



Executive summary

A bilateral seminar titled *Gender Equality in Research* was collaboratively hosted by the South African Department for Science and Technology (DST), the National Research Foundation (NRF) South Africa, the Swedish Ministry of Education and Research, and the Swedish Research Council (SRC), at the Swedish Ambassador's residence in Pretoria, South Africa on 7 December 2016.

The seminar was a recommendation of the two countries made at the Swedish and South African Binational Committee (BNC) meeting of the Committee on Research, Technology and Innovation in Stockholm on 19 October 2015. The two nations agreed to further explore the issue of gender equality in research through a seminar focusing on policy exchange with the aim to present conclusions and recommendations on how to strengthen gender equality in research, science, technology and innovation (STI) in the two countries at the next BNC.

The seminar brought together South African, Swedish and internationally renowned researchers and experts, who explored three key themes from a comparative perspective: *Gender in science and research policy*, *Gender and participation in STI and research*, and *Gender dimension in research*. Both Swedish and South African strategies, policy reforms, advocacy and capacity building initiatives as well as evaluation and monitoring systems were presented and discussed. Resulting from the workshop is a set of recommendations for prioritised actions to governments, funding agencies and higher education institutions in Sweden and South Africa; as well as important research questions that the two countries could explore in follow up collaboration.

Recommendations for governments, research funding organisations (RFOs) and higher education institutions (HEIs) in Sweden and South Africa:

1. *For governments:* Institutional funding to higher education institutions should be linked to gender mainstreaming goals.
2. *For RFOs and HEIs:* Enact targets, quotas and positive discrimination where necessary and applicable to support gender mainstreaming.
3. *For governments, RFOs and HEIs:* Raise awareness and provide policy direction across the system on the importance of sex and gender as variables in research and innovation – and fund the collection of baseline indicators that can be used to develop metrics for success regarding the gender dimension of research.

Areas for joint collaborative research and action:

1. Comparative research on the enablers and barriers for progression of women in research and academic leadership in South Africa and Sweden.
2. Comparative research on the similarities between SA and Sweden regarding participation of women and girls in STI.
3. Comparative research on how to best include a gender as well as an intersectional perspective in research and innovation.

Additional measures, actions and suggested collaborations discussed during the seminar can be found in Appendix A.

Background

South Africa and Sweden have had formal bilateral engagements and several successful research collaboration projects since 1999. Notable engagements are the Square Kilometre Array project for SA-Swedish industry relations, health research projects with the South African Medical Research Council (MRC) and the Swedish Research Council for Health, Working Life and Welfare (Forte), and the South African-Sweden Research Cooperation programme for mobility and internationalisation, a collaboration between NRF, SRC, Forte and the Swedish Foundation for International Cooperation in Research and Higher Education (STINT).

Questions of gender equality, under-representation of women and inclusion of gender perspectives in research and STI have become central issues in debates on the academic workforce and career possibilities, and are crucial factors for high quality research and innovation (R&I). A general conclusion is that gender equality in research requires changes in deep-seated values and relationships that are held in place by traditions, power and privileges (resulting in biases which in some cases may reflect subconscious socio-cultural influences rather than overt or deliberate discrimination). Additionally, a growing body of literature now indicates that achieving gender equality in R&I requires an integration of a gender perspective in the R&I process. Applying a gender perspective in the R&I process means integrating gender and sex as variables in how scientific priorities are determined, the parameters of research questions, how research teams are composed, how funding decisions are made, the methodologies used in conducting research, the findings and conclusions reported, and finally, the way suggestions for future studies and innovations are formulated. Cooperation on gender equality in science, research and innovation should therefore become an essential part of the research cooperation between Sweden and South Africa.

