



United Nations
Educational, Scientific and
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Organisation
des Nations Unies
pour l'éducation,
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Organización
de las Naciones Unidas
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Организация
Объединенных Наций по
вопросам образования,
науки и культуры

منظمة الأمم المتحدة
للتربية والعلم والثقافة

联合国教育、
科学及文化组织

Address by Irina Bokova,

Director-General of UNESCO

**on the occasion of opening the International Forum on Harnessing Women's
Talents in Science, Technology and Innovation**

Kuala Lumpur, Malaysia, 25 May 2015

Dato' Dr Lee Yee Cheong, Chairman of the Governing Board of the *International Centre for South-South Cooperation in Science, Technology and Innovation*,

Dr Ismail Abdel Hamid, Sciences Directorate, Islamic Educational, Scientific and Cultural Organization,

Dato' Professor Dr Asma Ismail, Director-General, Higher Education, Ministry of Education, Malaysia,

Excellencies, Ladies and Gentlemen,

I am honoured to address this forum on *Harnessing Women's Talents in Science, Technology and Innovation*. I am inspired by the energy in this room and by the speeches just pronounced.

It is not by chance that I am speaking here today. This topic stands at the heart of UNESCO's mandate.

Harnessing women's talents in the sciences holds a key to opening the doors of innovation and scientific progress, to writing the next chapter of the scientific revolution we need to foster sustainable development.

Science, technology and innovation has the power to transform our lives.

It can help us provide clean drinking water and strengthen health care for everyone.

It is essential to feed the earth's rising population and to tackle the challenges of climate change.

The world today needs more and better science.

Let me say that this is my second visit to Malaysia. Two years ago, I celebrated the fifth anniversary of ISTIC. I wish to congratulate ISTIC and its Chairman Dr Lee Yee Cheong for such extraordinary work to harness STI for South-South cooperation.

This time I am here for the United Nations Secretary-General's Scientific Advisory Board (SAB). When I suggested the composition of the SAB to the Secretary-General, I recommended 13 women and 13 men scientists, from different branches of science and different regions to find the right solutions through a better science-policy interface. And we are proud to count a woman Nobel prizewinner on our Board.

To succeed, science needs the talent of women and girls.

As the scientist Ada Yonath -- a *L'Oréal-UNESCO Women in Science Laureate*, who became Nobel Prize Laureate -- said:

Women make up half the population, and the world is losing half of the human brain power by not encouraging women to go into the sciences.

We simply cannot afford this.

In 2015, we have an historic opportunity to reach a global agreement on climate change, at the COP21 Climate Conference in Paris.

This year, the world will adopt a new global sustainable development agenda, with a new set of sustainable development goals -- and we know the importance of science to achieve all of these goals.

This year is also special for UNESCO, when we celebrate the 70th anniversary of the Organisation.

UNESCO was founded on the idea that scientific cooperation and the pursuit of objective truth, taken forward through the free exchange of ideas and knowledge, are essential to sustainable development and lasting peace.

The Organisation was created with this core mission, to nurture, to increase and to share knowledge.

This year we also celebrate the 20th anniversary of the Beijing Declaration and Platform for Action – I was honoured to participate in the 59th session of the *United Nations Commission on the Status of Women* in March, which explored achievements and mobilized action to tackle new challenges.

So, Ladies and Gentlemen, this year is *the time* to review progress and to renew our commitment to enable positive change.

Deep divides must be bridged.

We need to close several gaps in the access of girls to Science, Technology, Engineering and Mathematics (STEM) – the gap in access, the gap in data, and the gap in policies.

First, there is the gap in the number of girls and women in STEM – where a “leaky pipe” is at work every inch of the way.

Barriers to STEM begin in the earliest years, with poor access to education -- one third of countries have still not reached parity in primary school enrolment.

Girls and women remain the majority of out-of-school children, youth and illiterate adults.

According to the *UNESCO Education for All Global Monitoring Report*, there are 31 million girls who should be in primary school but *are not*, and the number is higher for the secondary.

