



GEECCO

Gender Equality in Engineering through Communication and Commitment

WP 7

Overview and assessment of gender criteria for funding programmes



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List of Abbreviations

CEE.....Central and Eastern Europe
ERA.....European Research Area
EU.....European Union
FESTA.....Female Empowerment in Science and Technology Academia
GEECCO.....Gender Equality in Engineering through Communication and Commitment
GEP.....Gender Equality Plan
HCI.....Human-Computer-Interaction
HR.....Human Resources
LERU.....League of European Research Universities
LGBTQI.....Lesbian, gay, bisexual, transgender, queer and intersex
PI.....Principal Investigator
RDI.....Research, Development and Innovation
RFO.....Research Funding Organization
ROPE.....Research Opportunity and Performance Evidence
RPO.....Research Performing Organization
SME.....Small and medium-sized enterprises
SSH.....Social Sciences and Humanities
STEM.....Science, Technology, Engineering, and Mathematics

About this document

This document was produced within work package 7, “Implementing gender equality in RFOs”, of the H2020 funded project *GEECCO - Gender Equality in Engineering through Communication and Commitment*. In task 7.4, the focus lies on the “Overview and assessment of gender criteria for funding programmes”. The goal of this task was to analyse possible gender dimensions of processes connected to the design of gender criteria occurring in the activities of RFOs (Research Funding Organisation), their intersection and also their application in different research domains. This document addresses this by providing a description of potential gender criteria which can be implemented by RFOs on different levels. It also includes a selection of existing criteria already implemented by RFOs of different kinds. To produce this document, we drew from existing literature as well as work which has been done in other work packages within the project GEECCO. One rich source was task 7.1 of the project GEECCO, in which a questionnaire was developed and answered by 19 RFOs from eight European member states and three non-EU countries. The questionnaire included one section explicitly focussed on funding criteria. These insights were taken into account in this report. In addition, desk research was conducted to provide a broad overview of the criteria implemented by different funding institutions. This document will give an overview and assessment of gender criteria for funding programmes. The report also includes a list summarizing possible gender criteria for funding programmes at the end of each section.

About the project GEECCO

GEECCO aims to establish tailor-made Gender Equality Plans (GEPs) in four European RPOs (research performing organisations) and to implement the gender dimension in two RFOs (funding schemes, programmes and review processes). All participating RPOs are located in the STEM (Science, Technology, Engineering, and Mathematics) field, where gender equality is still a serious problem and whose innovations are increasingly important in the knowledge-based economies. It is thus a question of excellence, competitiveness and justice to achieve gender equity within STEM-institutions, including policy and decision-making bodies. Concerning the gender dimension in research programmes, RFOs are one important key to substantial changes and thus a crucial part of the aspired transformation. GEECCO will pursue the following objectives to enhance systemic institutional change towards gender equality in the STEM-field:

- (i) Setting up change framework and a tailor-made GEP for each participating RPO;
- (ii) Implementing gender criteria in the activities of RFOs;
- (iii) Setting up a self-reflective learning environment in and between all RPOs and RFOs to participate from existing experiences and match them with their specific needs and circumstances. Facilitators will build up appropriate communication structures and processes within the RPOs and RFOs. They will enable the RPOs and RFOs to help themselves in the longer term dealing with internal resistances against gender equality.
- (iv) Evaluate GEP implementation within the participating RPOs and RFOs with a quantitative evaluation using monitoring indicators and qualitative monitoring to enhance and fine-tune implemented actions throughout the project.

GEECCO will develop the “GEECCO Experience: Dos and Don’ts while Degenderizing the STEM Field”, a guideline for RPOs and RFOs in the STEM field how to promote gender equality in the STEM field and intends to participate in standardization processes at EU level to measure “gender balance performance” of RPOs and RFOs.

1 Introduction

In 2009, the expert group report “The Gender Challenge in Research Funding – Assessing the European National Scenes” by the European Commission already stated that “*evaluation criteria generally consist of scientific quality criteria of the researcher and the project, pertinence criteria considering the funding programme or scheme, and often also social or national relevance criteria. These are usually presented in rather general terms.*” and “*Gender is only rarely explicitly mentioned among evaluation and funding criteria*”.¹

This observation can still be considered as valid more than ten years later, at the time of writing this report in the year 2020. Even though there are several RFOs which have already implemented criteria related to gender aspects, these are often seen as secondary criteria to the scientific quality of the project and the researcher.