In the context of this seminar both concepts 'gender equality' and 'gender equity' were used. Gender equality refers to achievement of equal rights, life prospects, opportunities and power for women and men. The term gender equity is sometimes used synonymously to gender equality but refers to actions and measures based on an analysis identifying differences in issues and needs for women and men. In this report however, the term gender equality encompasses all these aspects. It is important to also incorporate an intersectional (or multidimensional) view on inequalities between women and men, as power relations based on gender often interlinks with other discriminatory factors (e.g. race, ethnicity, age, and sexuality).

Seminar summary***Setting the Scene***

The DST, NRF, and the Ambassador of the Kingdom of Sweden to the Republic of South Africa presented opening remarks that were in agreement that gender equality is a global challenge, and that in STI, the challenge is exacerbated by various factors hindering women and girls taking up and advancing within STI. It was acknowledged that research funding organisations (RFOs) such as the SRC and NRF have a key role to play in shaping gender equality discussions in their national systems of innovation; supported by an enabling policy environment facilitated by government policy actions. The research community's role in communicating the negative impacts of gender inequality and the benefits of gender equality was underscored. Some of the programmes that South Africa has implemented to support gender equality in the higher education system include, inter alia; increasing the number of students accessing higher education to over a million since 1994; a 54% participation of women in higher education institutions; and the implementation of centres of excellence and research chairs (over half are now women) as key strategic investment areas. Sweden has had a feminist government since 2014; has 45% women among research and teaching staff with 27% of all professors female; and a government goal of having 50% of all newly recruited professors being women by 2030. In the Swedish research and innovation bill from 2016, *Collaborating for knowledge – for society's challenges and strengthened competitiveness*, one key component is further integration of gender mainstreaming into research funding and producing organisations (RFOs and RPOs) as well as in R&I content.

Three keynote addresses by Dr Elizabeth Pollitzer, Dr Birgitta Jordansson and Prof Jennifer Thomson provided the context for ensuing discussions. The conclusions can be summarised as follows:

- There is increasing evidence to persuade science leaders and decision makers that gender bias in science knowledge is detrimental to excellence. Bias in science knowledge means bias in innovation, research methods and technologies used for research. Societal challenges are not gender neutral (societies are gendered) and so they cannot be successfully tackled by gender blind science or policies.
- The manner in which male masculinities are constructed in higher education, i.e. how scientific excellence is defined, favours men more than women and does not consider intersectionalities. As a result gender inequalities persist due to these current ways of doing gender in academia. The gender perspective has to be integrated in all aspects of higher education and contextualised to each institution's responsibility and conditions.
- There are a number of global organisations, programmes and initiatives across the world that acts as advocates, provide best practices and can be adapted to different contexts to support a greater focus on gender equality in STI. Examples include the Gender Summits, the Organisation for Women in Science for the Developing World (OWSD), academies of science and their networks, GenderInSITE and the Swedish International Development Agency (SIDA).

Gender in Science and Research Policy

South Africa has an array of policies to support STI and gender equality including; the Bill of rights (1993), White Paper in STI (1996), National Research and Development Strategy (2002), and in 2003 a reference group was established to monitor and advise the DST on gender equality in STI – SET4W within the National Advisory Council on Innovation (NACI). There is an opportunity to include, in a strategically directed fashion, a gender dimension in the process of revising the White Paper in STI managed by NACI, with a focus on getting the numbers right; including a gender perspective in R&I; applying a gender lens to policymaking; and considering gendered innovations. There are also a number of initiatives and

programmes that support gender equality in the country including: NRF's Thuthuka programme, the DST/NRF research chairs initiative, DST women in science awards, organisations such as South African Women in Science and Engineering (SAWISE), SA Association of Women Graduates, and the OWSD South African National Chapter. Policy should provide an enabling environment that supports emerging and young researchers during their training and research careers so that day to day challenges do not hamper their progress.

