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# GENDER MAINSTREAMING TOOLKIT FOR THE SPACE SECTOR



UNITED NATIONS



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UNITED NATIONS  
OFFICE FOR OUTER SPACE AFFAIRS

GENDER  
MAINSTREAMING  
TOOLKIT  
for the Space Sector



**UNITED NATIONS**

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Astronaut Christina Koch reflected in the helmet of her colleague Jessica Meir during an all-female spacewalk outside of the International Space Station  
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## FOREWORD

For millenniums, space exploration was limited to our sight and imagination. Today, we use advanced technology to broaden our horizons and understand our origins in the cosmos. And, looking down at Earth from orbit, we cherish our beautiful home with its beauty and fragility, propelling us to seek solutions that improve the well-being of all living things.

However, amid the spectacular results of modern technology, a glaring disparity persists. The gap in representation where the voices and contributions of women remain conspicuously underrepresented holds us back as we seek to progress on global challenges.

Time and time again, empirical evidence has shown that we cannot treat gender equality merely as a matter of fairness. At its core, it is about much more than parity – it is a strategic imperative. Why? My message is simple – leaving women and girls behind leaves everyone behind and prevents us from reaching goals and maximizing benefits for all that are well within our reach.

Only by fostering an inclusive environment can we harness the full spectrum of talent, ideas and skills, so crucial in a frontier field with such transformative power.

Through the Space4Women project led by the United Nations Office for Outer Space Affairs (UNOOSA), we confront this imbalance head on. By empowering women around the world to actively participate in space-related activities, this initiative demonstrates the significance of gender equality in the space sector. Through networking and mentorship, and by nurturing talent, we are making a real difference.

We are now proud to present a Gender Mainstreaming Toolkit which we hope will inspire, equip and help navigate the path to driving necessary change. The Toolkit itself was born of the project and is based on valuable expertise and insights from both established and emerging professionals in the field.



The 2023 Space4Women Expert Meeting that we proudly co-hosted with the Canadian Space Agency (CSA) was instrumental in the process. We are grateful to our partner and all participants for their support in preparing this guide towards rectifying the systemic inequalities that have hindered progress for far too long.

The Toolkit is a comprehensive resource that addresses a range of challenges, and its ultimate goal is not inherently utopian – it is, in the end, enshrined in the Charter of the United Nations. We must tackle biases and obstacles that have created a problem that should have been overcome a long time ago.

Change is not an option, but a necessity. We must act now – it is our shared responsibility to women around us and for future generations to come. May this guiding document shine as a beacon of hope and inspiration for all those who strive to make the dream of space exploration a reality for everyone.

**Ms. Aarti Holla-Maini**

Director,  
United Nations Office for Outer Space Affairs

## FOREWORD

Space has the unique ability to inspire people around the world, across cultures and generations. By channelling this inspiration into innovation, we can leverage space technologies to help solve some of humanity's biggest challenges. The potential is immense – from using satellite data to better understand and mitigate the effects of climate change, to improving food and health-care access through advances in technologies devised for space exploration.

Canada is proud to have co-hosted the 2023 Space4Women Expert Meeting alongside the United Nations, bringing global experts together to review and prepare the space sector's first Gender Mainstreaming Toolkit. We are grateful for the contributions from each Expert Meeting participant and from supporting institutions, organizations and governments.

We need the knowledge of diverse groups of people, including women and girls, to help maximize the innovation potential of space. As the importance of space to the lives of people

all around the world grows, it creates jobs, opportunities and high demand for people with the skills and talents to help advance humanity's future in space. To ensure that future is more equitable, we urgently need women of all backgrounds to help seize the opportunities created by the space economy.

The Canadian Space Agency (CSA) is focused on addressing the gender gap in the space workforce of Canada by encouraging and supporting women and girls in their pursuit of education and careers in science, technology, engineering and mathematics (STEM). CSA invests in youth STEM programmes so that students, including girls, can engage in space activities and be inspired to become part of a more diverse space workforce.

From Dr. Roberta Bondar, the first Canadian woman and the first neurologist in space, to Dr. Jenni Gibbons, engineer and Canadian backup crew member on the historic Artemis II mission to the Moon, and the thousands of women who work in the space sector nationwide, women in





Canada have and continue to significantly contribute to advancements in space. In Canada, we also recognize the important ways of knowing and lived experiences of First Nations, Inuit and Métis. Our understanding of the universe, and of equity, is strengthened by working closely with Indigenous peoples.

Building on this legacy, we must continue our collective work to better empower women and girls everywhere, and to create a space workforce that is more inclusive of the full range of human talent and potential. This Toolkit offers a range of important measures that organizations are encouraged to adopt to help bring about meaningful improvements for gender equality in the global space community.

CSA is honoured to have supported its creation, to ensure that the benefits of space reach everyone. When the space sector embraces diversity, we bring the greatest minds together, and we move confidently towards a brighter and more sustainable future on Earth.

**Ms. Lisa Campbell**

President,  
Canadian Space Agency

## ACKNOWLEDGEMENTS

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Special thanks are also due to Aarti Holla-Maini, UNOOSA Director, and Lisa Campbell, President of CSA, for their leadership and support.



# Chapter 1.

## BACKGROUND

Space4Women is an initiative of the United Nations Office for Outer Space Affairs (UNOOSA) to advance gender equality in the space sector and in the STEM fields. The objectives of Space4Women are to raise awareness about the importance of gender equality and women's empowerment in the space sector; to strengthen and deliver targeted capacity-building activities both at institutional and individual level; to encourage women and girls to pursue space and STEM education and careers; and to contribute to achieving Sustainable Development Goal (SDG) 4 on quality education and SDG 5 on gender equality. As part of its activities, UNOOSA co-hosts annual expert meetings to advance the discussion around gender equality at the global level.

In 2023, UNOOSA and CSA hosted the fourth Space4Women Expert Meeting from 30 October to 3 November in Montréal, Canada. The theme was to build the capacity

of individuals and institutions to promote and advance gender equality and empower all women and girls in the space sector. This Gender Mainstreaming Toolkit is the key output, made possible by combining expertise of the United Nations, CSA and the participants in the fourth Expert Meeting.

### 1.1 Purpose

This is the first Gender Mainstreaming Toolkit for the space sector. It aims to:

- Strengthen the capacity of the global space community to undertake gender mainstreaming efforts to address underlying systemic gender inequalities, at various levels and contexts. This means supporting organizations taking measures to increase the representation of women as well as creating enabling environments where women can thrive.

- Provide simple and practical measures, examples and tools to help people who are not gender specialists adapt gender mainstreaming efforts to their unique situations.

For maximum impact, organizations are encouraged to follow up with institutional commitments, policies, data collection and reporting, and implementation plans. The responsibility for implementing gender mainstreaming also lies with the individuals involved in the space sector to amplify efforts and ensure that gender biases and stereotypes are not perpetuated.

This Toolkit will help space-related institutions to:

- Better recruit and retain talent: Integrate the perspectives and needs of all women in their work to achieve equal opportunities and outcomes for everyone
- Understand and address underlying systemic or structural causes of gender-based inequality to create policies and targeted interventions at international, national, regional and local levels that include everyone
- Develop adequate accountability mechanisms to monitor progress at the management level

## 1.2 Scope

Target institutions for this Toolkit include entities engaged in any space-related activities such as:

- Space agencies or other space-related public organizations
- Academia
- Civil society organizations
- Industry, and
- International and regional organizations

## 1.3 Gender mainstreaming

At the fourth World Conference on Women that took place in Beijing in 1995, gender mainstreaming was reaffirmed by Member States of the United Nations as the fundamental strategy to achieve gender equality and women's empowerment.<sup>[1]</sup>

“Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies, or programmes in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design,

implementation, monitoring and evaluation of policies and programmes in all political, economic, and societal spheres so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal is to achieve gender equality.”<sup>[2]</sup>

As mentioned in the UN-Women Gender Mainstreaming Handbook on Gender Equality Results, gender mainstreaming involves targeted and fully integrated approaches to addressing gender equality challenges, known as the “twin track approach.”<sup>[3]</sup>

- *Targeted approaches* include the development of specific interventions or actions that have the primary goal of gender equality
- *Integrated approaches* consider the regular inclusion of gender equality issues as part of programming, with the final goal of making it gender responsive.<sup>[4]</sup> The primary goal relates to a specific programme or policy, but gender equality is considered a significant objective

Gender mainstreaming is an approach to achieving both programming and institutional change. It is important to recognize that mainstreaming is not a final resolution, but instead a strategy to achieve the goal of gender equality.



Participants at the fourth Space4Women Expert Meeting in October 2023 posing with Canadian astronaut Dr. Jenni Gibbons

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## Chapter 2.