According to the GEECCO project description, there are four key impacts of which three address gender criteria corresponding to the ERA goals regarding gender equality. The criteria discussed in this report are clustered according to these focus areas:

- 1) Gender balance in the research team (e.g. balanced teams, female project lead) (GEECCO Impact 2),
- 2) Gender balance in decision making bodies (board of directors, advisory boards, juries, reviewers) (GEECCO Impact 3), focussing only on panels and reviewers in this document
- 3) Gender in the research content (entire research life cycle, incl. budget, monitoring; in different domains within STEM) (GEECCO Impact 4), including a brief overview of different research domains and their specific needs concerning criteria.

We also want to clarify our use of the term “criterion”. In this document the term is used reflecting the two perspectives of a criterion: firstly, it applies to requirements which applicants of a funding call have to address in their application. Secondly, and as counterpart, it applies to requirements according to which an application is evaluated in the selection process.

This section will be followed by a chapter on the critical reflection and assessment of common evaluation processes and gender criteria and the role of the criterion “excellence in quality” which currently is still one of the main criteria for funding agencies.

¹ EC (2009a): p. 49.

Even though the focus of this report lies on the inclusion of gender criteria in the evaluation of grant proposals, we want to stress that this alone is not sufficient. The integration of the gender dimension is necessary in the entire funding cycle (the call design, the creation of call documents, the call advertising, ideally also strategy or policy documents regarding gender mainstreaming and gender in research, call requirements, review and evaluation phase and monitoring of the funded projects). This aspect cannot be addressed thoroughly and comprehensively herein, but it will be highlighted in individual sections throughout the document.

2 Overview

The Gendered Innovations website provides an overview² of measures in place in 15 RFOs that gives a good introduction to the topic of gender criteria. Table 1 shows a list of the institutions included in the Gendered Innovations overview. For better readability, the individual initiatives have not been listed below; please refer to the link in footnote 2 for the full list.

Table 1: Status of implementation of gender-relevant policies in different RFOs

Organization	Policy to: 	Policy to: 	Policy to: 	Date of implementation
Austrian Research Promotion Agency (FFG)	Yes	Yes	Yes	2009
Austrian Science Fund (FWF)	Yes	Yes	Yes	2019
Canadian Institutes of Health Research (CIHR)	Yes	Yes	Yes	2006-2018
Dutch Ministry of Health, Wellbeing, and Sports	Yes	Yes	Yes	2016
European Commission Directorate-General for Research and Innovation	Yes	Yes	Yes	2003; 2014
French National Research Agency (ANR)	Yes	Yes	Initiatives	2019
Bill and Melinda Gates Foundation: Agricultural Development Grants	Yes	Yes	Yes	2012
German Research Foundation (DFG)	Yes	Yes	No	2020
Irish Research Council	Yes	Yes	Yes	2013
Research Council of Norway (Norges forskningsråd)	Yes	Yes	Yes	2013
Spanish Ministry of Science and Innovation and Universities (MICINN)	Yes	Yes	Yes	2011-2013
UK Research and Innovation	Yes	Yes	Yes	2019
U.S. National Institutes of Health (NIH)	Yes	Yes	Yes	2016
U.S. National Science Foundation (NSF)	Yes	Yes	No	-

² Schiebinger, L. et al.: <https://genderedinnovations.stanford.edu/sex-and-gender-analysis-policies-major-granting-agencies.html>

World Health Organization (WHO)	Yes	Yes	Yes	2002
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Schiebinger et al. identified several international, national, and private granting organizations which require sex and gender analyses as a criterion in their selection procedure. Applicants may be required to address how their projects will promote the following three aspects:

- “Fixing the numbers”: equal representation of men and women in employment, decision-making, and as clinical research subjects
- “Fixing the institutions”: removing institutional barriers to gender equality
- “Fixing the knowledge: integrating sex and gender analysis as a resource to create new knowledge and technologies

Regarding the third column, “fixing the knowledge”, the RFOs listed with “Yes” have requirements in place ensuring that sex/gender analysis is integrated in the research design, if relevant. The applicants need to explain how they integrate a sex and gender analysis into all phases of basic and applied research, again if applicable. These policies ensure the consideration of sex and gender analysis as researchers conceptualize their work.

