WFA) rates. **Program**: Internal Services	**Performance indicator #1**: Percentage of the CSA's workforce who identified as female. **Starting point:** 46.7% of the CSA's workforce identified as female as of March 31, 2023. **Target:** Equal to or greater than 38.4% of the CSA's workforce identified as female by 2027[3]. **Performance indicator #2:** Percentage of senior leadership positions at the CSA occupied by females. **Starting point**: 38.7% of senior leadership positions at the CSA were occupied by females as of March 31, 2023. **Target**:	By establishing baselines when it comes to representation rates, the CSA will be able to reflect on why certain targets were/were not met and introduce policies and procedures that aim to resolve gaps in representation. Thus, the implementation of the Equity, Diversity, and Inclusion Strategy will provide the CSA with the information needed to do whatever is needed to advance gender equality throughout the department. **Relevant targets or ambitions:** *CIF Ambition 10.1*: Canadians live free of discrimination and inequalities are reduced. *CIF Indicator 10.2.1*: Proportion of the population reporting discrimination or unfair treatment.	**Indicator result #1**: 49.2% of the CSA's workforce identified as female as of March 31, 2024. **Indicator result #2**: 50% of senior leadership positions at the CSA were occupied by females as of March 31, 2024.

[3] Target is based on the most recent workforce availability rate as of March 31, 2023.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		Equal to or greater than 31.5% of senior leadership positions at the CSA to be occupied by females by 2027[3].	*CIF Indicator* 10.3.1: Median hourly wage ratio. *GIF Target 10.2:* By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	
Foster diversity, inclusion and accessibility in the federal public service	Renew and implement the CSA's recruitment strategy to ensure that the CSA's workforce reflects the diversity that characterizes the Canadian population. **Program**: Internal Services	**Performance indicator #1**: Percentage of the CSA's workforce who identifies as a visible minority. **Starting point**: 19.7% of the CSA's workforce identified as a visible minority as of March 31, 2023. **Target**: Equal to or greater than 21.2% of the CSA's workforce identified as a visible minority by 2027[3]. **Performance indicator #2:** Percentage of senior leadership positions at the CSA occupied by visible minority members. **Starting point:** 9.7% of senior leadership positions at the CSA were occupied by visible minority members as of March 31, 2023**.** **Target:** Equal to or greater than 17.4% of senior leadership positions at the CSA to	The recruitment strategy will foster diversity, inclusion, and accessibility in the federal public service by prioritizing outreach and engagement with underrepresented groups, implement bias-free recruitment process, provide accommodations for individuals with disabilities, and establish mentorship and support programs to ensure an inclusive and equitable workplace. **Relevant targets or ambitions:** *CIF Ambition 10.2*: Canadians live free of discrimination and inequalities are reduced. *CIF Indicator 10.2.1*: Proportion of the population reporting discrimination or unfair treatment. *GIF Target 10.2:* By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex,	**Indicator result #1**: 22.7% of the CSA's workforce identified as a visible minority as of March 31, 2024. **Indicator result #2**: 14.7% of senior leadership positions at the CSA were occupied by visible minority members as of March 31, 2024. **Indicator result #3**: 13.1% of the CSA's workforce identified as a person with disabilities as of March 31, 2024. **Indicator result #4**: 14.7% of senior leadership positions at the CSA were occupied by a person with disabilities as of March 31, 2024.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		be occupied by visible minority members by 2027.[3] **Performance indicator #3:** Percentage of the CSA's workforce who identified as a person with disabilities. **Starting point:** 7.5% of the CSA's workforce identified as a person with disabilities as of March 31, 2023. **Target:** Equal to or greater than 8.6% of the CSA's workforce identified as a person with disabilities by 2027[3]. **Performance indicator #4:** Percentage of senior leadership positions at the CSA occupied by a person with disabilities. **Starting point:** 9.7% of senior leadership positions at the CSA were occupied by a person with disabilities as of March 31, 2023. **Target:** Equal to or greater than 5.4% of senior leadership positions at the CSA occupied by persons with disabilities by 2027[3].	disability, race, ethnicity, origin, religion or economic or other status.	

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Advance reconciliation with Indigenous Peoples and take action on inequality"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Increased Indigenous employment in the federal public service	Renew and implement the CSA's recruitment strategy to ensure Indigenous representation within the CSA's workforce. **Program**: Internal Services	**Performance indicator #1**: Percentage of the CSA's workforce who identifies as Indigenous. **Starting point:** 1.9% of the CSA's workforce identified as Indigenous as of March 31, 2023. **Target:** Equal to or greater than 0.9% of CSA's workforce to identify as Indigenous by 2027 [3]. **Performance indicator #2:** Percentage of senior leadership positions at the CSA occupied by Indigenous people. **Starting point**: 3.2% of senior leadership positions at the CSA were occupied by Indigenous people as of March 31, 2023 **Target**: Equal to or greater than 2.8% of senior leadership positions at the CSA to	The CSA seeks to continue its commitments to promoting Indigenous representation in its workforce to align itself with labour market availability levels. Promoting Indigenous employment in the CSA will both advance reconciliation efforts and engage Indigenous peoples in the space sector. **Relevant targets or ambitions:** *CIF Ambition 10.1*: Canadians live free of discrimination and inequalities are reduced. *GIF Target 10.3:* Ensure equal opportunity and reduce inequalities of outcomes, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard. *GIF Indicator 10.3.1*: Proportion of population reporting having personally felt discriminated against or harassed within the previous 12 months on the basis of a ground of discrimination	**Indicator result #1**: 1.8% of the CSA's workforce identified as Indigenous as of March 31, 2024. **Indicator result #2**: 2.9% of senior leadership positions at the CSA were occupied by Indigenous Peoples as of March 31, 2024.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		be occupied by Indigenous people by 2027.[3]	prohibited under international human rights law.	
Support economic development and entrepreneurship in Indigenous communities	In collaboration with industries, Indigenous businesses and Indigenous Services Canada, the CSA will develop long-term strategies to increase Indigenous business capacity in the space sector over time. Presently, the CSA is including requirements to subcontract parts of our major crown space project to Indigenous businesses or include mandatory Indigenous participation plan in our requests for proposals. Program: Internal Services	**Performance indicator**: Percentage of CSA contracts awarded to Indigenous businesses. **Starting point**: 4% of the CSA's eligible contracts were awarded to Indigenous businesses in 2022-23. **Target**: Starting in 2023-24, award 5% of the CSA's eligible contracts to Indigenous businesses annually.	The CSA seeks to collaborate and build relationships with Indigenous communities and organizations. The CSA wishes to promote meaningful engagement and participation in space-related activities to ensure that its projects are respectfully co-developed with Indigenous partners. By doing so, the CSA will support economic development and entrepreneurship in Indigenous communities. **Relevant targets or ambitions:** *CIF Ambition 10.1*: Canadians live free of discrimination and inequalities are reduced. *GIF Target 10.2:* By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.	**Indicator result**: 4.36% of CSA eligible contracts were awarded to Indigenous businesses in 2023–24. **Notes:** The CSA will continue its efforts to award 5% of the total value of its contracts to Indigenous businesses. To achieve this, the CSA will continue the implementation of its Procurement Strategy for Indigenous Businesses, utilizing set-asides to increase contract awards where Indigenous businesses are available, and incorporating Indigenous Participation Plans and evaluation criteria to build industry capacity in areas where direct contracts are currently insufficient.

