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## ENCOURAGING FEMALE GENDER EFFECTIVE PROFESSIONAL PARTICIPATION FOR SUSTAINABLE DEVELOPMENT THROUGH GEOMATICS EDUCATION –A WIN-WIN INITIATIVE(11596)

BY

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ORGANISED BY



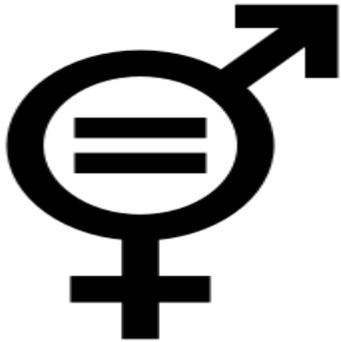
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## SUMMARY

- THE GAP BETWEEN FEMALE PROFESSIONALS AND THEIR MALE COUNTER PARTS IS INCREASINGLY WIDENING. THIS UNHEALTHY DEVELOPMENT IS ABATING DESPITE THE COMPARATIVE ADVANTAGE THE FEMALE GENDER HAS OVER THE MALE IN TERMS OF THEIR HIGHER POPULATION OVER THE MALES GLOBALLY. THIS IS A CRITICAL FACTOR IN LOW PROFESSIONAL DEVELOPMENT IN MOST DEVELOPING ECONOMIES , ESPECIALLY, THE SUB-SHARAN AFRICA GENERALLY AND NIGERIA IN PARTICULAR.
- UNITED NATIONS ENTITY FOR GENDER EQUALITY AND THE EMPOWERMENT OF WOMEN ENTITLED "WOMEN IN SCIENCE TECHNOLOGY ENGINEERING AND MATHS IN LATIN AMERICA AND CARRIBGEAN (LAC)" ARE VERY EQUIVOCAL IN SUGGESTING THAT A GOOD NUMBER OF FEMALES IN THEIR CORE PROFESSIONAL CALLING ARE INCREASINGLY DIMINSHING. EFFORTS IN THE LAST DECADE BY THE UNITED NATIONS (UN), SPECIFICALLY IN 2016 SUCH AS THE DECLARATION OF FEBRUARY 11, AS INTERNATIONAL DAY OF WOMEN (IDW) AND GIRLS IN SCIENCES TO GUARANTEE ACCESS AND INCREASED PARTICIPTION OF THE FEMALE GENDER IN SCIENCES WITH THE PURPOSE OF EMPOWERING THEM AND MAKING THEM KEY ACTORS AT THE LOCAL AND GLOBAL STAGES IS AIMED ACHIEVING SUSTAINABLE DEVELOPMENT GOALS (SDGs) AT THE VARIOUS LEVELS OF THE VALUE CHAIN. IN LINE WITH THE ABOVE OBJECTIVE, THIS WORK IS AN ADVOCACY INITIATIVE AIMED AT ENCOURAGING, THROUGH GEOMATICS EDUCATION, THE FEMALE GENDER EFFECTIVE PROFESSIONAL PARTICIPATION FOR SUSTAINABLE DEVELOPMENT OF THEIR CLIMES . IF THIS IS ACHIEVED, IT WOULD BE A WIN-WIN, ESPECIALLY, IN THE DEVELOPING ECONOMIES OF SUB-SHARAN AFRICA-NIGERIA AS A CASE STUDY.

- **INTRODUCTION:**



**Gender equality, also known as sexual equality or equality of the sexes, is the state of equal ease of access to resources and opportunities regardless of gender, including economic participation and decision-making; and the state of valuing different behaviors, aspirations and needs equally, regardless of gender. As of 2017, gender equality is the fifth of seventeen sustainable development goals(SDG 5) of the UNITED Nations. Gender inequality is measured annually by the United Nations Development Programme,s Human Development Reports(WIKIPEDIA, 2022). GENDER EQUALITY IS WHEN PEOPLE OF ALL GENDERS HAVE EQUAL RIGHTS, RESPONSIBILITIES ANS OPPORTUNITIES**