# GENDER EQUALITY

Gender equality is a fundamental human right and an important international, political and policy priority for fostering a peaceful, prosperous and sustainable world.<sup>[5]</sup> Despite many efforts to advance gender equality, structural and systemic discrimination against women and girls persists around the world. According to a report by UN-Women and the United Nations Department of Economic and Social Affairs, without further investment, it could take close to 300 years to achieve full gender equality.<sup>[6]</sup>

Bold action is needed as gender balance in the labour market has the potential to boost

gross domestic product by 9.2 per cent on average across the Organisation for Economic Co-operation and Development (OECD) countries by 2060.<sup>[7]</sup> Various efforts to close the gender gap have been implemented across OECD countries from parental leave, flexible work hours and higher representation in leadership roles.<sup>[8]</sup> However, women continue to face barriers to accessing quality education and good jobs, opportunities for entrepreneurship and self-employment, equitable pay, and paid care and equal housework.

## 2.1 Gender equality in the space sector

Although efforts are under way to include more women and girls in the space sector, it is still largely male dominated, with men making up most of the workforce globally.<sup>[9]</sup> By ensuring women have access to quality education and decent jobs, the space sector can reach its full

potential while ensuring the benefits of space reach everyone.

The nature of the space sector is highly innovative and jobs in STEM are the backbone of the industry. Up to 90 per cent of future jobs

(beyond the space sector) will require some degree of STEM-related skills, necessary for solving the key global challenges, from health equity to climate change and food security (see box 1).[10] Although a number of countries are investing in STEM fields, women hold only one in five STEM jobs.[11] The absence of women in STEM fields can lead to developing technological solutions that are not inclusive, further deepening existing gender disparities.[12] Statistics show four key trends in this respect:

- Access to STEM-related education is not available to everyone. According to UNICEF, 125 million girls in developing countries are deprived of opportunities to access education, including STEM fields.[13] While most girls begin primary education, fewer than half make it to the upper secondary level where STEM skills are solidified.[14]
- More boys than girls between the ages of 13 and 14 wish to pursue careers in mathematics or science. [15] Girls' confidence in mathematics and science can be negatively impacted by peers, parents, teachers and educational materials that promote gender stereotypes in STEM, which can influence the quality of education they receive and the careers they pursue.[16]
- While women graduate in STEM programmes at faster rates than men, research shows that many women do not pursue higher education or jobs in STEM fields due to gender bias and discrimination. [17] For example, one study by UNESCO reported the barriers to STEM education and careers experienced by women. These include discrimination, pressure to marry early, expectations to take full responsibility for household and family duties, and "glass ceilings" that prevent women from accessing leadership positions.[18]
- For women who do pursue STEM careers, barriers remain. Women are underrepresented in leadership, managerial and technical positions – and these barriers are amplified for marginalized groups of women. According to the 2019 OECD Report on the Space Economy, the employment of women in space and/or aerospace manufacturing hovers around 20 per cent in Europe and the United States.[19] Human spaceflight, the most symbolic of all space activities,



has historically been dominated by men. As of November 2023, men represent 89 per cent of all people who travelled to space, whereas women represent only 11 per cent.<sup>[20]</sup> This imbalance has limited our understanding of how an astronaut's sex influences their health in space and post-spaceflight.

While these trends show a limited participation of women and girls in STEM and space fields, the international community reaffirmed the importance of gender equality in these sectors in the "Space2030" Agenda. This is an overarching document for strategy in the space domain in support of Sustainable Development Goals endorsed by the Committee on the Peaceful Uses of Outer Space and adopted by the General Assembly in 2021. One of its overarching objectives is to improve access

to space for all, and to "promote inclusiveness and gender equality in space activities, including by strengthening the participation of women in science, technology, engineering and mathematics education."<sup>[21]</sup> In 2023, in the report entitled "Our Common Agenda", including policy brief 7 entitled "For all humanity – the future of outer space governance", the Secretary-General highlighted the need to "accelerate efforts to advance the equal participation of women in the aerospace sector, including through programmes that promote STEM education for girls".<sup>[22]</sup>

It is thus paramount that institutions and individuals take action to create enabling environments and uplift women and girls in the space and STEM fields.

**Box 1.****Gender equality in the space sector supports the broader United Nations Sustainable Development Agenda**

Women play a significant role in disaster management and response, agriculture and food security, and water resources management. Including women and girls in the design, development and delivery of space-enabled technologies that drive solutions that work for everyone, contributes to SDGs such as Goal 2 on zero hunger, Goal 6 on water and sanitation, and Goal 13 on climate action. In addition, gender equality in space can tap into the diverse skills and talents of everyone, promoting inclusivity in entrepreneurial endeavours and technological advancements that benefit

society (Goal 8 on decent work and economic growth and Goal 9 on industry, innovation and infrastructure). The economic empowerment of women in the space sector has broader impacts on the quality of life of women, men, children and families overall, as higher income translates into financial freedom and quality of life in general (Goal 5). Gender equality in the space sector can also foster inclusive institutions by challenging discriminatory practices and promoting equal opportunities (Goal 16 on peace, justice and strong institutions).





## Chapter 3.

# GENDER MAINSTREAMING TOOLKIT

This chapter will provide a series of measures and submeasures for gender mainstreaming in the space sector. Institutions are encouraged to adopt these measures based on the context, size and maturity of their organization. These measures include:

- Committing at all levels to advance gender equality
- Promoting equal opportunities within the organization
- Creating dedicated programming to empower all women and girls
- Measuring and reporting on gender equality outcomes

A series of examples are presented throughout the text. More information about these examples can be found in the links contained in the references list. A checklist of the steps to implement the measures is provided in the annex.

## 3.1 MEASURE ONE: Committing at all levels to advance gender equality

To successfully implement gender mainstreaming as a strategy to achieve gender equality in the space sector, active effort and participation is required from all leaders and staff at all levels within and across organizations.

While there may be international and national policies and tools to support the integration of gender mainstreaming in your country such as gender budgeting or feminist foreign policies, it is important for each organization to create internal policies with gender equality objectives specific to the space sector to guide collective efforts and track progress.<sup>[23]</sup>

### Establishing an organizational policy on gender mainstreaming

An organizational policy on gender mainstreaming can help drive accountability for gender equality and should include objectives (specific to the space sector), key requirements and roles and responsibilities on gender mainstreaming for leaders and staff. The example in box 2 highlights the gender mainstreaming organizational policy of CSA.

This policy can be developed in consultation with all staff in the organization, as well as any existing networks that advance women or diversity, equity and inclusion (DEI) in STEM or the space sector.

The existence of gender mainstreaming policies can ensure that the contributions, perspectives and needs of women and marginalized groups are included at every aspect of the organization. Implementing and adhering to these policies will

#### Box 2.

### Canadian Space Agency (CSA) Gender-based Analysis Plus (GBA Plus) assessments

All CSA initiatives (e.g. policies, programmes, projects, grants and contributions, budget proposals, etc.) that are new or which need re-approval are subject to the GBA Plus policy of the Government of Canada, which seeks to ensure no adverse impacts of new initiatives on diverse groups of people and, more generally, better results for all Canadians.

require buy-in from leaders and staff. Resistance could be encountered for many reasons, such as maintaining the status quo, bias, misperceptions or individual attitudes. Therefore, dedicated leadership and resources can help overcome implementation barriers to ensure the success, accountability and sustainability of policies that support and promote gender equality.

### Having dedicated leadership and resources

Institutions are encouraged to reflect on the internal and external resources needed to advance gender mainstreaming within their organization, including in areas such as governance, policy development/implementation, awareness and training, and data collection, monitoring and reporting. Sustainable

leadership and resources for gender mainstreaming are key indicators of the organization's commitment to advance gender equality. Consider scaling up based on the size, capacity and context of your organization. The following table highlights a variety of approaches that may be relevant depending on organizational size and context.

Regardless of the approach taken, it is important to develop a workplace culture where gender mainstreaming is considered a common responsibility of all employees and management. To enable this diffusion, identify and develop job competency requirements on gender equality that translate into recruitment processes, job descriptions, workplans and performance assessments as well as in criteria for promotion for all employees and management.<sup>[24]</sup>

**Table. Approaches to advancing gender mainstreaming**

Approach	Organization size	Description
Advisory committee	Any size	An advisory committee typically consists of external experts who provide advice or recommendations to an organization without having the formal authority and decision-making powers of a board of directors. When forming an advisory committee, consider individuals with diverse skills, backgrounds, and expertise in gender equality.