The Swedish government uses gender mainstreaming as the main strategy to achieve the goals of the national gender equality policy. Specific programmes are in place (as from 2013 and 2016): Gender Mainstreaming in Governmental Agencies (GMGA) which comprises all public RFOs, and Gender Mainstreaming in Academia (GMA) which targets all public HEIs. The GMGA and GMA applies a systematic approach where a gender perspective has to be integrated in all aspects of their work, on each governmental authority's and university's own responsibility and own conditions, and to comprise core activities and be accomplished within ordinary budget. As a support structure, the government has commissioned University of Gothenburg, where the Swedish Secretariat for Gender Research is located, to support all GMGA and GMA authorities in their gender mainstreaming efforts.

The Swedish Research Council also has ordinance instructions compelling them to promote gender equality throughout their sphere of activities. In achieving this, SRCs strategy for gender equality sets up a number of operational objectives. Namely, that SRC should:

- achieve and maintain an equal gender distribution in its evaluation panels
- ensure that the percentages of female and male applicants for grants from the SRC correspond to the percentages of women and men among the potential research grant applicants
- ensure that women and men have the same success rates and receive the same average size of grants, taking into account the nature of the research and the type of grant
- include a gender equality perspective in each analysis and evaluation, where possible
- integrate a gender equality perspective in the council's external communication.

Gender and Participation in STI and Research

Participation of women at all levels was discussed as one of the challenges during the seminar. In South Africa, in 1993, 43% of the students were women, that number is now 53%. In Sweden, the proportion of women among students in higher education has been around 60% for a long time.

Within the Swedish Research Council's efforts for achieving gender equality, they have performed recurring observations of peer-review panel meetings, analysing them from a gender equality perspective. The intention is to investigate whether male and female researchers are being treated equally in the assessment of grant applications. Their main findings suggests that sex and gender together with other aspects, such as academic rank, belonging to a particular research discipline, university affiliation, geographical origin, or language skills, can interact and create status hierarchies and power relations that lead to biases in the assessments.

Considering intersectionality is thus important, as how scientific excellence is defined favours men more than women and assumes that both groups are homogenous. Quotas and positive discrimination were discussed as possible short term solutions to level the participation playing field especially in convening activities, e.g. workshops and seminars. There was consensus that increased focus on the qualitative

aspects of challenges of participation (often resulting in unconscious bias and discrimination) was important, as opposed to only focusing on quantitative representation.

The Gender Dimension in Research

Gender bias in research, science and innovation is counter-productive to excellence. By, for example, excluding women from studies on heart diseases, pollution, smoking, voice recognition, crash test dummies or radiation doses, the results may be inconclusive or even counterproductive, causing inadequate medical treatments for not only women but also other diversities of groupings in a population. The worldwide notion of neutrality in research needs to be questioned so that negative consequences for women resulting from using men as the norm in research could be reduced. Research questions and research models should be encouraged to avoid the gender blindness that currently characterises the research enterprise. The research system also need to acknowledge that sometimes the best solutions come from outside of the most established science and innovation contexts, and quite often from female researchers, scientists and innovators. Several projects have shown that by open and inclusive innovation practices women are more often included and the results are improved.

Discussions concluded that: 1) the gender dimension of research would gain value at its intersection with the humanities and social sciences; 2) an intersectional perspective to research is important, meaning that e.g. race, gender, geographical diversity and ethnicity can often not be analysed as independent variables; and 3) there are several initiatives and tools from Sweden and the European Commission that South Africa could take inspiration from (see appendix B).

Appendix A: Additional Recommendations for Actions and Collaborations

Gender in science and research policy

- Gender mainstreaming should be adopted and adapted for policy documents in STI (partially implemented in Sweden).
- Enact targeted support policies to support the re-entry into research and innovation of families after career breaks.
- Implement progressive and innovative policies that support inclusion and diversity such as the provision in travel grants for child care support.
- Collaborative comparative research on how policymakers, the research community and funding agencies engage with the questions of gender equality and equity within their contexts in the two countries.
- For South Africa: a gender desk at the DST to monitor, evaluate and make recommendations regarding policy choices and actions should be established.