## BACKGROUND TO THIS STUDY

- **SOME CONVENTIONS AND STATUTES THAT FAVOURED GENDER EQUALITY**
- Historically, Christine de Pizan, an early advocate for gender equality, states in her 1405 book *The Book of the City of Ladies* that the oppression of women is founded on irrational prejudice, pointing out numerous advances in society probably created by women.
- Since World War II, the women's liberation movement and feminism have created a general movement towards recognition of women's rights. The United Nations and other international agencies have adopted several conventions which promote gender equality. These conventions have not been uniformly adopted by all countries, and include:
  - The Convention against Discrimination in Education was adopted in 1960, and came into force in 1962 and 1968.
  - The United Nations Security Council Resolution 1325 (UNSCR 1325), which was adopted on 31 October 2000, deals with the rights and protection of women and girls during and after armed conflicts
  - The Maputo Protocol guarantees comprehensive rights to women, including the right to take part in the political process, to social and political equality with men, to control their reproductive health, and an end to female genital mutilation. It was adopted by the African Union in the form of a protocol to the African Charter on Human and Peoples' Rights and came into force in 2005.

- **INTRODUCTION CONT:**

- On a global scale, achieving gender equality also requires eliminating harmful practices against women and girls, including sex trafficking, femicide, wartime sexual violence, gender wage gap, and other oppression tactics. UNFPA stated that, "despite many international agreements affirming their human rights, women are still much more likely than men to be poor and illiterate.
- They have less access to property ownership, credit, training and employment. This partly stems from the archaic stereotypes of women being labelled as child-bearers and home makers, rather than the bread winners of the family.
- They are far less likely than men to be politically active and far more likely to be victims of domestic violence (WIKIPEDIA, 2022).

- **INTROD CONTD;**

- Gender equality is one of the objectives of the United Nations Universal Declaration of Human Rights. World bodies have defined gender equality in terms of human rights, especially women's rights, and economic development.
- The United Nation's Millennium Development Goals Report states that their goal is to "achieve gender equality and the empowerment of women".
- Despite economic struggles in developing countries, the United Nations is still trying to promote gender equality, as well as help create a sustainable living environment in all its nations. Their goals also include giving women who work certain full-time jobs equal pay to the men with the same job.

- **EFFORTS TO FIGHT INEQUALITY**

- In 2010, the European Union opened the European Institute for Gender Equality (EIGE) in Vilnius, Lithuania to promote gender equality and to fight sex discrimination. In 2015 the EU published the Gender Action Plan 2016–2.
- A large and growing body of research has shown how gender inequality undermines health and development. To overcome gender inequality the United Nations Population Fund states that, "Women's empowerment and gender equality requires strategic interventions at all levels of programming and policy-making."

- **SOME GENDER RELATED ISSUES THAT HAMPER THE FEMALE GENDER PROFESSIONAL GROWTH AND PROGRESS**

- **They are the following:**

1. DENIAL OF JUSTICE TO GIRLS AND WOMEN BY SOME CLIMES
2. HARMFUL TRADITIONAL PRACTICES ESPECIALLY IN SUB-SHARAN AFRICA
3. FEMALE GENITAL MUTILATION AND OTHER NEFARIOUS CULTURES
4. FORCED MARRIAGE AND CHILD MARRIAGE IN
5. BRIDE PRICE COMPULSORILY PLACED ON MARRIAGES
6. GENDER-BASED PRICE DISCRIMINATION FOR THE WORKING FEMALE GENDER
7. GENDERED ARRANGEMENT OF WORK AND CARE (DISCRIMINATORY PRACTICES)
8. FREEDOM OF MOVEMENT NOT FULLY GRANTED TO THE FEMALE GENDER
9. GIRLS ACCESS TO EDUCATION IS SKEWED
10. DENIAL OR LACK OF INFORMATION FOR THE FEMALE GENDER

## FEMALE GENDER AND GEOMATICS PROFESSION

- The geomatics program curriculum covers topics such as land surveying, mapping, geodesy (studying the shape of the earth), digital photogrammetry (developing 3D measurements from photos), hydrographic surveying (surveying underwater), remote sensing (mapping from satellite data), LiDAR (laser scanning from airplanes).
- Geomatics is a broad field and includes **land surveying, underwater soundings (Bathometric information), LiDAR/photogrammetry from an airplane or UAV, and laser scanning.**
- According to FAJEMIROKUN — **Geomatics education** in Nigeria is offered at three main levels namely, (i) University (ii) College of technology/Polytechnic and (iii) Technical College.
- It is a common knowledge that the Geomatics profession in Nigeria is a male dominated profession and there is an overt low participation of the female gender in this profession. Some the contributing factors had already been stated above mostly bordering on the biases and gender related issues/factors

