



GENDER EQUALITY AND DIVERSITY IN R&I

“Empowering women remains a common denominator and a global imperative for all those who care about fairness and diversity, but also productivity and growth of societies and economies that are more inclusive. If we can achieve this, we all gain.” – Christine Lagarde, President of the European Central Bank.

Horizon 2020 is one of the most successful multiannual financial framework programmes at integrating gender aspects. Gender is a crosscutting issue across the whole programme, there are three dedicated gender objectives and dedicated elements of the programme. The actions on gender equality are integrated throughout the funding process from inclusion in the legal text, through content in the work programme, grant implementation and monitoring. The link with European Research Area objectives strengthens further the gender dimension in European research and innovation.

Why does it matter?

Achieving gender equality is as much a matter of improving economic outcomes and research and innovation performance as it is of fairness and social justice. So long as women and other underrepresented groups do not have their full place at the table, Europe will continue to fail in utilising its full human capital capacity and will miss the economic and social gains that could bring.

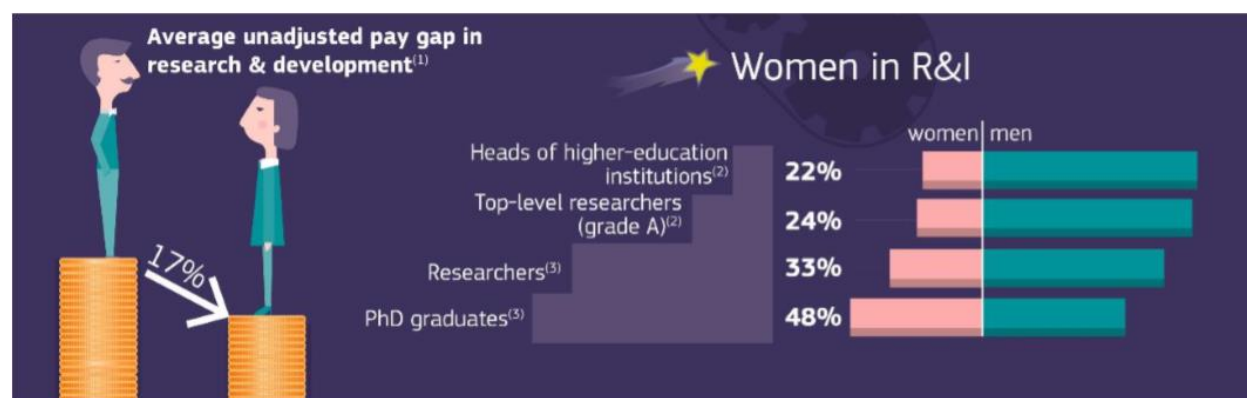
Equality between women and men is a fundamental European value, enshrined in the EU treaties. It is also included in the UN Sustainable Development Goals as both a specific goal and a component of achieving other goals.

Nonetheless, systemic biases persist in research and innovation. When women are excluded or underrepresented in the research process it can lead to suboptimal outcomes, for example the historical exclusion of women from biomedical trials means that many common treatments and therapies are less effective in women, if they are effective at all. Similarly, and more recently, embedded bias in the data used for machine learning hardcodes bias in the ensuing algorithms. For example, facial recognition technology tends to be weak in recognising women of colour, because they are underrepresented in the training datasets.

Gender equality in the European Research Area (ERA)

Gender equality and gender mainstreaming in research is one of the priorities of the ERA calling for more transparency and wider access to R&I for women, in order to enlarge the talent pool and the innovation potential. Positive changes are under way in many countries and guidance to help Member States implement gender targets and quotas in R&I has been adopted. The 2018 ‘She Figures’ report on gender in R&I, produced by DG RTD, shows an overall improvement. However, a glass ceiling persists in most ERA countries and further efforts to promote institutional change are needed.

Only one third of European researchers are women and men still hold more than three quarters of the top academic positions. While the number of PhD candidates is almost at parity, gender disparity grows as research careers progress. The gender pay gap persists in research. Women make up only one third of entrepreneurs and less than 1 in 10 patent holders in Europe.