**Table. Approaches to advancing gender mainstreaming** *(continued)*

Approach	Organization size	Description
Gender equality in existing job descriptions	Small to medium	Small to medium organizations aiming to increase their capacity in gender mainstreaming can begin with integrating this role and responsibility in existing positions and job descriptions.
Community of practice	Medium to large	A community of practice (CoP) can include staff whose official responsibilities are gender mainstreaming as well as allies and supporters of gender equality. A CoP helps ensure that gender mainstreaming knowledge and skills are shared across the organization and facilitates the exchange of lessons learned and promising practices.
Dedicated gender adviser or focal point	Small to large	Small, medium to large organizations with more resources can create one or more gender adviser or focal point positions, either on top of their existing responsibilities or as distinct roles. Eventually they could invest in an entire gender equality unit or office. Where possible, dedicated and paid staff whose main responsibility and expertise is gender mainstreaming should be assigned such a role rather than volunteers working in an ad hoc capacity or part-time.
Gender mainstreaming leader	Medium to large	An executive-level gender mainstreaming leader such as an ambassador or a champion can be identified to promote gender equality efforts throughout the organization. Ideally, the leader has both the capacity and commitment to inspire and make decisions to enable gender mainstreaming. Having experiences, expertise and the ability to provide financial support to gender equality efforts can increase credibility.

## Delivering training for staff and raising awareness

To successfully implement gender mainstreaming within and across an organization, the active effort and participation of all staff is required. Staff should be supported with gender mainstreaming training, ranging from introductory training to ensure they have a basic level of understanding, to ongoing progressive and targeted training for various occupational groups and functional areas.<sup>[25]</sup> Depending on the size and complexity of the organization, training could be made specific to the staff's day-to-day activities such as programmes, procurement, evaluation or communications. Gender mainstreaming training can include

topics such as gender-sensitive programming, gender analysis and gender mainstreaming strategies and tools.<sup>[26]</sup> Publicly available and free online learning exists such as the [Asian Development Bank's Gender Mainstreaming course](#) or [Canada's Gender-based Analysis Plus \(GBA Plus\) online learning](#).

Raising awareness about gender mainstreaming can include targeted campaigns, informal lunches and learning events aimed at promoting available resources such as gender mainstreaming toolkits. Similarly, opportunities could be explored to create mentorship opportunities and networks for women and marginalized groups as tools to raise awareness and foster organic learning about gender equality.

## 3.2 MEASURE TWO: Promoting equal opportunities within the organization

Challenges remain to achieving equal representation of women in the space sector, particularly in leadership, managerial and technical positions. The historic underrepresentation of women at all levels of the space sector can be attributed to biases, both subconscious and conscious. For instance, biases related to parental leave or gender norms such as domestic and care work may influence the hiring process such as decisions around “best fit” or during pay negotiations.<sup>[27]</sup>

Societal and structural norms, including the lack of caregiving support can negatively impact women’s career progression and prospects for promotion.

Initiatives such as providing opportunities for women for career development and progression, and supportive human resources practices such as flexible working hours and considerations regarding work-life balance can promote equal opportunities within the space sector.

### Increasing representation of women at all levels

To achieve equal opportunities in larger organizations, instruments such as equal opportunity plans<sup>[28]</sup> or equity, diversity and inclusion action plans<sup>[29]</sup> can facilitate a systemic approach to achieving gender balance in staffing patterns and tracking progress. These plans can include clear objectives and planned measures to achieve realistic targets.

Consider a workforce analysis which includes the following general approach to increasing the representation of women and marginalized groups in the workplace:

- Understand the current composition of your workforce
- Identify where representational gaps exist
- Set realistic and incremental gender equality or equity, diversity and inclusion targets
- Pursue sustainable actions to increase the representation of women



Understanding the composition of the space workforce is a starting point to identify the baseline and track whether progress is being made. While some spacefaring nations collect data on their workforce, data is not available for many countries and often not comparable. To address the lack of information and comparability, UNOOSA has launched a Landmark Study on Gender Equality in the Space Sector (see box 3) to measure the participation of

### Box 3.

#### Landmark Study on Gender Equality in the Space Sector

Launched in 2024, the UNOOSA study on the participation of women in the space sector focuses on measuring gender representation across the functions and roles of different organizations at global level. It further analyses policies or interventions that aim to advance gender equality and looks at potential correlations between such measures and higher or lower representation of women. It provides a baseline for countries to track progress towards achieving gender equality in the space sector. The study and the survey can be consulted [here](#) as a starting point for analysing their workforce.

women in the space workforce and track progress towards achieving gender equality.

### Establishing measures to recruit, retain and promote women

Efforts to recruit, retain and promote women in the space sector are ways to increase their representation. Remember that it is important to improve the representation of women at all levels, sectors and positions within the organization, including in the executive, managerial, scientific and technical, legal, policy, communications and administrative levels. Here are some examples of actions to promote women during the recruitment and hiring process:

- Internship, apprentice or mentorship opportunities to help young women prepare for the workforce
- Increasing outreach to promote job advertisements and use gender-inclusive language
- Gender-neutral recruitment practices such as removing the name or photo of applicants when reviewing resumes and applications [30]
- Providing unconscious bias training to staff involved in HR decisions, and
- Including women and marginalized groups on interview panels

Box 4 highlights other examples implemented by the Kenya Space Agency to promote equal opportunities within the organization.

Retention strategies are also needed to sustain gender equality efforts in the workplace such as addressing the gender pay gap. Whether intentionally or unintentionally, the work of women can be undervalued. Gender stereotypes exacerbate the issue as there is a belief that women do not engage in salary negotiations.<sup>[31]</sup> Measures such as including the salary range or explicitly stating that salaries are negotiable in job advertisements can help reduce the gender gap.<sup>[32]</sup>

The workplace should also be set up for women to thrive. A good practice is to establish networks to promote the representation of women in STEM fields, including the space domain. These networks, typically known as employee resource groups (ERGs), can provide support personally and professionally, including training and professional development opportunities to help women advance in their careers. For example, NASA has ERGs such as the Allies and Advocates for Women (A2W) and has produced a guidance document on how to develop effective ERGs. In addition, these networks can also help provide visibility to women who are working in these sectors through

#### Box 4.

#### Promoting equal opportunities at Kenya Space Agency

In 2020, the Kenya Space Agency (KSA) adopted a gender mainstreaming policy addressing all measures included in this Toolkit. KSA measures include:

- Encouraging applicants from marginalized groups to apply for opportunities and shortlist them in line with affirmative action
- Treating all its employees equally with regards to pay, benefits, transfers, training, promotion, growth and development
- Using affirmative action as a corrective measure for gender imbalances (...) including in recruitment, training, development and promotion, particularly in appointments of heads of sections, committees and governance units.

newsletters, speaking engagements, outreach and role model opportunities. CSA has established a Women in Science, Technology and Management Committee that focuses on concerted actions that help achieve better representation of women in key roles across the Agency, working within the CSA GBA Plus and Employment Equity and Diversity frameworks.

In addition, networks exist outside the workplace to strengthen connections among women and have access to role models. An example from New Zealand is highlighted in box 5.

All staff working in the space sector have a role to play in uplifting women, including those who belong to marginalized groups. All women deserve to be recognized for their unique experiences, and subsequently gain visibility and equal opportunities for career progression. Consider initiatives that can help women increase their chances for promotion by having equal access to professional development and training, targeted mentorship and networking,

#### Box 5.

### Women in Space Aotearoa New Zealand (WISANZ)

WISANZ is a national professional and inclusive network that aims to support and enable women and gender minorities working in the New Zealand space sector and those wanting to join the sector. Their “[Space Up](#)” programme provides girls direct engagement with women role models and access to profiles showcasing the different study and career pathways of women space mentors.

#### Box 6.

### Job sharing at UK Space Agency

Dividing one full-time role is an innovative way of pooling skills and experience while fostering work-life balance. [Sharing jobs at UK Space Agency](#) creates new learning opportunities, and helps attract and retain staff, particularly those with caring responsibilities or returning to work after an absence such as maternity/paternity leave.

as well as opportunities related to leadership, job sharing (see Box 6.), access to research funding, including grants and contributions, and publications. Consider developing a list of women candidates that can be drawn upon for various opportunities, as they arise.

### Fostering an inclusive workplace

An inclusive workplace is critical to achieving gender equality as women of all backgrounds are fully able to participate and contribute to a work environment that is free from harassment and discrimination. [33] Fostering an inclusive workplace calls on employers and leaders to balance:

- A sense of belonging among employees where everyone is accepted just the way they are, and
- Individuation where every person is seen, heard and valued with the different perspectives and backgrounds that they bring to work.