## • OBJECTIVES OF GEOMATICS EDUCATION

The key objectives of Geomatics Education are:

1. To significantly contribute to institutionalize Geomatics Engineering Education.
  2. To develop mid-level professionals in Surveying/Geomatics with adequate knowledge and skills that is necessary to deal with issues related to land-
  3. To impart need based training on the latest technologies in the field of Surveying, Mapping, Geo-information and Space-tech Applications.
  4. To produce high level competent manpower in Geomatics Engineering and Mapping Science.
  5. To provide consultancy and other technical services to the local government bodies, business community, private enterprises, NGOs, INGOs.
  6. To conduct academic and applied research studies, surveys, conferences and seminars in the issues of national and international interests.
  7. To expand necessary infrastructure as per the demand of the time and growing technology to provide the quality education required for the overall development of its students.
  8. To design awareness, appraisal, operational and professional level and make available for decision makers, technicians, and discipline specialists
- *(culled from Ashim Babu Shrestha-Nepal(2017))*

- **GEOMATICS PROFESSION APPLICATIONS**
- **THE FOLLOWING ARE SOME IDENTIFIED AND COMMON APPLICATION AREAS:**
  1. MILITARY AND DEFENSE
  2. SEARCH AND RESCUE OPERATIONS
  3. SURVEYING AND MAPPING
  4. RECREATION/TOURISM
  5. FORESTRY
  6. SATELLITE POSITIONING AND TRACKING
  6. GEOGRAPHIC INFORMATION SYSTEM(GIS) AND REMOTE SENSING (RS)
  7. URBAN RENEWAL AND TRANSPORTATION
  8. AGRICULTURE,ETC.

- **CHALLENGES TO FEMALE GENDER PARTICIPATION IN GEOMATICS PROFESSION**
- Some observed challenges to female gender participation in geomatics profession are as follows:
  1. ESTABLISHED GENDER BIAS
  2. POOR CAPACITY BUILDING AND POOR INFRASTRUCTURAL SUPPORT
  3. THE NEAR ANALOGUE AND INERTIA TO EMBRACE AUTOMATION IN THE UNDERDEVELOPED CLIMES
  4. DISCRIMINATORY LAWS AND PRACTICES AGAINST THE FEMALE GENDER
  5. LACK OF ENTHUSIASM AS A RESULT OF POOR ENCOURAGEMENT AND EDUCATION ON THE PROFESSION
  6. SELECTIVE FEAR OR PHOBIA BY FEMALE FOLKS ON THE STEM COURSES/SUBJECTS
  7. LACK OF INSTITUTIONAL FRAMEWORK AND POOR MENTORING STRATEGIES
  8. INABILITY TO EMBRACE AUTOMATION AND ICT IN TEACHING AND LEARNING OF GEOMATICS COURSES

- **ROLE OF THE REGULATORY BODY (SURCON) IN ENCOURAGING FEMALE GENDER IN GEOMATICS EDUCATION IN NIGERIA**

- **What is the meaning of Surcon?**

- **Surveyors Council of Nigeria (SURCON)**, is an Agency of Government established in 1989 by Decree no 44 of 1989 (Act no. S18 Laws of Federation of Nigeria 2004) for the registration of surveyors and to provide extensively for the regulation and control of the practice of survey profession in Nigeria. SURCON has performed the following enviable roles to encourage the female gender full professional participation:
  - 1. Routine encouragement of the academic institutions offering Surveying and Geoinformatics by ensuring that they perform their statutory functions dutifully.
  - 2. Donation of survey Equipment , work stations, books and journals and also granting scholarship to scholars locally and overseas.
  - 3. Encouraging and sponsoring the Young Surveyors and the Female Surveyor group (wis) in Nigeria in their various programmes and activities.
  - 4. Promoting the Surveying and Geoinformatics profession in Nigeria by encouraging inter and intra- professional linkages and synergies.
  - 5. constantly participating in the global FIG conferences and workshops and also encouraging the YSN and the female folks by way of sponsorships
  - 6. imbibing the principle of gender mainstreaming in her rules of engagement.

