





Integrating Gender in Climate, Energy and Mobility Research

Areti ProvataCommunication Consultant

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INTRODUCTION

The GENDER-IN project is a bilateral cooperation initiative, which aims to cultivate the integration of a gender perspective in research and to enhance learning processes between Greek and Norwegian scholars and researchers. Through a series of live workshops and webinars, which took place from October 2022 to November 2023, the participants gained insights into different ways to integrate gender in their research and recognized its value in terms of interdisciplinary research.

Drawing upon diverse sources such as European Union documents, scientific articles, publications from Kilden, i.e., the independent Norwegian knowledge center for gender perspectives and gender balance in research, and the GENDER- IN insights gathered from the workshops and webinars related to Cluster 5 (Climate, Energy, and Mobility) of the Horizon Europe, the following report endeavors to offer further perspectives on the incorporation of gender into research.

The report has five sections. In Section 1, the main topics addressed by Cluster 5 of the Horizon Europe are defined. In Section 2, the focus lies on the EU guidelines related to the integration of the gender dimension in research projects in Cluster 5. Section 3 provides examples on how the gender dimension has been integrated in interdisciplinary research relevant for Cluster 5. In Section 4, ways in which researchers could strengthen gender integration in the design of research projects in Cluster 5 are presented. Finally, Section 5 offers a set of policy recommendations for funding institutions.

The main topics addressed by Cluster 5: Climate, Energy and Mobility

Cluster 5 of the Horizon Europe Programme for research and innovation consists of three main topics, namely Climate, Energy and Mobility (European Commission n.d.). This cluster aims to tackle climate change by fostering a better understanding of its causes, evolution, challenges, and effects and by enhancing energy and transport sustainability (Ibid.).

The main goal of this cluster is to ensure a fair ecological and digital transformation, which will lead to an overall improvement of the Union's economy, industry, and society. Climate neutrality in Europe should be reached by 2050; this involves achieving greenhouse gas neutrality in the energy and mobility sector accordingly. Another goal of this cluster is to enhance the competitiveness, resilience, and benefits for citizens and society while advancing towards these environmental goals (European Commission, 31 March 2023).

Climate

Climate change is deemed as one of the most challenging problems faced by today's society. We cannot avert dangerous climate change. It is already having damaging consequences, which will worsen as global temperatures increase (IPCC, 2018). Even keeping warming to <1.5°C seems a faint hope, requiring major commitments and action within the next decade (Ibid.). The international climate community has notably advanced our comprehension of the causes of climate change, as well as viable response options encompassing both mitigation and adaptation. The current urgency revolves around expediting the implementation and acceptance of these strategies. The upcoming decade holds pivotal significance in

determining the trajectory, making it crucial to act promptly. Utilizing every available tool and solution is essential, encompassing not only technological approaches but also nature-based and societal interventions. In these endeavors, research and innovation will be pivotal (European Commission, n.d.).

Energy

The term energy transition denotes the worldwide move away from energy systems reliant on fossil fuels towards those centered on low-carbon and renewable sources. This transition entails a significant change in how we generate, distribute, and consume energy.

Prioritizing the green transition will lower emissions, diminish reliance on imported fossil fuels, and guard against price spikes. Escalating fossil fuel prices disproportionately affect energy-poor or vulnerable households, intensifying disparities and inequalities within the EU. Businesses, particularly energy-intensive industries and the agri-food sector, encounter elevated production costs. Ensuring companies and households have access to affordable, secure, and clean energy necessitates prompt action, beginning with price mitigation and gas storage for the upcoming winter (European Commission, 8 March 2022).

Mobility

Mobility and transport account for approximately one third of Europe's total energy consumption and almost a quarter of Europe's GHG emissions. They are also the main causes of air pollution in cities. At the same time, transport is considered an essential service, as it enables individuals to satisfy basic needs, such as access to employment, education, health and care services. According to the European Green Deal "transport should become drastically less polluting" and also has to ensure a fair transition towards climate neutrality by acknowledging the need for more data on the issue of transport poverty, while promoting sustainable alternatives, especially public transport networks (European Commission, May 2023, p. 84)

EU guidelines relating to the integration of the gender dimension in research projects in Cluster 5

Integrating a gender dimension into research requires a change in perspective, moving away from normative and unexamined ideas about gender. This entails posing novel and diverse questions, adopting alternative data collection methods, and approaching research from different theoretical perspectives. It's essential to recognize that sex and gender, though interconnected, are distinct concepts. While sex pertains to biological characteristics in humans or animals, gender encompasses socio-cultural processes that influence behaviors, values, norms, and knowledge. (Gender Action, 2021)

Sex, gender and intersectional analyses of the research content are crucial factors for the scientific excellence and success. The European Commission's Horizon Europe research funding applications are required to include gender dimension into the research content (Resources - GIA Checklist for Research Proposals, n.d.).