Gender and participation in STI and Research

- Require continuous collection, analysis and reporting of sex and gender disaggregated data for the science and research system (partially implemented in Sweden).
- Monitoring and evaluation processes to support the implementation of STI should consider sex and gender as variables (partially implemented in Sweden).
- Consider the cut off age limits for young scientists in terms of eligibility criteria so that parental care and other work-life equilibrium breaks are factored in.
- Intensify considerations in the call, research and grant management processes and systems so that these are sufficiently gendered e.g. including more women in peer review panels; and integrate penalties for non-compliance with gender mainstreaming strategies in funding.
- For South Africa: Embed gender equality and equity in research and innovation as a strategy in its STI policy instruments
- Collaborative research on the differences and similarities on politics and resistance practices at institutions to gender equality initiatives in Sweden and South Africa.

Gender Dimension in Research

- Support and promote fundamental and applied research on the inclusion of sex and gender as variables in research and innovation.
- Catalyse discussions that seek to document experiences in academia by gender and diversity, and explore innovative solutions to support equality in academia
- Compile best practice models and experiences on how grant and research management process engender inclusive research patterns.

Appendix B: Resources

1. Athena Swan: <https://www.sciencegenderequity.org.au/athena-swan-principles/>)
2. Guidelines for gender mainstreaming in academia:
<http://www.genus.se/en/mediapost/guidelines-for-gender-mainstreaming-in-academia/>
(Swedish Secretariat for Gender Research)
3. Centre for Human rights, Pretoria university: www.chr.up.ac.za/
4. www.genderportal.eu
5. www.gender-summit.eu
6. genderinsite.net
7. CEDAR, gender responsive treatment: <https://www.cedarcolorado.org/programs/treatment-cedar/gender-responsive-treatment>
8. MASIS, EC expert group: https://ec.europa.eu/research/science-society/document_library/pdf_06/the-masis-report_en.pdf
9. <http://www.government.se/press-releases/2016/11/collaborating-for-knowledge--for-societys-challenges-and-strengthened-competitiveness/>
10. <https://genderedinnovations.stanford.edu/case-studies-medicine.html>
11. Gender observations in peer-review panels (Swedish Research Council):
2013 report: <https://publikationer.vr.se/en/product/observations-on-gender-equality-in-a-selection-of-the-swedish-research-councils-evaluation-panels-2012/>
2015 report: <https://publikationer.vr.se/en/product/a-gender-neutral-process/>
2017 report (Swedish only): <https://publikationer.vr.se/produkt/en-jamstalld-process-jamstalldhetsobservationer-i-vetenskapsradets-bedomningsgrupper-2016/>
12. Gender Tool Box by the Swedish International Development Cooperation Agency (SIDA):
<http://www.sida.se/English/partners/resources-for-all-partners/methodological-materials/gender-tool-box/>
13. Guidelines for Gender Mainstreaming in Academia: <http://www.genus.se/en/about-us/our-assignments/gma/>
14. Science Europe's Practical Guide to Improving Gender Equality in Research Organisations:
https://www.scienceurope.org/wp-content/uploads/2017/01/SE_Gender_Practical-Guide.pdf