- **GENDER MAINSTREAMING AND FEMALE PROFESSIONAL GROWTH**

- Gender mainstreaming is a strategy to improve the quality of public policies, programmes and projects, ensuring a more efficient allocation of resources. Better results mean increased well-being for both women and men, and the creation of a more socially just and sustainable society.
- **The five principles of gender mainstreaming: They are as follows:**
  - Gender-sensitive language. ...
  - Gender-specific data collection and analysis. ...
  - Equal access to and utilization of services. ...
  - Women and men are equally involved in decision making. ...
  - Equal treatment is integrated into steering processes.]
- Gender mainstreaming requires incorporation of both gender perspectives (linkages between gender and the sector areas or issues being dealt with, as ascertained through gender analysis) and attention to the goal of promoting gender equality (actions to be taken, on the basis of the understanding of gender perspectives)

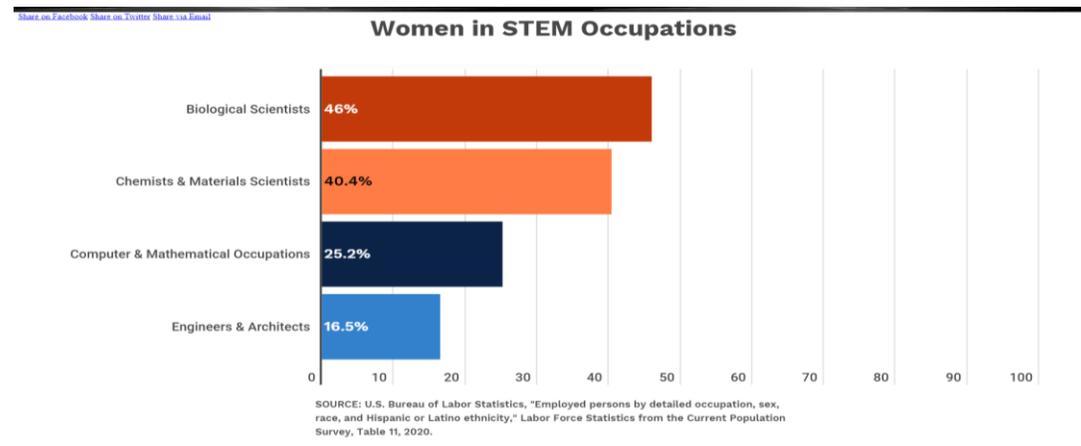
- **GENDER MAINSTREAMING AND FEMALE PROFESSIONAL GROWTH-SURCON INITIATIVE;**  
**This is the core value of Geoinformatics education and training aimed at encouraging the female gender participation in this profession.**
- SURCON and all the major players in the Geomatics profession believes that a gender equality strategy which **outlines the vision for combatting gender inequality in an organization and holds the organization accountable by setting measurable objectives for progress.**
- Therefore, in order to develop a potentially successful gender mainstreaming strategy **it is vital to have in-depth knowledge of the organization itself, including its hierarchies, processes and mode of operation.** It is also important to clearly understand how gender mainstreaming can be sustainably implemented and enforced. The SURVEYORS COUNCIL OF NIGERIA AND OTHER STAKEHOLDERS have commendably employed this strategy in ensuring that the female gender participation in the profession thorough the complete eradication of all known forms of biases and discrimination against the female gender becomes an established strategy for sustainable socio-economic development of the Sub-Saharan Africa and Moreso Nigeria. This would definitely be a win-win.