GOAL 12: REDUCE WASTE AND TRANSITION TO ZERO-EMISSION VEHICLES

FSDS Context:

The government of Canada deploys a variety of strategies and policies to ensure sustainable consumption and production practices within its federal activities; this is a direct effort to follow the government's ambition to consume in a sustainable manner. To tackle this challenge, the Greening Government Strategy (GGS) and the Policy on Green Procurement were created to reduce the environmental impacts of government operations, promote environmental stewardship and adapt to climate change.

Through the implementation of the GGS, the CSA has committed to supporting responsible consumption and production by actively working on three key priorities: reducing waste, transitioning to a zero-emission vehicle fleet (ZEVs) and greening its procurement activities. Waste audits were completed during the 2023–24 fiscal year to measure progress since 2019 and identify new opportunities for diverting and reducing waste. The CSA's renewal of the waste program (e.g., the installation of new sorting stations and the implementation of organic waste collection) has significantly improved the Agency’s diversion rate. Detailed results are presented in the tables below. Since 2018, all the CSA's new purchased vehicles are zero-emission vehicles or hybrids.The CSA has also been proactive in organizing activities to give its employees an opportunity to be involved in environmental protection initiatives (micro forest plantation, bicycle repair workshops, newsletters, etc.). In 2022–2023, the CSA analyzed its procurement profile and identified its most important purchases in terms of categories (goods, services or construction), volume and expenses. The results were used to conduct a carbon footprint study, which identified the procurement categories with the greatest environmental impacts. The CSA will also be conducting a life cycle assessment (LCA) on a space project throughout the coming years. Lastly, a strategy and action plan to reduce the environmental impacts of the CSA's business air travel were developed. These initiatives will be pursued throughout this 2023–2027 DSDS.

Looking ahead, the CSA will show leadership in ensuring that future expenditures are net zero and in line with the sustainability and circular economy principles. The CSA will also continue implementing guidance, tools and training for its employees to support green procurement and encourage low-carbon mobility (carpooling, public transit, cycling) and employees' mobilization and awareness. These actions are steps toward reaching a sustainability culture in the workplace.

Target: By 2030, the Government of Canada will divert from landfill at least 75% by weight of non-hazardous operational waste (All Ministers).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Maximize diversion of waste from landfills.	Strengthen the CSA management waste program to increase the diversion rate of non-hazardous operational waste. **Program**: Internal Services	**Performance indicator**: Percentage by weight of non-hazardous operational waste diverted from landfills, **Starting point**: In 2019, the non-hazardous operational waste diversion rate was 48%. **Target**: Divert at least 75% of non-hazardous operational waste by weight from landfills annually by 2030.	By diverting and reducing waste, the CSA contributes to the FSDS goal and target of diverting at least 75% by weight of non-hazardous waste. A better waste management program will ensure that recycling and composting are maximized, which reduces the emissions generated by the transportation and disposal of waste. Material recovery via recycling reduces emissions for the extraction and production of raw materials. **Relevant targets or ambitions:** *CIF Ambition 12.3*: Canadians consume in a sustainable manner. *CIF Indicator 12.3.1*: Total waste diversion per capita. *GIF Ambition 12.5*: By 2030, substantially reduce waste generation through	**Indicator result**: In 2023–24, the non-hazardous operational waste diversion rate was 83.78%. **Notes:** By strengthening the CSA's waste management program and implementing organic waste collection procedures, the CSA has improved its non-hazardous waste diversion rate.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			prevention, reduction, recycling, and reuse. GIF Indicator 12.5.1: National recycling rate, tons of material recycled.	
Maximize diversion of waste from landfills.	Complete new waste audits for the CSA's primary facilities to update waste diversion statistics, measure progress and submit annual reporting.	**Performance indicator:** Percentage by weight of non-hazardous operational waste diverted from landfills. **Starting point:** In 2019, the non-hazardous operational waste diversion rate was 48%. **Target:** Divert at least 75% by weight of non-hazardous operational waste from landfills annually by 2030.	Auditing, tracking, and disclosing waste quantity and type, allows for a better understanding of the CSA's waste production which is needed to raise awareness, identify diversion and reduction opportunities, and prioritize actions. With these actions, the CSA contributes to supporting the FSDS goal and target of diverting at least 75% of non-hazardous waste by weight. **Relevant targets or ambitions:** *GIF Target 12.5:* By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse. *GIF Indicator 12.5.1:* National recycling rate, tons of material recycled.	**Indicator result**: In 2023, the non-hazardous operational waste diversion rate was 83.78%. **Notes:** New waste audits were conducted in 2023–24, which allowed the CSA to measure progress from the 2019 starting point.
Maximize diversion of waste from landfills.	Increase, track and disclose the plastic waste diversion rate. **Program**: Internal Services	**Performance indicator**: Percentage (%) of plastic waste by weight diverted from landfills. **Starting point**: In 2019, the plastic waste diversion rate was 30%.	The CSA is taking action to reduce plastic waste (e.g., increasing awareness for better plastic waste sorting, eliminating single-use plastics in operations, events, and meetings, reducing procurement of plastic goods, etc.) and contributes to the goals and targets on plastic of the FSDS, Canada's 2030 agenda and SDGs.	**Indicator result**: In 2023, the plastic waste diversion rate was 54.18%. **Notes:** By strengthening the CSA's waste management program with sorting stations, the Agency has improved its plastic diversion performance.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		Target: Divert at least 75% by weight of plastic waste from landfills annually by 2030.	Plastic recycling is a real challenge that needs to be addressed at its source. By eliminating plastic in operations, events, and meetings, and raising awareness, we can contribute to reducing the pollution created by plastic waste and better protect the environment from microplastics, including marine pollution in oceans. **Relevant targets or ambitions:** *GIF Target 12.5:* By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse. *GIF Indicator 12.5.1:* National recycling rate, tons of material recycled.	