Table 2 shows an overview of the RFOs and their criteria; some of which will be described together with specific measures in greater detail later in this document. This list of RFOs which have implemented gender criteria either for gender balance in teams (= fixing the numbers), gender balance in decision making (= fixing the numbers and fixing the institutions) or gender in the research content (= fixing the knowledge) should be understood as an addition to the table shown above (and available at the Gendered Innovations website). It makes no claim of being complete and might only refer to specific programmes or calls, not the overall situation in an RFO, nor do the examples listed in this document claim to be exhaustive. The RFOs shown in Table 2 are selected members of Science Europe³ or were part of the survey conducted within T7.1 of the project GEECCO.

Table 2: Extension of Table 1 based on desk research

Organization	Gender in Teams	Gender in Research Content	Gender in decision making
Independent Research Fund Denmark (DFF)	x	-	x
Health Research Board Ireland (HRB)	x	x	x
Swedish Research Council for Sustainable Development (FORMAS)	x	x	x
Science Foundation Ireland (SFI)	x	x	x

³ <https://www.scienceeurope.org/about-us/members/>

Swedish Research Council (SRC)	x	x	x
Technology Agency of the Czech Republic (TACR)	x	x	x
Vienna Business Agency (VBA)	x	x	x
Vienna Science and Technology Fund (WWTF)	x	x	-
Swedish Innovation Agency Vinnova (Vinnova)	x	x	x

This overview shows that many RFOs already have criteria in place for all or some gender-relevant aspects. From Table 1, it becomes apparent that this development started in the late 2000s in RFOs, but many are also still in the process of implementing their measures. Although both tables show numerous RFOs actively gender mainstreaming their funding processes, we also note that there is still a high number of RFOs in which these criteria are not standard yet or which only have started to implement some criteria.

One approach used by the Swedish Innovation Agency Vinnova is introduced below. It covers all three aspects described in the tables above. After that, there will be separate sections listing possible criteria and examples for all three aspects.

Vinnova: Who, What, How⁴

Criteria used by Vinnova in the evaluation process should include gender aspects that answer the following three questions: “Who, What, How”. At a minimum level, all applicants report on the gender balance in the project team when applying. Gender aspects should be part of the overall assessment of the application. In specific funding schemes, the applicants must submit a gender equality analysis⁵ together with the application.

- WHO: This question involves analysing the distribution of women and men in the project team, who is invited to conferences, who participates and to whom is the project marketed and communicated? Are the resources distributed equally between women and men in the project?
- WHAT: This question aims at the conditions and opportunities for women and men (girls and boys) to have the same power to participate and influence. This means, for example, to analyse the target groups of a project and the potential outcomes. Many problems, results and solutions may appear to be gender-neutral yet affect women and men differently. Therefore, an analysis is needed to assess the various potential effects on the situation of women and men, respectively, before making important decisions about goals, objectives, strategies, solutions and resource allocation. On an institutional level, it needs to be reflected “For what is Vinnova giving out funding? Is it giving out funding to R&I projects that contribute to gender equality?”.

⁴ Lasinger & Nagl (2019)

⁵ <https://www.vinnova.se/en/m/equal-innovation/how-do-i-get-started/> and https://www.vinnova.se/contentassets/6bf9b3642c2b492e8cc5e6a7c8bce955/udi_jamstalldhetsanalys.pdf (Document only available in Swedish language)

- HOW: This question concerns the implementation of gender aspects in the research project and questions like the following: Have the researchers established routines, roles or policies linked to gender equality in the implementation of the project? Have the researchers examined what methods, skills, tools and the like they will use to implement and evaluate their equality efforts? If the researchers come to the conclusion that more knowledge about gender equality or gender and / or gender perspectives is needed, it is recommended that they consult experts or engage researchers in their project. Costs for this are eligible. Also including education on gender / gender issues in the proposal is possible and the related costs are eligible.

