

Report

2017 International Day for Women & Girls in Science in Ghana.



Organised by:



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REPUBLIC OF GHANA
MINISTRY OF EDUCATION



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MINISTRY OF GENDER,
CHILDREN AND SOCIAL
PROTECTION

About IPPG.

The International Perspective for Policy & Governance (IPPG) is an independent and a non-profit think tank devoted to the implementation of sound policies and the strengthening of the practice of good governance for the sustainable development of Ghana and the African continent.

The drive and passion of our work is built on the fundamentals of the success stories and lessons learnt from the development and governance process from other countries in guaranteeing that, in some cases, there is no need to re-invent the wheel, but to learn from the development experiences, challenges and successes of others.

Vision.

A principal think tank providing practical support, making an impact on the socio economic development agenda of the continent and sharing knowledge for a sustainably developed Ghana and Africa.

Mission.

To promote good governance, shape public policy and inform the decision making process through empirical research and advocacy to ensure the sustainable and effective use of development resources.

What we do.

- * Research.
- * Advocacy.
- * Knowledge Sharing.
- * Capacity Building & Training.

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About Diplomatic Call Ghana.

Diplomatic Call is the media and advocacy arm of the International Perspective for Policy & Governance (IPPG).

Following in line with the values and mission of IPPG, Diplomatic Call leads IPPG's advocacy agenda on the UN Global Sustainable Development Goals (SDGs) through news and events.

In this regard, Diplomatic Call provides an unparalleled medium in publishing reports, analysis, insights, and commentaries on developmental cooperation with primary focus on Ghana and Africa's diplomatic and bilateral relations while providing practical support and knowledge sharing through seminars, conferences, roundtables and debates in our advocacy work on the SDGs.

With the sole objective of making a passionate diplomatic call on all to support the sustainable development agenda of Ghana and the African continent, the platform would also provide readers/subscribers with current news, opinions and research from the media, diplomatic missions, government, think tanks, our speakers, foreign affairs experts and a host of others.

More information available on www.diplomaticcallonline.com

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Foreword.

It gives me much pleasure as the Executive Secretary of the International Perspective for Policy & Governance (IPPG) to write the foreword for this report, which has been prudently generated following deliberations from a Roundtable Discussion organised by Diplomatic Call Ghana (IPPG's Advocacy Arm) to mark the 2017 International Day of Women and Girls in Science.

As a forward-thinking institution which seeks to make an impact in the world, we hosted this Roundtable Discussion in our quest to add up and also lead advocacy initiatives for informed decisions and policies on Gender Equality and the Empowerment of Women and Girls in Science by Government, Civil Society and Corporate Ghana.

This report clearly captures deliberations from the discussions on the major hurdles and difficulties faced by women and girls in the study of STEM related courses in Ghana.

It further outlines a series of actions to be taken to salvage the situation to ensure that more girls “go on to pursue science related careers – which is the most important stage where the benefits of their involvement in science can be realized and felt by the country and the world at large” as mentioned by Mr. Tirso Dos Santos, UNESCO Representative to Ghana in his opening remarks at the program.

As the challenge was thrown to the Diplomatic Call team to take action to lead the path in seeing more girls flourish in the study of science and

taking up careers in the field, I am confident that this publication will find many grateful readers who would gain a broader perspective on this issue and also join and support our upcoming initiatives for this worthy cause.



Seth Owusu - Mante Jnr.
Executive Secretary, IPPG.

1. Introduction.

Science and gender equality are both vital for the achievement of the internationally agreed development goals, including the 2030 Agenda for Sustainable Development. Over the past 15 years, the global community has made a lot of effort in inspiring and engaging women and girls in science.

Unfortunately, women and girls continues to be excluded from participating fully in science. According to a study conducted in 14 countries, the probability for female students graduating with a Bachelor's

degree, Master's degree and Doctor's degree in a science-related field are 18%, 8% and 2% respectively, while the percentages of male students are 37%, 18% and 6%.

To achieve a full and equal access to and participation in science for women and girls, and further achieve gender equality and the empowerment of women and girls, the United Nations General Assembly adopted resolution A/RES/70/212 (draft A/70/474/Add.2) declaring 11 February as the International Day of Women and Girls

in Science (IDWGS), with a call on all people around the world to mark the day as such.

In response to this call, the International Perspective for Policy & Governance (IPPG) through its advocacy arm; Diplomatic Call hosted a Round Table Discussion to mark the day in Ghana and also bring stakeholders together to discuss and share ideas in addressing the gender imbalance and inequality as well as the empowerment of women and girls in science in the country.

