Feedback from the GENDERACTIONplus project: Action Plan for Women in Research, Innovation and Start-ups

High-quality, inclusive research and innovation systems are essential to Europe's future: our social cohesion, our response to the major challenges ahead of us, as well as our competitiveness. The forthcoming Action Plan for Women in Research, Innovation and Start-ups represents a critical opportunity to address persistent structural barriers that limit women's full participation across research careers, innovation ecosystems and entrepreneurship.

Despite progress, gender inequalities remain deeply entrenched in research and innovation systems, and are structural in nature. They arise from the organisation of research and innovation careers, persistent biases and stereotypes, evaluation practices, funding models, investment ecosystems and institutional cultures, rather than from differences in individual capacity or ambition.

Structural and institutional barriers in research careers

Empirical evidence demonstrates the persistence of gender bias in research evaluation and peer review processes. Studies show that assessment outcomes can be influenced by the applicant's gender and that evaluation systems are not immune to bias (Jappelli, Nappi and Torrini, 2017; Helmer et al., 2017). Structural bias in recruitment and evaluation can disadvantage women and other underrepresented groups, with identical profiles perceived as less competent in hiring decisions and conventional metrics shaped by homophily and entrenched norms (Figueiredo, 2023).

These dynamics operate within research career systems that remain organised around linear, competitive models that reward uninterrupted productivity, mobility and accumulation of research capital. Women's disproportionate care responsibilities interact with fixed-term contracts, mobility expectations and funding rules that often do not recognise career breaks due to care work and exclude childcare costs, creating structural penalties (OECD, 2024a; European Commission, 2026). This is further compounded in laboratory and fieldwork-based disciplines, where career breaks can disrupt long-term research continuity (Paksi et al., 2025).

As a result, women researchers are more frequently exposed to contractual instability and fragmented career paths, particularly at early career stages. They also undertake more teaching, service and advising work, which remains undervalued in research-based promotion systems, contributing to cumulative disadvantage in senior progression (OECD, 2024a).

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Although women now enter academia in comparable numbers to men, they account for only 30 per cent of full professor Grade A positions across the EU and just 20 per cent in Science and Engineering. Women represent 26 per cent of heads of higher education institutions and 22 per cent of university presidencies, illustrating persistent vertical segregation (European Commission, 2026).

Comparative evidence across several European countries confirms that female PhD holders face higher risks of fixed-term and part-time employment, lower probabilities of research employment and persistent gender pay gaps, including within research positions (EIGE, 2016). These patterns reflect structural features of research labour markets that generate cumulative disadvantage.

Gender-based violence constitutes an additional and pervasive structural barrier. Psychological violence and sexual harassment are widespread in European research and higher education and disproportionately affect women (UniSAFE, 2022). Gender-based violence reflects unequal power relations embedded within research systems and constitutes a direct barrier to safe participation, retention and career development (UniSAFE, 2024)

Cultural and pathway effects shaping STEM participation

Inequalities begin long before labour market entry and are shaped by early socialisation processes. OECD PISA analysis demonstrates that social norms, stereotypes conveyed by families and teachers, and the lack of visible female role models influence girls' perceptions of whether STEM careers are attainable or appropriate (OECD, 2019). These influences interact with structural features of education systems. A European review of the gender gap in STEM education identifies interconnected individual, contextual and institutional factors shaping girls' participation, including lower STEM self-efficacy, sociocultural stereotypes in the curriculum and pedagogical practices (European Commission, 2024).

National studies reinforce this evidence. Research from Italy confirms that stereotypes about STEM careers remain influential among upper secondary students and that exposure to women role models positively affects girls' self-perceptions and motivation towards STEM (Arnaboldi et al., 2025). Even among high-performing students, girls' expectations of pursuing science and engineering careers are substantially lower than those of boys with comparable levels of achievement (OECD, 2019). Evidence from Spain further shows that gendered norms in higher education legitimise horizontal segregation and reinforce the undervaluation of women in science-related fields (Verdugo-Castro et al., 2023).