Target: By 2030, the Government of Canada will divert from landfill at least 90% by weight of all construction and demolition waste (All Ministers).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Maximize diversion of waste from landfills	Ensure all required[4] construction projects track and disclose the amount of construction and demolition waste generated, as well as the amount diverted from landfills. This can include preliminary waste audits, waste reduction work plans, waste management strategies, tracking and reporting the quantity of waste, etc. **Program:** Internal Services	**Performance indicator**: Percentage by weight of all construction, renovation and demolition (CRD) waste diverted from landfills. **Starting point**: In 2022–2023, no completed projects were subjected to the requirement. **Target**: Divert at least 90% by weight of all CRD waste from landfills annually by 2030.	By tracking and diverting its CRD waste, the CSA not only contributes to the FSDS's goal and target, but also contributes to reducing scope 3 greenhouse gas (GHG) emissions created by waste generation, transportation, and disposal. Reducing CRD waste at the source can also contribute to reducing the emissions related to the extraction, production, and use of construction material. Lastly, this initiative contributes to enhancing collaboration with suppliers, thus contributing to an overall transition in the industry. This will be achieved by ensuring CRD waste management is included in all contracting components of a construction project, and by following the government's and industry's best practices. **Relevant targets or ambitions:** *GIF Target 12.4:* By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and	**Indicator result**: In 2023–2024, no completed projects were subjected to the requirement. **Notes:** In 2023–24, one project was subjected to this requirement, but its results will only be available once the project is completed in the 2024–25 fiscal year.

[4] Actual requirements are for projects above $5 million. Most of the CSA's construction projects are less than $5 million. To better reflect this reality, the CSA will look into lowering the $5 million threshold to increase CRD diversion opportunities, when possible, to divert a greater quantity of waste.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment. *GIF indicator 12.4.1:* Hazardous waste generated per capita Proportion of hazardous waste treated, by type of treatment.	

Target: The Government of Canada's procurement of goods and services will be net-zero emissions by 2050, to aid the transition to a net-zero, circular economy (All Ministers).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Disclose embodied carbon in construction	The CSA will track and disclose the embodied carbon in the structural materials of major construction projects, starting with concrete. As stated in the GGS, the CSA is also required to reduce the embodied carbon of structural materials. Therefore, to achieve this target, the CSA will incorporate embodied carbon disclosure requirements in all major construction project phases, as well as in the procurement processes to make sure	**Performance indicator #1**: Percentage of major construction projects that disclosed the embodied carbon of structural materials used. **Starting point**: No data—New initiative since December 2022. **Target**: 100% of major construction projects disclose the embodied carbon of structural materials used yearly.	By tracking, disclosing, and reducing the embodied carbon in the structural materials of construction projects, the CSA is helping the Government of Canada's procurement transition towards a net-zero economy to achieve net-zero greenhouse gas (GHG) emissions by 2050. Reducing embodied carbon at the source can also contribute to the reduction of emissions related to the extraction, production and use of construction material and raw resources. Finally, this	**Indicator result #1**: No major construction projects met the threshold for the disclosure of the embodied carbon of structural materials used in 2023–24. **Indicator result #2** In 2023–24, no major construction projects had reduced embodied carbon by 10% or more. **Notes:**

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
	that embodied carbon is being reported and reduced. **Program**: Internal Services	**Performance indicator #2**: Percentage of major construction projects that reduced embodied carbon by at least 10%. **Starting point**: No data—New initiative since December 2022. **Target**: Starting with concrete, 100% of major construction projects will reduce embodied carbon by at least 10%.	initiative also contributes to enhancing collaboration with the suppliers, thus contributing to an overall transition in the industry. **Relevant targets or ambitions:** *GIF Target 12.2:* By 2030, achieve the sustainable management and efficient use of natural resources. *GIF Indicator 12.2.1:* Material footprint, material footprint per capita, and material footprint per GDP.	In 2023–24, one major project was subjected to this requirement, but the results will be available once the project is completed in the 2024–25 fiscal year.
Incentivize supplier disclosure.	The CSA will ensure that processes for procurement over $25 million including taxes apply the Policy on Green Procurement standard which induces suppliers to measure and disclose their greenhouse gas emissions and adopt a science-based target to reduce greenhouse gas emissions in line with the Paris Agreement as part of participating in the Net-Zero Challenge or an equivalent initiative or standard. **Program**: Internal Services	**Performance indicator**: Percentage of CSA contracts over $25 million that applied the Policy on Green Procurement standard. **Starting point**: No data yet—New initiative since April 2023. **Target**: Starting in 2023-24, 100% of CSA's contracts over $25 million recipients had applied the standard.	The CSA is responsible for ensuring that the obligations of this standard are included in its departmental procurement policies and processes. With this departmental action, the CSA is encouraging suppliers to reduce the environmental impacts from their supply chain and the goods and services they deliver. It is also ensuring responsible consumption for high expenditure procurement and directly contributes to the FSDS's and GGS's target of helping the Government of Canada's procurement of goods and services to yield net-zero emissions by 2050. **Relevant targets or ambitions:** *CIF Ambition 12.2:* Canadians consume in a sustainable manner.	**Indicator result**: In 2023–24, no CSA contracts over $25 million had to apply the Policy on Green Procurement standard.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			CIF Indicator 12.2.1: Proportion of businesses that adopted selected environmental protection activities and management practices. *GIF Target 12.6:* Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle. *GIF Indicator 12.6.1:* Number of companies publishing sustainability reports.	
Transform the federal light-duty fleet	The CSA will take action to decarbonize its fleet by: • Purchasing hybrid or zero-emission vehicles (ZEVs) when replacing a vehicle; and • Ensuring that the conventional light-duty fleet will comprise only ZEVs by 2030. Program: Internal Services	**Performance indicator #1**: Percentage of annual administrative fleet purchases that are ZEVs or hybrids. **Starting point**: In 2021–22, 100% of annual administrative fleet purchases were ZEVs or hybrids (No purchase in 2022–23). **Target**: 100% of new light-duty unmodified administrative fleet vehicle purchases yearly are ZEVs or hybrids. **Performance indicator #2:** Percentage of ZEVs in administrative fleet. **Starting point:**	As conventional gasoline-powered vehicles are increasingly replaced with ZEVs and the size of the fleet is optimized, a greater proportion of the CSA's fleet will be ZEVs. This will contribute to the goal of having 100% of the government's administrative vehicle fleet be ZEVs by 2030 and reduce the total scope 1 GHG emissions of federal operations. It directly contributes to the FSDS's goal and targets for ensuring that the Government of Canada's procurement of goods and services will yield net-zero emissions by 2050. **Relevant targets or ambitions:** *CIF Ambition 12.1*: Canadians consume in a sustainable manner.	**Indicator result #1**: In 2023–24, 100% of annual administrative fleet purchases were ZEVs or hybrid. **Indicator result #2**: In 2023–24, 50% of the administrative fleet was made up of ZEVs. **Notes:** In 2023–24, the CSA purchased two electric vehicles and disposed of one gasoline-powered vehicle.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		In 2022–2023, 40% of the CSA's fleet was ZEVs. **Target:** 100% of the fleet to be ZEVs by 2030.	*CIF Target 12.1*: Zero-emission vehicles represent 10% of new light-duty vehicle sales by 2025, 30% by 2030 and 100% by 2040. *CIF Indicator 12.1.1*: Proportion of new light-duty vehicle registrations that are zero-emission vehicles. *GIF Target 12.7:* Promote public procurement practices that are sustainable, in accordance with national policies and priorities. *GIF Indicator 12.7.1*: Number of countries implementing sustainable public procurement policies and action plans.	