The European Commission and various national research-funding agencies and institutions encourage researchers to include the gender dimension in their grant proposals – when relevant (Korsvik & Rustad, 2018). The Commission's Policy Review titled: "Gendered Innovations 2: How inclusive analysis contributes to research and innovation" (European Commission, 2020), highlights the importance of integrating sex and/or gender analysis into research and innovation by mentioning that it enhances research by fostering excellence, creativity, and business prospects; encourages researchers and innovators to challenge gender norms, stereotypes, and reconsider standards and reference models; facilitates a comprehensive comprehension of varied gender needs, behaviors, and attitudes; caters to the diverse requirements of European Union citizens, thereby augmenting the societal significance of the generated knowledge, technologies, and innovations and contributes to the creation of goods and services better tailored for emerging markets.

Cluster 5 of the Horizon Europe Programme encompasses climate, energy, and transport – including mobility – three pivotal sectors for environmental sustainability. The UN's 13th Sustainable Development Goal is to "take urgent action to combat climate change and its impacts". In order to meet this goal, the European Commission calls for research that aims to achieve a resource efficient and climate-change resilient economy and society (European Commission 2018-2020). To address the challenges of Cluster 5 crucial topics, there is a need of multi-level and holistic approaches in which local and indigenous traditional knowledge and technologies in climate change research must be considered (Gender Action, Sep. 2021, p.5).

Moreover, in this context of the holistic, multilevel and intersectional research approach, the Horizon Europe - Work Programme 2023-2024 [Climate, Energy and Mobility] highlights that "Research has proven that Social Sciences and Humanities (SSH) and stakeholders' involvement in the design phase of a project is pivotal to facilitate societal buy-in and longlasting market integration of a system or technology, so they are addressed in relevant topics across the six destinations of the Cluster 5 work programme. Activities in this work programme should also pay attention to potential (biological) sex and (socio-cultural) gender differences when it comes to users' preferences and safety issues" (European Commission, 31 March 2023, p.20).

Examples on how the gender dimension has been integrated in interdisciplinary research relevant for Cluster 5.

In the last decade a growing body of literature has begun to uncover the ways in which gender intertwines with climate change, energy access, consumption and saving as well as daily mobility and/or immobility.

Gender based variations relevant for the topics addressed by Cluster 5 have been recognized and need to be further explored in interdisciplinary research. To date, the depth of understanding of the gendered differences in climate, energy and mobility varies significantly.

As a general observation, the gender dimension in climate, energy and mobility research tends to concentrate more on women in the Global South due to their vulnerability (UN Women, 2015).

However, there is no single definition of vulnerability. Gender scholars have argued that it is neither an intrinsic characteristic of a certain community or person, nor derived from a single social dimension like being poor, rural or female (Blaikie et al. 2014; Enarson, 1998). It is rather rooted in "patterns of practices, processes and power relations that render some groups or persons more disadvantaged than others" (Enarson, 1998). The complexity and the limits of the concept of vulnerability and the multi- faceted topics of climate, energy and mobility require therefore an interdisciplinary approach.

Climate

It is widely acknowledged that the climate crisis is not "gender neutral" (UN Women, 2022). In many regions worldwide women and girls bear disproportionate responsibilities for securing food, water and fuel (Ibid). As a result, they are also more vulnerable to climate change and face unique threats to their livelihoods, health, and safety (Ibid.).

Within the research area of gender and climate, a plethora of studies relevant for Cluster 5 have primarily contributed to the understanding of the concept of vulnerability and the differential impacts of climate change. However, a disproportionate number of those focus on sub-Saharan Africa and Asia, often including particular thematic focuses, such as agriculture, nutrition and health (Alston 2015; Alston and Akhter 2016; Chidakwa et al. 2020; Jost et al. 2016; Patel et al. 2020; Sorensen et al. 2018; Goh 2012).

