

GenderINSITE: Research on the perspectives of decision makers and stakeholders
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INTRODUCTION

Science, Technology and Innovation (STI) has proved to be at the core of the improvement of lives in the southern Africa region. There are numerous challenges faced by women in general and women in STI in particular in the region, and these require continuous collaboration and communication with key decision makers and stakeholders. Research has shown that there is a significantly lower number of women STI than men within the region. It has also been demonstrated that STI products and services are accessed by fewer women than men in the region. There is a need to ensure that policymakers are aware of the key issues around gender and STI.

This report, derived from desktop research and oral interviews with key women in STI in South Africa, presents data on gender and STI in the southern Africa context. Interview responses are indicated in boxes within the relevant sections.

Gender in STI Sectors

There is a specific connection between gender and STI in the southern Africa region. The general trend within the region is that although there has been increased enrollment of females in basic and higher education institutions in the last few years, women are still underrepresented in the STI sector. STI in the region is still perceived as a male dominated sector by society and many women tend to shy away from the sector.

Within the South African context, the National Advisory Council on Innovation (NACI) report (2004) found that there was a higher representation of women in the health, human and social sciences and under-representation in the natural sciences and engineering, with the lowest representation in engineering. This trend mirrors itself in both graduation and workplace statistics. Within the natural science and engineering, there was a high representation of women in computer sciences. In

education, the report found that women were underrepresented in the managerial and senior positions and the same applied in the STI industry.

Some countries within the region, including Zimbabwe, South Africa, Mauritius, Botswana, Lesotho and Swaziland, have increasingly recognised that the increased participation of women in STI will have significant impact in addressing the Millennium Development Goals (MDGs). The issues around gender and STI have received policy attention in the South African context since the advent of democracy through the following policies:

- Human Resource Development Strategy for South Africa
- National Research and Development (R&D) Strategy
- National Plan for Higher Education
- South African National Policy for Women Empowerment and Gender Equality
- Strategic Framework on Gender and Women's Economic Empowerment

The Gender Policy of the Southern Africa Development Community (SADC) recognises the need to:

- advance women's equal participation in decision making, trade and economy, agriculture and food security, health and HIV and AIDS, education and training
- equal access for girls and boys to education, especially in science and mathematics and
- enhance access of women and girls to quality education, including tertiary education, especially in non-traditional subject areas.
- appropriate, affordable and beneficial technologies as well as inclusion of women in programs to promote food production, processing and accessing natural resources,
- promoting women training and employment as extension workers, researchers and agricultural workers

Despite the above mentioned information, there is need for a critical assessment of the participation of women in STI in southern Africa, using comparative data collection instruments, to be undertaken to determine factors contributing to, or inhibiting, the advancement of women in the STI sector.

The interviews revealed the following:

In your view, is there a specific connection between women or gender and STI in South Africa?

There is a connection although women are invisible due to the STI sectors being traditionally male dominated. A link between STI and gender needs to inform the whole spectrum of the population.

In which areas of the science sector?

There is a connection in the health, medical and biological sciences. Engineering is male dominated, and women are found in less risky sectors such as electrical engineering. The information technology sector seems to be gender neutral.

Do you feel that there is gender balance between women and men as scientists, technologists and workers in these areas?

The dominating gender in the STI sector is male. There seems to be a lack of a code of practice that ensures gender mainstreaming in the sector.

What are the STI areas that are strongest in terms of women's representation? What are the weakest? *The representation of females is highest in the medical and biological sectors, and lowest in engineering, physics and information technology respectively.*

Are women represented at all levels in the sector equally with men?

There are fewer women in the higher levels of management within the STI sectors. A clear example is observed within university structures where often top management positions are occupied by men.