Initiatives advancing Canada's implementation of SDG 12 – Responsible Consumption and Production

The following initiatives demonstrate how the Canadian Space Agency's programming supports the 2030 Agenda and the SDGs, supplementing the information outlined above.

PLANNED INITIATIVES	ASSOCIATED DOMESTICS TARGETS OR AMBITIONS AND/OR GLOBAL TARGETS	RESULTS ACHIEVED
Strengthen green procurement criteria The CSA is planning to complete a life cycle assessment (LCA) on a typical large-scale space project to better understand the environmental impacts and carbon reduction opportunities for R&D service contracts and to identify solutions for decarbonizing these contracts. **Program:** Internal Services	With LCA results available, the CSA will be able to: 1) develop specific criteria that address greenhouse gas emissions reductions for goods and services with a high environmental impact; 2) ensure the criteria for addressing these categories are included in procurement mechanisms and instruments. These actions will help to support the FSDS goal to make Government of Canada's procurement of goods and services net zero by 2050. **Relevant targets or ambitions:** *CIF Ambition 12.2:* Canadians consume in a sustainable manner. *CIF Indicator 12.2.1:* Proportion of businesses that adopted selected environmental protection activities and management practices. *GIF Target 12.7:* Promote public procurement practices that are sustainable, in accordance with national policies and priorities.	**Result**: This project is ongoing and will be completed in 2026–27. In 2023–24, the project was selected to receive a grant and the project will continue to advance throughout the 2024–25 fiscal year. **Notes:** In 2024–25, the CSA is planning to call for tender and begin its life cycle assessment (LCA).
Strengthen green procurement criteria The CSA will continue its effort to include criteria in its contracts that incentivize carbon reduction, sustainable plastics and/or broader environmental benefits in procurement processes and, prioritize goods and services with high environmental impacts. In this regard, the CSA will improve data collection and tracking to enable adequate accountability and reporting of the inclusion of environmental criteria and standards in procurement processes. **Program:** Internal Services	Incorporating green criteria into purchasing decisions is expected to improve the carbon footprint of the Government's procurement activities and encourage suppliers to reduce the environmental impact of the goods and services they deliver. It will also contribute to ensuring responsible consumption for internal operations and considering environmental impacts when purchasing goods and services. **Relevant targets or ambitions:** *CIF Ambition 12.2:* Canadians consume in a sustainable manner. *CIF Indicator 12.2.1:* Proportion of businesses that adopted selected environmental protection activities and management practices. *GIF Target 12.7:* Promote public procurement practices that are sustainable, in accordance with national policies and priorities.	**Result:** The CSA's efforts to incorporate green criteria into purchasing decisions to improve the carbon footprint of the government's procurement activities and encourage suppliers to reduce the environmental impact is ongoing and will continue.

Strengthen green procurement criteria In line with the GGS requirements, the CSA will take action regarding in high-impact categories, including: • Analyzing the departmental procurement profile to identify departmental high-impact categories and major spending areas (completed) • Developing an action plan to reduce the CSA's procurement environmental impacts. **Program:** Internal Services	An analysis of the departmental procurement profile will enable the CSA to develop an informed action plan that will reduce the CSA's procurement environmental impacts, strengthening green procurement criteria. Together, these actions will build on the 2022-carbon footprint study of the CSA's procurement activities from 2017–2018 to 2022–2023. CIF Ambition 12.2: Canadians consume in a sustainable manner. CIF Indicator 12.2.1: Proportion of businesses that adopted selected environmental protection activities and management practices. GIF Target 12.7: Promote public procurement practices that are sustainable, in accordance with national policies and priorities. GIF Indicator 12.7.1: Number of countries implementing sustainable public procurement policies and action plans.	**Result:** In 2023–24, the CSA completed a carbon footprint study that identified the CSA's high-impact categories and major spending areas. This was the first step to developing an action plan by 2026–27. **Notes:** The 2023 carbon footprint study found that space-related R&D contracts are the most important in terms of value, expenditure and carbon intensity for the CSA. As mentioned above, this is why the CSA will carry out a life cycle assessment (LCA) on a space project to gather relevant granular data on the environmental impacts of these missions, thus identifying opportunities for reducing embodied carbon and developing solutions for decarbonizing space-related R&D contracts.
Strengthen green procurement The CSA will continue to ensure that all procurement and materiel management specialists are trained in green procurement (such as the Canada School of Public Service course on green procurement or equivalent) within one year of being hired. **Program:** Internal Services	Trained staff are better equipped to incorporate environmental considerations into purchasing decisions, which can motivate suppliers to reduce the environmental impact of the goods and services they deliver and their supply chains. **Relevant targets or ambitions:** *CIF Ambition 12.2:* Canadians consume in a sustainable manner *CIF Indicator 12.2.1:* Proportion of businesses that adopted selected environmental protection activities and management practices. *GIF Target12.7:* Promote public procurement practices that are sustainable, in accordance with national policies and priorities.	**Result:** In 2023–24, 50% of procurement and materiel management specialists were trained in green procurement. Going forward, the CSA will ensure that all current and new procurement and materiel management specialists are trained in green procurement.