Measures to foster an inclusive workplace include the use of flexible working arrangements, family-friendly policies to support all employees, and common standards of conduct.<sup>[34]</sup> Flexible working arrangements are mutually beneficial arrangements between staff and their managers to agree on when, where and how work is completed (e.g. in-person, remote, working hours). Staff-centric

policies, including parental, medical or compassionate leave and accommodations, can enable staff to effectively balance personal, family and professional commitments which arise throughout the span of an employee's career. Common standards of conduct are also important to secure a harmonious and discrimination-free workplace where employees feel safe and respected. Organizations must take action to ensure a workplace culture where misconduct, including harassment and discriminatory behaviour, is not tolerated. As highlighted in box 7, the implementation of awareness-raising campaigns or the establishment of whistle-blowing systems are concrete measures that organizations can implement.

**Box 7.****OHB “Watch out” campaign**

The Orbital- und Hydrotechnologie Bremen-System GmbH (OHB), a European space and technology group headquartered in Germany, launched the “Watch out” campaign in 2022 to raise awareness among employees of the issues of sexism and sexual harassment in the workplace. The goal was to encourage employees to look out for one another and maintain a positive working environment at OHB. The “Watch out”

campaign, initiated by the equal opportunities officer, included posters, training for managers, help/SOS toolkits, and guidelines for victims and witnesses, among others. In addition, the OHB Group instituted a whistle-blowing system available to all employees as an additional channel to report severe violations including discrimination or sexual harassment.

### 3.3 MEASURE THREE: Creating dedicated programming to empower all women and girls

Creating dedicated programming to empower all women and girls in the space sector is a targeted approach to gender mainstreaming (see chapter I).

Organizations can research, identify and address potential barriers to the access and participation of women in the space sector to inform tangible dedicated programming. Resources such as this Toolkit and data from the Space4Women project can offer guidance on what actions to pursue to support women and girls.

In addition, organizations can partner with other local, regional and international organizations that reach out and support women in STEM and space to maximize efforts.

#### Inspiring all girls and young women to pursue STEM and space education

As discussed, cultural and social norms and stereotypes can influence the perceptions young women have regarding their abilities, roles in

society, career and life aspirations – including their participation in the space sector.

To address this barrier, mentorship opportunities and programmes that encourage girls through hands-on activities are very important. For instance, international programmes such as the UNOOSA Space4Women Mentorship

#### Box 8.

#### UNOOSA Space4Women Mentorship programme

The Mentorship programme matches experienced mentors in the space sector with mentee women and girls who would like to pursue their studies or careers in space or STEM-related subjects. Mentors are leaders and professionals in the space industry and represent a variety of fields and geographic regions. Together, these mentors support women and girls around the world to cultivate their skills, knowledge and networks. In 2023, the programme included 94 mentors and 152 mentees from 67 countries.

programme inspire and support girls and young women from all over the world (see box 8).

Many programmes also exist at national level. Examples are the She Space programme (see box 9) or the Female Space Workforce Development programme of the Republic of Korea (see box 10).

#### Box 9.

### She Space International

The She Space programme, initiated in Israel in 2017, utilizes climate change as a research topic, employing remote sensing technologies to engage high school-age girls in STEM subjects free from gender stereotypes. Since 2019, She Space has expanded internationally to include Brazil, Côte d'Ivoire, Germany, Nigeria, Peru, the Republic of Korea, Spain, Switzerland, Togo and the United States. Mentored by faculty and graduate students, participants explore academic research, space industries and agencies in their countries, gaining a global perspective. The programme aims to broaden horizons and inspire young women to pursue scientific careers, fostering a constructive environment for exploration and learning in space sciences.

#### Box 10.

### Republic of Korea Female Space Workforce Development programme

The Female Space Workforce Development programme was created by the Government of the Republic of Korea to expand the nation's female space workforce. This programme includes hands-on satellite remote sensing education for high school girls, internships and mentoring for female university students, and capacity-building and leadership development activities for female researchers. It also supports networking events, conference sessions and workshops organized to promote women's participation in space. While the programme is funded by the Ministry of Science and ICT and managed by the Korean Aerospace Research Institute (KARI) Academy, much of the activity and the development of the actual content of the programme itself is led by the members of the KARI Women's Association.

It is important to provide access to role models at a young age by connecting girls with established women professionals at primary to high schools or post-secondary institutions through guest lectures by women in the space sector.

In addition, awareness-raising campaigns that target not only young women but also their parents and/or guardians can help break gender stereotypes. Collaborating with parents, teachers and the overall education sector is critical to breaking down gender stereotypes. Consider providing funding opportunities for young women to attend space conferences or training, scholarships to pursue STEM or space education at post-secondary institutions, or internships to access employment and expand their professional networks.

### Including women in the design phase and throughout the project and programme life cycle

It is essential that women from all backgrounds are represented throughout the life cycle of a project or programme, including in the feasibility, design, build, testing, deployment and closure stages.<sup>[35]</sup>

In fact, gender considerations should be integrated as early in the programme design as possible. Proactively considering gender differences during early issue identification and research phases, as well as project team design would ensure that gender-specific needs and requirements are planned from the outset. If

not, specification gaps in the designed products, services or solutions may occur. Whether in Earth science development and application (see box 11), or spacesuit design (box 12), including and considering women in all stages is necessary.<sup>[36]</sup>

#### Box 11.

#### SERVIR and Women in Earth Science

SERVIR, a joint initiative of NASA and USAID, uses satellite data and geospatial technology to address challenges such as climate change, food security, disasters and air quality. The organization highlights the importance of including women at all stages of developing and applying Earth science. Women tend to occupy fewer decision-making roles, and are not necessarily involved in deciding how to apply geospatial and Earth data to address agriculture-related concerns. In addition, due to gendered division of labour, women might farm different crops to men. Unless the factors above are addressed, crop monitoring data tools will be solely based on men's realities, perpetuating inequities as such tools will not apply to women's farming needs.



**Box 12.****Inclusion through NASA spacesuit design**

Since the first spacesuits designed in the early 1960s, NASA has developed groundbreaking spacesuit technology. While the number of women astronauts has increased, the first NASA all-women spacewalk was postponed from 29 March 2019 to 21 October 2019 (seven months later) because there were not enough space suits that comfortably and safely fit both participating women. As the space sector continues to become more inclusive, the spacesuit prototype for the NASA Artemis III Moon Surface Mission, the AxEMU, will fit a broad range of crew members, accommodating at least 90 per cent of the United States male and female population. This exemplifies lessons learned through the adoption of universal design in efforts to be more inclusive.

Considering various perspectives in all space activities is important for keeping up with the pace of technological innovation and advancement in a dynamically changing sector.

However, given that women are currently under-represented in the space sector, it may not always be possible to achieve gender balance

on all projects. Therefore, when possible, project teams can consult directly with women and marginalized groups with lived experiences or from organizations that partner or support them. This includes women in space-adjacent industries such as the STEM field and women-led businesses. Organizations are also encouraged to seek women's perspectives through data, secondary research and literature from sources such as those created by governments and not-for-profit organizations.

**Empowering women through space technologies and applications**

Another way to empower women is to have dedicated programming that encourages and enables women to use space technologies and their applications to improve their lives and those of their communities.

Space technologies connect remote and isolated communities to services, education and work opportunities. They increase the accessibility of educational resources and remote learning, and support the delivery of health-care services through telemedicine. Space assets are crucial for monitoring climate change, optimizing crop productivity, using land and water

resources efficiently, and supporting disaster management and response.

While such benefits apply across the entire population, women's experiences need to be considered.

Globally, over 40 per cent of the agricultural workforce<sup>[37]</sup> are women, but in the least developed economies two in three women work in this sector, often informally. In many cultures, women are traditionally perceived

as water providers and managers but make up less than 20 per cent of the WASH (water, sanitation and hygiene) labour force.<sup>[38]</sup> This comparatively greater dependence on natural resources makes women more vulnerable to disaster risks, droughts or crop losses. It is thus important to empower women through space technologies, making them not only beneficiaries but also active contributors to space solutions. Box 13 presents how capacity-building initiatives empower women in Costa Rica.

### Box 13.

#### Costa Rica Geospatial Technologies Rally

The Women's Geospatial Technologies Rally delivers capacity-building initiatives designed to empower women, specifically those from rural communities in Costa Rica, through training and technical guidance to propose and develop their own prototype solutions to community issues, using geospatial technologies. The key components of these geospatial rallies include the use of accessible and cost-effective geospatial technologies, such as popular geospatial applications, unmanned aerial systems, single-board micro-controllers and various spatial data collection

techniques. Over 625 women have benefited from these rallies and the programme has expanded to other Central American countries, such as Guatemala, Honduras and Nicaragua. The focus of the project is to find solutions related to local issues, such as disaster risk prevention, environmental conservation, water management and agricultural systems management. More than 100 prototypes have been developed for the participants and most of them implemented in their communities.

## 3.4 MEASURE FOUR: Measuring and reporting on gender equality outcomes

Measuring and reporting on gender equality outcomes is critical for tracking progress towards gender results.<sup>[39]</sup> Reporting on gender equality outcomes can drive accountability and inspire organizations and the sector to act.

