

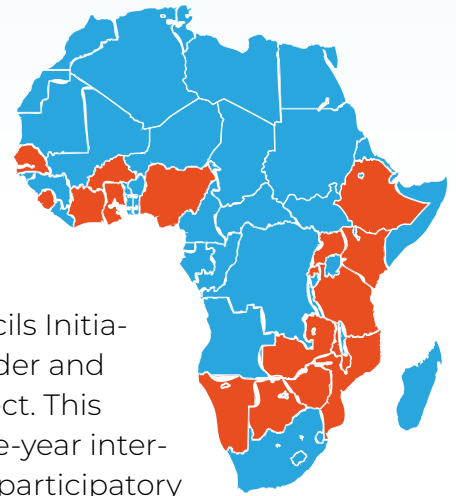
# Embedding gender transformation in science, technology and innovation in context:

## Emerging priorities and practices of African Science Granting Councils

**Regional Brief** of the Science Granting Councils Initiative Gender and Inclusivity Project · July 2023

Gender inequalities in science, technology, and innovation (STI) remain a global challenge and women's representation dwindles as they proceed through the 'leaky' STI pipeline (Huyer, 2019). Addressing gender equality and inclusion (GEI) in STI is an issue of social justice and socio-economic advancement on a national scale. Gender transformation is a UNESCO priority and is embedded across the Sustainable Development Goals, compelling governments to advance gender equality across all aspects of the STI landscape. As central role players in national innovation systems, Science Granting Councils (SGCs) can play a pivotal role in addressing gender disparities in STI human capital development and stimulating gender integration in knowledge production and innovation, ultimately ensuring science investments benefit all.

This Brief shares insights and recommendations from the first phase of the Science Granting Councils Initiative (SGCI) Gender and Inclusivity Project. This innovative three-year intervention used a participatory action learning approach to collaborate with 13 African SGCs to develop and implement key actions advancing GEI in STI. Participating councils are based in Botswana, Burkina Faso, Côte d'Ivoire, Ghana, Kenya, Malawi, Mozambique, Namibia, Senegal, Tanzania, Uganda, Zambia and Zimbabwe.