GOAL 13: TAKE ACTION ON CLIMATE CHANGE AND ITS IMPACTS

FSDS Context:

When it comes to climate change and its impacts, the CSA has taken various actions to meet the Government of Canada's environmental commitments, not only with the Greening Government Strategy but also with a variety of Earth observation projects and initiatives.

The CSA is continuing to work towards achieving its carbon neutrality goal by 2050 and incorporating sustainable management practices and low-carbon operations in its workplace. Over the 2023–27 period, the CSA will incorporate GHG emission reductions into decision-making processes using a GHG option analysis methodology for major renovations and all other real property projects that affect energy consumption and GHG emissions. In 2023–24, the CSA has continued to report on its environmental performance through the annual inventory declaration of: GHG emissions, vehicle fleet, waste, water and adaptations to climate change. To ensure that all relevant employees are trained on assessing climate change impacts and undertaking climate change risk assessments, the CSA will promote the new courses on climate change offered by the Canada School of Public Service.

Earth observations from space is defined as acquiring data about the Earth's physical, chemical and biological systems using satellites. From space, they provide information and services to support global communications, the economy, security and defence, public safety and emergency management, the environment, and health. The CSA is playing a leading role within the Government of Canada to ensure the accessibility and use of Earth observation data.

Through Earth observation, the CSA has continued to play a leading role in natural disaster management with its satellites. As the consequences of climate change become more severe, natural disasters will become more frequent and intense. Thus, satellite data has become essential to assist emergency response teams by identifying potentially dangerous sites, assessing the extent of damage and facilitating rescue operations. Canada's expertise in Earth observation and processing synthetic aperture radar data assists in disaster management response and relief efforts through the

"International Charter Space and Major Disasters." From October 2023 to April 2024, the CSA assumed the role of the Charter Leading Agency in collaboration with the European Organisation for the Exploitation of Meteorological Satellites.

Target theme: Federal Leadership on Greenhouse Gas Emissions Reductions and Climate Resilience

Target: The Government of Canada will transition to net-zero carbon operations for facilities and conventional fleets by 2050 (All Ministers).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Implement the Greening Government Strategy through measures that reduce greenhouse gas emissions, improve climate resilience, and green the government's overall operations.	Monitor and disclose environmental performance related to CSA operations, such as GHG emissions, energy, and water consumption, as well as waste for each facility using the RETScreen software. **Program**: Internal services	**Performance indicator**: Percentage change in the CSA's GHG emissions between 2005–06 (base year) and the current reporting fiscal year. **Starting point**: In 2005–2006, the CSA's total GHG emission was: 2.4 ktCO2e. In 2022–2023, the CSA's total GHG emission was 1 ktCO2e, which represents 56% reduction below the 2005–2006 level. [5] **Target**: Reduce the CSA's total GHG emissions by 40% below the 2005 level by 2025. Reduce the CSA's Total GHG emissions by 90% below the 2005 level by 2050.	By monitoring and disclosing its environmental performance, the CSA is supporting the Government of Canada in measuring and disclosing progress and results to respect its accountability, transparency, and open data principles. The CSA is also contributing to ensure the federal GHG emissions inventory is accurate by providing its operation results and to monitor progress. **Relevant targets or ambitions:** *CIF Ambition 13.1*: Canadians reduce their greenhouse gas emissions. *CIF Target 13.1*: By 2030, reduce Canada's total greenhouse gas emissions by 40 to 45%, relative to 2005 emission levels. By 2050, achieve economy-wide net-zero greenhouse gas emissions.	**Indicator result**: Between 2005–06 and 2023–24, the CSA has reduced its total GHG emissions by 43.2% below the 2005 level. **Notes:** The loss in reduction between 2022–23 and 2023–24 is mainly due to a facility mechanical issue (broken water heaters), which resulted in a temporary increased in natural gas consumption. Normal consumption should be resumed once the water heaters are replaced in 2024–25. Other reasons, such as the increase of Ontario emission factors (EF), the return to service of the cafeteria and the change in the total emission of our baseline years (see Footnote 5), also had an impact in lowering our reduction rate this year.