Gender equality in Horizon 2020

Horizon 2020 was the first framework programme to include a specific article on gender equality in its regulation and to establish gender as a crosscutting issue. Gender is mainstreamed across Horizon 2020 by using dedicated targets and evaluation criteria. So far, 104 universities and research organisations have been supported in implementing gender equality action plans through 14 projects with a total EU contribution of €33 million.

- For gender balance in decision-making Horizon 2020 set targets of 40% for expert groups and evaluation panels and 50% for advisory groups. They are fully achieved.
- For gender balance in research teams Horizon 2020 uses gender balance as a ranking factor when evaluating proposals that receive the same score. Today, women represent 42% of the participants in projects (including non-researchers) and 28% of projects have women coordinators.
- Horizon 2020 aims at integrating the gender dimension in R&I content, to ensure that the biological characteristics and social/cultural features of women and men are taken into account (e.g. developing a framework for a sustainable game change in European transport for a smart mobility that is sensitive to gender and diversity). Horizon 2020 also supports key policy related actions such as the implementation of Gender Equality Plans, tackling implicit gender biases and addressing gender-based violence, including sexual harassment in academia.

“Integrating gender and sex analysis into research design can lead to new insights that enhance the external validity and precision of scientific research with human outcomes.” - **Londa Schiebinger**, Chair of the EC Gendered Innovations Expert Group

EU Prize for Women Innovators

The European Commission awards an annual recognition prize to women innovators who have brought game changing innovations to market or had outstanding success running innovative companies. The prize is intended to encourage innovation potential in women and to provide role models for aspiring female innovators. Previous winners have included the founder of a biotech company producing pheromones as a safe, affordable alternative to pesticides, the inventor of the first 'tactile tablet' for blind people and a woman who created a solar powered water heating and purifying system that helps to prevent disease and greatly reduces the time that women in developing countries spend collecting and purifying water, thus allowing them to spend time on other, more productive, activities.

The launch of the prize and the award ceremonies each year are popular events, attracting media coverage and drawing attention to European support for women innovators.



Horizon 2020 funds the prize and it will continue in Horizon Europe under the umbrella of the European Innovation Council.

Beyond Gender: diversity and intersectionality in Horizon Europe

Horizon Europe will go beyond Horizon 2020 by advancing an inclusive concept of gender equality and diversity in open and democratic R&I institutions. This is commonly known as an 'intersectional' approach which means consideration is given to interlocking systems of power between gender and other social categories and identities such as ethnicity and race (including migrants and refugees), social class and wealth, gender identity and sexual orientation (LGBTI+ issues) and disability to better address the multiple and interacting factors of inequality experienced by R&I actors. Related activities include:

- New activities supporting gender research to develop a broader understanding of gender equality and intersections with other inequalities;
- Policy-related actions supporting gender equality in scientific careers and in decision making and the integration of the gender dimension in R&I content;
- Incentives to promote the adoption of gender equality plans, diversity and inclusion strategies, and comprehensive approaches to institutional change.