3 Gender balance in the research teams and organizations

The participation of women in science and in research teams at all levels is fundamental: *“Investing in equal opportunities for men and women in research makes for teams that perform better, and attracts top-level researchers”*⁶. To achieve the aim of attracting outstanding researchers, it is necessary to be able to have the entire pool of talent available. This again requires having a working environment that provides the same opportunities for all. In addition to providing equal opportunities to all researchers, the gender balance within a team plays a crucial role for the success of a team. Research by Hoogendorn et al. (2013) has shown that mixed teams are more efficient, creative and innovative than single-sex teams due to a diversity of experiences and beliefs, and/or different ways of thinking and finding solutions. The very small share of women in some research fields results in an exclusion of their perspectives in research and development. With a gender balanced research team, more diverse perspectives and views are considered in the research outcomes. Thereby, a higher number and different groups might benefit from the research and from the resources given to fund the research.

Funding organisations could, for example, use the following criteria to promote gender balance in the research team:

- Balance of female and male employees on the general organizational level and balance in teams working on specific projects
- Balance of female and male PIs (=principal investigators, leaders of the team)
- Quota for additional team members that are not yet known at the proposal stage (with an effect on recruitment procedures)

The boxes below show two examples from Austrian RFOs and one example from the Technology Agency of the Czech Republic:

FFG: COIN (Cooperation & Innovation)⁷

The funding programme COIN contributes towards fostering Austria's innovation performance by the better and broader transposition of knowledge into innovation. The COIN "Network" funding line encourages technology transfer within entrepreneurial cooperation schemes, thus raising the level of innovation within businesses and strengthening their cooperation capacities. It focuses on output-oriented cooperation projects to develop and improve innovative products and processes. The focus of the COIN "Aufbau" (capacity building) funding line is on building RDI competence and infrastructure at universities of applied sciences and research institutes. COIN "Aufbau" aims at

⁶ EC (2009b): p. 12

⁷ E.g. FFG (2020): p. 21 but also available in previous guidelines

strengthening providers of applied research, who are core partners for enterprises in terms of RDI, and increasing the cooperation between applied sciences and companies, especially SMEs.

FFG was one of the first funding institutions in Austria to implement gender criteria, also in programmes where SMEs and companies are involved. The following gender relevant criteria for teams are in place in the funding scheme COIN:

- In the section “Suitability of the applicant/project participant” one sub-criterion is “Composition of the project team in terms of gender balance”:
 - Has gender equality been considered in the project team?
 - Are conditions regarding gender balance improved in comparison to the standard in the respective business branch?

Vienna Business Agency: *FemPower*

FemPower calls address companies that submit project applications that fulfill at least one of the following criteria:

- Qualified female project lead and/or
- Projects with a significant share of qualified female project members and/or
- Projects focusing on aspects of gender mainstreaming

In the case that more than one criterion is fulfilled, a preferential rule (in case of equal quality) is in place.

The considerations regarding gender balance also include offerings on gender-sensitive working conditions, culture, recruitment, monitoring and management so that equal careers are possible. Therefore, as an RFO, the following recommendations may be vital:

- Taking into consideration the existence of gender-sensitive working conditions of the applying organisation (RPO) already at the proposal stage. For example, RFOs can decide to only fund RPOs which are either certified e.g. with the Athena SWAN or HR excellence in research awards or have comparable measures in place such as GEPs, equal salary certifications, opportunities for training, access to grants and funding, fair and transparent recruitment processes, childcare facilities, solutions to mobility matters, flexible time schedules.
- Asking for open advertisement procedures in recruitment in RPOs and implementing them accordingly also in RFOs and making them transparent to applicants in the proposal stage
- Offering additional funding for maternity/paternity leave, care costs (children, elderly) or accepting these costs as eligible grant costs
- Explicitly encouraging women to apply and being open for atypical career paths (including but not limited to career breaks, relevant experience gained outside academia)

- Asking for monitoring, e.g. workforce statistics at the end of a project, feedback mechanisms, explanation of the culture (e.g. what has been done to fulfil gender-sensitive working conditions) and thinking of consequences in case of shortcomings.