### Collecting gender-related data

The establishment of data-collection plans can help organizations understand what data needs to be collected, when and how often (e.g., yearly, quarterly, etc.), from where, from whom, and how (e.g., online survey, administrative data, etc.). Collecting gender-related data, therefore, supports the establishment of outcomes, indicators and targets necessary to evaluate the impact of measures and review progress on advancing gender equality. Here are some examples of how to collect gender-related data:

- *Quantitative data:* Gender-related disaggregated data is information that is categorized by gender and sociodemographic factors such as age, race/ethnicity or geography, which allows for intersectional analysis of specific characteristics of

various population groups.<sup>[40]</sup> For example, consider the intersection between gender and Indigeneity which presents itself in data as information specifically about the Indigenous population, particularly women. An example of disaggregated data collection is presented in box 14.

- *Qualitative data:* Gender-related qualitative information captures various perspectives and experiences through surveys, observations, interviews or focus groups. Collecting this type of data provides deeper insights and a more comprehensive understanding of social relationships, power dynamics, gender roles and behaviours.<sup>[41]</sup>

Where possible, this data should be collected directly from the individual through self-identification questionnaires with the option to not respond (e.g., “prefer not to say”) to respect privacy.<sup>[42]</sup> Deciding not to engage in any data collection of personal information should not become a barrier to participation. A robust data-collection framework respects the confidentiality and privacy of individuals, includes

**Box 14.****Disaggregated data collection at the South African National Space Agency**

To better understand its workforce, the South African National Space Agency (SANSA) collects disaggregated data categorized by gender, race/ethnicity and ability. According to the 2023/2024 Annual Performance Plan, the percentage of permanent female employees increased from 38.2 per cent in 2011 to 45.6 per cent in 2022. The largest underrepresentation of female employees is in professional and skilled categories. Seventy per cent of senior and top management, including board members, were females, with 54 per cent being African and Black females.

safeguards for data protection, and clearly communicates the purpose and use of their personal information.

Organizations should also consider and address potential challenges such as overcollection of data, data validity (e.g., not everyone chooses to share their gender due to confidentiality concerns), small sample sizes and risk mitigation for any data breaches. Guidance such as that offered by the United Nations Development

Group on data privacy, ethics and protection can inform data-collection efforts to enable monitoring and evaluation.

**Identifying gender-related outcomes, indicators and targets**

Collecting data and identifying outcomes, indicators and targets based on available baseline information and gender-related data are needed when measuring and reporting on gender equality outcomes. An example of specific target setting is provided in box 15.

**Box 15.****Setting targets at the Japan Aerospace Exploration Agency (JAXA)**

The Work-life Support and Diversity Office is responsible for promoting diversity and work style reform at JAXA, including the promotion of gender equality. Among others, JAXA offers childcare support. In its employer action plan, JAXA set the target of achieving an 80 per cent satisfaction rate of employees who are eligible for maternity and childcare leave and are using the JAXA childcare support system.

Identifying gender outcomes and indicators early on is critical in the planning phase of a policy or programme to be able to monitor and evaluate its effectiveness later (see section below on evaluation). Instruments such as the [SERVIR Gender Analysis Tool](#) can help understand what key data needs to be collected, how to conduct stakeholder mapping, how to capture secondary data and to identify gaps including gender-disaggregated data.

Although it is important to set realistic representation targets, consider the aspirational objective of pursuing gender parity as a potential ultimate outcome of your gender mainstreaming efforts.

### Monitoring progress towards gender equality outcomes

To track the progress of a policy or programme in achieving its objectives and to inform decision-making by management,<sup>[43]</sup> it is important to monitor and analyse the gender data collected over the course of implementation. This process allows for understanding of where programming is at in terms of planned gender equality results.<sup>[44]</sup> It typically emphasizes the examination of processes, including the timing and location of activities, the

individuals or systems involved in their delivery, the reach of the programme or project of the target population, and the extent of their ability to advance gender equality.<sup>[45]</sup> It is important to keep in mind that monitoring is active, periodic and ongoing during the implementation phase of a project or programme.<sup>[46]</sup> Observations and conclusions from monitoring efforts are used for effective management of a project or programme to maximize positive gender results and minimize the risk of any adverse results or impacts.

### Evaluating progress on gender equality outcomes

Gender-responsive evaluations inform decision-making, improve programme delivery, foster innovation and demonstrate accountability towards gender equality outcomes.<sup>[47]</sup> Gender-responsive evaluation allows for a systematic and impartial assessment of a programme, policy, strategy or other interventions to determine their relevance, impact and effectiveness in advancing gender equality.<sup>[48]</sup> To maximize effectiveness, gender equality issues can be explicitly included in evaluation objectives, processes, methodologies and reports, and in the dissemination and use of findings, conclusions and recommendations.<sup>[49]</sup>

There are two important elements in gender-responsive evaluations. The first focuses on the gender results achieved and the extent to which a programme has contributed to gender equality. The second focuses more on the process by evaluating the effectiveness of gender mainstreaming efforts and the lessons learned – both challenges and constraints as well as effective approaches.<sup>[50]</sup>

### Reporting on gender equality impacts, opportunities and challenges

Reporting is a step towards accountability after completing data collection, monitoring and evaluation.<sup>[51]</sup> When reporting on gender equality outcomes in the space sector, it is beneficial to describe what was achieved, assess actual results against expected or intended results, identify promising practices and lessons learned, and make recommendations for improvement. Consider inclusive and accessible communication to ensure that the report is disseminated to all stakeholders, including the main beneficiaries of the gender mainstreaming initiatives that were completed.



# Annex: CHECKLIST

STEPS	COMPLETED
<b>1. COMMITTING AT ALL LEVELS TO ADVANCE GENDER EQUALITY</b>	
<b>Establishing an organizational policy on gender mainstreaming</b>	
<p>Consult staff in the organization or any existing networks that advance women or DEI to develop organizational policy</p>	
<p>Identify objectives, key requirements, roles and responsibilities of leaders and staff, and include them in organizational policy</p>	
<b>Having dedicated leadership and resources</b>	
<p>Identify one or more champions at executive level to promote gender equality efforts throughout the organization</p>	
<p>Set up an advisory committee to make recommendations on measures to advance gender equality</p>	
<p>Establish a gender focal point or unit to develop, implement and monitor gender mainstreaming measures</p>	
<p>Provide dedicated budget and necessary resources to implement gender mainstreaming efforts</p>	

STEPS	COMPLETED
<b>Delivering training for staff and raising awareness</b>	
Organize gender mainstreaming training for staff and management	
Provide introductory training and targeted training for various occupational groups and functional areas	
Raise awareness about gender mainstreaming through targeted campaigns, formal or informal events	
<b>2. PROMOTING EQUAL OPPORTUNITIES WITHIN THE ORGANIZATION</b>	
<b>Increasing representation of women at all levels</b>	
Undertake analysis to understand workforce composition and identify representational gaps	
Set realistic gender balance and gender equality targets to achieve a balanced workforce at all levels	
Set up an equal opportunity plan to measure gender representation and track progress	
<b>Establishing measures to recruit, retain and promote women</b>	
Provide opportunities to women and girls through: <ul style="list-style-type: none"> <li>• Internships</li> <li>• Targeted mentorship programmes</li> <li>• Networking</li> <li>• Professional development and training</li> </ul>	
Establish gender-neutral recruitment practices such as CV blind review and the use of gender-inclusive language for job advertisements	
Provide unconscious bias training to staff involved in human resources decisions	



STEPS	COMPLETED
Include women and representatives of marginalized groups on interview panels	
Ensure equal pay and benefits	
Establish or support the establishment of an employee network to support women	
<b>Fostering an inclusive work environment</b>	
Promote the use of flexible working arrangements	
Establish family-friendly policies such as parental leave to support all employees	
Set common standards of conduct to ensure an inclusive and discrimination-free workplace	
<b>3. CREATING DEDICATED PROGRAMMING TO EMPOWER ALL WOMEN AND GIRLS</b>	
<b>Inspiring all girls and young women to pursue STEM and space education</b>	
Create mentorship opportunities and programmes that encourage girls through hands-on activities	
Provide funding opportunities for young women to attend space conferences or training	
Support access to women role models for young girls	
<b>Including women in the design phase and throughout the project and programme life cycle</b>	
Ensure gender representation balance in all projects and teams	
Assess who is impacted by the project/programme and how, identifying differences between groups of different gender	