The gendered character of climate change adaptation seems to be addressed more rigorously than vulnerability and the gender- differentiated impacts of climate change (Alston 2007; Khalil et al. 2020; Lawson et al. 2020; Ngigi et al. 2017). Again, the diverse responses to climate change are mostly explored in the Global South and in an agrarian context (Aryal et al. 2022; Assefa and Gebrehiwot 2023; Carr and Thomson- Hall 2014; Ravera 2016; Van Aelst and Holvoet 2016; Ylipaa et al. 2019). Compared to the impacts and adaptation research, there is a relative lack of research on gender and mitigation. Recently, Rainard et al. (2023) and Jerneck (2018) examined the links between gender equality and climate change mitigation.

To date, the gender dimension is rarely included in research regarding the impacts of climate change on the Global North. Climate change adaptation and mitigation practices are also barely investigated. Scholars focus almost explicitly on discourses and perceptions regarding climate change. Flavell (2023) draws on the discourses by MacGregor (2010) that have been already covered in academic literature attempting to provide a fuller and more varied picture about women's perceptions working in spaces of climate change. Even if women are not directly affected by climate change, findings from industrialized democracies have showed that they tend to express more concern about climate change than men do (Egan and Mullin, 2017, 215; Franzen and Vogl 2013, 1004; McCright and Dunlap, 2011). This gender gap in climate concern only

emerges in wealthier countries and highly correlates with the gross domestic product per capita (GDPpc) (Bush and Clayton, 2023).

With a GDP per capita of \$20,732 in 2022 and such an advanced economy, it should be expected that climate change in Greece would stand out as a strong concern among citizens (Greece GPD per capita 1960-2024, n.d.). However, climate change remains a lower priority for many Greeks (Voskaki and Tsermenidis, 2016). According to Voskaki and Tsermenidis (2016), women are more aware of the climate change risks than men are, and thus more willing to contribute to climate protection, or are more actively engaged in pro-environmental attitudes. In their survey, people were grouped based on their answers concerning the importance of climate change and actions taken or planned aiming to mitigate climate change effects which resulted in two distinctive profiles, profile A and profile B (Ibid.). Women are more likely to belong to profile A than men are. Such an insight could mean either that women are more sensitive to environmental issues or that men evaluate the climate change risk lower than women or do not accept the climate crisis at all.

Energy

Access to modern energy services is linked to well- being and affects many aspects of human life, from increased economic activity to improved living standards, child literacy, safe drinking water and women's empowerment (Oparaocha & Dutta, 2011, p. 265; Ritchie et al., 2019).

Many countries have invested in energy infrastructure to expand their economies and serve their public better. However, in 2022 the number of people without access to electricity has increased for the first time in decades (IEA, 2022). Due to the global energy crisis 775 million people are denied access to electricity and nearly 3 billion worldwide rely on solid fuels or open fires for cooking and heating as their primary sources of energy (EPA n.d.; IEA 2022).

There is evidence that the availability (and affordability) of electricity and clean fuels for cooking and heating is strongly related to income. Thus, the Global South is disproportionately affected by energy poverty and it appears that access to energy services increases as incomes increase (Ritchie et al., 2019). The burden of energy poverty and the heavy reliance on the traditional biomass falls disproportionately also on women and girls (Oparaocha & Dutta, 2011).

There have been several studies that investigate the impacts of energy access on gender from the perspectives of the Global South (Johnson et al., 2018; Osunmuyiwa & Ahlborg, 2019; Pachauri & Rao, 2013; Pueyo & Maestre 2019; Ryan 2014) with its burden and heavy reliance on traditional biomass falling disproportionately on women and girls (Oparaocha & Dutta 2011).

On the other hand, the 2023 Gender Equality Index by the European Institute of Gender Equality (EIGE), which centers on the socially fair transition of the European Green Deal and scrutinizes factors such as public attitudes and behaviors concerning climate change, energy, transport, and decision-making, underscores that in Greece, the percentage of women facing challenges in adequately heating their homes and experiencing difficulties or delays in paying electricity bills is significantly higher than that of men¹. Simultaneously, the thematic focus of the results emphasizes the male-dominated nature of the energy sector in Greece, where women comprise only 20% of the employees in the sector (EIGE, 2023).