STI, gender equity and development

Countries in the SADC region face similar challenges to other developing countries in their progress towards the achievement of the Millennium Development Goals (MDGs). The following initiatives in Botswana have been used to support the participation of women in STI although they are not entirely targeted at women scientists:

- Establishment and implementation of internationally recognized research standards and procedures in the area of science, engineering and technology.
- Development and implementation of research programs in accordance with national priority focus areas for research and development.
- Initiation of programs targeted at stimulating the creation of new products, processes, services and supporting infrastructure and platforms in the domain of research and development
- Initiation of research projects which enhance the reputation of the organization and contribute to the development of processing industries and utilization of Botswana's natural endowments.
- Assessment of emerging international scientific and technology challenges and trends and their impact on the country's research and development agenda

In South Africa, there have been a number of projects which focus on women's empowerment and entrepreneurship development. The Science, Engineering and Technology for Women (SET4W) committee of NACI, has invested in various studies to highlight, provide facts and explore solutions to gender issues in science in South Africa. The results of these studies have often influenced the policy direction of the Department of Science and Technology (DST) to both encourage the promotion of gender equality in the MDG framework and support women's development and poverty reduction activities through STI. The latter goal is mainly supported through an overarching project, Women's Entrepreneurship Development and Gender Equality South Africa, whose objective is to create an enabling national environment for the promotion of women's entrepreneurship development, and gender equality to support poverty reduction and job creation initiatives in South Africa.

Article 31 of the SADC protocol on gender and development encourages all State parties to 'put in place information and communication technology policies and laws in the social, economic and political development arena for women's empowerment, regardless of race, age, religion, or class. These policies and laws shall include specific targets developed through an open and participatory process, in order to ensure women's and girl's access to information and communication technology' (SADC Protocol on Gender and Development, 2008).

The interviews revealed the following:

Which are the key STI areas for supporting women's development and poverty reduction activities in South Africa?

The Department of Science and Technology has set programs (women in science initiative, SET4W committee) in place that support women but there is a lack of adequate implementation and impact monitoring where implementation has been successful.

Is there sufficient policy and programming in place to promote this?

Although the Department of Science and Technology is required to adhere to all the policies that govern issues related gender, there is no specific strategy or policy by the department on the issue of gender and science and technology.

If not, what needs to be done?

There is a need for programs that address the full life cycle of women in science and technology, and that are flexible and sensitive to accommodate women's needs

In general, there need to be clear policies that address the issues around family and career development for women in all sectors. It is critical for policymakers to understand that education is key for supporting women's development. Health policies that support women on issues of malnutrition and women's health in general are necessary.

What are the main STI issues in South Africa or the southern Africa region relating to or of importance to women?

Science Education, Health Education, Leadership skills, Business Skills, Entrepreneurship

Do you feel that there is adequate policy and programming in place to address these main STI and gender issues?

There are many programs and targets within the country but there is a need for an in-depth study or impact evaluation to determine why the implementation of the programs is not achieving the anticipated outcomes.

Gaps and obstacles

Southern Africa presently generally faces a number of challenges when it comes to issues of gender equality and women's empowerment. These include:

- Gender relations: The challenge is to shape the broad transformation project in a way that acknowledges the centrality and compatibility of the transformation to the broader institutional change process.
- Poverty: the majority of the poor in South Africa are women. Also, the location of women in rural areas and the underdevelopment of infrastructure in these areas exacerbate the situation.
- HIV/AIDS: The power imbalances between men and women continue to contribute to this pandemic and women are affected disproportionately to men.
- Violence against women: There is a high incidence of rape and other forms of physical and psychological abuse of women and girls.
- Access to basic needs: Access to education, housing, welfare, fuel and water has been

influenced by historically unequal gender, race and class relations. Due to a lack of adequate infrastructure, women's control over resources such as fuel and water is compromised.

- Access to employment: Women have access to new employment opportunities in the labour market. However, these opportunities are available to few women who have had access to education and training. The majority of women's employment continues to remain within low paid, traditionally female occupations.
- Women's access to political power: There is a strong representation of women in the national, provincial and local branches of government. However the challenge to change their institutional cultures to be more responsive to women politicians and civil servants remains.

These gaps are often caused by a lack of understanding of:

- The role of women in social and economic development,
- The role of STI in addressing challenges faced by women in fulfilling their roles as food producers, social educators, caregivers for their families and community managers, and
- The real and potential contribution of women to research, development and innovation.

Obstacles related to girls' and women access to science education STI careers within the region are mainly due to:

- Few or lack of national policies on STI and that specifically address gender issues in STI.
- The tendency of men in senior positions to dismiss the potential of women, and favor men for promotions. This is caused mainly by a lack of understating of gender issues.
- Resistance by senior women to the advancement of other women in science in the sector.
- Employers' reluctance to support further studies for women in STI since women are often seen as "risky investments".

The interviews revealed the following:

Where are the biggest gaps in terms of STI sectors and gender equity in South Africa or Southern Africa, relating to either women or men?