Psychological mechanisms interact with these structural and cultural dynamics. Lower mathematics self-confidence is identified as an early factor contributing to gendered

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educational pathways away from science-related careers (OECD, 2019), while research on the impostor syndrome demonstrates how gender stereotyping and biased expectations undermine self-evaluation among girls and women (Feenstra et al., 2020). This body of evidence illustrates how cultural signals, institutional practices and self-perception combine to shape long-term participation in STEM.

Intersectional inequalities and compounded disadvantage

Gender inequality does not operate in isolation but intersects with other structural dimensions of disadvantage. Evidence from European research systems shows that intersectional dimensions, including ethnicity, disability and socioeconomic background, remain insufficiently integrated into policy frameworks, limiting the effectiveness of equality interventions (GENDERACTIONplus, 2023). This omission risks obscuring how inequalities compound in practice.

Research in STEM academia demonstrates that bias does not operate as a single mechanism. Rather, it functions through multiple interacting processes that intensify disadvantage for women whose gender intersects with other marginalised identities (Llorens et al., 2021). These dynamics are reflected in experiences of gender-based violence. UniSAFE survey data show that gender-based violence is significantly more prevalent among minoritised groups and carries disproportionate consequences for these groups' wellbeing, productivity and retention (UniSAFE, 2022).

Structural employment conditions also compound these inequalities. Precarious contracts, mobility requirements and unequal access to institutional support disproportionately affect early career researchers and those with caring responsibilities, disabilities or constrained mobility (Michlová et al., 2024). Taken together, this evidence illustrates that gender equality measures must be designed with an intersectional lens in order to address the cumulative and differentiated nature of disadvantage within research and innovation systems.

Academic freedom and feminist and gender research

Researchers working on gender equality and gender dimensions in research face specific pressures where such topics are politicised or publicly contested. These include harassment, delegitimisation and attempts to restrict research agendas (ERA Forum Sub-group on Inclusive Gender Equality, 2025). Such pressures can discourage research questions, limit funding access and narrow the range of topics considered legitimate. Gender-based violence further undermines academic freedom by constraining who can participate safely in research systems. Addressing academic freedom in relation to feminist and gender research as well as gender-based violence is therefore a structural condition for research integrity and excellence.

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Structural barriers in innovation and investment ecosystems

Barriers extend beyond academia into innovation and entrepreneurship ecosystems. Research shows that male dominated investor networks systematically advantage men, limiting women's access to capital, mentoring and informal opportunities that shape entrepreneurial success (Fine, 2025). Empirical evidence further demonstrates that discriminatory attitudes among venture capitalists influence funding decisions, contributing to unequal investment outcomes (Koch, Berger and Kuckertz, 2025).

These dynamics are reflected in participation and leadership patterns. Although women represent approximately 42 per cent of STEM graduates, they remain underrepresented in innovation leadership and in venture funding decision making positions (European Innovation Council, 2025). Women hold around one quarter of STEM related jobs and self-employment roles and only 19.4 per cent of ICT specialist roles, limiting their presence in high growth innovation sectors (European Commission et al., 2025).

Funding disparities are particularly pronounced. Women-only founding teams receive less than 1 per cent of total European venture capital investment (Financial Times, 2025). Barriers are especially acute in deep tech sectors, where high capital requirements amplify existing structural disadvantages (Technology Centre Prague, 2024). Persistent stereotypes in ICT and digital innovation further reinforce socio-cultural bias in capital-raising processes (OECD, 2024b).

At the same time, emerging rollbacks of diversity initiatives outside Europe raise concerns about potential spillover effects on corporate governance and investment practices within European innovation ecosystems (Aktan, 2025). In this context, without deliberate corrective action, existing disparities risk becoming further entrenched across emerging and capital-intensive sectors.