TACR: ZÉTA⁸

Promoting gender equality is one of the explicit aims of the programme ZÉTA. There are two gender-relevant criteria assessed by the Programme board: 1) the proportion of men and women in the team (and gender of the person leading it) and 2) HR policy of the institution of the main applicant – the aspects related to gender equality and their level of advancement.

1) The proportion of men and women in the team is assessed according to the following matrix:

GENDER-MATRIX – tool for evaluation of gender equality in the research team in the ZETA programme

	Pillar 1	Pillar 2	Pillar 3	
Research team	Gender-diverse (under 35%)	Gender-balance (35% and more)	Female leadership	RECOMMENDED EXTRA POINTS
Project 1	YES	YES	YES	10
Project 2	YES	YES	no	7
Project 3	YES	no	YES	7
Project 4	YES	no	no	3
Project 5	no	no	YES	3
Project 6	no	no	no	0
Concerns:	<i>F/M</i>	<i>F/M</i>	<i>F</i>	

However, the evaluators are instructed not to proceed mechanically and to consider the distribution, type of activities and responsibilities of men and women in the team as well.

2) The quality of HR policy and management (of the main applicant institution) is part of the evaluation criteria. It is an optional criterion (the applicants can receive extra points, but do not have to address this). Currently, **it is possible to get 10 points** (out of 391 at maximum) **if the main applicant (institution) fulfils at least 1 of the following conditions:**

1. it holds HR Excellence in Research Award
2. it holds the award "Company of the year: Equal Opportunities" (awarded by the NGO Gender Studies and relevant mainly to business companies, who are also eligible applicants of the programme ZÉTA)
3. it implements a Gender Equality Plan
4. it implements at least 2 of the following measures (which needs appropriate documentation):

⁸ <https://www.tacr.cz/program/program-zeta/>

- aspiration to receive the HR Excellence in Research Award⁹ (endorsement of the 40 principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers and submission of the endorsement letter to the European Commission)
- Gender Equality Plan in the phase of mapping and planning
- operating of a childcare provider, children's groups
- collection and evaluation of gender statistics
- institution employs a person responsible for gender equality
- institution has the ombudsperson for employees
- transparent rules of promotion/career growth (such as the transparent distribution of institutional posts, transparent management of successive fixed-term contracts, equal treatment of persons with institutional posts and persons employed on projects)

The topic of gender balance in teams can also be broadened to network aspects, e.g. a larger consortium and further partners. When collaboration takes place, cultural differences must be taken into account to the best of one's knowledge by reflecting on one's own and the opposite's differences in networking strategies, different type of networks, different ways to communicate that may vary between male and female scientists and different cultural backgrounds.

A summary of the presented criteria, measures and recommendations can be found below in Table 3.

⁹The HR Excellence in Research Award (HR Award) is an award that has been launched by the European Commission to support research institutions and funding organizations in aligning their human resource policies and practices with the principles set out in 1) the European Charter for Researchers and 2) Code of Conduct for Recruitment of Researchers. The principles of the Charter and Code specify the roles, responsibilities and entitlements of researchers as well as of employers of researchers. Non-discrimination and gender equality represent one part of these principles. The overarching aim is to develop an attractive, open and sustainable European labour market for researchers, giving individual researchers the same rights and obligations wherever they may work throughout the European Union. Currently, there are 469 institutions that have received the HR Excellence in Research Award. More information about this award (and also the list of its holders) can be found here: <https://euraxess.ec.europa.eu/jobs/hrs4r>