2. Women and Girls in Science in Ghana.

The Ghana Science Clinic which started in 1987 has been the major drive in addressing gender imbalance and inequality in science and mathematics education in Ghana.

This has among others broken misconceptions and psychological

barriers to female participation in science and mathematics.

As of 2011, female students constituted 25% of students studying Science, Technology, Engineering and Mathematics (STEM) courses in the country.

Further, the Senior High School Examination results indicate that girls are obtaining better grades in science as compared to previous years.

3. IDWGS Round Table Discussion in Ghana.

The Roundtable discussion to mark the International Day of Women and Girls in Science, which was hosted by Diplomatic Call brought together various stakeholders from government, UN agencies, private sector, civil society and the media as well as female science students from tertiary institutions across the country.

Objectives for Discussion.

- * Identify the barriers and challenges faced by female students in science in the access to resources and opportunities.
- * Suggest practical solutions to the identified challenges and also identify

sustainable means for inclusion of women and girls in science: in relation to policies and government decisions.

- * The role of the private sector in empowering female students in science.

4. Guests & Participants.

1. **Dr. Elsie Effah Kaufmann** (Moderator) - Senior Lecturer, Department of Biomedical Engineering, University of Ghana.
2. **Mr. Tirso Dos Santos** - Head & Representative, UNESCO Ghana.
3. **Mrs. Melody Boateng** - National Programs Officer – Science, UNESCO Ghana.
4. **Mr. Andrews Quaming** - Director, Science Technology and Mathematics Education, Ministry of Education.
5. **Rev. Joana Koranteng** - Deputy Director, Science Education Unit, Ministry of Education.
6. **Ms. Erika Goldson** - Ag. Country Director, UNFPA.
7. **Dr. Doris Mawuse Aglobitse** - Program Analyst, Communication and Resource Mobilization, UNFPA Ghana.
8. **Ms. Vera Karikari Bediako** - Senior Program Officer, Department of Gender, Ministry of Gender, Children & Social Protection.
9. **Ms. Estelle Jacqueline Asare** - Product Planning and Development Manager, MTN Ghana.
10. **Mrs. Beatrice Asumadu** - Senior Social Development Officer, Department of Gender, Ministry of Gender, Children & Social Protection.
11. **Ms. Sabina Afua Agyeiwaa** - Student, Physician Assistantship, Presbyterian University College.
12. **Ms. Aurelia Abena Attipoe** – Student, Computer Science, University of Ghana.
13. **Ms. Barbara Adu-Brimpong** - Student, Pharmacy, KNUST.
14. **Ms. Naa-Amy Wayne** - Student, Biochemistry, Cell and Molecular Biology, University of Ghana.
15. **Ms. Esther Azasi** - Delegate, Young Diplomats of Ghana.
16. **Dr. Janice Lovi** - Delegate, Young Diplomats of Ghana.
17. **Beatrice Laryea** - Journalist, Daily Graphic.
18. **Ms. Ivana Obeng Odei** - Programs Assistant, Diplomatic Call.

5. Opening Remarks - Mr. Tirso Dos Santos, Head & Representative, UNESCO Ghana.

Distinguished Moderator, Representative of the Ministry of Education, Representative from the Gender Ministry, Representative of the United Nations Population Fund (UNFPA), Representatives from the various Media Houses, Dear Students, Distinguished Participants, Colleagues, Ladies and Gentlemen,

It is an honour for me to be with you all at this important occasion – A RoundTable Discussion on the theme Gender, Science and Sustainable Development: the way forward. This programme is among some of the activities which our host the Diplomatic Call is organizing to mark the 2017 International Day of Women and Girls in Science.

On behalf of UNESCO, allow me to take this opportunity to congratulate the Diplomatic Call for taking on this initiative. The good initiatives you have undertaken in the past have not gone unnoticed. I would like to invite all of you to join me applauded them for organizing this forum for us to deliberate on issues that would enhance gender equity in science.

UNESCO as a specialized agency with both education and science as part of its main mandates has supported various initiatives to promote women in science. Notable among these is the L'Oréal-UNESCO for Women in Science Programme.

Since 1998, this programme has recognized and awarded more than 92 women out of which two of them have gone on to receive the Nobel Prize. We are therefore pleased to be associated with today's programme.

Indeed science plays an important role for sustainable development and even more crucial is the role that women in science can play to ensure that the world does not only survive but thrives. Recent statistics show that the number of females who are studying science related courses in tertiary institutions in developed countries have shot up and in some cases are even more than their male counterparts.