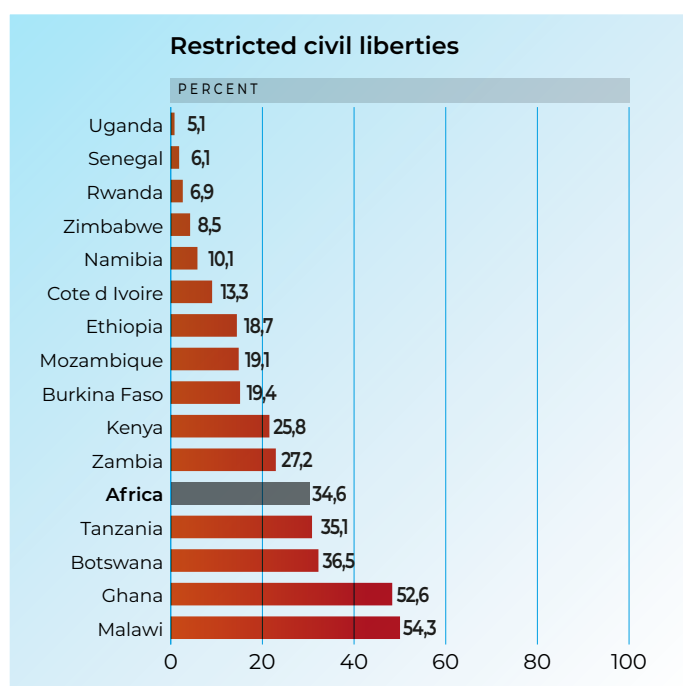
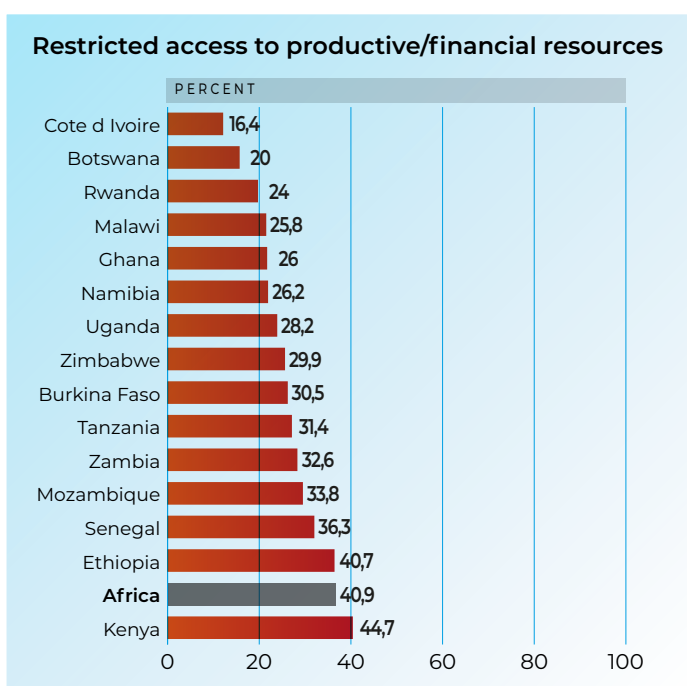
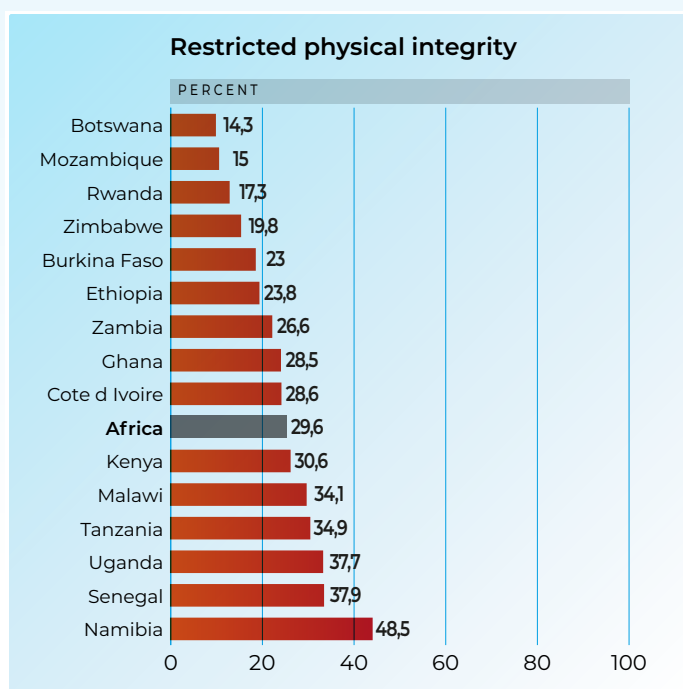
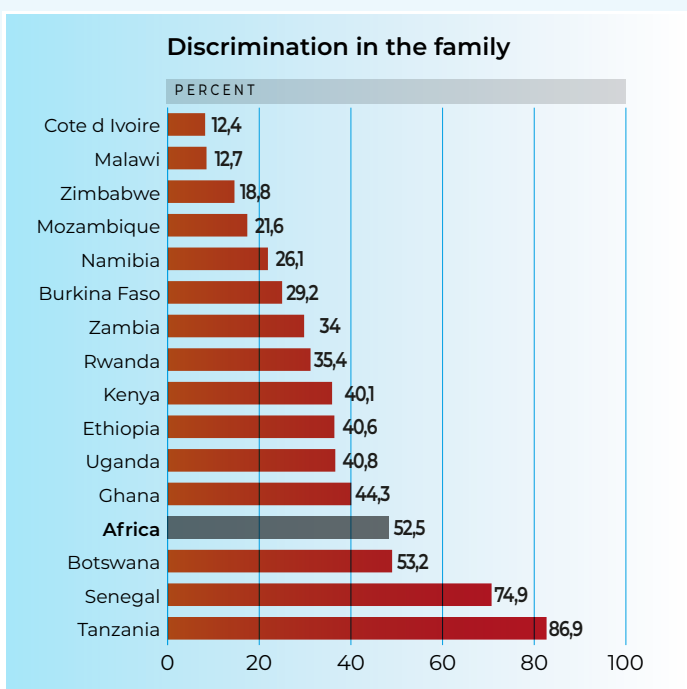


*Gender & Inclusivity*  
A PROJECT OF THE SCIENCE GRANTING COUNCILS INITIATIVE

# A backdrop of deepening inequalities

Deepening gender inequality profoundly impacts the lives of girls and women in sub-Saharan Africa (SSA) and forms the backdrop for understanding gender disparities in STI. SSA has stalled in making progress on several gender-related Sustainable Development Goals (SDGs) and in some countries, progress has regressed (Sachs et al., 2022). The impact of COVID-19 continues to deepen longstanding gender and socio-

economic inequality fault lines (UN Women, 2022). Climate change contributes to financial insecurity, displacement and regional conflict with the burden of these shocks harshly felt by vulnerable groups, including women and girls (Johnson et al., 2020; Lwamba et al., 2022). Anti-gender and human rights political rhetoric has been followed through with laws and policies that roll back the rights of women and minority groups (EM2030, 2022).