Table 3: Gender Balance in the Research Team

GENDER BALANCE IN RESEARCH TEAM	
Elementary criteria, measures and recommendations for RFOs	
Criteria for funding programmes	Measures of RFOs
Focus on the composition of project team	
Equal representation of men and women in the research team (team members)	<ul style="list-style-type: none"> • Extra points to the application with gender-diverse team and/or female PIs • Bonuses for team members or PIs with care duties (children, elderly family members) • Quota for additional team members that are not yet known at the proposal stage
Equal opportunities for men and women to lead the team (Principal investigators)	
Focus on the applying organisation	
Incentives for gender-sensitive culture in the applying organisation	<ul style="list-style-type: none"> • Extra points for project proposals with applicants that are demonstrably providing equal opportunities to male and female researchers • Higher flat-rate for applicants with awards or certifications (e.g. HR or gender-equality awards, Gender Pay Gap certifications, GEP in place) • Eligibility of applicants (e.g. consideration of eligible applicants only from organisations with particular certification/award as in the case of the Athena SWAN Awards)
Recommendation for RFOs	
<ul style="list-style-type: none"> • Make the costs related to care duties (day-care facilities, babysitting etc.) eligible • Offer or make the costs related to trainings on leadership/research collaboration eligible (concerning gender competence, parenthood, work-life balance needs, LGBTQI+ team members, multicultural competences) • Be open for atypical research careers and consider them when preparing the competition rules • Try to support researchers, esp. mothers with young children or researchers with the duty to care for elderly relatives. Consider providing a bonus for these researchers in the grant scheme • Do not use a fixed time frame for the track records of researchers (e.g. “not older than five years”) as this would disadvantage those researchers who have had a career break due to maternity leave, parental leave, long-term illness or caring responsibilities for family members alongside their career development. • Be sure the gender-related criteria the RFO applies are known to the applicants • Explicitly encourage women to apply • Use of existing certification schemes and awards related to gender equality as a subject of advantage (bonus, extra points, higher flat-rate, eligibility of applicants) 	

4 Gender balance in decision making bodies

In this section, the focus will be on juries and reviewers, not on other governance bodies of RFOs like advisory boards, board of directors or the like. Similar rules as those stated above can be applied while looking at the sheer numbers or processes that lie behind them. The assumption that mixed groups are more efficient, creative and innovative than single-sex groups due to a diversity of experiences and ways to think, is also valid for panels and reviewer pools. Having diverse groups should greatly reduce both conscious and unconscious bias.

RFOs should consider the following criteria for gender balance when setting up their decision-making bodies, especially juries and reviewers:

- Ensure mixed selection panels/juries and pool of reviewers (male/female) to ensure an open and impartial selection procedure; no panels without representation of both male and female experts
- Consult specific networks and platforms (e.g. female experts databases) and not rely solely on the usual search strategies
- Consideration of atypical career paths for juries/reviewers (not only assessed by scientific quality and classical research careers, but different paths, e.g. from business, social/ volunteer work and other)
- Quality assurance for juries/reviewers: e.g. necessary gender training beforehand to raise awareness on gender bias
- Raise awareness and encourage a self-reflective environment about the effect of different ways to evaluate or participate in conversations such as group dynamics, the panel member's status or the speaking time of different members within a panel¹⁰

A widespread practice is to have the target of at least 30-40% of the underrepresented gender present in evaluation boards. Having gender parity in evaluation boards is the uncontested aim of the goal to have gender equality in decision making. However, the target of 30-40% is not readily achievable for all RFOs, especially if they are only at the beginning of the gender mainstreaming process or focus on scientific fields dominated by men. For example, if there are panels with no participating women evaluators, it might be more achievable and realistic to introduce lower target figures to start from, such as 10-20% of the underrepresented gender and increase them annually by several percent. Similarly, it is possible to introduce the rule that at least one of the two highest panel's positions - chairperson and vice-chairperson – are

¹⁰ See also Söderqvist et al. (2017): p. 15 ff.

gender-balanced. The document “Guideline for jury members and reviewers” produced within GEECCO includes more information on these aspects.

While having gender-balanced panels in place does bear the potential to lead to better decision-making processes, it does not automatically lead to gender-sensitive decision making, i.e. more equal funding decisions and thereby more equal success rates. One observation made in the project “GendERC”, was that panels with a high proportion of women, the share of women promoted was actually lower.¹¹ However, this example needs cautious interpretation, as different studies on these effects came to different conclusions, which indicates that there is a strong influence of context-related aspects.¹²

The boxes below show two examples of very advanced RFOs regarding gender criteria in the selection process:

Independent Research Fund Denmark: Composition of Boards¹³

The Independent Research Fund Denmark aims at equal representation of men and women in the fund in order to further diversity and the quality of the academic level and the academic scope of Danish research. The target is that on the board, the academic councils and sub-councils and the group of external assessors, the under-represented gender should account for at least 40 per cent.