[5] Starting point is now 2.36 ktCO2e. This modification is due to a change in the emissions factor that decreased our baseline total emissions, going from 2.397 to 2.357 ktCO2e. The changes in the EFs are out of our control and were due to revised coal oxidation factors, updated Global Warming Potential (GWP), and revised activity data presented in the Report on Energy Supply and Demand (RESD).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		Reduce the CSA's total GHG emission by an additional 10% every five years, starting in 2025.	*CIF Indicator 13.1.1*: Greenhouse gas emissions. *GIF Target 13.2:* Integrate climate change measures into national policies, strategies and planning. *GIF Indicator 13.2.2*: Total greenhouse gas emissions per year.	
Implement the Greening Government Strategy through measures that reduce greenhouse gas emissions, improve climate resilience, and green the government's overall operations	The CSA will participate in government initiatives to purchase megawatt hours of renewable electricity for its sites located where the electrical grids still emit carbon. **Program**: Internal Services	**Performance indicator**: Percentage of clean electricity used by the CSA. **Starting point**: In 2022–23, the CSA used 97% of clean electricity. **Target**: The CSA will use 100% of clean electricity by 2025.	By using clean electricity in building operations, the CSA will contribute to the elimination of GHG emissions from federal buildings in jurisdictions where electricity generation is not coming from clean renewable sources; thus, the CSA is contributing to the transition to net-zero carbon operations for facilities and conventional fleets by 2050. It also contributes to transitioning to a net-zero economy by enhancing the renewable energy industry economy. **Relevant targets or ambitions:** *CIF Ambition 13.1:* Canadians reduce their greenhouse gas emissions. *CIF Target 13.1:* By 2030, reduce Canada's total greenhouse gas emissions by 40 to 45%, relative to 2005 emission levels. By 2050, achieve economy-wide net-zero greenhouse gas emissions. *CIF Indicator 13.1.1:* Greenhouse gas emissions.	**Indicator result**: In 2023–24, the CSA used 97% of clean electricity. **Notes:** The CSA has signed an agreement with the Government of Canada to be part of a bulk purchase of clean electricity to reach 100% by 2025.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			GIF Target 13.2: Integrate climate change measures into national policies, strategies, and planning. *GIF Indicator* 13.2.2: Total greenhouse gas emissions per year	
Implement the Greening Government Strategy through measures that reduce greenhouse gas emissions, improve climate resilience, and greening the government's overall operations.	All newly installed heating, ventilation, air conditioning and refrigeration (HVAC-R) equipment will use refrigerants with global warming potential (GWP) lower than the limits stated by the GGS, unless such equipment and/or refrigerant is found to not be available domestically or its acquisition is not technically or economically feasible.	**Performance indicator**: Percentage of newly installed HVAC-R equipment using refrigerants with GWP lower than the limits stated by the GGS. **Starting point**: In 2022–23, no newly installed HVAC-R equipment. **Target**: 100% of newly installed HVAC-R equipment using refrigerants with GWP lower than the limits stated by the GGS by 2030.	As the impacts of climate change become more severe, the GGS prompts federal departments and agencies to demonstrate leadership by accelerating the pace of converting or replacing equipment using these gases by 2030. Installing new HVAC-R equipment using refrigerants with lower GWP will contribute to reducing high GWP, ozone depleting refrigerants and hydrofluorocarbons (HFCs), which are targeted under the GGS, as these gases can be long lasting and potent greenhouse gases, with some staying in the atmosphere for centuries. They will also contribute to Canada's objective to phase down HFCs to 15% of calculated baseline levels by 2036 via Environment and Climate Change Canada's (ECCC's) Ozone depleting Substances and Halocarbon Alternatives Regulations (ODSHAR). **Relevant targets or ambitions:** *CIF Ambition 13.1:* Canadians reduce their greenhouse gas emissions. *CIF Target 13.1:* By 2030, reduce Canada's total greenhouse gas emissions by 40 to 45%, relative to 2005 emission levels. By	**Indicator result**: In 2023–24, no new HVAC-R equipment was installed.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
			2050, achieve economy-wide net-zero greenhouse gas emissions. *CIF Indicator 13.1.1:* Greenhouse gas emissions. *GIF Target 13.2:* Integrate climate change measures into national policies, strategies and planning. *GIF Indicator 13.2.2*: Total greenhouse gas emissions per year.	
Modernize through net-zero-carbon buildings	Decarbonize the CSA's real property portfolio by implementing measures identified in the carbon-neutrality studies and by outlining the roadmap to carbon neutrality. **Program**: Internal Services	**Performance indicator**: Percentage change in the CSA's GHG emissions from facilities operations between 2005–06 (base year) and the current reporting fiscal year. **Starting point**: In 2005-06, the CSA's total GHG emissions was: 2.4 ktCO2e. In 2022-23, the CSA's total GHG emission from its facilities operations was 1 ktCO2e, which represents a 56% reduction below the 2005–2006 level.[6] **Target**: Reduce the CSA's total GHG emission by 40% below 2005 levels by 2025.	Following the completion of carbon-neutral studies for its two main buildings in 2022 and 2023, the CSA plans to outline the carbon-neutrality strategy roadmap for its portfolio and make sure to align building maintenance strategy with carbon-neutrality study conclusions. All these actions will allow the CSA to reduce its GHG emissions related to the operation of its buildings and to invest in low-carbon renovations. Thus, the CSA will contribute to the reduction of total scopes 1–2 GHG emissions related to the operation of federal buildings and ensure that the reduction targets set by the Government of Canada are met. **Relevant targets or ambitions:**	**Indicator result**: Between 2005–06 and 2023–24, the CSA reduced its total GHG emissions from its facilities and operations by 44.1%. **Notes:** The loss in reduction between 2022–23 and 2023–24 is mainly due to a facility mechanical issue (broken water heaters), which resulted in a temporary increase in natural gas consumption. Normal consumption should be resumed once the water heaters are replaced in 2024–25. Other reasons, such as the increase of Ontario emission factors (EF), the return to service of the cafeteria and the change in the total emission of our baseline years

[6] Starting point is now 2.36 ktCO2e. This modification is due to a change in the emissions factor that decreased our baseline total emissions, going from 2.397 to 2.357 ktCO2e. The changes in the EFs are out of our control and were due to revised coal oxidation factors, updated Global Warming Potential (GWP), and revised activity data presented in the Report on Energy Supply and Demand (RESD).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		Reduce the CSA's total GHG emission by 90% below 2005 levels by 2050. Reduce the CSA's total GHG emission by an additional 10% every 5 years, starting in 2025.	*CIF Ambition 13.1*: Canadians reduce their greenhouse gas emissions. *CIF Target 13.1*: By 2030, reduce Canada's total greenhouse gas emissions by 40 to 45%, relative to 2005 emission levels. By 2050, achieve economy-wide net-zero greenhouse gas emissions. *CIF Indicator 13.2*: Greenhouse gas emissions. *GIF Target:* Integrate climate change measures into national policies, strategies and planning. *GIF Indicator 13.2.2*: Total greenhouse gas emissions per year.	(see Footnote 6), also had an impact in lowering our reduction rate this year.

Target: The Government of Canada will transition to climate resilient operations by 2050 (All Ministers).

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Reduce risks posed by climate change to federal assets, services and operations	The CSA will take action to reduce the risks identified in its climate risk and resiliency study by: • Incorporating and/or strengthening the consideration of climate change in business continuity planning,	**Performance indicator**: Percentage of critical assets for which action has been taken to reduce climate change impacts.	Factoring climate variability and change into policy, programs, and operations is one of the important ways in which the government can adapt and be resilient to a changing climate. By assessing the risks of climate change impacts on critical assets, and developing plans to mitigate those	**Indicator result**: In 2023–24, action had been taken to reduce climate change impacts for 50% of critical assets.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
	departmental risk planning or equivalent processes, and program design and delivery considerations. • Incorporating the conclusion of CSA climate risks and resiliency study in its operational activities and other real property portfolio strategy planning. • Integrating future climate change conditions and adaptations into major real property projects to make sure that building projects and retrofits are climate resilient. Program: Internal Services	**Starting point**: In 2022–23, action has been taken to reduce climate change impacts for 50% of critical assets. **Target**: By 2026-27, action will be taken to reduce climate change impacts for 100% of critical assets.	risks, the CSA will reduce the risk of disruption of critical service delivery to Canadians. **Relevant targets or ambitions:** *CIF Ambition 13.2*: Canadians are well-equipped and resilient to face the effects of climate change. *GIF Target 13.1:* Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. *GIF Target 13.2:* Integrate climate change measures into national policies, strategies and planning. *GIF Indicator 13.2.1*: Number of countries with nationally determined contributions, long-term strategies, national adaptation plans and adaptation communications, as reported to the secretariat of the United Nations Framework Convention on Climate Change.	