Once in school, girls face a steep gender bias that discourages them from choosing science.

Too many girls, in too many countries, are held back simply because they are girls.

They are forced to work, married off, taken from school.

An even lower proportion advances to professional careers – in Australia, women make up only 15 percent of student engineers, and less than 7 percent of the engineering workforce – across the world, only 30 percent of researchers are women.

In Sweden, women form the majority (60 percent) of students enrolled in a Bachelor's programme -- but their numbers dwindle as they move up the education ladder, accounting for 49 percent of doctoral students and 36 percent of researchers.

The data collected by the UNESCO Institute of Statistics highlighted the conflict many women face to reconcile career with family. I know first hand how difficult this is.

Women researchers also tend to work in the academic and public sectors, while men dominate the private sector, with better salaries and opportunities.

This is the case even in countries with high shares of women researchers.

In Argentina, for instance, 52 percent of researchers are women -- but they account for only 29 percent of researchers employed in the private sector.

We need more disaggregated data to understand what influences women's participation in STEM – sharper evidence is essential for sharper policies.

The *Global Database on Women in Science*, compiled by the UNESCO Institute for Statistics, is important in this respect.

With support from Sweden, we have started to explore new national gender equality indicators -- I am convinced we need many more initiatives like this.

UNESCO has launched a new report on *Girls and Women in Science, Technology, Engineering and Mathematics in Asia* – exploring gender-disaggregated data from seven countries in South East Asia, highlighting key lessons to increase the participation of girls and women in STEM.

This has revealed interesting figures -- for instance, in the Philippines, women account for 52 percent researchers, compared to 26 percent in France or 14 percent in Japan.

All this shows the tremendous potential and interest of women to embrace scientific careers – we must support these aspirations and make them realities.

For this, we need to build new partnerships for innovation, and here I wish to pay tribute to the work of the *International Centre for South-South Cooperation in Science, Technology and Innovation*.

It is all about partnership – it is not about pitting women against men. What is important is also to have strong men leaders who promote women in science – in universities, in the private sector, in government.

Under UNESCO auspices, with the exceptional support of the Government of Malaysia, this Centre has become a key player in mobilizing intellectual resources, assisting the formulation of science, technology and innovation policy and providing advice to countries across the South.

I was honoured to attend its anniversary ceremony in 2013.

“ISTIC is a small organization, with a very big footprint.”

These are the words of Dato’ Dr Zakri Abdul-Hamid, a Member of the United Nations Secretary General’s *Scientific Advisory Board*, whose third meeting is hosted by Malaysia, and Joint Chairman of the *Malaysian Industry-Government Group for High Technology*.

Inspired by the *2005 Doha Plan of Action*, ISTIC was launched in May 2008 as an international platform for South-South cooperation in science, technology and innovation.

Gender equality is precisely a field where I believe South-South cooperation can boost new policies and make a real global difference.

ISTIC has been organising the *International Forum on Women in Science and Technology*, and has become a key player in assisting STI policy formulation and review. I warmly welcome the proposal to institutionalize the Forum, by holding it every two years - UNESCO will support this. This is a game changer.

We must formulate recommendations to bridge the policy and knowledge gap.

We share the same vision that gender equality in science is a game changer to bolster the scientific capacities of developing countries, to accelerate research and development, to bridge the policy and knowledge gaps.

I know I am preaching to the converted, but we mustn't tire in sending our message.

Gender equality is a human right.

Gender equality is a development multiplier.

Gender equality is a force for the renewal of global science.

We need the right policies to take these goals forward.

This is the purpose of the *Global STEM Alliance* we launched last September, with the support of His Excellency the Prime Minister of Malaysia -- to connect the dots between Government, the United Nations, the private sector and academia.

This is the goal of the *UNESCO-L'Oréal for Women in Science* partnership, to recognize women scientists as role models, to support them through fellowships.