Lack of understanding of the concept of gender mainstreaming; basic education; ethics and gender equality; coaching; mentoring; absence of best practices guidelines; broad policy statement on gender equity in STI sector; deploying of STI to promote advancement of women; and barriers created that hinder women advancement

Level of awareness of policy initiatives and decision makers

In southern Africa, although policies that deal with issues of gender and development have been enacted, government ministries and departments often lack the capacity to implement these. In other cases, policymakers are often unaware, due to a lack of training and skills development, of issues related to gender and STI. In other areas, there is a disconnect between policy implementation strategies put in place with the problems that the civil society faces.

In South Africa, the DST has facilitated the enactment of polices designed to drive the development of highly skilled people in various sectors in South Africa. However, these efforts do not specifically address the issue of women's participation in the STI sector, nor do they focus on the need for both

women and men to benefit equally from STI research, products and services. The levels of awareness within the private sector and civil society vary.

Most countries in the SADC region have formed partnerships through programs and projects with the private sector, government ministries and agencies, universities, research institutes, educational institutions and NGO's. These partners have set up structures for funding training in order to support small, micro and medium businesses towards enhancing STI skills.

Training and skills development for policymakers on gender issues within STI is critical in ensuring that the process is driven by gender sensitive people.

The interviews revealed the following:

What do you feel is the level of awareness among policy and decision makers in different sectors (government, private sector, research, civil society) around women and STI for development?

There seems to be a difference between levels of awareness with top leadership in government being aware and vocal about the issues but lower level (the implementers) awareness being low. There is a need for government to change attitudes towards other policies that exist, e.g. Health policies and Agriculture, and levels of awareness to be increased within the civil society and private sector which is mostly male dominated.

What are the main obstacles to greater recognition and support for recognizing the need for science and technology to support women in their development activities?

Lack of addressing underlying feminine issues; the fact that technology is market driven; and the usage of inappropriate/non-contextualised models for training and skills development on the roles of women in STI

Conclusion

General Recommendations

- Intensify drives that ensure role modelling, mentoring and coaching of women in STI
- Lobby for policies that support childcare, maternity and paternity responsibilities for women in STI
- Encourage strategies and policies that focus on gender and STI
- Enact policies on gender and development where none exist
- Capacity building in science and technology education, research and development organizations, and intellectual property
- Increased activism on the importance of gender streaming
- Support the training and skill development of decision making on matters related to gender and STI
- Set-up Technology Transfer Offices (TTO) within the region that will support local research and development agencies to convert science, technology and innovation into business opportunities
- Increased responsibility on roles of women to be reflected in policy formulation
- Support networks of women in science that can influence relevant policies

Women's participation in the STI sector can be enhanced through various mechanisms, including:

- Policies that redress discrimination, and encourage funding and networking opportunities that support women scientists
- An organizational culture that is sensitive to women's work-life balance
- Continuous monitoring and evaluation of statistics and targets related to women's participation in STI
- Establishment of associations/ organisations that focus research and activities on gender and STI, and the provision of support and mentorship to girls
- Ensuring access to information for women in the STI sector

A campaign to promote increased awareness of gender and STI issues should focus on:

- The collection of good, high-quality gender disaggregated data
- The importance of political commitment
- Encouraging commitment of financial and human resources by policymakers to these issues
- Encouraging continual training of policymakers and key people involved in decision making regarding STI and gender
- Encouraging the monitoring and evaluation of interventions and strategies employed thus far
- Lobbying for the increased involvement of and commitment by key stakeholders at all levels

A regional campaign should target:

- Policymakers/ government staff in top, middle and lower levels of management
- National commissions, directorates or departments of STI in countries where there are no ministries
- Women in science associations in the region
- The SADC desk on gender and development
- The SADC desk of science, technology and innovation
- Academies of science in the region
- International Council for Science Regional Office for Africa
- NEPAD Secretariat

The main partners in southern Africa to develop and carry this message should include:

- SADC desk on Gender and Technology
- SADC desk on science, technology and innovation
- Ministries, departments, and directorates of science and technology (where they exist)
- African Centre for Gender and Social Development (ACGS)
- The NEPAD Secretariat
- The Pretoria UNESCO Office
- Academies of science in the region
- International Council for Science Regional Office for Africa

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