At the same time, some African countries have pushed back by strengthening protections from discrimination, such as improved legal protection for women’s rights to land (Malawi and Côte d’Ivoire), workplace gender equality laws (Senegal), and repealing colonial-era ‘morality’ laws (Botswana and Mozambique) (EM2030, 2022; Matebeni, 2021). Nonetheless, progress towards gender equality on the continent is slow and limited in scale (EM2030, 2022; UN Women, 2022).

Social norms and practices are considered the ‘hidden’ drivers of persisting unequal gender outcomes (OECD, 2021). The Social Institutions

and Gender Index (SIGI) provides a snapshot of the extent to which women and girls experience restrictions to their rights, agency and wellbeing across several social institutions (OECD, 2023). While there is regional variation, the continent faces extreme challenges in restrictions to women and girls’ physical integrity, access to productive and financial resources, and civil liberties. The highest levels of discrimination in Africa are found within the family domain, where deep-rooted unequal power relations between men and women determine women’s subordinate status and limit their decision-making power.

## Gender disparities in STI human capital development in Africa

Gender disparities in educational attainment and career progression emerge early on. African countries are progressively improving access to basic education for all citizens. However, gender-related barriers such as higher household responsibilities for girls, a lack of access to menstruation products, school-based violence, and poorer households prioritising boys’ schooling contribute to a growing gender gap as girls proceed through the education system (Muhanguzi, 2019). A lack of social and policy support for school-age pregnancy and the persistence of child marriage further detract from girls’ educational outcomes in the region. (Human Rights Watch, 2022). Currently only Botswana has achieved gender parity in the percentage of adults 25 and older with at least some secondary education (see Table 1) (UNDP, 2021).

Girls from poorer households and rural areas face greater educational exclusion. Likewise, children with disabilities have lower access to education, and this disparity is even more pronounced for girls with disabilities (UN Women, 2022). Few countries, however, disaggregate data according to gender and even fewer include other social stratifiers, such that these differences are obscured when

**Table 1** (UNDP, 2021)

Country	Population with at least some secondary education (% ages 25 and older)	
	Female	Male
Botswana	91.3	91.8
Ghana	58.0	73.2
Namibia	41.5	44.1
Zimbabwe	61.8	72.4
Kenya	31.1	37.7
Zambia	47.1	56.8
Côte d'Ivoire	23.9	32.2
Tanzania	13.0	19.1
Uganda	29.3	36.3
Malawi	21.3	28.4
Senegal	11.1	30.9
Burkina Faso	11.3	<b>17.1</b>
Mozambique	<b>10.8</b>	20.2
<b>SSA</b>	<b>31.1</b>	<b>44.3</b>
<b>World</b>	<b>64.2</b>	<b>70.3</b>

pooling educational outcomes for groups with diverging vulnerabilities. Girls' participation and performance in science, technology, engineering and mathematics (STEM) subjects are negatively impacted by stereotyping and biased assumptions about their mathematical and scientific capabilities (Kwarikunda et al., 2021).

Gender disparities persist in higher education. The region is seeing progress in closing gender gaps in tertiary education enrolment. Still, women's representation at postgraduate degree level dwindles with stark disparities in STEM disciplines: "In Africa, women represent over half the science graduates at Bachelor's level (53%), compared to 43% at the Master's level and 28% at the PhD level" (Fisher et al., 2020, p. 2). There are, however, regional differences. For example, Namibia is closing their PhD gender-disparity gap with women accounting for over half (56%) of PhD enrolments in 2020 and 39% of PhD graduates (National Council for Higher Education Namibia, 2021). Zambia and Zimbabwe exceed the continental average of 28% for women PhD graduates at 35% and 33%, respectively (Higher Education Authority, 2020; Zimbabwe National Statistics Agency, 2021). Overall, data gaps for tertiary education enrolment and graduation rates disaggregated by gender, degree type and field of scientific study frustrate a nuanced understanding of the gender-based, leaky pipeline in tertiary education, including for STI.

Once in research careers, women continue to face barriers to full and equal participation. A global analysis revealed that most countries reporting the lowest proportions of women researchers in engineering and technology are in Africa (UNESCO, 2021). South Africa has achieved gender parity, with women comprising 45% of researchers since 2015. Senegal has made significant progress by increasing the share of women in the research pool from 10% to 29% between 2006 and 2015 (UNESCO, 2021). However, determining countries' progress is challenging due to the lack of regular collection of gender-disaggregated data, with only five out of the 13 participating countries in the SGCI G&I Project collecting such data consistently.

