



IGU/UNESCO Roundtable on Women in Engineering Concept paper

1. Background

For nearly three decades, governments and industries across the industrialized world have sponsored efforts to increase the representation of women in professional engineering, recognizing the (largely) untapped pool of talent amongst women. These efforts have had some impact, but engineering remains a heavily male-dominated occupation in most countries. There is clearly room for improvement – not only in recruiting women into engineering, but also in retaining and promoting those women who do enter the profession.

Given the current and future global need for engineering, it is imperative that all human resources are used. Yet, historically, women have been significantly underrepresented in engineering fields, typically making up only 10 – 20% of the engineering work force. In some European countries these figures are higher with Latvia having 30% of female engineers and Sweden 26%, but percentages drop for Ireland 14%, India 12% and the United Kingdom 8.7%. In Africa, South Africa has typically around 10% of women in the engineering workforce while Kenya has a representation of 8% of women engineers. There is an increase in the uptake of women studying Science, Technology and Innovation (STI) which is positive. In the USA and Europe, women now make up around 30% of the engineering students enrolled at university, in India it is 35%, in South Africa the representation is 15% whereas in the Gulf region (such as Kuwait) women make up around 60% of the engineering students at university. However, even in countries where the numbers of women studying STI have increased, it has not translated into more women in the workplace. Many students who graduate do not go into the engineering profession due to many different factors based on cultural beliefs and religion.

It is evident that there is a need to encourage more women to study engineering and to enter the engineering workforce. Women face diverse challenges when pursuing an engineering education and when deciding to apply for engineering jobs, both within the academia or private sector. Educational constraints, cultural norms and prejudices influence opportunities and choices, severely reducing the number of women engineers who are employed in their field of expertise.

This workshop intends to shed light on these constraints, focusing on concrete recommendations to improve the cultural and social conditions in which African and Arab will-be female engineers live and will develop their educational and professional careers.

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2. Workshop

2.1 Overview

A workshop consisting of two round-tables is being organized in Paris on 10 December 2013, concentrating on the regions of Africa and Arab States. The issues to be addressed are:

- The education system and what the constraints are for women which prevent them from studying engineering
- What are the career environments that prevent women from entering the engineering workforce
- Examining what the national policies and company policies are that could affect women's participation

2.2 Objectives

The objective of the workshop is to formulate a report which will outline the socio-economic, cultural and educational constraints for women in engineering in Africa and the Arab States, as well as the opportunities for their inclusion in the engineering workforce in these regions.

2.3 Round-Table

There will be two round-tables which will discuss the issue of women in engineering in Africa and then in the Arab States.

2.3.1 Enticing Young Women into STEM Education in Africa

- The panel will be made up of four experts from Africa who work on the issue of women in engineering with the appropriate gender balance.
- Ideally the panel should consist of educational/institutional experts, industrial/private sector experts and NGO/CSO/volunteer group experts
- Issues of education policies, STEM education in curricula, hands-on training and learning, mathematics and science teachers and their focus, increasing the participation of girls in STEM education, increasing the number of female students studying engineering.
- Analysing the participation of women engineers in the workforce and the policy related constraints to their greater representation

2.3.2 Identifying Best Practices for Attracting Women to Careers in Engineering in the Arab States

- The panel will be made up of four experts from the Arab States/Gulf regions who work on the issue of women in engineering with the appropriate gender balance.
- Ideally the panel should consist of educational/institutional experts, industrial experts/private sector and NGO/CSO/volunteer group experts
- It is known that the engineering students in the Arab States are predominantly women, however, the factors that prevent these women from entering the workforce need to be analysed, including policy issues.
- Examine the environment that prevents female engineers from entering the workforce in greater numbers.