- **STRATEGIES FOR GENDER EQUALITY PROMOTION ESPECIALLY IN GEOMATICS PROFESSION: The following strategies are necessary:**
  1. REJECT CHAUVINIST AND RACIST ATTITUDES.
  2. HELP WOMEN GAIN POWER.
  3. LISTEN AND REFLECT.
  4. HIRE DIVERSITY.
  5. PAY (AND DEMAND) THE SAME SALARY FOR EQUAL WORK
  6. ENSURE THAT PRINCIPLE OF DIVERSITY AND INCLUSIVENESS ARE ADOPTED AT THE WORK PLACE
  7. ENCOURAGE THE GIRL CHILD TO DEVELOP INTEREST IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS COURSES
  8. ENCOURAGE THE FEMALE GENDER TO DEVELOP STRONG SPATIAL SKILLS BY SYNERGISING WITH THE WOMEN –IN-SURVEYING AND YOUNG SURVEYORS GROUP IN NIGERIA.
  9. ENSURING THAT THE GEOMATICS ACADEMIC CURRICULUM IS STRONGLY TAILORED TO ICT AND TECHNOLOGY (soft-Geomatics). **This will encourage and attract the female gender to geoinformatics profession.**

## CONCLUSION AND RECOMMENDATIONS

Girls and women are systematically tracked away from science and math throughout their education, limiting their access, preparation and opportunities to go into these fields as adults.

Women make up only 28% of the workforce in science, technology, engineering and math (STEM), and men vastly outnumber women majoring in most STEM fields in college. The gender gaps are particularly high in some of the fastest-growing and highest-paid jobs of the future, like computer science , engineering, Geomatics (Surveying and Geoinformatics), etc.



Culled from US bureau of Statistics

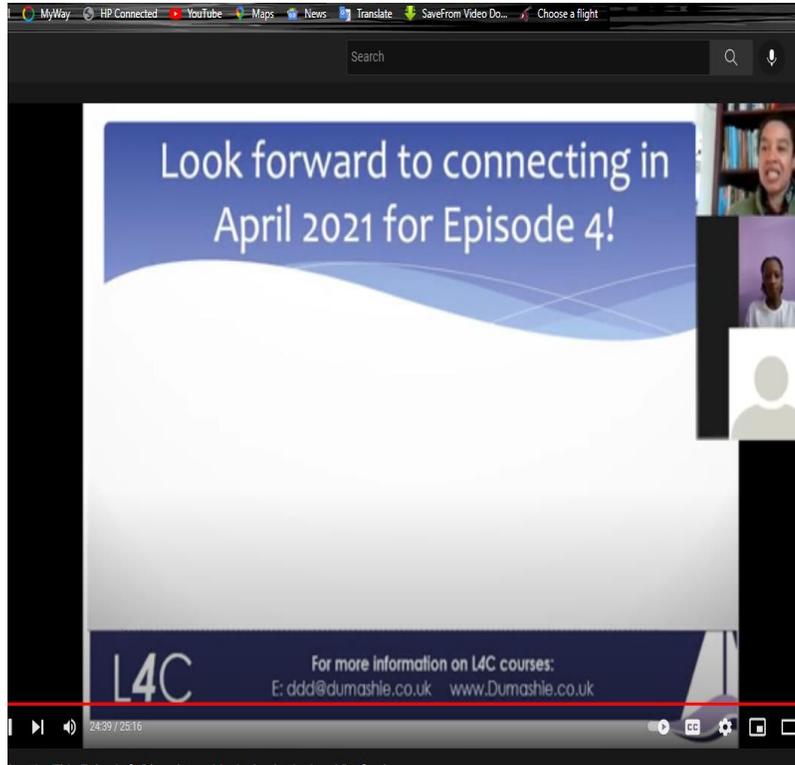
## CONCLUSION AND RECOMMENDATIONS

- The consequences of the above mistakes would be very devastating. Geomatics (Surveying and Geoinformatics ) is a very important professional discipline global. It is the bed-rock of any meaningful and sustainable development. Well mapped and surveyed climes have been proved to be amongst the best developed economies. The principle and objectives of spatially enabled societies have been better harnessed in the developed economies than undeveloped economies.it is also an established that the education of the girl child and women have an overall multiplier consequences on the society than that of the male. It is therefore very important that there should be an overall encourage of the female gender in surveying and Geoinformatics profession stemming from well planned training and education. This will be the main nexus for efficient development of the profession with the diverse and inclusive contribution of the female gender, sure the gains would be all encompassing. This will have a multiplier positive effect.(Win-win strategy)