Mirroring the trend in tertiary education, women's representation in research decreases with level of seniority in institutions, with gender parity low in most leadership, decision-making and senior research positions (Huyer, 2019; Mayimele et al., 2020). Entrenched biases, stereotypes, double standards, harassment and gender-based violence in research environments impact women's participation in STI (O'Connell & McKinnon, 2021). Workplace equality laws that protect women against discrimination are lacking in many countries in the region, and SDG tracking data reveal that "if current trends continue, an estimated 81.1 million women in sub-Saharan Africa will live in countries without full gender equality laws at work in 2030" (EM2030, 2022).

The invisible (unacknowledged) caregiving burden contributes to women's marginalisation in tertiary education and STI careers. Socio-cultural norms that assign disproportionate caregiving responsibilities to women mean that women continue to spend more time on household tasks and childcare than their male partners, even when both partners are in full-time employment, impacting their career progression (Fisher et al., 2020; OECD, 2021). An analysis of STEM PhD programs in 17 African countries found that women who became parents were more likely to interrupt their doctoral studies than men. Specifically, 11% of women reported having to take a break due to family reasons, such as marriage or childbirth, while only 2% of men reported the same (Fisher et al., 2020). Gender norms surrounding relationships also contribute to inequality – 33% of married women in doctoral programmes feel compelled to downplay their successes and career prospects to avoid conflicts with their spouses (Fisher et al., 2020). These socio-cultural insights point to the need for transformative approaches to not only remove barriers to women's equal participation (e.g., eliminating bias in education and work environments, and addressing gender pay gaps) but also encourage norm change (e.g., incentivising parental leave for both women and men to support men's involvement in childcare).

# Gender equality and inclusivity in research design and content

---

Gender inequalities in STI are not limited to barriers to women's equal participation in STI; research methods and content still suffer from the legacy of gender bias, leading to partial or incorrect findings and potentially perpetuating harmful gender norms and power relations (Pollitzer, 2021). Globally, gender-related research on the Sustainable Development Goals is lacking (Herbert et al., 2020). A review of the status of gender-related research in SSA shows an upward trend in the number of gender-specific publications (Jackson et al., 2022). Disciplinary disparities, however, exist: uptake of a gender lens in STI knowledge production in particular has been slow (Lynch et al., 2020).

Knowledge production and funding practices are inextricably interlinked; councils can stimulate research designs and content responsive to gender through funding practices that encourage grantees to integrate gender considerations (Hunt & Schiebinger, 2022; Lynch et al., 2020). A global review of public funding agencies' policies found that integration of GEI is heavily weighted towards "who is doing the research", with less momentum in addressing "how research is done" (Hunt & Schiebinger, 2022, p. 16). Considering the urgency of evidence-based solutions to persisting gender challenges on the continent, stimulating gender knowledge is critical.

## Science Granting Councils as catalysts of gender transformation in STI

---

Science granting councils occupy an essential strategic role in advancing GEI in STI. Several initiatives contributed to increased momentum in integrating GEI analysis in grantmaking across research content, methods and institutional policies and practices. These include the Global Research Council (GRC) Statement of Principles and Actions on Promoting the Status and Equality of Women in Research (2016) which articulates clear actions for Councils to take to increase participation of women scientists in STI and endorsed by SGCI Councils. A key moment for SGCI SGCs was the adoption

of the SGCI Gender Mainstreaming Framework and Action Plan (GMFAP) in 2018, outlining flexible guidelines for Councils to mainstream GEI throughout SGCI activities. Integrating GEI in grant-making policies and practices, however, remains uneven and on the whole mainly limited to European, North American and Asia/Pacific funding agencies (Global Research Council, 2021; Hankivsky et al., 2018; Hunt & Schiebinger, 2022). Moreover, agencies' engagement with social inequities beyond gender is limited (Majokweni et al., 2022).



# The SGCI G&I Project

---

The SGCI G&I Project aimed to provide action learning opportunities to resource SGCs towards advancing GEI in three interrelated domains: increasing women's participation in research; transforming institutional policies and practices to address barriers to women's career progression and leadership participation in research institutions; and integrating sex, gender and diversity analysis into research to stimulate excellence in research and innovation. The SGCI G&I Project was led by the Human Sciences Research Council (HSRC) of South Africa in partnership with Gender at Work, the Council for the Development of Social Science Research in Africa (CODESRIA) and Jive Media Africa.