However, we must admit that the same cannot be said for our part of the world. Although a significant number of girls study science in high schools, the numbers reduce as they progress to tertiary institutions.

Even more worrying is the global trend which shows that fewer number of females go on to pursue science related careers – which is the most important stage where the benefits of their involvement in science can be realized and felt by the world at large. Women, therefore still remain a minority in science research and decision making.

As we go into the discussions and even beyond what we do here today, let us all ask ourselves this pertinent question, which is that, is it just enough encouraging girls and women to study science only for them not to be able to pursue or succeed in science related careers? I believe that a lot more needs to be done in order to retain women in science related careers.

The more women that remain in scientific related careers, the more role models will there be for our young girls to look up to.



Mr. Tirso Dos Santos.

UNESCO Representative to Ghana.

In developing countries where survival is the main mantra, the best way of inspiring girls to go into the study of science is through the use of role models - women who have thrived in various scientific fields that girls can look up to or identify with.

With this notion in mind, I would like to take this opportunity to call on the various scientific research institutions, technology and engineering companies in Ghana to systematically recruit, train and do all that is possible to empower and retain female scientists in these institution and industries.

For it is only by doing so that we can capitalize on all talents, including that of women in order to realize the full potential of science for sustainable development.

With these few words, I would like to once again thank the Diplomatic Call and to wish us all very fruitful discussions.

6. UNFPA Remarks - Ms. Erika Goldson, Ag. Country Representative.

Gender equality is, first and foremost, a human rights objective, which is key to social and economic development. When women are empowered they are able to claim their rights and contribute to the health and productivity of families and communities and, in so doing, improve the prospects of the next generation.

Despite the connection between gender equality and development, women remain far from achieving parity with men in all facets of life. Women still suffer as a result of discrimination, violence and unequal access to education and health services and there is still a gap in data on gender relations for key development indicators.

For example, evidence shows that women and girls are seriously under-represented in the field of Science, Technology, Engineering and Mathematics (STEM), and this is not because of a lack of talent or drive, but because of several biases that are either "intentional, unintentional, implicit", outdated and unfavourable institutional policies and/or structures.

This is in spite of documented facts that the few women and girls who go into the sciences performed excellently and play prominent roles. The Moderator for today's occasion, Dr. Kauffman being a Senior Lecturer in the Department of Biomedical Engineering, can attest to this..

There are several well researched reasons for the under representation of women and girls in the sciences. Studies have suggested gender discrimination and manifestations of subtle prejudices internalized from societal stereotypes.

People's perceptions of the way things are; really influence how they act and when females are constantly made to think that the Sciences are for males, their aspirations and interest in these areas are lowered.

Gender stereotypes about what women are not good at, or even stereotypes about what they are good at, have real impacts on the success of women in the science fields. These unconscious beliefs, or implicit biases, are more powerful than explicitly held beliefs and values because society might not even be aware of them.

Lack of role models and the fact that men continue to outnumber women in the sciences, coupled with the significant implicit bias women face based on their gender, continue to pose a major challenge to several young girls who even have the interest in the science and engineering fields.

Yet the critical importance of the inclusion and contribution of women and girls in the sciences cannot be overemphasized due to their pivotal roles in family formation and social development.



Ms. Erika Goldson.

UNFPA, Ag. Country Representative.

Science literacy generally provides the basis for solutions to everyday problems, in uncontroversial ways.

Apart from the economic and developmental aspects of the benefit of science to society, science enriches the capacity of women and girls to appreciate the biological functions and understand anatomy, physiology, haematology, microbiology and parasitology to enable them appreciate their sexual and reproductive health responsibilities to offset maternal mortality and morbidity, child mortality and morbidity, pursue family planning as their concept of contraceptives and reproductive health commodity will be sharpened. In addition, women are at the nexus of health, nutrition and agriculture.

In rural areas, they are responsible for daily food production and childcare. And science has established a strong interrelation between nutrition, health,

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UNFPA Remarks - Ms. Erika Goldson, Ag. Country Representative.

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gender equality, education, and agriculture as it is impossible to be healthy without adequate nutrition and adequate nutrition is also closely linked to agriculture for the production of nutritious food.

Without involvement in the basic/applied sciences to appreciate these interlinkages, negative consequences, especially severe health hazards, can occur resulting in unhealthy societies.

Consequently, to speed progress in this area, the international community has made gender equality one of the seventeen Sustainable Development Goals – where it speaks to achieving gender equality and empower all women and girls, (SDGs/ Agenda 2030).