STEPS	COMPLETED
<p>Collect perspectives directly from women or seek information through secondary research</p>	
<p>Integrate gender considerations throughout the life cycle of a project or programme, including:</p> <ul style="list-style-type: none"> <li>• Feasibility</li> <li>• Design</li> <li>• Build</li> <li>• Testing</li> <li>• Deployment</li> <li>• Closure stage</li> </ul>	
<p><b>Empowering women through space technologies and applications</b></p>	
<p>Assess needs of women and identify potential differences between groups of different gender</p>	
<p>Create dedicated programming that encourages and enables women to use space technologies and their applications</p>	
<p>Consider delivering capacity-building initiatives designed to empower women, particularly those from remote and rural communities</p>	
<p><b>4. MEASURING AND REPORTING ON GENDER EQUALITY OUTCOMES</b></p>	
<p><b>Collecting gender-related data</b></p>	
<p>Establish data-collection plans to identify data to be collected, source, frequency, and collection and analysis method</p>	
<p><b>Identifying gender-related outcomes, indicators and targets</b></p>	
<p>Establish outcomes, indicators and targets necessary to evaluate the impact of intervention and review progress</p>	

STEPS	COMPLETED
<p><b>Monitoring progress towards gender equality outcomes</b></p>	
<p>Monitor and analyse the data collected over the course of implementation of an intervention</p>	
<p><b>Evaluating progress on gender equality outcomes</b></p>	
<p>Conduct systematic and impartial assessment of interventions to evaluate relevance, impact and effectiveness</p>	
<p><b>Reporting on gender equality impacts, opportunities and challenges</b></p>	
<p>Assess actual results against expected or intended results</p>	
<p>Identify promising practices and lessons learned</p>	
<p>Make recommendations for improvement and inform future decisions</p>	
<p>Present results in a dedicated report or other accessible formats, and distribute to stakeholders and beneficiaries of interventions</p>	



Pioneering software engineer, Margaret Hamilton, poses beside the guidance material she helped produce for the NASA Apollo programme and the historic moon landing of 1969

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## ADDITIONAL RESOURCES

### Publications

- “APEC gender-mainstreaming mentoring package”, Asia Pacific Economic Cooperation, 2022. Available at: [https://www.apec.org/docs/default-source/publications/2022/2/apec-gender-mainstreaming-training-package-mentor%27s-handbook/222\\_act\\_gender-mainstreaming-training-package\\_mentor%27s-handbook.pdf?sfvrsn=d0eb6909\\_2](https://www.apec.org/docs/default-source/publications/2022/2/apec-gender-mainstreaming-training-package-mentor%27s-handbook/222_act_gender-mainstreaming-training-package_mentor%27s-handbook.pdf?sfvrsn=d0eb6909_2)
- *Artemis Generation Spacesuits: Educator Guide*, NASA, 2023. Available at: <https://www.nasa.gov/wp-content/uploads/2023/03/artemis-generation-spacesuits-508.pdf>
- *Evaluation of the implementation of Gender-Based Analysis Plus at the Canadian Space Agency*, Canadian Space Agency, 2021. Available at: <https://www.asc-csa.gc.ca/eng/publications/er-1920-0201.asp>
- *The Future of Jobs Report*, World Economic Forum, 2020. Available at: [https://www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2020.pdf](https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf)
- *Gender Analysis Tool*, SERVIR, 2023. Available at: <https://servirglobal.net/sites/default/files/2023-06/IUCN-SERVIR-gender-analysis-tool.pdf>
- “Gender Checklists”, Asian Development Bank, n.d. Available at: <https://www.adb.org/documents/series/gender-checklists>
- *Gender Mainstreaming: A Guide to Organisational Change*, European Institute for Gender Equality, 2016. Available at: [https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language\\_content\\_entity=en](https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language_content_entity=en)
- *Gender Mainstreaming Policy*, Kenya Space Agency, 2020. Available at: <https://ksa.go.ke/assets/files/KSA-GENDERMAINSTREAMINGPOLICY-FINALAUG20201.pdf>
- *Joining Forces for Gender Equality: What is Holding us Back?*, OECD, 2023. Available at: <https://www.oecd.org/gender/joining-forces-for-gender-equality-67d48024-en.htm>
- *Pay transparency tools to close the gender wage gap*, OECD, 2021. Available at: [https://www.oecd-ilibrary.org/social-issues-migration-health/pay-transparency-tools-to-close-the-gender-wage-gap\\_eba5b91d-en](https://www.oecd-ilibrary.org/social-issues-migration-health/pay-transparency-tools-to-close-the-gender-wage-gap_eba5b91d-en)
- *South Africa National Space Agency Annual Performance Plan 2023/2024*, 2023. Available at: <https://www.sansa.org.za/wp-content/uploads/2023/03/SANSA-Annual-Performance-Plan-20232024.pdf>
- *The Space Economy in Figures 2019*, OECD, 2019. Available at: <https://www.oecd.org/innovation/the-space-economy-in-figures-c5996201-en.htm>
- “Sustainability report 2022”, OHB, 2022. Available at: [https://www.ohb.de/fileadmin/ohb/Nachhaltigkeitsberichte/2022/OHB\\_SE\\_Nachhaltigkeitsbericht\\_2022\\_E.pdf](https://www.ohb.de/fileadmin/ohb/Nachhaltigkeitsberichte/2022/OHB_SE_Nachhaltigkeitsbericht_2022_E.pdf)

## United Nations resources

- “Agreed Conclusions, 1997/2, excerpted from the Economic and Social Council for the year 1997”, A/52/3/Rev.1, United Nations, 1997. Available at: [https://undocs.org/Home/Mobile?FinalSymbol=A%2F52%2F3%2FREV.1\(SUPP\)&Language=E&DeviceType=Desktop&LangRequested=False](https://undocs.org/Home/Mobile?FinalSymbol=A%2F52%2F3%2FREV.1(SUPP)&Language=E&DeviceType=Desktop&LangRequested=False)
- “Data privacy, ethics and protection guidance note on big data for achievement of the 2030 agenda”, United Nations Development Group, 2017. Available at: [https://unsdg.un.org/sites/default/files/UNDG\\_BigData\\_final\\_web.pdf](https://unsdg.un.org/sites/default/files/UNDG_BigData_final_web.pdf)
- “Enabling environment guidelines”, United Nations, 2019. Available at: <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2019/Gender-parity-Enabling-environment-guidelines-en.pdf>
- Gender Equality Glossary. UN Women Training Centre eLearning Campus. Available at: <https://trainingcentre.unwomen.org/mod/glossary/view.php?id=36&mode&lang=en>
- *Gender Mainstreaming in Practice a Toolkit*, UNDP Kyrgyzstan, 2014. Available at: <https://www.undp.org/kyrgyzstan/publications/toolkit-gender-mainstreaming-practice>
- Gender mainstreaming. Strategy to promote gender equality, United Nations, 2001. Available at: <https://www.un.org/womenwatch/osagi/pdf/factsheet1.pdf>
- *Handbook on Gender Mainstreaming for Gender Equality Results*, UN-Women, 2022. Available at: <https://www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf>
- “Mapping gender equality in STEM from school to work”, UNICEF, 2020. Available at: <https://www.unicef.org/innocenti/reports/mapping-gender-equality-stem-school-work-report>
- Monitoring and Evaluation, UNDAF Campaign Guidance. Available at: <https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-6-Monitoring-And-Evaluation.pdf>
- “Progress on the Sustainable Development Goals: the gender snapshot 2022”, UN Women, 2022. Available at <https://data.unwomen.org/publications/progress-sustainable-development-goals-gender-snapshot-2022>
- “Progress on the Sustainable Development Goals: the gender snapshot 2023”, UN DESA, 2023. Available at: <https://unstats.un.org/sdgs/gender-snapshot/2023/#:~:text=The%20Progress%20on%20the%20Sustainable%20Development%20Goals%3A%20The,the%20journey%20towards%20achieving%20gender%20equality%20by%202030.>
- “RESPECT Women: preventing violence against women – implementation package”, UN-Women, 2020. Available at: <https://www.unwomen.org/en/digital-library/publications/2020/07/respect-women-implementation-package.>
- *STEM Education for Girls and Women. Breaking Barriers and Exploring Gender Inequality in Asia*, UNESCO, 2020. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000375106?posInSet=4&queryId=7ebcf2e8-68bf-4921-a0f4-e0f8737a4600>
- Sustainable Development Goal 5, Achieve gender equality and empower women and girls, United Nations. Available at: <https://sdg-tracker.org/gender-equality>

- “Women in science – 2019”, UNESCO Institute for Statistics, 2022. Available at: <http://uis.unesco.org/en/topic/women-science>