The project was underpinned by participatory action learning principles, i.e. acknowledging participants as experts and drawing on existing strengths, experience and resources; encouraging experimentation; and creating opportunities for peer learning and reflection. Councils formed G&I change teams and participated in online and in-person activities to develop and implement an action (a change experiment) responding to a central learning question: "What will it take for SGCs to more fully develop and implement policy commitments around gender equality and inclusivity?". Councils' participation took place through two parallel streams. The first entailed a unique peer-learning methodology – Gender Action Learning (GAL) – developed by Gender at Work and underpinned by a customised, participatory process of co-creating strategies focused on individual and structural change (see Gender at Work, 2018).

The second took the form of a Targeted Technical Assistance (TTA) process, an innovative adaptation of the project which supported councils not in the GAL cohort to implement a GEI strengthening activity in their grant-making cycle. The TTA adaptation was introduced to support councils that opted out of the GAL activities, most notably due to limited human resources to allow for the time-intensive nature of participation. The TTA adaptation involved focused, strategic support for strengthening GEI in the context of councils' current activities. The project culminated in a final Gender and Inclusivity Learning Summit, where councils showcased and reflected on the GEI actions implemented during the project period.

Gender integration can be conceptualised as existing on a continuum ranging from gender-limited, gender-aware, gender-responsive to gender-transformative (UNICEF, 2019). Gender-aware and gender-responsive research, policies and programmes acknowledge gender inequalities, but do not take steps to redress and transform underlying gender norms and power relations. Gender-transformative initiatives encourage critical awareness among men and women of gender norms and power relations, and explicitly seek to transform gender inequalities and empower women and other marginalised groups (Mullinax et al., 2018). Across both GAL and TTA streams, councils aimed to develop actions that were at minimum gender-responsive, adopting gender-transformative practices as appropriate and feasible.

# A snapshot of councils' GEI actions

Councils' GEI actions were responsive to socio-cultural contexts and spanned building internal gender infrastructure; nurturing organisational norm change; developing the resources, capacities

and agency of individual women; and addressing the systems and social norms working against gender transformation in the broader STI ecosystem:



**1 Building organisational gender equality and inclusion infrastructure**, such as developing gender policies, establishing gender units or committees, and addressing gender disparities in key decision-making spaces. These actions are essential steps to grant greater legitimacy to and institutionalise gender equality concerns, create formal opportunities for gender considerations to be discussed with decision-makers, and support adequate resourcing for gender work (Henry et al., 2017; Parpart, 2013; Roa & Kelleher, 2003).

- This domain was highly populated, with councils' actions spanning developing or updating internal gender policies (FONSTI, Côte d'Ivoire; NCST, Malawi; COSTECH, Tanzania; UNCST, Uganda), revitalising or establishing gender mainstreaming committees (NRF, Kenya; UNCST, Uganda),

and ensuring women's equal representation in decision-making spaces such as organisational boards and grant review panels (RCZ, Zimbabwe).

**2 Shifting informal organisational norms, practices and power relations** that keep gender inequality intact. Actions in this domain, while challenging, are essential to the uptake, impact and sustainability of formal gender infrastructure (Newman et al., 2017). Structural transformation depends on the willingness of people to "challenge the gender biases and power relations within their own organisations" (Hillenbrand et al., 2023, p. 10).

- There were fewer actions in this domain. Council interventions include identifying gender champions to promote organisational norm change (NRF, Kenya). Gender

champions completed GEI training on topics such as gender bias and stereotyping, inclusivity in decision-making, and workplace gender empowerment such as maternity and childcare programmes.

- Actions also included offering GEI training to all staff in the organisation (FNI, Mozambique; NSTC, Zambia).

### 3 Targeted measures and enabling conditions

**addressing unequal access** to resources and research opportunities are important mechanisms to address the historical impact of gender discrimination and marginalisation and can promote substantive equality (Newman et al., 2017).

- Robust actions were undertaken by councils in this domain, including awarding scholarships for female STEM students (FONRID, Burkina Faso; RCZ, Zimbabwe), developing organisational guidelines for addressing gender disparities in funding allocations (FONRID, Burkina Faso; FNI, Mozambique; COSTECH, Tanzania), issuing targeted funding calls prioritising female principal investigators (FONRID, Burkina Faso) and implementing mentorship and capacity development programmes for female researchers (FONRID, Burkina Faso;

FNI, Mozambique; UNCST, Uganda; NSTC, Zambia).

- The UNCST, having identified rural location as disadvantaging researchers, supported the establishment of regional gender committees to address intersections between gender and geographic exclusion in grant-making. FONRID issued a call targeting young / emerging researchers.