Annex I **Key projects dedicated to gender equality in R&I**

- **ACT** is setting up and supporting an international network of Communities of Practice (CoPs) as agents to develop gender equality actions at research performing and research funding organisations in the European Research Area. Seven CoPs are being developed: three have a disciplinary focus (life sciences, physics and engineering), four have a geographical focus, one focusing on Research Funding Organisations, and one focusing on gender budgeting;
- **GENDERACTION** is an innovative policy network for the implementation of Priority 4 of the European Research Area, 'gender equality and gender mainstreaming in research'. The project seeks to facilitate networking and exchange among more and less experienced countries to develop knowledge and build capacities, competences and know-how for gender equality and mainstreaming in R&I. The project cooperates closely with the ERAC Standing Working Group on Gender in Research and Innovation;
- **GENDER-NET PLUS** is the first ERA-NET Cofund scheme dedicated to the promotion of gender equality in research and innovation gathering 16 committed national funding organisations from across Europe and beyond. A joint co-funded call for proposals is supporting 13 third party transnational projects, and consortium partners are carrying out joint assessments on the promotion of gender equality through institutional change and the integration of sex and gender analysis into R&I, as well as on gender differences and bias in access to research grants;
- **HYPATIA** aimed to foster partnerships among schools, museums and science centres and industries and offer gender inclusive STEM education to young people. It also actively exposed young people and especially girls to the variety of STEM related careers, debunking gender stereotypes;
- **LIBRA** - 'Leading Innovative measures to reach gender Balance in Research Activities' worked to improve gender equality within the EU-LIFE alliance – a group of 13 European life science research institutes. The project aimed to improve recruitment policies, support the career development of female staff, generate an inclusive environment and ensure that the gender dimension is considered in research. The project has developed training material on unconscious bias for H2020 evaluators.

Examples of research projects having integrated a gender dimension in their contents

- **FairTax** produces recommendations on how fair and sustainable taxation and social policy reforms can increase the economic stability of the EU, analysing gender equality in taxation. Interaction and collaboration with Member State ministries of finance, the European Parliament and the United Nations has been extensive, and FairTax results informed the recent report from the European Parliament's Committee on Women's Rights and Gender Equality (FEMM) on gender justice in taxation.
- **ENTRUST** takes a multidisciplinary approach to develop an in-depth understanding of the human and societal dimension of the energy system, analysing the effects that gender and intersecting categories such as age and socioeconomic status have on transitioning to a low carbon energy system.

Annex II She Figures 2018

	INDICATOR	YEAR	EU-28
PHD	Number of PhD graduates by sex	2016	W = 61 683 M = 67 104
	Evolution of the proportion of women PhD graduates	2007	45.9 %
		2016	47.9 %
	Proportion of women PhD graduates Engineering, manufacturing and construction	2016	29 %
RESEARCHERS	Number of researchers , by sex, headcount	2015	W = 958 565 M = 1 908 598
	Researchers per thousand labour force, by sex	2015	W = 8.6 M = 14.5
		2009 ¹	32.9 %
	Proportion of women researchers	2015	33.4 %
		2009-2015	W = 3.8 % M = 3.4 %
	Proportion of women researchers in the Higher Education Sector (HES)	2009	40 %
		2015	42.1 %
	Proportion of women researchers in the Government Sector (GOV)	2009	40.1 %
2015		42.5 %	
Proportion of women researchers in the Business Enterprise Sector (BES)	2009	19.4 %	
	2015	20.2 %	
CAREERS	Evolution of the proportion of women in grade A positions ²	2010	19.8 %
		2013	22.1 %
		2016	23.7 %
	Women to men ratio of authorships (all authors) in all fields of science	2013-2017	0.55
Women to men ratio of authorships (when acting as corresponding author) in all fields of science	2013-2017	0.47	
RESEARCH ORGANISATIONS, INCLUDING UNIVERSITIES	Proportion of women heads of institutions in the Higher Education Sector	2010 ³	15.5 %
		2017	21.7 %
	Proportion of women heads of universities or assimilated institutions based on capacity to deliver PhDs	2010	10 %
		2017	14.3 %
	Proportion of women board ⁴ leaders	2017	20 %
Proportion of women board members (including leaders)	2017	27 %	
Proportion of Research Performing Organisations (RPOs) that adopted gender equality plans (total number of responding RPOs to the MORRI survey)	2016	55.9 % (313)	
INNOVATION	Women to men ratio of inventorships , all International Patent Classification	2013-2016	0.10
	Percentage of publications having a sex or gender dimension in research content	2013-2017	1.79 %

¹ Source of data referring to 2009 in this section: Eurostat, rd_p_femres table

² Source of data referring to 2010 in this section: She Figures 2012; EU-27

³ Source of data referring to 2010 in this section: She Figures 2012; EU-27

⁴ Such as scientific of R&D commissions, boards, councils, committees, foundations, academy, assemblies and councils.