In addition to gender perspectives were mainstreamed in all the other goals. It has been widely acknowledged that success in achieving the other sixteen goals hinges on the progress that will be made to achieve gender equality.

For this reason, UNFPA seeks to incorporate gender issues into all of its programming and advocates for gender equality and equity measures in all fields.

UNFPA's work in the area of gender equality is firmly grounded in international human rights law and guided by major international agreements and instruments, such as the International Conference on

Population and Development (ICPD) and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), in addition to national laws and policies.

The Fund uses a human rights-based approach to advocate for international and national efforts to focus on strategic measures that will empower women and girls and enhance their interest in all professional fields including the sciences.

Relevant sectors including the Ministries of Education, educational institutions (colleges, universities) and academic societies have been urged to strengthen their commitment to gender equality in the sciences by developing and implementing policies and programmes that will improve the climate for women and girls in academic science to operate free from gender biases and discrimination.

To achieve their full potential, women and girls need access to the same educational, social and economic

opportunities as men and boys, along with their fair share of resources. They also need to enjoy their human rights and to benefit from policies that promote gender equality in all spheres of life including in the sciences. Where there has been historical discrimination, conscious equity measures such as quotas have to be instituted to bridge the gap.

With the realization that gender equality is vital for the achievement of all internationally agreed development goals, including the current SDGs, UNFPA will continue to advocate for enhanced representation of women and girls in all spheres of their life including in the sciences.

With the unremitting belief that every young person's potential must be fulfilled, our work on gender equality will continue to include advocacy for policies that will encourage more girls into the sciences especially since sciences also have a critical role to play in meeting the challenges for sustainable development, as it lays the foundations for new approaches and technologies that identifies, clarifies and tackle global challenges.

Thank you for your attention.

7. Challenges Identified.

a. Knowledge about Job Prospects.

One of the major challenges identified was the limited knowledge about job prospects, opportunities and careers in the STEM fields. The ultimate for most science students at the secondary level is Medicine; with very limited knowledge about other science related fields of study and careers. Beyond the tertiary level, most graduates do not know what they can do with some of the science courses they studied and eventually end up falling off the bandwagon and rather going into finance and business fields amongst others.

b. Stereotype: Medicine/Pharmacy/Engineering or Nothing.

Tied to the earlier mentioned challenge is a widely held opinion, not only among science students but also among parents, families and the general public that the study of science should lead to becoming a Doctor, Pharmacist, or nothing.

Thus for fear of being ridiculed for not making it to medical or pharmacy school, many students after secondary school drop the pursuit for a higher education in science for business and art related courses. There is also no encouragement and support (financial and morale) from families and parents should one decide to carve the path of other science related courses.

c. Gender Stereotype.

This exist at the family, school and also at the level of the society; on the perception that; "some things are for men only". Science related courses are generally perceived as a no go area for girls and women but solely for men. Parents are willing to see a male child through school rather than the daughter. Some parents do have certain outdated cultural ideas of the roles of females as solely home makers. Some teachers are also not supportive of exceptional female science students with the passing of comments that tend to demoralize them at the very early stages.

d. Lack of Female Role Models.

Some participants alluded to the critical part role models played in shaping their future and career choices. However, one significant challenge identified was the lack of female role models or very fewer women in the field for our young girls to look up to. This means that, females in this field have little motivation that all their hard work would pay off in the future. After all, they have few examples of women who have attained great heights in the field.

e. Lack of Continuity for Women in STEM.

Closely related to the issue of lack of role models is the lack of continuity for females in the field. Although a significant number of girls study science in high schools, the numbers reduce as they progress to the tertiary level. Statistics indicate that fewer number of females go on to pursue science related careers; which is the most important stage where the benefits of their involvement in science can be realized and felt by the world at large.

f. Education Expenses.

The studying of STEM courses is expensive and an average Ghanaian parent may have to trade an arm and a leg to see their children through school. This also accounts for the reason for a lot of female children not being encouraged in that line but pushed for other fields of study which may be affordable for the average Ghanaian parent.

g. Lack of Female Science Teachers at the Secondary Level and Gender Unfriendly Teaching Methodology.

With most of science teachers across the country being males, there is an apparent lack of motivation at the secondary level for the female science student from the teachers. Further, the methodology in teaching is gender unfriendly and do not follow modern trends of teaching science. This includes lack of materials and equipment for practical and hands on work which creates a better understanding for girls as compared to a total theoretical style which works for the boys.