### 4 Promoting collective ownership of and active engagement with addressing GEI in the broader STI ecosystem

to facilitate change in the systems and practices that marginalise women. Over time, these actions hold the potential to go beyond the 'symptoms' of gender inequality to address the root causes (Roa & Kelleher, 2003).

- Councils' actions were diverse and included advocacy, awareness-raising and stakeholder mobilisation in support of regional GEI initiatives (DRST, Botswana); GEI awareness-raising and partnership building among strategic actors (government ministries, departments and agencies; the private sector; industry; higher education) (MESTI, Ghana; DFRSDT, Senegal); and conducting science promotion in marginalised communities (NCRST, Namibia).

## Recommendations

**Context matters:** The SGCI G&I Project underscores the importance of ensuring GEI initiatives are embedded in cultural, socio-economic and political context. Councils' contexts are impacted by challenging political and socio-economic environments that "condition the ways STI systems in SSA evolve, the goals they prioritise, and which STI system actors secure economic benefits and power" (Daniels et al., 2021, p. 1). When a council operates in a national context with robust policy support for gender equality, it facilitates the implementation of GEI initiatives at the organisational level. Conversely, in contexts where gender equality is not systematically addressed as a policy concern, councils have adopted strategies

such as establishing partnerships and capacity/expertise groups to raise awareness and gain support from STI stakeholders, enabling the implementation of GEI actions at the local level. The actions taken by African SGCs offer valuable insights into customizing approaches to suit the local context, contributing to addressing the lack of guidance in existing literature.

**Adequate resourcing of GEI initiatives:** Addressing GEI requires dedicated resources. Many of the councils are small and members participating in the SGCI G&I Project took on the additional demands of driving GEI actions in their council on top of their other full-time work responsibilities.



Several councils identified impactful actions that they could not implement due to a lack of funding. Long-term, sustainable structural change requires prioritising GEI and committing sufficient human and financial resources, which will require internal investment and support from other STI stakeholders. At the same time, the project demonstrates that even narrowly circumscribed actions can be catalysts for raising awareness and advancing issues related to GEI within councils.

**Growing the breadth and depth of actions:** The diverse range of actions provides fertile ground for developing comprehensive organisational GEI approaches, and leveraging regional experience and momentum. Councils are well-positioned to create a regionally harmonized strategic roadmap for GEI transformation in public funding practices, with the potential for such a roadmap to be tailored to individual socio-cultural, economic, institutional and regulatory contexts.

**A collective approach to advancing GEI:** Several councils strategically used partnerships to address internal capacity gaps – especially relevant to small councils and councils with limited gender expertise – and to amplify the impact and sustainability of actions. Some of these partnerships were between government entities, universities and science councils, some already existed and some were forged at the start of the project.

**GEI in research design and methods:** Integrating a GEI lens in knowledge production results in higher quality research, increased social relevance and ultimately greater impact of science investments, yet this domain of gender transformation in science remained relatively unexplored in councils' actions, mirroring global trends (Hunt & Schiebinger, 2022). Going forward, councils can consider ways to

promote meaningful integration of GEI in research design and methods through, for example, having clear guidelines for applicants and evaluators on addressing GEI considerations in research funding applications.

**Diversity beyond gender:** The project demonstrates that an intersectional focus on social stratifiers beyond gender is still nascent. Where other intersecting identities and experiences were included, these were focused on age and rurality. Future GEI initiatives can include dedicated activities to tailor GEI initiatives to the diverse marginalised social identities that are relevant to councils' contexts.

**Disaggregating data according to gender identity and other relevant social stratifiers:** is a powerful tool for gaining insight that goes “beyond the averages to capture the full picture” of inequalities in STI (EM2030, 2022, p. 37). Capacity building through training, resources and peer knowledge-sharing can support the development of organisational systems that use data disaggregation for informed decision-making and targeted interventions.

**Monitoring and evaluation of GEI actions:** are critical to assess overall impact (including unintended negative impacts) and identify what works, why and in which settings. Few councils developed or implemented monitoring and evaluation plans, a gap in public funding agencies' practices worldwide. Hunt and Schiebinger (2022) outline potential evaluation domains spanning the grant-making cycle. In addition to quantitative measures, innovative qualitative assessments can capture insights about the contextual factors and processes that support or hinder impact.