Consequences for excellence and competitiveness

Underrepresentation is not only a question of equality but also of research quality, innovation capacity and economic performance. When women are excluded from design and development processes, products and systems may be built around a default male reference point, with measurable consequences for safety, usability and inclusion (Ban and Banda, 2025; Sugimoto and Larivière, 2023).

Evidence also links diversity to the quality and impact of research itself. Gender diverse teams are associated with greater analytical depth and improved research validity, while the exclusion of gender perspectives can result in blind spots and distorted findings (Krewson et al., 2025). At leadership level, more diverse decision-making structures are correlated with more novel

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and impactful research outputs (Yang et al., 2022) and stronger organisational performance (McKinsey, 2020).

These effects extend to the macroeconomic level. Economic modelling indicates that fuller utilisation of women's skills and increased participation in the workforce are associated with higher output and growth (Fluchtmann et al., 2024; Woetzel et al., 2015). Persistent underrepresentation therefore carries measurable costs for excellence, competitiveness and long-term economic resilience.

Added value of coordinated EU action

Fragmentation across national systems results in uneven levels of protection and inconsistent standards, particularly in the context of increasing researcher mobility. In this landscape, EU level coordination has proven effective in aligning expectations. Progress achieved between 2019 and 2024 demonstrates how combined action by the Commission, supportive Council Presidencies and Member States advanced Gender Equality Plans and zero-tolerance approaches to gender-based violence across the European Research Area (Linková and Mergaert, in print).

Building on this experience, common EU standards on gender equality, inclusive research assessment and zero tolerance to gender-based violence can strengthen predictability, trust and mobility across the ERA. Research funding organisations are central actors in this process. Through funding conditionalities, they can require comprehensive institutional policies, including in mobility schemes and early career support. EU-level coordination can reinforce this role by embedding consistent expectations across programmes and countries, thereby strengthening prevention, accountability and researcher protection across borders (GENDERACTIONplus, 2024).

Priority actions for the EU and Member States

The evidence outlined above demonstrates that gender inequalities in research and innovation are embedded in funding structures, evaluation systems, career models and investment ecosystems. The Action Plan should therefore prioritise structural measures that align with this diagnosis.

First, **Gender Equality Plans** should be maintained and strengthened as a structural requirement across EU research and innovation funding. Where innovation actors and Business Enterprise Sector organisations participate in EU programmes, consistent expectations on gender equality and monitoring should apply. These standards should be also embedded within national funding criteria to ensure coherent ERA-wide implementation, supported by capacity building and appropriate transition measures.

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Second, **inclusive gender analysis in research and innovation content** should be required by default, with applicants expected to justify non-relevance and evaluators equipped with appropriate expertise. Research assessment reform aligned with CoARA and DORA should broaden excellence criteria to recognise teamwork, open science, societal impact and Equality, Diversity and Inclusion contributions, including responsibilities linked to structural change, as well as the integration of inclusive gender analysis as an excellence criterion.

Third, **zero tolerance to gender-based violence** should be reinforced as a condition of funding and participation. EU and Member State mobility schemes should require host institutions to guarantee safe and inclusive environments, with hosting eligibility conditional on effective prevention, reporting and support mechanisms.

Fourth, **innovation funding instruments** should systematically mainstream gender equality objectives. This includes monitoring gender gaps in venture investment, incentivising diversity within publicly backed funds, integrating gender indicators into innovation governance and introducing targets where persistent disparities exist. Supporting women's participation in commercialisation, including in spin-offs, patenting and knowledge valorisation, should form part of EU innovation strategy.

Finally, **dedicated and long-term funding for gender equality and intersectional gender research** should be secured within FP10 and national R&I programmes, alongside measures addressing work–life balance and care-related costs in research careers.

Conclusion

The Action Plan must recognise that gender inequality in research, innovation and entrepreneurship is structural, systemic and intersectional. It affects excellence, integrity, safety and competitiveness. Coordinated EU action, grounded in common standards, inclusive funding conditions, intersectional monitoring and zero tolerance to gender-based violence, is essential to make the European Union the most attractive place for women to build research and innovation careers by 2030.

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