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Take action on climate change and its impacts"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Collaborate on emergency management and disaster risk reduction	The CSA will continue to provide satellite data in response to the Charter activations. **Program**: Space Utilization	**Performance indicator**: Percentage of International Disaster Charter activations that have been supported with CSA images. **Starting point**: 84% of International Charter activation has been supported with CSA images in 2022–23. **Target**: 80% or above of the International Charter activations will be supported with CSA images annually.	The provision of CSA satellite images to disaster relief efforts is essential in responding to natural disasters around the world. This endeavour not only strengthens international relationships; it also contributes to emergency management and disaster risk reduction. **Relevant targets or ambitions:** *CIF Ambition 13.2*: Canadians are well-equipped and resilient to face the effects of climate change. *CIF Indicator 13.2.1*: Frequency of selected natural disasters. *GIF Target 13.1:* Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries. *GIF Indicator 13.1.1*: Number of deaths, missing persons and directly affected persons attributed to disasters per 100,000 population.	**Indicator result**: In 2023–24, 80% of International Disaster Charter activations were supported with CSA images. **Notes:** The decrease in the result is due to a normal variation in charter support based on requests for Canadian data. The indicator will be monitored closely to ensure that the target is met over time.
Support climate change adaptation across Canada	Ensure the continuous delivery of Earth observation services to partners. **Program**: Space Utilization	**Performance indicator**: Number of Earth observation data services offered by the Space Utilization Program (SUP).	Space-based data is an indispensable tool for learning about our planet and its complex dynamics. This data is the cornerstone on which government departments, industry, and academia rely for monitoring vulnerabilities, assessing natural disasters, and engineering cutting-	**Indicator result**: In 2023–24, 8 EO services were offered by the SUP. **Notes:** The number of services provided by SUP remained stable in 2023–24.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
		Starting point: In 2022-23, 8 EO services were offered by the SUP. **Target**: By 2026-27, 11 EO services will be offered by the SUP	edge solutions to withstand today's environmental challenges and those to come. By ensuring the continuous delivery of data from its Earth observation (EO) satellites to its national and international partners, the CSA contributes to the understanding of climate change, the assessment of its impacts, and the development of effective adaptation strategies to mitigate its effects. **Relevant targets or ambitions:** *CIF Ambition 13.2:* Canadians are well-equipped and resilient to face the effects of climate change. *GIF Target 13.2:* Integrate climate change measures into national policies, strategies and planning.	

GOAL 17: STRENGTHEN PARTNERSHIPS TO PROMOTE GLOBAL ACTION ON SUSTAINABLE DEVELOPMENT

FSDS Context:

Satellites in space offer valuable information that can change people's lives for the better and inform government decisions. Space-borne data enables innovators in the academic and business communities to find solutions to tangible challenges faced in day-to-day lives, such as wild forest fires, water scarcity, floods and heat waves.

Canada's space community, with its Earth observation capability, currently collaborates with American, European, Japanese and other partners. In 2023–24, Canada became an official member of the **Space Climate Observatory** which is an international initiative that brings together public and private organizations involved in Earth observation to develop tools to monitor, mitigate and adapt to the impact of climate change.

2023-01-18 – Artist's rendering of the SWOT satellite with solar arrays fully deployed. (Credit: CNES/Mira Productions)

When it comes to taking action to protect Canada's and the world's ecosystems, the CSA contributes to this by sharing space-borne data nationally and internationally, and by financially supporting the development of applications. The CSA's **RADARSAT satellites**, for example, monitor ecosystems and ice, facilitate marine surveillance, and assist in disaster management, resource management, and mapping around the world. Making this data accessible provides all partners with key information to monitor environmental conditions and inform decision making. Another example is the **SCISAT** satellite, which collects atmospheric data to monitor global air quality, ozone recovery and the Earth's climate in line with Canada's engagement to the United Nations' Montréal Protocol and the Paris Agreement. In 2023–24, a new dataset was released that includes new data products related to a family of substances used in the refrigeration and air conditioning industry. SCISAT data was also used to discover a new chemical process that links wildfire smoke to ozone depletion. The **SWOT satellite** surveys 90% of the Earth's water and provides integral support to a plethora of services that benefit Canadians. In December 2023,

SWOT data was **publicly released** for the first time. Other CSA satellites and instruments[7] also monitor different parts of the world's ecosystems, atmosphere and oceans.
Additionally, the CSA has actively improved the availability of scientific data and publications as part of the Open Government initiative.
The CSA provides access to scientific data in atmospheric science, earth surface science, solar-terrestrial science, astronomy, planetary exploration, space health and space technologies. Greater access to space-borne data will result in more value-added applications and services for Canadians, developed by all actors of the space sector, while strengthening international partnerships.

Implementation strategies supporting the goal

This section is for implementation strategies that support the goal **"Strengthen partnerships to promote global action on sustainable development"** but not a specific FSDS target.

IMPLEMENTATION STRATEGY	DEPARTMENTAL ACTION	PERFORMANCE INDICATOR STARTING POINT TARGET	HOW THE DEPARTMENTAL ACTION CONTRIBUTES TO THE FSDS GOAL AND TARGET AND, WHERE APPLICABLE, TO CANADA'S 2030 AGENDA NATIONAL STRATEGY AND SDGS	RESULTS ACHIEVED
Work with partners to monitor and protect our ecosystems through space-based services and technologies.	The CSA will continue to provide space-based data to other governmental departments (OGDs) and the private sector and support the development of data processing applications to monitor and protect the environment. **Program**: Space Utilization Space Capacity Development	**Performance indicator:** Number of services to Canadians offered by OGD and the private sector dependent on space data. **Starting point:** 49 services offered by OGDs and the private sector are dependent on space data in 2022–23 **Target**: 60 services to be offered by OGDs and the private sector are dependent on space data by 2026-27.	Fostering partnerships with national and international partners is essential to the success of climate change actions. By supporting government departments and the private sector in providing services dependent on space-based data to Canadians, the CSA is contributing to the development of services and applications that have the capacity to protect and monitor our ecosystems. **Relevant targets or ambitions:** *CIF Ambition*: Canada fosters collaboration and partnerships to advance the SDGs.	**Indicator result**: There were 55 services to Canadians offered by OGD and the private sector dependent on space data in 2023–24. **Notes:** In 2023–24, the services were offered by 7 OGDs and 11 organizations from the private sector. In addition to the 55 operational services registered this year, 20 are currently in development.