Every year, UNESCO and the L'Oréal Foundation recognize five outstanding women researchers who have contributed to the advancement of science. This is the most visible part. Through this Foundation, over 2000 young women have earned access to research and exchange programmes and opportunities to work in research centres.

Promoting women is essential to craft a new narrative about women in science, to combat stereotypes, to strengthen the confidence of those who wish to become scientists, to promote their career development.

We have to tell the story that women are at the forefront of science -- this is what we are trying to do.

This calls on us to reflect on the history of science, especially particularly on the history of women of science.

There is the story of Emmy Noether, a mathematical genius of the early 20th century, who had to seek a waiver to integrate a university then forbidden to women.

There is the story of Lise Meitner, considered three times for the Nobel Prize in Physics, never receiving it, because she was a woman.

There is the story of Rosalyn Franklin, a molecular biologist, who was 'dispossessed' of the discovery of the structure of DNA by her own staff.

These women had a level of excellence comparable to Marie Curie.

Because they were women, they had to remain on the side-lines, deprived of their rights.

What a waste of talent!

At UNESCO we often say that our ultimate renewable energy is human ingenuity. And what is not being sufficiently tapped is the human talent of women.

Imagine what we can do if we draw on every source of innovation...

The truth is, the more science is inclusive and equitable, the more it catalyses exceptional discoveries.

Simply put, gender equality is our best ally for scientific excellence.

It is important to tell these stories, because they can help us alter the status quo, by changing mind-sets, by inspiring young minds.

This is the objective of the *Crowdsourcing Girls' Education Initiative* -- a community-based approach to identify solutions to tackle drop-out rates in secondary schools in Ethiopia and Tanzania, in partnership with the Packard Foundation.

With the Intel foundation, we are working to increase interest in mathematics and science education – through scholarships for young women in engineering in South Africa, and through a pan-Arab science competition to encourage high school students develop an interest in science.

UNESCO has partnered with the *GEMS Foundation* to increase enrolment, participation and advancement of girls and women in science, mathematics and technology education, training STEM teachers and school principals to use a balanced gender approach.

UNESCO is working also to encourage schools to provide appropriate career guidance to girls interested in science careers.

We must not forget that, in many traditional societies, women are the ones who keep and transmit scientific knowledge, and they have unique contributions to make.

...when we discuss water management.

...when we talk about the sustainable management of forests and natural resources.

The international conference on *The Gender Dimensions of Climate and Weather Services*, held in Geneva last November, co-sponsored by UNESCO with a wide range of partners, showed how the empowerment of girls and women is essential for more resilient societies, responsive to climate vulnerability.

This is my key point.

It is not enough to support girls -- we must create an enabling environment, by encouraging families, teachers, and mentors, by making it 'normal' for girls to be engaged in STEM.

To succeed, we must integrate gender sensitivity into the educational cycle as early as possible; in some cases to increase the number of female teachers, in others, to take targeted policy decisions to bridge the gap.

In some countries in Africa, there is just one qualified engineer per 6,000 people – compared to one engineer per 200 people in China.

We need more science, engineers, and more scientists.

In this new age of limits, human ingenuity is our ultimate renewable energy.

We must nurture new wellsprings of knowledge, new fields of talents – to enlarge the world scientific team, with new visions.

Girls and women are the greatest untapped population to become the next generation of scientists.

By encouraging them to pursue STEM, I am convinced we can change the face of science and change the world.

We will continue our advocacy, give recommendations to the United Nations, work in partnership with civil society, the private sector and governments to promote gender equality for peace and sustainable development.

In September governments will adopt an ambitious development agenda to achieve by 2030. We must use every opportunity to harness women's talent in science to find solutions and realize this ambition.

That is why this International Forum is so important.

This spirit guides UNESCO's longstanding cooperation with Malaysia, especially in harnessing the power of the sciences for the benefit of all societies.

I see this as a symbol of our joint commitment to put science, and women in science, at heart of the new global sustainable development agenda.

This is the most powerful strategy we have to change societies, for a better future for all.

Thank you.