

Gender lens into Science, Technology and Innovation (STI) policies to effectively address socio-economic development challenges

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Abstract

The 2030 Agenda highlights that gender equality is not only a fundamental human right, but also a necessary foundation to achieve Sustainable Development Goals (SDGs). Therefore, to devise Science, Technology and Innovation (STI) policies for the advancement of SDGs will require to incorporate a gender perspective to address social equity and economic development. This policy brief proposes three main topics to introduce the gender lens throughout the field of STI. The first one involves the implementation of actions to enhance the participation of women and other marginalized groups into STI jobs and education, which would result into more creative solutions and greater potential for innovation. The second aspect refers to the use of STI to intentionally benefit girls and women or to solve gender-based problems. And the third one refers to the development of financing opportunities for STI businesses led by women or with diversity in the teams at both, private and public level supporting innovative businesses to address socio-economic development challenges, leaving no one behind.

Science, Technology and Innovation (STI) have the potential to either uplift people lives or to exacerbate gaps and inequalities, depending on how it is used and who is participating. Additionally, climate change and the COVID-19 crises also highlighted the fundamental role of STI to address these issues. Although there is agreement among sustainability actors that STI can contribute to advance SDGs, most of STI policies lack a gender perspective. Therefore, to address crises and inequalities effectively it is necessary to bring the relevance of the gender lens into STI policies to the attention of policy makers as well as cooperation programs to advance SDGs until 2030 and beyond. Because of this potential the priority theme for the 67th Session of the Commission on the Status of Women (CSW-67) will focus on innovation, technological change, and education for achieving gender equality and the empowerment of all women and girls¹.

As long as gender inequality is structural and systemic (Davis, 1981), gender mainstreaming it is not an easy task. It will imply a multidimensional approach with the participation of public and private stakeholders to deploy policies, regulations, incentives and practices in different sectors, areas and dimensions. This will require a paradigm shift involving a holistic approach at social, organizational and political level to develop effective policies, projects and products to enhance diversity participation into STI and consequently to address socio-economic development challenges, leaving no one behind. In order to contribute with gender mainstreaming into STI this policy brief proposes policy makers, academia and private sector

stakeholders to take into account three main topics to introduce the gender lens throughout the field of STI. The first involves the implementation of actions to enhance the participation of women and other marginalized groups into STI jobs and education opportunities. The second aspect refers to the use of STI to benefit girls and women or to solve problems faced by women and other marginalized groups. And the third refers to the development of financing opportunities for STI businesses led by women and for innovation & research initiatives at private and public level aligned with the framework of the Addis Ababa Action Agenda.

1- Gender Equality into STI

To increase women's participation in STI it is necessary to ensure greater access of women to education, technology infrastructure, entrepreneurial skills, markets opportunities and capital. According to UNESCO Science Report (2021) globally, women represent only 28% of tertiary graduates in engineering and 40% of those in computer sciences. Just 22% of professionals working in the field of AI are women, while girls do as well as boys in science in most countries.

To act on the bias and social constraints systematically excluding women from science, technology, engineering, and mathematics (STEM) areas and job opportunities in the STI fields is critical if we want to reduce inequalities, improve women participation and harness their potential and diversity for innovation to solve sustainability challenges. To do so, first we need

¹ See: <https://www.unwomen.org/en/csw/csw67-2023/preparations>

accurate data to specifically identify the gender-gap and barriers women are facing in STI areas and then to act on these barriers with intentionality to reduce the gender gaps. The lack of women and diversity in STEM field for social biases and structural inequalities -such as sexual labour distribution, concentration of power and capital-, will require intentional policies and actions to reduce this gap with an intersectional perspective.

It is critical to understand that gender equality will require an intersectional approach if we really are to leave no one behind. Intersectionality is an analytical framework for understanding a social phenomenon in relation to how identities and social characteristics (like race, ethnicity, origin, disability, age, religion, economic, or others) combine to produce different forms of discrimination or privileges of access, particularly to certain areas of work and decision-making levels (Bebbington and Dillard 2009). Furthermore, there are many business cases that demonstrate how teams with diversity have a direct effect on more creative solutions and greater potential for innovation, resulting in innovative products and more effective businesses.

The Women Empowerment Principles (WEPs) developed by UN Women and the Global Compact are a useful set of principles offering guidance to business on how to promote gender equality and women's empowerment in the workplace, marketplace and communities². Some of the actions to improve women participation into STI companies will require the development of policies and practices to create a harmonious work-life balance for both women and men; the implementation of recruitment processes without biases; the assurance of equal pay for work of equal value; the prevention and elimination of violence and harassment at the workplace; the focus of gender equality in the value chain and the design of policies, projects and products with gender perspective; investment in training and career plans for women and strategies for retaining them.

Another challenge pertains to women's participation in leadership positions. Among companies listed in the Fortune Global 500, only 4.8% have a woman CEO³ and globally, only 10.9% of power lies in the hand of women executives in the average company⁴. To create strategies to reduce the leadership gap is critical, not only because it is fair but also because leadership spaces

are those where structural changes can be effectively implemented. Additionally, role models play a key part to encourage girls and women to participate in the STI field.