## Recommendations

1. To build a more equal, inclusive future, free from gender discrimination, we need to start in childhood
2. All stakeholders participation and contributions needed.
3. **Child marriage is a global problem and is compounded by poverty.** Child marriage is a problem that cuts across countries, cultures, religions and ethnicities. Child brides can be found in every region in the world. Major factors that place a girl at risk of marriage include poverty, especially in rural areas, as well as weak laws and enforcement, the perception that marriage will provide “protection,” customs or religious laws, and unequal gender norms. This should be avoided by a very reasonable society.
4. Increased funding and sponsorship from all stakeholders in Surveying profession.
5. Strengthening our leadership strategy (Mentor/mentee relationship should be strengthened and harnessed).
6. The last slide speaks for itself on what it takes to develop a volunteering spirit in a profession. This definitely is journey that would ensure sustainable growth.

## REFLECTING ON THESE FACTS WOULD SPUR US INTO GREATER ACTION



Look forward to connecting in  
April 2021 for Episode 4!

L4C

For more information on L4C courses:  
E: ddd@dumashie.co.uk www.Dumashie.co.uk



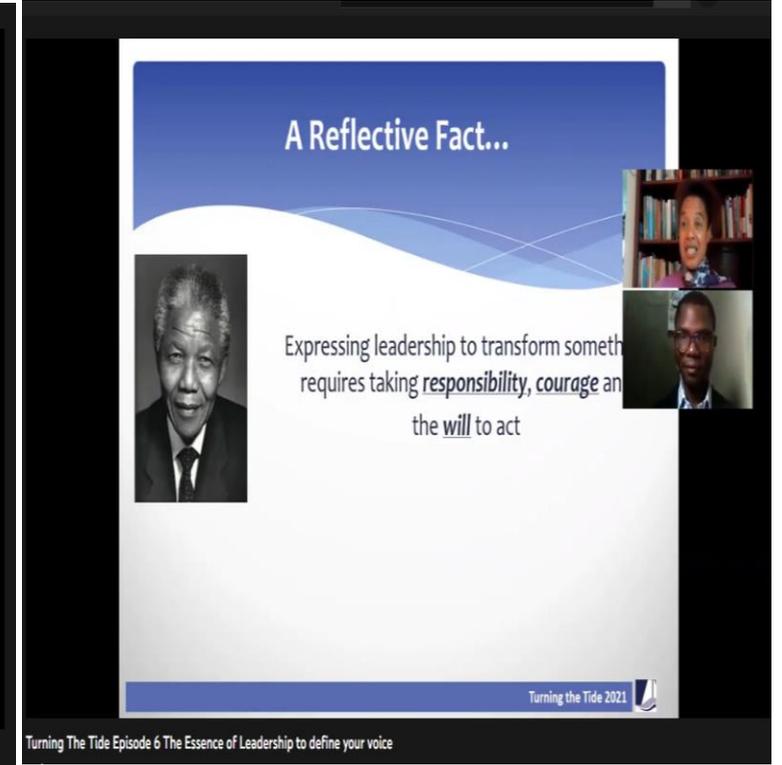
### African Voices

- \* The Essence of leadership
- \* Define you and your Voice
- \* Why it matters in Volunteering

\* In conversation:  
Diane A Dumashie, &  
Israel Tawio

Turning the Tide 2021

Turning The Tide Episode 6 The Essence of Leadership to define your voice



### A Reflective Fact...

Expressing leadership to transform something requires taking **responsibility, courage** and the **will** to act

Turning The Tide Episode 6 The Essence of Leadership to define your voice

## REFLECTING ON THESE FACTS WOULD SPUR US INTO GREATER ACTION

### ... From the Old and the New



#### Chinese philosophy, Confucius:

- \* A transformational process
- \* An individual who **can express** the best of themselves through leadership will encourage others to influence others
- \* **20<sup>th</sup> Century M P Follett:**
  - \* Leadership comes from anywhere, regardless of the leader's position
  - \* It is about grasping **the total situation** and the ability to organise everyone **to serve** a common purpose
  - \* Requires a **pioneering spirit** that would challenge and blaze a new trail by **seeing** possible new routes

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## THANKS FOR LISTENING

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