## Articles

- “2021–2024 Employment equity, diversity and inclusion action plan”, Canadian Space Agency, 2021. Available at: <https://www.asc-csa.gc.ca/eng/publications/employment-equity-diversity-inclusion-action-plan-2021-2024.asp>
- “Allies and advocates for women (A2W)”, NASA Office of Diversity and Equal Opportunity, n.d. Available at: <https://odeo.larc.nasa.gov/ergs/a2w/>
- “Canadian employers failing mothers returning from parental leave: report”, Benefits Canada, 2021. Available at: <https://www.benefitscanada.com/news/bencan/canadian-employers-failing-mothers-returning-from-parental-leave-report/>
- “Diversity at work: making the most of increasingly diverse societies”, OECD, 2020. Available at: <https://www.oecd.org/els/diversity-at-work-policy-brief-2020.pdf>
- “Japan Aerospace Exploration Agency work-life support and diversity office”, n.d. Available at: <https://stage.tksc.jaxa.jp/geoffice/en/research/network.html>
- “JAXA general employers action plan integrated with the act on advancement of measures to support raising next-generation children and the act on promotion of women’s participation and advancement in the workplace”, 2022. Available at: [https://stage.tksc.jaxa.jp/geoffice/en/activity/pdf/7jisedai\\_3josei\\_en.pdf](https://stage.tksc.jaxa.jp/geoffice/en/activity/pdf/7jisedai_3josei_en.pdf)
- “Missing out on half of the world’s potential: fewer female than male top achievers in mathematics and science want a career in these fields”, UNESCO, 2022. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000381324>
- “More women and girls in science equals better science, UN chief declares”, United Nations, 2023. Available at: <https://news.un.org/en/story/2023/02/1133367>
- “Over one hundred women involved in agriculture and natural resource management in Costa Rica strengthened their digital and geospatial technology skills at IICA headquarters”, Inter-American Institute for Cooperation on Agriculture, 2023. Available at: <https://iica.int/en/press/news/over-one-hundred-women-involved-agriculture-and-natural-resource-management-costa-rica>
- “Power on: how we can supercharge an equitable digital future”, UN-Women, 2023. Available at: <https://www.unwomen.org/en/news-stories/explainer/2023/02/power-on-how-we-can-supercharge-an-equitable-digital-future>.
- “Privacy implementation notice 2023-02: Personal information for program monitoring, evaluation and reporting purposes”, Treasury Board of Canada Secretariat, 2023. Available at: <https://www.canada.ca/en/treasury-board-secretariat/services/access-information-privacy/access-information-privacy-notices/2023-02-evaluation.html>
- “She Space”, Israel Space Agency, Ben-Gurion University of the Negev. Available at: <https://in.bgu.ac.il/en/epif/Pages/She-Space.aspx>

- “Spacesuit for NASA’s Artemis III moon surface mission debuts”, NASA, 2023. Available at: <https://www.nasa.gov/humans-in-space/space-suit-for-nasas-artemis-iii-moon-surface-mission-debuts/>
- “Space-up”, Women in Space Aotearoa New Zealand. Available at: <https://www.womeninspace.co.nz/space-up>
- “Whistleblower system”, OHB, 2021. Available at: <https://www.ohb.de/en/corporate-governance/whistleblower-system>
- “Who we are”, SERVIR, n.d. Available at: <https://servirglobal.net/who-we-are>
- “Why gender equity matters in applied Earth science: a SERVIR miniseries”, 2023. Available at: <https://servirglobal.net/news/why-gender-equity-matters-applied-earth-science-servir-miniseries>
- “Work-life support and diversity office”, 2023. Available at: <https://stage.tksc.jaxa.jp/geoffice/en/activity/goal.html>

## Courses and guides

- Gender-based Analysis Plus course. Women and Gender Equality Canada, 2022. Available at: <https://women-gender-equality.canada.ca/en/gender-based-analysis-plus/take-course.html>
- Gender Equality Training. Asian Development Bank, n.d. Available at: <https://elearn.adb.org/course/index.php?categoryid=26>
- Gender Equality Training. European Institute for Gender Equality, 2016. Available at: <https://eige.europa.eu/sites/default/files/documents/mh0716093enn.pdf>
- Guidance for Developing Effective Employee Resource Groups (ERGs). NASA, 2018. Available at: [https://www.nasa.gov/wp-content/uploads/2018/08/erg\\_guidance\\_7-17-13.pdf](https://www.nasa.gov/wp-content/uploads/2018/08/erg_guidance_7-17-13.pdf)



## ABBREVIATIONS AND ACRONYMS

<b>CSA</b>	Canadian Space Agency
<b>DEI</b>	Diversity, equity and inclusion
<b>GBA Plus</b>	Gender-based Analysis Plus
<b>ERGs</b>	Employee resource groups
<b>JAXA</b>	Japan Aerospace Exploration Agency
<b>KARI</b>	Korean Aerospace Research
<b>KSA</b>	Kenya Space Agency
<b>NASA</b>	National Aeronautics and Space Administration
<b>OECD</b>	Organization for Economic Co-operation and Development
<b>SDG</b>	Sustainable Development Goals
<b>STEM</b>	Science, technology, engineering, mathematics
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization
<b>UNICEF</b>	United Nations International Children’s Emergency Fund
<b>UNOOSA</b>	United Nations Office for Outer Space Affairs

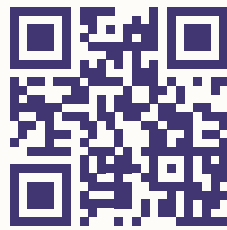
## ENDNOTES

- 1 “Progress on the Sustainable Development Goals: the gender snapshot 2022”, UN-Women, 2022. Available at <https://data.unwomen.org/publications/progress-sustainable-development-goals-gender-snapshot-2022>
- 2 “Agreed Conclusions, 1997/2”, excerpted from the Economic and Social Council for the year 1997, A/52/3/Rev.1, United Nations, 1997. Available at: [https://undocs.org/Home/Mobile?FinalSymbol=A%2F52%2F3%2FREV.1\(SUPP\)&Language=E&DeviceType=Desktop&LangRequested=False](https://undocs.org/Home/Mobile?FinalSymbol=A%2F52%2F3%2FREV.1(SUPP)&Language=E&DeviceType=Desktop&LangRequested=False)
- 3 *Handbook on Gender Mainstreaming for Gender Equality Results*, 2022, UN-Women. Available at: [www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf](http://www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf).
- 4 Ibid.
- 5 “Progress on the Sustainable Development Goals: the gender snapshot 2022”, UN-Women, 2022. Available at <https://data.unwomen.org/publications/progress-sustainable-development-goals-gender-snapshot-2022>
- 6 Ibid.
- 7 Ibid.
- 8 “All OECD countries need to step up efforts to boost gender equality”, OECD, 2023. Available at: [www.oecd.org/social/all-oecd-countries-need-to-step-up-efforts-to-boost-gender-equality.htm](http://www.oecd.org/social/all-oecd-countries-need-to-step-up-efforts-to-boost-gender-equality.htm)
- 9 *The Space Economy in Figures 2019*, OECD, 2019. Available at: [www.oecd.org/innovation/the-space-economy-in-figures-c5996201-en.htm](http://www.oecd.org/innovation/the-space-economy-in-figures-c5996201-en.htm)
- 10 *The Future of Jobs Report*, World Economic Forum, 2020. Available at: [www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2020.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf)
- 11 “Progress on the Sustainable Development Goals: the gender snapshot 2023”, UN DESA, 2023. Available at: <https://unstats.un.org/sdgs/gender-snapshot/2023/#:~:text=The%20Progress%20on%20the%20Sustainable%20Development%20Goals%3A%20The,the%20journey%20towards%20achieving%20gender%20equality%20by%202030>
- 12 Ibid.
- 13 “Mapping gender equality in STEM from school to work”, UNICEF, 2020. Available at: <https://www.unicef.org/innocenti/reports/mapping-gender-equality-stem-school-work-report>
- 14 *The Future of Jobs Report*, World Economic Forum, 2020. Available at: [www3.weforum.org/docs/WEF\\_Future\\_of\\_Jobs\\_2020.pdf](http://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf)
- 15 “Missing out on half of the world’s potential: fewer female than male top achievers in mathematics and science want a career in these fields”, UNESCO, 2022. Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000381324>
- 16 Ibid.
- 17 “Persistence and representation of women in STEM programs”, Statistics Canada, May 2019. Available at: [www150.statcan.gc.ca/n1/pub/75-006-x/2019001/article/00006-eng.htm](http://www150.statcan.gc.ca/n1/pub/75-006-x/2019001/article/00006-eng.htm); “Why Representation Matters for Girls and Women in STEM”, United States Environmental Protection Agency, May 2022. Available at: [www.epa.gov/perspectives/why-representation-matters-girls-and-women-stem](http://www.epa.gov/perspectives/why-representation-matters-girls-and-women-stem)