Appendix C: The Programme

SOUTH AFRICA – SWEDEN GENDER EQUALITY IN RESEARCH SEMINAR PROGRAMME	
Date: 7 December 2016 Venue: Residence of the Swedish Embassy 297 Canopus Street Waterkloof Ridge, Pretoria	
08:30-09:00	REGISTRATION, COFFEE/TEA
OPENING AND WELCOME Chair: Prof Melissa Steyn, Director: Centre for Diversity Studies and SARChI Chair in Critical Diversity Studies, University of the Witwatersrand, South Africa	
09:00-09:10	Dr Beverley Damonse Group Executive: Science Engagement and Corporate Relations, National Research Foundation, South Africa
09:10-09:20	Dr Rebecca Maserumule Chief Director: Hydrogen and Energy, Department of Science and Technology, South Africa
09:20-09:30	Cecilia Julin Swedish Ambassador to South Africa
SESSION 1: SETTING THE SCENE Chair: Prof Melissa Steyn, Director: Centre for Diversity Studies and SARChI Chair in Critical Diversity Studies, University of the Witwatersrand, South Africa	
09:30-09:50	Global Perspective Dr Elizabeth Pollitzer Co-founder, Gender Summits and Director, Portia, United Kingdom Subject: The gender dimension of science and research
09:50-10:10	Sweden Perspective Dr Birgitta Jordansson Deputy Head: Department of Sociology and Work Science, Gothenburg University, Sweden Subject: Gender equality in Swedish HEI and research
10:10-10:30	South Africa Perspective Prof Jennifer Thomson President: Organisation for Women in Science for the Developing World (OWSD) and Chair: OWSD South Africa National Chapter Subject: Gender equality in research in South Africa- practical interventions
10:30-10:45	Questions and discussion
10:45-11:00	COFFEE/TEA BREAK
SESSION 2: Gender in Science and Research Policy Chair: Veronica Ahlqvist, Swedish Ministry of Education and Research, Division for Research policy	
11:00-11:15	Prof Roseanne Diab Executive Officer: Academy of Science of South Africa Subject: The gender dimension of science policy- South Africa's experience
11:15-11:30	Assoc. Prof Carl Jacobsson Senior Advisor and Coordinator: Gender Equality Mainstreaming, Swedish Research Council Subject: Gender equality mainstreaming, policy and statistics at the Swedish Research Council
11:30-11:45	Questions and discussion
SESSION 3: Gender and Participation in STI and Research Chair: Veronica Ahlqvist, Division for Research policy, Swedish Ministry of Education and Research	
11:45-12:00	Prof Olubukola Babalola

	Director: Food Security and Safety, Faculty of Agriculture, Science and Technology, North-West University, South Africa Subject: Gender Equity in South Africa - Practical support actions for emerging young researchers		
12:00-12:15	Assoc. Prof Lisbeth Söderqvist Senior Analyst: Policy Advice Unit, Swedish Research Council Subject: Gender observations in peer review panels		
12:15-12:30	Questions and discussion		
12:30-13:30	LUNCH		
SESSION 4: The Gender Dimension in Research Chair: Bridgette Prince, Director: Business Development and International Liaison, Human Sciences Research Council, South Africa			
13:30-13:45	Dr Heidi Van Rooyen Executive Director: Human and Social Development, Human Sciences Research Council, South Africa Subject: Integrating a gender lens into research – meanings and methods		
13:45-14:00	Assoc. Prof Malin Lindberg Department of Business Administration, Technology and Social Science, Luleå University of Technology, Sweden Subject: Gendered innovations – challenging science		
14:00-14:15	Questions and discussion		
14:15-15:15	Group Discussions Aimed at identifying suggestions for joint policy recommendations between Sweden and South Africa.		
	Gender in Science and Research Policy Discussion Leaders Dr Birgitta Jordansson Prof Roseanne Diab Assoc. Prof Carl Jacobsson	Gender and Participation in STI and Research Discussion Leaders Prof Jennifer Thomson Prof Olubukola Babalola Assoc. Prof Lisbeth Söderqvist	The Gender Dimension in Research Discussion Leaders Dr Elizabeth Pollitzer Dr Heidi van Rooyen Assoc. Prof Malin Lindberg
15:15-16:00	Group Discussion Feedback and Recommendations Co-Chairs: Lovisa Hellberg, Swedish Ministry of Education and Research, Division for Higher Education and Bridgette Prince, Director: Business Development and International Liaison, HSRC		
CLOSURE			
16:00-16:10	Cecilia Julin Swedish ambassador to South Africa		
16:10-16:20	Dr Rebecca Maserumule Chief Director: Hydrogen and Energy, Department of Science and Technology		
16:20-	REFRESHMENTS AND DEPARTURE		