Find out more about the project here:  
<https://sgciafrica.org/>

Watch project reflection videos here:  
[https://youtube.com/playlist?list=PLWpK\\_f-GZpIZ0J4gAOPQU6R8fynV3ycc4](https://youtube.com/playlist?list=PLWpK_f-GZpIZ0J4gAOPQU6R8fynV3ycc4)

Project posters :  
<https://sgciafrica.org/gender-and-inclusivity-theme/>

# Reference

- Daniels, C., Byrne, R., Pointel, S., & Hanlin, R. (2021). *Political economy insights for science system transformations in sub-Saharan Africa*. University of Sussex.
- EM2030. (2022). *'Back to normal' is not enough: The 2022 SDG Gender Index*. Equal Measures 2030. <https://www.equalmeasures2030.org/2022-sdg-gender-index-report/>
- Fisher, M., Nyabaro, V., Mendum, R., & Osiru, M. (2020). Making it to the PhD: Gender and student performance in sub-Saharan Africa. *PLOS ONE*, *15*(12), 1–19. <https://doi.org/10.1371/journal.pone.0241915>
- Gender at Work. (2018). *Gender action learning*. <https://genderatwork.org/gender-action-learning/>
- Global Research Council. (2021). *Gender-disaggregated data at the participating organisations of the Global Research Council: Results of a global survey*. Global Research Council.
- Hankivsky, O., Springer, K. W., & Hunting, G. (2018). Beyond sex and gender difference in funding and reporting of health research. *Research Integrity and Peer Review*, *3*(1), 6. <https://doi.org/10.1186/s41073-018-0050-6>
- Henry, S. K., Sandler, J., Passerini, L., & Darmstadt, G. L. (2017). *Taking on the gender challenge in organisations: What does it take?* *12*(7), 846–857.
- Herbert, R., Falk-Krzesinski, H. J., & Plume, A. (2020). *Sustainability through a gender lens: The extent to which research on UN Sustainable Development Goals (SDGs) includes sex and gender consideration* (SSRN Scholarly Paper No. 3689205). <https://doi.org/10.2139/ssrn.3689205>
- Higher Education Authority. (2020). *The state of higher education in Zambia 2020*. Higher Education Authority. <https://hea.org.zm/wp-content/uploads/2021/12/The-State-of-Higher-Education-in-Zambia-2020.pdf>
- Hillenbrand, E., Mohanraj, P., Njuki, J., Ntakobakinvuna, D., & Sitotaw, A. T. (2023). "There is still something missing": Comparing a gender-sensitive and gender-transformative approach in Burundi. *Development in Practice*, *33*(4), 451–462. <https://doi.org/10.1080/09614524.2022.2107613>
- Human Rights Watch. (2022). *Education access across the African Union: A Human Rights Watch Index*. <https://www.hrw.org/video-photos/interactive/2022/08/29/brighter-future-empowering-pregnant-girls-and-adolescent>
- Hunt, L., & Schiebinger, L. (2022). *Sex, gender and diversity analysis in research policies of major public granting agencies: A global review*.
- Huyer, S. (2019). Is the gender gap narrowing in science and technology? In *UNESCO Science Report* (pp. 85–103). UNESCO.
- Jackson, J. C., Payumo, J. G., Jamison, A. J., Conteh, M. L., & Chirawu, P. (2022). Perspectives on gender in Science, Technology, and Innovation: A review of Sub-Saharan Africa's Science Granting Councils and achieving the Sustainable Development Goals. *Frontiers in Research Metrics and Analytics*, *7*. <https://www.frontiersin.org/articles/10.3389/frma.2022.814600>
- Johnson, O. W., Han, J. Y.-C., Knight, A.-L., Mortensen, S., Aung, M. T., Boyland, M., & Resurrección, B. P. (2020). Intersectionality and energy transitions: A review of gender, social equity and low-carbon energy. *Energy Research & Social Science*, *70*, 101774. <https://doi.org/10.1016/j.erss.2020.101774>
- Kwarikunda, D., Schiefele, U., Ssenyonga, J., & Muwonge, C. (2021). The relationship between motivation for, and interest in, learning physics among lower secondary school students in Uganda. *African Journal of Research in Mathematics, Science and Technology Education*, *24*(3), 435–446.
- Lwamba, E., Shisler, S., Ridlehoover, W., Kupfer, M., Tshabalala, N., Nduku, P., Langer, L., Grant, S., Sonnenfeld, A., Anda, D., Eyers, J., & Snilstveit, B. (2022). Strengthening women's empowerment and gender equality in fragile contexts towards peaceful and inclusive societies: A systematic review and meta-analysis. *Campbell Systematic Reviews*, *18*(1). <https://doi.org/10.1002/cl2.1214>
- Lynch, I., Isaacs, N., Fluks, L., Friese, S., Essop, R., & van Rooyen, H. (2020). *Intersectionality in African research: Findings from a systematic literature review*. HSRC.
- Majokweni, P., Lynch, I., Isaacs, N., Essop, R., Tembo, D., Djoukouo, F., & Fluks, L. (2022). *Integrating intersectionality into the functions of African Science Granting Councils: A review of institutional reports and policies*. HSRC.
- Matebeni, Z. (2021). The state of LGBT rights in Africa. In O. Yacob-Haliso & T. Falola (Eds.), *The Palgrave Handbook of African Women's Studies* (pp. 465–478). Springer International Publishing. [https://doi.org/10.1007/978-3-030-28099-4\\_79](https://doi.org/10.1007/978-3-030-28099-4_79)
- Mayimele, R., Ndudzo, A., & Ndlovu, C. (2020). Towards closing the gender gap in higher management: Gender analysis of education management policies in Zimbabwe. *Gender & Behaviour*, *18*(1), 15163–15175.
- Muhanguzi, F. K. (2019). Women and girls' education in Africa. In O. Yacob-Haliso & T. Falola (Eds.), *The Palgrave Handbook of African Women's Studies* (pp. 1–18). Springer International Publishing. [https://doi.org/10.1007/978-3-319-77030-7\\_34-1](https://doi.org/10.1007/978-3-319-77030-7_34-1)
- Mullinax, M., Hart, J., & Garcia, A. (2018). *Using research for gender-transformative change: Principles and practice*. IDRC.
- National Council for Higher Education Namibia. (2021). *2020 Namibia Higher Education Statistical Year Book (NHESY)* (pp. 9–25). National Council for Higher Education Namibia.