While 259 million fewer women have access to the Internet than men and 37% of women do not even use the internet⁵; according to the WEF Report, by 2050 75% of jobs will be in STEM areas. Consequently, if women are unable to access the Internet and do not feel safe online, they are unable to develop the necessary digital skills to engage in digital spaces, which diminishes their opportunities to pursue careers in STEM related fields, which directly impacts their possibilities of market participation and economic empowerment.

2- STI to benefit girls and women and to solve gender-based problems

To create job opportunities and to put digital tools in the hands of women, is only part of the solution. It is relevant to emphasise the need to shape the structures in order to make a paradigmatic shift in favour of gender and social justice. This means that the deployment of data and digital technologies needs to encounter people diversity and protect the fundamental rights of all women in all societies. A study of 51 countries revealed 38 per cent of women had personally experienced online violence⁶. To make the internet safe, actions would be needed in order to eliminate harassers and devise plans to educate women. In addition, for all women to thrive it is required to create safe online and offline environments.

Furthermore, to benefit all girls and women and solve gender-based problems STI will require policies and strategies to support women's development in key sectors, such as agriculture, water, energy, and transport operating in the intersection between gender, environment and the innovative economy. Today, women and girls continue to disproportionately suffer the effects of poverty and exclusion. Therefore, STI also needs to focus in solving gender-based problems. This approach requires to consider, for instance, how safe public transportation means could promote girls and women's access to education, or how sustainable energy could improve women's health.

² See: <https://www.weps.org>

³ See: <https://fortune.com/2022/08/03/female-ceos-global-500-thyssenkrupp-martina-merz-cvs-karen-lynch/>

⁴ See: <https://www.weps.org/blog/listen-measure-and-communicate-three-secrets-corporate-womens-leadership>

⁵ See: <https://www.un.org/en/observances/womens-day>

⁶ See: https://www.unwomen.org/sites/default/files/2022-09/Progress-on-the-sustainable-development-goals-the-gender-snapshot-2022-en_0.pdf

In addition to this, new materials, AI, digital, and nanotechnologies have great potential for improve women lives through the efficient use of water, renewable energy and sustainable mobility everywhere reducing inequalities within and among countries and catalysing global advancement towards sustainability. The worldwide transition under process towards a greener global economy, is also generating windows of opportunity for the creation of quality jobs. However, technology change has never been neutral, which calls for incorporating intersectional gender considerations into the design of these technologies from the beginning. In order for STI to benefit all women requires ensuring the different impacts diverse populations face and supports women's development and livelihood activities in ways that bring equal benefits to women and men.

3- Financing STI

Addis Ababa Action Agenda establishes a strong foundation to support the implementation of the 2030 Agenda and provides a new global framework for financing sustainable development aligning all financing flows and policies to economic, social and environmental priorities⁷. Consequently, sustainable finance has a key role to play in the world's transition to social, economic and environmental sustainability. Thus, ESG standards are guiding investments to allocate money in companies and projects that measure and report a positive impact.

In this framework, Gender Lens Investment (GLI) is an innovative sustainable investment approach which, besides looking for a financial profit, focuses the investments on companies and projects that positively impact women's lives. These investments are made in women-owned or led enterprises, or in companies that promote gender equality at the workplace; as well as in products or services that improve the lives of women and girls. Using GLI to create financing opportunities for STI businesses led by women or with diversity in the teams at private and public level is key when addressing the gender financial gap.

Women find it harder than men to obtain venture capital for tech-based start-ups (WEF, 2016). Tech

Report from TrustRadius –which surveyed 700 tech companies around the world– found that women were almost twice as likely (58%) as men (31%) to find the gender funding gap for venture capital⁸. Likewise, in 2019, just 2% of venture capital was directed towards startups founded by women⁹ showing how women who start up their own business struggle significantly more than men to access finance.

Create financing opportunities for STI companies led by women or with diversity in the teams is not only beneficial for the advancement of SDGs and for gap reductions but it is also an investment which is outperforming the market. BlackRock –the world's biggest asset management company– shows that during the height of the COVID-19 pandemic in 2020, more than 8 out of 10 sustainable investment funds performed better than share portfolios not based on ESG criteria¹⁰. ESG ratings have also experienced higher increases in their share price in the past five years, according to research by financial website Morningstar.

To invest in STI with gender lens represents an opportunity to partner profit with purpose, supporting financially sustainable and innovative solutions to improve the lives of girls and women, reduce poverty, create education and job opportunities for women's economic empowerment.

Policy recommendations / conclusions

As described above, to introduce gender lens into STI policies will require policy makers, academia and private sector stakeholders to consider gender intersectionalities and the different impacts of STI into diverse populations; analysing, for example, how to expand more education and job opportunities for all women into STI, supporting and financing technological innovations that have provided benefits for all women, defining legal protocols to manage digital data and to ensure women rights online, supporting technological innovation in developing countries that supports and empowers women entrepreneurs and creating opportunities for women in leadership positions.

Finally, supporting and financing STI for sustainable development with a gender perspective and keep data updated to develop policies and solutions based on

⁷ See: https://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf

⁸ See: <https://www.trustradius.com/buyer-blog/women-in-tech-report>

⁹ See: <https://www.unesco.org/reports/science/2021/en/women-digital-revolution>

¹⁰ See: <https://www.blackrock.com/corporate/investor-relations/>

evidence will assure women's empowerment and inequalities reduction, leaving no one behind.

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