Even after efforts in equipping the labs of a good number of secondary schools for practical work, reports available to the Ministry of Education indicates that, the labs are not being utilized for various reasons including, complains by teachers on a very packed curriculum which favors more of the theory aspects to be able to complete the curriculum in time.

h. Lack of Female Lecturers.

Also tied to the absence of continuity is a clear lack of female science lecturers at the tertiary level. Even where there is a female lecturer in a department, she may either have retired or would be working on a contract/part time basis. Female science students at the tertiary level do not find this to be encouraging.

i. Employment Preference.

Men are given the preference over their female counterparts in employment of science related fields because most employers argue that once a woman starts a family, they become more of a liability than an asset, with a priority on raising their children. There are also some companies who unequivocally reserve some science related fields for men and would not employ a women, irrespective of the qualifications and capacity of a female who fits the job.

8. Suggested Solutions.

a. Mentorship Programs.

Mentorship programs were identified as one of the major means to bridge the gap and also encourage girls to develop more interest in the field. Also related to this suggestion is the involvement of men in science in the mentorship drive.

The setup of science clubs and organization of vacation camps and clinics for female science students were also mentioned to create an opportunity for them to connect and share ideas, practice and conduct experiments and also be opened to other important facts and aspects in science education.

b. Science Career Fairs and Seminars.

Tied to the Mentorship Initiative is a conscious effort in introducing female science students and parents to the numerous and various career options through job and career fairs for an enlightened knowledge on prospects in the field for both parents and students.

c. Capacity Building Workshop for Teachers.

Male teachers dominate the teaching of science related courses at the secondary level on a ratio of about 80:20. Thus science teachers at the secondary level must be taken through a continuous capacity building and training on gender friendly methodology, teaching skills and other best practices on how to impart knowledge and relate with the female science students.

d. Commitment by Government.

Government must equip and provide the needed capacity and adequate resources for the Science Education Unit of the Ministry of Education and the Education Unit of the Gender Department of the Ministry of Gender, Children and Social Protection to be fully functional and work to fulfil their mandate related to female education in STEM in Ghana.

e. Government/Private Sector Collaboration.

Government must collaborate with the private sector for a well-planned and well executed initiative of a deliberate absorption of female science graduates into the job market.

Again government must team up with the private sector and NGOs to put in place scholarship schemes for female science students at the tertiary, graduate and research levels as this becomes the most important stage where the benefits of their involvement in science can be realized and felt by the country and the world at large.

f. Civil Society Advocacy.

Civil society groups should spearhead advocacy campaigns targeting government and private businesses to be involved in the gender equality and empowerment of women and girls in science.

g. Parents Orientation.

Special PTA meetings should be held for parents at the high school level to discuss and orient them on means by which they can support their female wards through science education. This would solidify the single most important support base for females hoping to pursue higher education in science, that is, their parents and family.

h. Corporate/Private Sector Coordination.

There should be a central coordinating point for Corporate Ghana and all other private sector businesses with CSR initiatives focusing on Girls in Science. This provides a centralized administration on investments from businesses and also creates a solid opportunity for assessment on the impact of their investments in Girls in Science.

9. Conclusion.

From the issues raised in the challenges facing the study of science by girls and women in Ghana and the suggested solutions, it is very obvious that there is a need for a major driving force to light up the concentration on this aspect of gender equality and the empowerment of women through a Private Public Partnership (PPP) arrangement.

This would surely begin the process of making progress in empowering women in science and to see women get to the highest point of science education in Ghana.

The International Perspective for Policy and Governance (IPPG) is set to take up this mantle to continuously engage stakeholders in different ways to begin the journey of breaking all the myths, difficulties, stereotypes, and challenges in the study of science by women, to see more women excel in this noble field.

Of course, we cannot dispute the contributions of science to the socio economic development process, thus having more females in joining their male counterparts increases the benefits of science for the sustainable development of the country.

IPPG's short term action would include;

a. Research.

IPPG would initiate a research with the objective of providing an empirical data on the current state of women and science education in Ghana to well inform and influence governmental policy and the decision making process on gender equality and the empowerment of females in science.

b. Private Sector Engagement.

IPPG would begin engaging stakeholders in discussions for the establishment of an association; "Ghana Business Coalition for Women & Girls in Science" (GBCWBS) to bring businesses and other private sector actors together for a well-coordinated plan of action aimed at addressing the challenges faced by girls and women in science and creating an opportunity for them to excel in the field.

c. Programs & Events.

IPPG would also roll out a series of events including science career fairs and seminars, mentorship and exchange programs, boot camps for young girls studying science among others to sustain the interest of female science students in the field and also give them the needed assurance and support in addressing some of the challenges.