- Newman, C., Chama, P. K., Mugisha, M., Matsiko, C. W., & Oketcho, V. (2017). Reasons behind current gender imbalances in senior global health roles and the practice and policy changes that can catalyze organizational change. *Global Health, Epidemiology & Genomics*, 2, e19. <https://doi.org/10.1017/gheg.2017.11>
- O'Connell, C., & McKinnon, M. (2021). Perceptions of barriers to career progression for academic women in STEM. *Societies*, 11(2), Article 2. <https://doi.org/10.3390/soc11020027>
- OECD. (2021). *SIGI 2021 regional report for Africa*. [https://www.oecd-ilibrary.org/development/sigi-2021-regional-report-for-africa\\_a6d95d90-en](https://www.oecd-ilibrary.org/development/sigi-2021-regional-report-for-africa_a6d95d90-en)
- OECD. (2023). *Social institutions and gender index*. <https://www.oecd.org/stories/gender/social-norms-and-gender-discrimination/sigi>
- Parpart, J. (2013). Exploring the transformative potential of gender mainstreaming in international development institutions. *Journal of International Development*, 26(3), 382–395.
- Pollitzer, E. (2021). Why gender is relevant to materials science and engineering. *MRS Communications*, 11(5), 656–661. <https://doi.org/10.1557/s43579-021-00093-1>
- Roa, A., & Kelleher, D. (2003). Institutions, organisations and gender equality in an era of globalisation. *Gender & Development*, 11(1), 142–149.
- Sachs, J., Lafortune, G., Kroll, C., Fuller, G., & Woelm, F. (2022). *Sustainable development report 2022*. Cambridge University Press.
- UN Women. (2022). *Progress on the Sustainable Development Goals: The gender snapshot*. UN Women. <https://www.unwomen.org/en/digital-library/publications/2019/09/progress-on-the-sustainable-development-goals-the-gender-snapshot-2019>
- UNDP. (2021). *Latest human development composite indices. Table 5: Gender Inequality Index [Data set]*. <https://hdr.undp.org/data-center/documentation-and-downloads>
- UNESCO. (2021). *UNESCO science report: The race against time for smarter development*. UNESCO.
- UNICEF. (2019). *UNICEF guidance on gender integration in evaluation*. UNICEF.
- Zimbabwe National Statistics Agency. (2021). *Education Statistics Report 2018-2020*. Government Printer.

## Acknowledgements

This project was funded by the multi-donor Science Granting Councils Initiative (SGCI), which is geared towards supporting the development of research and evidence-based policies that contribute to socio-economic development, with participating Science Granting Councils in Botswana, Burkina Faso, Côte d'Ivoire, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, Tanzania, Uganda, Zambia and Zimbabwe.

## Citation

Lynch, I., Middleton, L., Essop, R., Fluks, L., Isaacs, N., & van Rooyen, H. (2023). Embedding gender transformation in science, technology and innovation in context: Emerging priorities and practices of African Science Granting Councils. Cape Town, South Africa: HSRC.