According to Anfinsen and Heidenreich (2017), cultural gender assumptions are based on energy efficiency technologies, which imply that a better understanding of the interaction between gender and energy is required to achieve ambitious energy goals (Anfinsen & Heidenreich, 2017). Räty and Carlsson-Kanyama (2010) analyzed data from four developed European countries, including Greece, and found that men tend to consume more energy than women.

Mobility

To begin with, over the past decades scholars of gender and mobility have been has been focusing on two seemingly disparate questions: on the one hand, they have been exploring how mobility shapes gender, considering problems such as how processes of mobility and/or immobility influence power relations embedded in gender (Hanson, 2010, p. 8). On the other hand, the other line of research has been examining how gender shapes mobility by shedding light on "how gendered processes create, reinforce, or change patterns of daily mobility"(Ibid.). Nevertheless, an improved and deeper understanding of the relationships between gender and mobility is required to deal with today's complex problems. Gender gaps in urban mobility (Gauvin et al, 2020; Macedo et al, 2022; Uteng 2021) and gender differences in mobility patterns (Hanson, 2010; Kawgan- Kagan, 2020; Miralles-Guasch et al. 2015; Yuan et al, 2023) have long been acknowledged by scholars.

In Greece, despite legal provisions advocating gender equality, various facets of life still witness the marginalization of gender issues, accompanied by persistent discrimination and inequalities. While local governments have recently adopted gender policies to align with international standards and secure funding, challenges persist owing to the absence of comprehensive gender-related data. The emergence of the COVID-19 pandemic and subsequent lockdowns has introduced new considerations regarding urban space, infrastructure, mobility, services, and the amplification of gender inequalities (Kallitsis, Prendou & Urbana, 2023). The institutional and legal framework in Greece highlights local

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¹ https://eige.europa.eu/gender-equality-index/thematic-focus/green-deal/country/EL

government as a privileged field for the inclusion and implementation of policies and gendered actions (Ibid.)

In a report conducted by the Nikos Poulantzas Institute in 2023, a comprehensive perspective on the intersection of city and gender is presented, spanning various levels from governance and national policies to everyday life. The report underscores the imperative of inclusive participation, considering diverse social groups, and emphasizes the importance of collecting and processing data with a gender perspective.

A case study of a Greek Municipality in the Region of Attica, Agios Dimitrios, is included in this report and sets an exceptional example of "participatory design" of public space and urban mobility through a gender lens. The Municipality along with URBANA a Civil Non-Profit Partnership, consisting of architects, social scientists, political scientists, and educators, organized an activity titled: "Women Visible in the city".

Between December 2022 and March 2023, three participatory workshops on experiential mapping took place in the city of Agios Dimitrios, Attica. Approximately 50 citizens (residents, men, women, high school students and members of the Municipality of Agios Dimitrios), after becoming familiar with theories and tools for assessing urban spaces from a gender perspective, became researchers themselves. They conducted two exploratory walks (one in the afternoon and one in the evening) in the neighborhoods of Agios Dimitrios.

After evaluating the changes that had already occurred by the Municipality in the city space and documenting the remaining needs, they gathered all the data on a collective map. They proposed solutions to make the city safer for women and, by extension, for all individuals. Urbana collected the observations and conclusions from the workshops and designed a map of the area in the form of a report, including all the aforementioned information. Subsequently, they presented the report to the Municipality of Agios Dimitrios for further action in the specific areas studied.

The exploratory walks, leading to the mapping and (re)assessment of the city space, revealed a common experience and shared concerns:

- Women's mobility differs from that of men, often rendering them invisible within their own neighborhood.
- Safety and accessibility emerged as two major issues faced by women when navigating the city.
- Overall, the new urban renovations were positively characterized by the participants, appearing to enhance the sense of comfort and safety in the neighborhood.
- However, there are still security, accessibility, and lack of urban facilities issues (i.e. adequate lighting of neighborhood streets, squares, and green spaces, proper

placement of urban equipment elements to not obstruct movement and visibility from and towards the road etc), that need to be addressed.

Through a comprehensive and participatory process, reflections and proposals were made to improve insecure areas, aiming for the city space to be more friendly for women and girls. (Kallitsis, Prendou & Urbana, 2023 p. 54).