[7] For a list of Earth observation satellites, please visit: Earth observation satellites | Canadian Space Agency

Advance open data initiatives.	The CSA will continue its efforts to strengthen partnerships by making space-based data available to its partners and the public. **Program**: Space Utilization Space Exploration Space Capacity Development Internal Services	**Performance indicator**: Number of datasets made available through CSA support. **Starting point**: 35 datasets in 2018. **Target**: 53 datasets will be made available through CSA support by 2026-27.	By continuing to make space data available to partners and the public, the CSA is promoting collaborative sustainable development. Through the Open Government initiative, the CSA has made data more accessible and has encouraged information sharing between partners. The information collected by CSA satellites and projects is useful in establishing sustainable development targets and evaluating the impacts of climate change; CSA data is therefore paramount in advancing the sustainable development goals. **Relevant targets or ambitions:** *CIF Ambition*: Canada fosters collaboration and partnerships to advance the SDGs. *CIF Indicator*: Number of open datasets published by the Government of Canada.	**Indicator result**: There were 53 datasets made available through CSA support in 2023–24. **Notes:** Overall, there are 28 datasets available through the Open Government websites, 15 datasets available through a partner website, and 10 datasets available through agreements with the CSA.

Integrating Sustainable Development

The CSA has committed to a series of internal initiatives that seek to further sustainable development into its internal processes. First, the CSA has taken steps to ensure that its decision-making processes take the objectives and targets of the FSDS into account. The CSA plans to intensify its efforts to integrate sustainable development into its internal management practices, policies and real property operations, as well as in its procurement through activities that support the Greening Government Strategy, the FSDS's goals and targets, Canada's 2030 Agenda and the SDGs.

Furthermore, the CSA has planned to add sustainable development requirements, such as the Greening Government Strategy's objectives and Strategic Environmental and Economic Assessment (SEEA) processes, into its Investment Governance Management Framework. This will ensure that sustainable development takes precedence and is duly considered throughout the planning and implementation phases of projects.

The longevity of our space assets is also at the core of the CSA's priority. For example, launched in 2003, SCISAT was supposed to deliver data for two years. Twenty years later, SCISAT still provides scientists all over the world with crucial information on the chemical composition of the atmosphere. Mission extensions are not only good for return on investment, but they are also contributing to maintain a sustainable space environment.

The CSA has also planned to integrate resilient and net-zero objectives into its operations management. As part of this initiative, the CSA plans to align its goal of carbon neutrality with its real property strategy, transition to greener procurement, integrate climate resiliency and adaptation into project management and encourage low-carbon mobility (carpooling, public transit, cycling). In parallel, the CSA will continue to integrate sustainable development through its

participation in all Greening Government committees and communities of practice at the national level.

Moreover, the CSA has drafted a green procurement directive, which will act as a significant step towards formalizing its commitment to green procurement obligations. This directive will not only solidify the CSA's dedication to environmentally responsible practices but will also ensure the reduction of environmental impacts from its procurement activities. The CSA will continue to make sure that all procurement and materiel management specialists are properly trained (e.g., the Canada School of Public Service course on green procurement or equivalent) within one year of being hired.

On February 22, 2024, the Honourable Anita Anand, President of the Treasury Board of Canada, announced new Greening Government Fund initiatives. Two of these involve the CSA: decarbonizing research and development service contracts and advanced control strategies for the CSA's Space Centre. The first involves conducting a life cycle assessment on an outer space project to gather relevant data on the environmental impacts of these missions, while the second involves optimizing heating, ventilation and air conditioning (HVAC) control systems at the Space Centre in St-Hubert.

The CSA has also dedicated itself to ensuring that sustainable development is reflected within the organization's communications and outreach. In this regard, the CSA proactively shares environmental performance updates with its employees through a quarterly newsletter and organizes activities during special occasions, such as the Canadian Environmental Week. In the past, such initiatives have involved a micro forest plantation activity, bicycle repair workshops and electric vehicles conferences. In 2023–24, the newly appointed Environmental Champion announced the creation of the CosMoss Committee. This environmental committee will work closely with the Greening Government team to organize events and activities that aim to share knowledge, raise awareness and mobilize the CSA workforce.

Representatives from the signatories of the Artemis Accords at the kick-off of the 2nd edition of the Artemis Accords Workshop at the John H. Chapman Space Centre. (Credit: Canadian Space Agency)

The 2023–27 DSDS cycle presents an opportunity for the CSA to refine its organizational vision and mission. The CSA is aiming to foster a workplace where sustainability is deeply embedded in the organizational culture to pave the way towards a greener future. The CSA is also looking forward to embracing this change and to contributing to protecting the Earth and its citizens' quality of life. With this mindset, the CSA is looking towards participating in the international efforts on space sustainability and the limitations of space debris. As a leading signatory of the **Artemis Accord**, the CSA has committed to "limit, to the extent practicable, the generation of now, long-lived harmful debris released through normal operations, break-up in operational or post-mission phases, and accidents and conjunctions."

In 2023–24, the CSA also participated in the first Space Agencies Leaders' Summit at COP 28 in Dubai, where leaders from two dozen space agencies discussed enhancing data sharing, strengthening climate research, supporting climate monitoring initiatives and promoting sustainable space operations. The summit concluded with participants pledging to enhance space-based climate initiatives to accelerate climate action in line with the 2015 Paris Agreement.

The CSA will ensure that its decision-making process includes consideration of FSDS goals and targets through the updated Strategic Environmental and Economic Assessment (SEEA) process, which came into force on April 1, 2024. The SEEA modernizes the previous analytical framework, which was the Strategic Environmental Assessment. An SEEA for a policy, plan or program proposal includes an analysis of the potential environmental and economic impacts of a given proposal, with a special focus on climate change and biodiversity, and supports relevant FSDS goals and targets.

Prior to the update, the CSA conducted assessments under the Strategic Environmental Assessment (SEA). The CSA completed one preliminary scan as part of a budget request in 2023–2024 to anticipate and mitigate environmental issues.

The Canadian Space Agency is planning to assess new proposals under the SEEA process starting in 2024–2025 and will issue a public statement when an initiative has undergone a detailed SEEA (**see here**). The purpose of the public statement is to demonstrate that the environmental effects of the approved policy, plan or program have been considered during proposal development and decision making, including the impacts on achieving the FSDS goals and targets.

To complete a SEEA, the CSA must complete the mandatory **Climate, Nature and Economy Lens** (CNEL), to ensure that any SEEAs are conducted appropriately and consistently. The preliminary screening portion of the CNEL requires CSA to consider important effects related to greenhouse gases (GHG) and impact Canada's GHG emissions reduction plans or targets, important impacts on nature and biodiversity, and other important environmental effects. Responses to the preliminary screening portion of the CNEL determine whether CSA undertakes a detailed SEEA process, which includes quantitative greenhouse gas modelling or economic modelling results.

The Canadian Space Agency did not complete any detailed SEAs in 2023–24.