MODULE 2

Integrating Gender/Intersectional Approaches into Research

Does gender matter in research?

Scientific and social research methods risk being biased with respect to gender, ethnicity or ability. Gender inequalities embedded in society influence science, medicine and technology and limit the benefits these disciplines can bring to individuals. Underlying these differences are gender biases, i.e. prejudices whereby certain people are treated differently based on their actual or perceived gender identity (for a more in-depth discussion of this topic, see the second paragraph of module four, Biases in Research). Gender bias in research hampers the quality, excellence and creativity of results and the number of subjects to whom innovations are addressed. There is a need to harness gender as a resource for creating new knowledge and achieving excellence in science. In addition to identifying the bias and understanding how it operates in science, medicine and engineering, it is necessary to recognise that its presence within the workplace could threaten any productive strategy. Sexual and gender bias in science is socially damaging and costly, so it is necessary for gender experts, natural scientists and engineers to work together to develop methods of analysis that can be used to understand what role gender plays in research and how it can best be exploited. Gender analysis must become integral to design and research at all levels. It is not enough to add the gender component in the advanced stages of development of a given project; research needs to consider gender from the outset because intervening retroactively could be expensive and damaging for citizens, companies and institutions.

Three strategic approaches

Governments, institutional administrators, and scientists adopt three strategic approaches to make science more inclusive. These approaches include:

1. ’Fix the Numbers of Women', which focuses on increasing the participation of women in science;
2. 'Fix the Institutions', which promotes gender equality through structural changes in research organisations;
3. 'Fix the Knowledge' (or 'Gendered Innovation'), which stimulates excellence in science and technology by integrating gender analysis into research.

This course focuses mainly on the third approach and investigates how analysis improves and enhances scientific and social knowledge and technological design. However, we will also briefly present the first two approaches below. It is important to emphasise that these three areas are closely related, so it is

ssential to operate in all directions.

Fixing the numbers of women, fixing the institutions

The first strategy adopted by governments and universities to promote gender equality aimed at increasing the participation of women in science, medical research, engineering and technology. 'Fix the Number of Women' is the first and direct approach recognising that more young girls and women must be adequately prepared to compete in scientific and technological fields. This urgency has been recognised since the 1980s when national governments began collecting data from citizens based on gender to monitor female participation in science and engineering. In 1982, the US National Science Foundation (NSF) published the congressional report Women and Minorities in Science and Engineering. In 2003, the European Commission's Directorate-General for Research & Innovation presented its first She Figures report on trends in women's participation in science and monitoring progress on gender equality in EU Member States. From these studies, the need arose for governments and international agencies to combine data collection with programmes to increase the number of women in science. In 1989, the NSF set up a Task Force on Programs for Women intending to support women's careers in science and engineering through measures such as funding women's scientific research, increasing women's negotiation skills and establishing mentoring networks to make them more competitive in the workplace.

Increasing the participation of women in science and engineering is of paramount importance. However, this strategy alone will only succeed with direct action on institutions. The second approach taken by government officials and academic administrators is to reduce the gender gap by reforming research institutions.

Despite their declared objectivity and neutrality, academic institutions have, throughout history, developed exclusive working environments characterised by the absence or under-representation of women. For this reason, since 1993, the NSF has implemented programmes to create positive and permanent changes in academic environments. The NSF has implemented interventions to transform university classrooms, laboratories and departments into welcoming and female-friendly workplaces. It also launched the ADVANCE programme in 2001, contributing to building a diverse and competent science and engineering workforce. The programme implements change strategies that can help institutions implement structural transformations to promote equity for STEM faculties and improve the success of women and minorities in science and engineering. Institutional reform aims to combat discriminatory hiring and promotion practices and restructure work-life balance. The programme proposes parental leave that facilitates the situation of male and female workers involved in caring for children and the elderly. The aim is to create

conditions that allow the careers of both men and women to flourish and enable all faculty members to make the most of their studies.
Institutional reform and increasing the number of women in science are essential to eliminate gender biases from research and design. However, more is needed for women to be involved; researchers must adopt a gender/intersectional lens and apply it to their activities. Change must come at a third level: the analysis of sex and gender must become part of scientific research and technology design.

Fix the Knowledge

The under-representation of women, gender and minorities in scientific and technological research violates a principle of social justice and is also an obstacle to scientific progress. To overcome prejudice, however, it is necessary to integrate gender analysis into scientific research and combine this approach with strategies to increase the number of women and transform institutions.
Over the past forty years, gender analysis have been developed mainly within the humanities and social sciences. However, natural science, technology, engineering and medicine need to introduce the gender dimension to propose innovations that consider the needs and requirements of the entire population. The point is not just to increase the number of women scientists; it is to expand knwoledge that is well-founded and to find technological solutions that meet the needs of all, thus improving the living conditions of large sections of the population.
The European Commission's DG Research & Innovation has implemented a policy of requesting more grants to address gender analysis in research and informing researchers on how to integrate this dimension into their work. According to European Commission guidelines, the design must specify whether and how sex and gender are relevant variables for the project's objectives and methodology. The European Union, however, has scaled back this requirement because few researchers have understood how to address this issue. Policies requiring researchers to integrate gender analysis are more common in health research organisations. Since 1993, the National Institute of Health has required scientists to value medical research to include women and minorities in research. In Europe, the Karolinska Institute in Sweden and the Charit-Universittsmedizin in Germany have both established gender medicine centres that promote sex and gender analysis in healthcare. The Fourth World Conference on Women in Beijing (1995) also helped to draw attention to this issue and urged governments to integrate gender equality into all systems and structures systematically.
In general, the current structure of research models prevents innovations from sifting through the differences that characterise individuals; it must therefore be challenged to make research fairer and more effective. Gender innovations are understood as the process that introduces the analysis of the relevance of

sexual and gender differences in all phases of scientific research to ensure the quality of the results. Gender analysis stimulates the creation of innovative knowledge and technologies, opens up new opportunities for research teams and produces services that all members of society can use. Gender innovations improve excellence in social sciences, science, medicine and engineering and multiply the possibilities of research to improve the lives of individuals. The idea of gender innovations is to harness gender as a resource to create new knowledge and to achieve excellence in science.