Africa's women in science

Women scientists have a critical role to play in Africa's development, including pushing the envelope on gender equality, one of the 17 Sustainable Development Goals (SDGs). As many young women pursuing careers in science are all too aware, persisting gender inequality often severely limits them from achieving their potential and effectively contributing to development challenges.

Although significant progress has been made globally in closing the gender gap in primary school enrolment, gender inequality prevails elsewhere. This includes in science, where women remain heavily underrepresented. Recent data from UNESCO indicates that only 28% of researchers employed in research and development (R&D) globally are women. This level varies across regions.

In 2013, women researchers employed in R&D exceeded the global average in Central Asia (47%), Latin America and the Caribbean (44%), Central and Eastern Europe (40%), Arab States (37%) and North America and Western Europe (32%) and Sub-Saharan Africa (30%), while the proportion of women researchers employed in R&D was much lower in South and West Asia (19%) and East Asia and the Pacific (23%).

Major gender disparities between women and men research scientists are also evident in places of work and in their levels of responsibility. Women scientists primarily work in academic and government institutions, while their male counterparts are engaged more in the private sector, where they enjoy better pay and opportunities (UNESCO Institute for Statistics, 2015). In addition, women scientists are often concentrated in the lower echelons of responsibility and decision-making with limited leadership opportunities. In academia, for example, women scientists are often lecturers and assistant researchers and very few are professors, while in research institutions, women are rarely research directors or principal investigators in major studies.

Indeed, women's underrepresentation in science not only has consequences for development, but also for research. In the area of infectious diseases of poverty, for example, the dearth of women scientists often means a lack of diverse perspectives essential to addressing gender dimensions and the burden of infectious diseases, which often disproportionately affect women. Moreover, with few women occupying decision-making positions in academic and research institutions, their scientific role in prioritizing research agendas is severely circumscribed. This has potentially adverse implications for addressing and eliminating infectious diseases.

Women's underrepresentation in science in sub-Saharan Africa

Policy, institutional and individual factors contribute to this severe underrepresentation in science. While many countries in sub-Saharan Africa have enacted Science, Technology & Innovation (ST&I) policies, some of which have gender-related objectives aimed at promoting women's participation in science, they are rarely implemented.

In many African countries, university departments and research institutes are often led by men who also occupy key leadership positions of responsibility. Persisting gender biases and stereotypes embedded within these institutions create an often challenging work environment for women scientists. Moreover, lack of programmes to recruit women scientists, coupled with an undefined career path, and the absence of mentoring programmes within institutions to provide professional support, tend to make it difficult to attract and retain women scientists.

Lack of gender-friendly policy frameworks, such as the provision of child care facilities at the workplace or the lack of career re-entry programmes to encourage women scientists to resume their careers after taking a break to start a family, contribute to women scientists abandoning the science profession, ultimately widening the gender gap in health research. This is reinforced by the failure to implement gender-sensitive promotion policies to ensure that women can advance in their careers. Not only do such approaches discourage many from pursuing long-term careers in science, but it results in women leaving the profession to pursue other endeavours.

Individual factors also influence the decision of women to pursue careers in science. Lack of career support, such as mentors, networks and professional development opportunities, along with societal expectations, such as raising a family over pursuing a career, dissuades many from seeking a future in science.

Frameworks and actions to promote women's participation in science

Recognizing the challenges that women face, efforts are being undertaken to promote their participation in science. At the international level, the UN Economic and Social Council's Resolution 2011/17 on Science and Technology (S&T) supports the role of women and girls seeking science careers through education, training and S&T.

Several UN agencies have undertaken activities to specifically bolster women in science, including initiating programmes and frameworks that actively promote their participation and leadership in science.

Promoting women's participation in science in Africa

Increasingly, actions are being taken across the continent to promote women's participation and leadership in science. Recognizing women's participation in key drivers of Africa's growth and development in science, technology and innovation, the African Union (AU) declared 2015 as the 'Year of Women's Empowerment and Development Towards Africa Agenda 2063', and adopted the Science, Technology and Innovation Strategy for Africa – 2024 (STISA 2024).

Several regional organizations in sub-Saharan Africa also have taken steps to promote women's participation in science. The East African Community (EAC), for instance, has adopted Gender & STI Frameworks that promote gender mainstreaming and gender equity in STI, entrepreneurship training and education. Similarly, the Southern Africa Development Community (SADC)'s Gender Policy, which supports equal access for girls and boys to science and mathematics education, as well as access for women and girls to tertiary education in non-traditional subject areas, is encouraging women's involvement in science. In addition, the Economic Community for West African States (ECOWAS) recognizes the contributions of women in STI in ECOWAS member countries through the *African Union Kwame Nkrumah Regional Award for Women Scientists*.

This brief was researched and written as part of a 2015 TDR grant scheme to identify barriers to careers for women scientists, and develop and implement potential solutions. The grants were provided to 9 African-based groups and are featured in case studies and alumni profiles.This piece that summarizes the context was written by consultant Jane Muthumbi, Ph.D.(jane_wangui@hotmail.com) in coordination with the research manager, Johannes Sommerfeld, Ph.D.

Additional information

Women in science initiative

More on the topic of gender