Appendix D: List of Participants

First Name	Last Name	Title	Organisation	Country
Veronica	Ahlqvist	Ms	Ministry of Education and Research	Sweden
Lovisa	Hellberg	Ms	Ministry of Education and Research	Sweden
Birgitta	Jordansson	Dr	Göteborg University	Sweden
Malin	Lindberg	Assoc Prof	Luleå University of Technology	Sweden
Carl	Jacobsson	Assoc Prof	Swedish Research Council	Sweden
Lisbeth	Söderqvist	Assoc Prof	Swedish Research Council	Sweden
Cecilia	Julin	Ambassador	The Swedish Embassy in South Africa	Sweden
Anna	Nordstrand	Ms	The Swedish Embassy in South Africa	Sweden
Helena	Pietersen	Ms	The Swedish Embassy in South Africa	Sweden
Anders	Lindahl	Prof	Lund University	Sweden
Peter	Svensson	Mr	Swedish Church Johannesburg	Sweden
Staffan	Abring	Mr	Business Sweden Johannesburg	Sweden
Agnes	Nygren	Ms	Afrikagrupperna	Sweden
Ulrika	Fritzson	Dr	Stellenbosch University	Sweden
Melissa	Steyn	Prof	University of Witwatersrand	South Africa
Beverley	Damonse	Dr	National Research Foundation	South Africa
Rebecca	Maserumule	Dr	Department of Science and Technology	South Africa
Elizabeth	Pollitzer	Dr	Co-founder, Gender Summits and Director, Portia	United Kingdom
Jennifer	Thomson	Prof	University of Cape Town	South Africa
Roseanne	Diab	Prof	Academy of Science of South Africa	South Africa
Bridgette	Prince	Ms	Human Sciences Research Council	South Africa
Heidi	Van Rooyen	Dr	Human Sciences Research Council	South Africa
Dorothy	Ngila	Ms	National Research Foundation	South Africa
Busiswa	Molefe	Ms	National Research Foundation	South Africa
Thandeka	Halles	Ms	Department of Science and Technology	South Africa
Sagren	Moodley	Dr	Department of Science and Technology	South Africa

First Name	Last Name	Title	Organisation	Country
Narnia	Bohler-Muller	Dr	Human Sciences Research Council	South Africa
Catherine	Ndinda	Dr	Human Sciences Research Council	South Africa
Konosoang	Sobane	Dr	Human Sciences Research Council	South Africa
Hester	Du Plessis	Dr	Human Sciences Research Council	South Africa
Kagiso	Masete	Mr	Department of Science and Technology	South Africa
Romilla	Maharaj	Dr	Department of Science and Technology	South Africa
Constance	Manyeli	Ms	Academy of Science of South Africa	South Africa
Olubukola	Babalola	Prof	North West University	South Africa
Saad	Dalia	Dr	University of South Africa	South Africa
Nkukwana	Thobela	Ms	Agricultural Research Council	South Africa
Akinlabi	Esther	Prof	University of Johannesburg	South Africa
Tonya	Blowers	Dr	Organization for Women in Science for the Developing World	Italy
Atya	Kapley	Prof	Organization for Women in Science for the Developing World	India
Maria Alejandra	Rodriguez Hertz Frugoni	Prof	Organization for Women in Science for the Developing World	Uruguay
Esi	Awuah	Prof	Organization for Women in Science for the Developing World	Ghana
Huda Omer Salem	Basaleem	Prof	Organization for Women in Science for the Developing World	Yemen
Xin	Fang	Prof	Organization for Women in Science for the Developing World	China
Shuqin	Fu	Prof	Organization for Women in Science for the Developing World	China
Edythe	Shikumo	Ms	Academy of Science of South Africa	South Africa
Marvin	Mandiwana	Ms	Academy of Science of South Africa	South Africa
Mildred Awuor	Airo	Dr	University of Witwatersrand	Kenya/ South Africa
Dalia	Saad	Dr	UNISA	Sudan/ South Africa
Lucia	Fanicchi	Dr	Organization for Women in Science for the Developing World	Italy