Ways in which researchers could strengthen the integration of gender in the design of research projects in Cluster 5

The topics within Cluster 5 cover a vast spectrum of diverse research fields, all sharing a common characteristic; their environmental impact and the pressing need for their resolution. However, "Research on the relationship between gender and environmental impact is still in its infancy" (Climate Change: Analyzing Gender, and Intersectional Approaches, n.d.). Examining gender in this context involves scrutinizing the behaviors and attitudes of women and men concerning climate change, energy, and mobility. In this framework, researchers need to consider: Which specific groups of women and men are being referred to? It is crucial to compare subsets of women and men based on social factors that also influence their climate footprint, such as income, educational background, and geographical location. Treating women and men as homogenous entities without considering these social distinctions, as often happens when simply disaggregating data by sex, overlooks essential factors influencing gendered behaviors (Ibid.)

According to the Toolkit Gender in EU- funded research (2011), the starting point for a research cycle is the generation of gender- sensitive ideas for a research proposal. Subsequently, researchers are expected to <u>formulate gender- sensitive hypotheses and research questions</u>, which can draw upon previous research and existing literature. During the next step the above mentioned considerations should be taken into account and a <u>gender- sensitive methodology</u> should be applied. Any scientifically sound methodology should differentiate between the sexes and consider men's and women's situations equally. <u>Groups such as "citizens"</u>, "consumers" and "victims", which are often used in research content in Cluster 5, are too general as categories.

The methodological step is followed by the <u>research implementation</u>. During this step <u>data collection tools</u> (such as questionnaires and interview checklists) should be deployed in a gendersensitive manner by using <u>gender-neutral language</u> and making it possible to detect the <u>different realities of men and women</u>. This is suggested to <u>avoid gender bias</u> before proceeding to the data analysis. In human subjects' research, data are normally disaggregated by sex, which leads to analyses according to sex. Systematically considering sex as a central variable and analyzing

others with respect to it (e.g. sex and mobility, sex and labour) will provide significant and useful insights.

Involving gender-balanced end-user groups in the course of the research is also a good way of guaranteeing the highest impact. With the <u>report and dissemination</u> of data a research comes full cycle. Also during this last step a gender- sensitive approach is required. Gender should be included in "mainstream" publications as it is as much part of daily reality as any other variable studied. Publications should use gender-neutral language and specific dissemination actions (publications or events) for gender findings should be also considered. Last but not least, institutions and departments that focus on gender should be included in the target groups for dissemination.

Integration of gender in Cluster 5 topics

Cluster 5 supports the EU's strategic objectives through its activities included in the Work Programme 2023-2024 (European Commission, 31 March 2023, p.8). The activities will contribute to all Key Strategic Orientations (KSOs)² of the Horizon Europe Strategic Plan. To contribute to these programme-level KSOs, Cluster 5 will deliver on six specific expected impacts.

For the **Climate and Energy** fields the expected impacts according to the Horizon Europe - Work Programme 2023-2024 [Climate, Energy and Mobility] are:

- 1. Transition to a climate-neutral and resilient society and economy enabled through advanced climate science, pathways and responses to climate change (mitigation and adaptation) and behavioral transformations.
- 2. Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative crosscutting solutions.

² Key Strategic Orientations: **A.** Promoting an open strategic autonomy by leading the development of key digital and, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations; **B.** Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment; **C.** Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems; **D.** Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

- 3. More efficient, clean, sustainable, secure and competitive energy supply through new solutions for smart grids and energy systems based on more performant renewable energy solutions.
- 4. Efficient and sustainable use of energy, accessible for all is ensured through a clean energy system and a just transition.