- 18 *STEM Education for Girls and Women. Breaking Barriers and Exploring Gender Inequality in Asia*, 2020, UNESCO. Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000375106?posInSet=4&queryId=7ebcf2e8-68bf-4921-a0f4-e0f8737a4600>
- 19 *The Space Economy in Figures 2019*, OECD, 2019. Available at: [www.oecd.org/innovation/the-space-economy-in-figures-c5996201-en.htm](http://www.oecd.org/innovation/the-space-economy-in-figures-c5996201-en.htm)
- 20 "Astronaut/cosmonaut statistics", Available at: [www.worldspaceflight.com/bios/stats.php](http://www.worldspaceflight.com/bios/stats.php)
- 21 A/RES/76/3 "The "Space2030" Agenda: space as a driver of sustainable development", Available at: [www.unoosa.org/res/oosadoc/data/resolutions/2021/general\\_assembly\\_76th\\_session/ares763\\_html/A\\_RES\\_76\\_3\\_E.pdf](http://www.unoosa.org/res/oosadoc/data/resolutions/2021/general_assembly_76th_session/ares763_html/A_RES_76_3_E.pdf)
- 22 "Our Common Agenda: policy brief 7 – for all humanity – the future of outer space", 2023. Available at: [www.unoosa.org/res/oosadoc/data/documents/2023/a77/a77crp\\_1add\\_6\\_0\\_html/our-common-agenda-policy-brief-outer-space-en.pdf](http://www.unoosa.org/res/oosadoc/data/documents/2023/a77/a77crp_1add_6_0_html/our-common-agenda-policy-brief-outer-space-en.pdf)
- 23 *Evaluation of the implementation of Gender-Based Analysis Plus at the Canadian Space Agency*, Canadian Space Agency, 2021. Available at: [www.asc-csa.gc.ca/eng/publications/er-1920-0201.asp](http://www.asc-csa.gc.ca/eng/publications/er-1920-0201.asp)
- 24 *Handbook on Gender Mainstreaming for Gender Equality Results*, 2022, UN-Women. Available at: [www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf](http://www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf)
- 25 *Gender Mainstreaming: A Guide to Organisational Change*, European Institute for Gender Equality, 2016. Available at: [https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language\\_content\\_entity=en](https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language_content_entity=en)
- 26 See for example: *Gender Mainstreaming Training Manual*, UNDP, 2023. [www.undp.org/sites/g/files/zskgke326/files/2023-03/Gender%20Mainstreaming%20Training%20Manual.pdf](http://www.undp.org/sites/g/files/zskgke326/files/2023-03/Gender%20Mainstreaming%20Training%20Manual.pdf)
- 27 "A gender analysis of the occupational pathways of stem graduates in Canada", Statistics Canada; Government of Canada. September 2016. Available at: [www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019017-eng.htm](http://www150.statcan.gc.ca/n1/pub/11f0019m/11f0019m2019017-eng.htm)
- 28 *Gender Mainstreaming: A Guide to Organisational Change*, European Institute for Gender Equality, 2016. Available at: [https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language\\_content\\_entity=en](https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/gender-mainstreaming-guide-organisational-change?language_content_entity=en)
- 29 "2021-2024 Employment Equity, Diversity and Inclusion Action Plan", Canadian Space Agency, 2021. Available at: [www.asc-csa.gc.ca/eng/publications/employment-equity-diversity-inclusion-action-plan-2021-2024.asp](http://www.asc-csa.gc.ca/eng/publications/employment-equity-diversity-inclusion-action-plan-2021-2024.asp)
- 30 See for example: "Guidelines for gender neutral recruitment, Government of South Australia", 2022. [https://office-forwomen.sa.gov.au/\\_\\_data/assets/pdf\\_file/0016/48112/Guidelines-Gender-Neutral-Recruitment-2022-04.pdf](https://office-forwomen.sa.gov.au/__data/assets/pdf_file/0016/48112/Guidelines-Gender-Neutral-Recruitment-2022-04.pdf)
- 31 "Now, Women Do Ask: A Call to Update Beliefs about the Gender Pay Gap", *Academy of Management*, vol. 10, no. 1. L. Kray, J. Kennedy, and M. Lee, 2023. Available at: <https://journals.aom.org/doi/10.5465/amd.2022.0021>
- 32 "Do Women Avoid Salary Negotiations? Evidence from a Large-Scale Natural Field Experiment", *Management Science*, vol. 61, no. 9. A. Leibbrandt and J. A. List, 2014. Available at: <https://pubsonline.informs.org/doi/10.1287/mnsc.2014.1994>
- 33 "Diversity at work: making the most of increasingly diverse societies", OECD, 2020. Available at: [www.oecd.org/els/diversity-at-work-policy-brief-2020.pdf](http://www.oecd.org/els/diversity-at-work-policy-brief-2020.pdf)
- 34 "Enabling environment guidelines", United Nations, 2019. Available at: <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2019/Gender-parity-Enabling-environment-guidelines-en.pdf>

## ENDNOTES

- 35 *The Standard for Project Management and A Guide to the Project Management Body of Knowledge (PMBOK® GUIDE)*, 7th edition. Project Management Institute, 2021.
- 36 “Power on: how can we supercharge an equitable digital future”, UN-Women, 2023. Available at: [www.unwomen.org/en/news-stories/explainer/2023/02/power-on-how-we-can-supercharge-an-equitable-digital-future](http://www.unwomen.org/en/news-stories/explainer/2023/02/power-on-how-we-can-supercharge-an-equitable-digital-future)
- 37 “Recognizing the agricultural efforts of women”, CGIAR, 2021. Available at: [www.cgiar.org/news-events/news/cgiar-celebrates-international-womens-day-2021/](http://www.cgiar.org/news-events/news/cgiar-celebrates-international-womens-day-2021/)
- 38 “Women are the secret weapon for better water management”, World Resource Institute, 2018. Available at: [www.wri.org/insights/women-are-secret-weapon-better-water-management](http://www.wri.org/insights/women-are-secret-weapon-better-water-management)
- 39 *Evaluation of UNDP Contribution to Gender Equality and Women’s Empowerment*, UNDP Independent Evaluation Office, 2015. Available at: <https://erc.undp.org/evaluation/documents/download/8794>
- 40 “Privacy Implementation Notice 2023-02: Personal information for program monitoring, evaluation and reporting purposes”, Treasury Board of Canada Secretariat, 2023. Available at: [www.canada.ca/en/treasury-board-secretariat/services/access-information-privacy/access-information-privacy-notices/2023-02-evaluation.html](http://www.canada.ca/en/treasury-board-secretariat/services/access-information-privacy/access-information-privacy-notices/2023-02-evaluation.html)
- 41 Ibid.
- 42 Ibid.
- 43 “RESPECT Women: Preventing violence against women - implementation package”, UN-Women, 2020. Available at: [www.unwomen.org/en/digital-library/publications/2020/07/respect-women-implementation-package](http://www.unwomen.org/en/digital-library/publications/2020/07/respect-women-implementation-package)
- 44 “Monitoring and evaluation, UNDAF campaign guidance”, <https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-6-Monitoring-And-Evaluation.pdf>
- 45 “RESPECT Women: Preventing violence against women – implementation package”, UN-Women, 2020. Available at: [www.unwomen.org/en/digital-library/publications/2020/07/respect-women-implementation-package](http://www.unwomen.org/en/digital-library/publications/2020/07/respect-women-implementation-package); *Handbook on Gender Mainstreaming for Gender Equality Results*, 2022, UN-Women. Available at: [www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf](http://www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf)
- 46 “Monitoring”, J. Hall, *Better Evaluation*, 2022. Available at: [www.betterevaluation.org/methods-approaches/themes/monitoring#:~:text=Types%20of%20evaluation,the%20risk%20of%20adverse%20impacts](http://www.betterevaluation.org/methods-approaches/themes/monitoring#:~:text=Types%20of%20evaluation,the%20risk%20of%20adverse%20impacts)
- 47 “Privacy Implementation Notice 2023-02: Personal information for program monitoring, evaluation and reporting purposes”, Treasury Board of Canada Secretariat, 2023. Available at: [www.canada.ca/en/treasury-board-secretariat/services/access-information-privacy/access-information-privacy-notices/2023-02-evaluation.html](http://www.canada.ca/en/treasury-board-secretariat/services/access-information-privacy/access-information-privacy-notices/2023-02-evaluation.html)
- 48 “Monitoring and evaluation, UNDAF campaign guidance”, <https://unsdg.un.org/sites/default/files/UNDG-UNDAF-Companion-Pieces-6-Monitoring-And-Evaluation.pdf>
- 49 *Handbook on Gender Mainstreaming for Gender Equality Results*, 2022, UN-Women. Available at: [www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf](http://www.unwomen.org/sites/default/files/2022-02/Handbook-on-gender-mainstreaming-for-gender-equality-results-en.pdf)
- 50 Ibid.
- 51 Ibid.



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