What researchers should consider in order to integrate gender in the design of research projects in the climate and energy fields:

- Gender is more than a straightforward empirical classification (i.e., men/women); it is also
 a discursive construction that shapes social existence. A comprehensive gender analysis
 should encompass the examination of power dynamics between men and women, as well
 as the discursive and cultural constructions of dominant masculinities and femininities.
 These constructions influence the way that discussion, articulation, and responding to
 social/natural/techno-scientific phenomena such as climate change is interpreted
 (McGregor, 2010).
- Gender analysis should steer clear of stereotypes and oversimplified differences between
 women and men. Treating women as a homogeneous group and contrasting this with
 men as another undifferentiated group (merely disaggregating data by sex) overlooks
 crucial factors that impact behaviors in relation to the environment. These factors
 encompass income, age, and geographic location (Climate Change: Analyzing Gender, and
 Intersectional Approaches, n.d).
- Suggested <u>adaptation</u> to climate change policies and measures must prioritize gender sensitivity, ensuring the inclusion of both men and women in adaptation planning. This involves considering relevant knowledge during project development and ensuring that the implemented measures genuinely benefit those who are supposed to implement them (Roehr & Hemmati, 2007)
- There is a lack of gender disaggregated data related to the production of CO2 emissions as well as to the impacts and preferences of climate <u>mitigation</u> measures (Roehr & Hemmati, 2007). Women's and men's contributions to climate change differ, especially with regard to their respective CO2 emissions (Roehr, 2007)
- Barriers hindering behavioral change must be acknowledged in climate adaptation strategies; otherwise, responses to climate risks may be influenced more by deeply ingrained gender norms than by objective rationality (Terry, 2009).
- There are notable disparities in the access to and control over energy technologies between women and men. These differences arise from varying income levels, gender

- stereotypes, and societal assignments in the field of energy technologies and usage (European Commission, 2011).
- Gender considerations should be integrated into the entire process of sustainable energy technologies, spanning from the extraction of energy resources to waste disposal. This comprehensive approach is essential for identifying potential implications that may arise at each stage (Ibid.).
- Vulnerable people are not a homogeneous group, which requires an understanding of their differentiated situations. Such an understanding requires the data collected to be disaggregated not only by gender but across a range of social characteristics (European Parliament, December 2022).
- A pervasive challenge across all aspects of energy research is the extremely low representation of women. This extends to research and development, policymaking, implementation, and the energy industry, encompassing both conventional energy production and renewables. The consequence of this underrepresentation is the complete neglect of women's perspectives, perceptions, and expectations concerning energy technologies and policy in research, planning, and decision-making processes (European Commission, 2011).
- The viewpoints of predominantly male energy experts are often perceived as genderneutral and the norm, while women's perspectives are marginalized and relegated.
 Addressing gender equality and achieving a gender balance in research is crucial, as is uncovering the underlying structures and patterns, particularly androcentrism (Ibid.).
- Researchers in the energy field, along with companies and policy-makers, must enhance their understanding of the influence of gender and other social, economic, and demographic factors on energy policy. Effective and equitable energy technologies and policies require a thorough analysis of gender and intersectionality (Smart Energy Solutions: Intersectional Approaches, n.d).
- Existing inequalities among men and women, especially those related to income, exacerbate energy poverty for women. This includes factors such as the gender pay gap, the gender pension gap, and the greater limitations women face in their work opportunities compared to men due to their disproportionate responsibilities for caring for children and other close relatives (Zamfir, 2023)
- Age significantly contributes to women's vulnerability to energy poverty. As women in the EU typically live longer than men and frequently receive lower pensions, they face an elevated risk of energy poverty. Additionally, age renders individuals more sensitive to cold conditions, exposing them to heightened health risks (Ibid.)

"The more technology-orientated research is, the harder it is to discover gender impacts

 and the greater the efforts that must be undertaken because of lacking data and research. Gender aspects are to be found or can be assumed in access to energy technologies, perception of (risk) technologies, energy needs and use and in particular in the very small share of women in energy technology-related areas, resulting in an exclusion of their perspectives in research and development." (European Commission, 2011)

For the **Mobility - Transport** field according to the Horizon Europe - Work Programme 2023-2024 [Climate, Energy and Mobility] the expected impacts are:

- Towards climate-neutral and environmentally friendly mobility through clean solutions across all transport modes while increasing global competitiveness of the EU transport sector.
- 2. Safe, seamless, smart, inclusive, resilient, climate neutral and sustainable mobility systems for people and goods thanks to user-centric technologies and services including digital technologies and advanced satellite navigation services.
- 3. Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative crosscutting solutions.

What researchers should consider in order to integrate gender in the design of research projects in the mobility and transfer field:

- Comprehending the unique mobility requirements based on gender is crucial. Gaining
 insight into gender-specific needs across diverse populations introduces fresh
 perspectives into the compilation of mobility data, thereby enhancing transportation for
 a more extensive range of the population. It is also essential to consider additional factors,
 including age, abilities, ethnicity, and socioeconomic status (European Commission, 2011
 p:26).
- Creating and employing methodologies that are sensitive to gender considerations for assessing gender-specific needs can enhance mobility options for a broader range of passengers. Simultaneously, this approach fosters environmentally friendly mobility behaviors (Ibid.)
- Transport and mobility are not gender neutral, yet systematic inclusion of gender mainstreaming in transport and mobility planning and projects is lacking. Moreover, gender-segregated data on travel behavior, trips, needs, and concerns in mobility is either

not consistently collected or not systematically analyzed. This results in an unintentional bias towards men in the planning and design of transport and mobility systems (Ramboll Smart Mobility, 2021).

Main policy recommendations for funding institutions

Addressing gender inequality in the European research ecosystem and broader society is imperative for both social and economic reasons. Moreover, the undeniable advantages of promoting equality and diversity emphasize the urgency of action. A policy brief conducted by Gender Action in 2020 underscores this challenge by noting that despite the advancements and valuable changes in Research Performing Organisations (RPOs), Research Funding Organisations (RFOs), and at the policy level in European Research and Innovation (R&I) over the last decades, the pace of change remains insufficiently swift (Gender Action, 2021).

Research funding entities and organizations (RFOs) engaged in research play a pivotal role in tackling gender disparities, not only to enhance their own ecosystems but also to contribute to broader societal progress. These organizations are instrumental in empowering all researchers of the Cluster 5 research fields, irrespective of gender, career stage to fulfill their maximum potential.

The authors of the GENDER-NET plus Policy Brief, titled "Promoting 'Gender Equality in Research Funding" conducted in 2022, emphasize that the systematic efforts toward gender equality by Research Funding Organizations (RFOs) can significantly influence the promotion of gender equality and diversity in higher education and research, particularly during the early stages of research careers. RFOs can make dual contributions by 1) advocating for and endorsing gender equality and diversity policies in higher education and research, and 2) actively striving for gender equality and diversity within their own research funding mechanisms (Hermansson, Jacobsson & Österberg, 2022).

In this aspect, it is more that evident that by actively promoting the participation of women researchers and those from marginalized groups (including considerations of race, ethnic origin, migrant background, sexual orientation, gender identity, disability, religion, etc.) in the projects of Cluster 5 is very important. Also, by endorsing projects that <u>adhere to gender equality</u> and <u>prioritize diversity</u> as an **evaluation criterion** for funding, RFOs contribute to the overall enhancement of gender equality in R&I.

According to the European Institute of Gender Equality (EIGE), in the distribution of grants, it is essential that research funding bodies allocate these funds equitably and inclusively, steering clear of any form of discrimination based on sex/gender, age, discipline, or ethnic background. Moreover, research funding bodies play a central role in shaping the research agenda by introducing novel topics or addressing societal challenges. By directing researchers to

<u>systematically analyze data based on sex and other social categories</u>, or by encouraging an <u>interdisciplinary research approach</u> when incorporating the sex/gender dimension in research content, these funding bodies can establish elevated quality standards that promote research excellence (EIGE, n.d).

To achieve those challenges a shift in the organizational culture of the RFOs is also highly recommended. Hermansson, Jacobsson & Österberg (2022) recommend that the RFOs should establish a permanent structure (department/section/task force or similar) for monitoring gender equality in its funding. The structure should report to, and be supported by, the highest level in the funding organisation, and be given adequate resources. Also, the entire RFO as an organisation must be committed to promoting gender equality and diversity. It is important to be open to bottom-up initiatives (Hermansson, Jacobsson & Österberg, 2022, p. 4).

Gender trained evaluators is also an important part of establishing funding quality standards that are committed to promoting gender equality and diversity. In this context, in 2017, Science Europe produced a practical guide aimed at enhancing gender equality in research organizations, underscoring the pivotal role of Research Funding Organizations (RFOs) in this endeavor. The guide showcases good practice examples from Austria, Switzerland, Sweden, Germany, and Ireland, emphasizing the significance of implementing training and awareness-raising campaigns within their organizations. These initiatives are crucial for bringing to light the impact of gender biases and stereotypes in the evaluation process (Science Europe, 2017, p. 12-19).

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