Health Research Board (HRB) Ireland: Gender balance in decision-making¹⁴

To ensure gender balance in decision-making, the HRB aims to reach the international best practice target of 40% of the under-represented sex in all HRB panels where possible. Gender will also be considered when appointing the position of Panel Chair. Require gender balance be a consideration within the HRB peer-review process including in the drafting and the implementation of HRB funding calls, recognising, for example, the impact of career breaks and unconventional research career paths on productivity, and taking steps to reduce unconscious bias in peer-review processes.

A summary of the presented criteria, measures and recommendations can be found below in Table 4.

¹¹ <https://www.joanneum.at/policies/referenzprojekte/projekt-genderc-gendered-dimensions-in-erc-grant-selection/>

¹² See also Wallon et al. (2015): p. 9 ff.

¹³ <https://dff.dk/en/about-us/goals-and-policies/equal-opportunities-policy-for-the-independent-research-fund-denmark>

¹⁴ https://www.hrb.ie/fileadmin/user_upload/HRB_Gender_Policy_Nov_2019.pdf

Table 4: Gender Balance in Decision-Making Bodies

GENDER BALANCE IN DECISION-MAKING	
Elementary criteria, measures and recommendations for RFOs	
Criteria for funding programmes	Measures of RFOs
Focus on gender balance	
Involvement of both men and women into the selection process	<ul style="list-style-type: none"> • Ensuring a balanced proportion of female experts in the pool of reviewers for individual evaluation of the projects proposals • Monitoring the proportion of men and women from the pool of reviewers who were engaged in the project evaluation • In the case of nominations of panel members from third parties, introduce a pre-requisite of balanced nominations of men and women • At least one of the two highest positions of the panel – chairperson/ vice-chairperson – is held by a woman • Target/quotas: determination of the given proportion of men and women in the panel (at least 30% of underrepresented sex recommended)
Focus on gender awareness	
Decision-making of individuals based on gender competence	<ul style="list-style-type: none"> • Include gender competencies in the training of reviewers and panel members
The bias-free collective negotiation of panels	<ul style="list-style-type: none"> • At least one panel-member demonstrates advanced competences in the area of gender equality • Training for the leading positions of the panels (chairpersons) in the area of gender-sensitive negotiation (open atmosphere, encouragement to speak, moderation of polarizing views, balancing dominated voices) • Invitation of observers for the evaluation of gender-sensitive behaviour and treatment during panel negotiations
Recommendations for RFOs	
<ul style="list-style-type: none"> • Proactively recruit female experts into the pools of reviewers and panels • Use gender-sensitive language, avoid generic masculine • Make reviewers, panellists or jury members aware about unconscious biases, include topics on gender sensitivity and other characteristics such as ethnicity, origin, sexual orientation in the training of reviewers and panellists • Be aware that in order to achieve an environment that allows everyone to express his/her opinion, it is necessary to reach a critical mass of the under-represented group. One representative of a minority must make more considerable efforts to assert him-/herself against the majority 	

- Be aware of the risk of overloading female experts as their involvement in decision-making processes is required in many cases
- Inform panellists about the most common gendered patterns of interactions (occurring during evaluations) identified by research in order to avoid a gender-biased environment during the panel's discussions
- Be aware that the balanced proportions of men and women alone will not ensure gender competence in decision making - all panel members should receive training on gender equality aspects

5 Gender in the research content

As the Toolkit Gender in EU-Funded research by the European Commission¹⁵ emphasises, “*Investing in a gender-sensitive approach to the research content makes for higher quality and validity*”¹⁶. As outlined before, there are increasing endeavours by several RFOs to implement criteria to include the gender dimension in the research content. Nevertheless, it is not a standard criterion in most RFOs, especially for RFOs focussing on basic research and RFOs from CEE countries.¹⁶ As far as applied research is concerned, the need for the inclusion of sex and/or gender considerations is more apparent, i.e. if individuals or groups are the subject of research, or the research results concern humans (as users, customers) and can have more severe consequences regarding safety, efficiency or access to innovative solutions. For basic research, this might not always be applicable, which is still frequently mentioned in informal discussions as one reason for not considering these aspects. As stated by Schiebinger et al. on the Gendered Innovations website, there is a necessity to rethink the concepts and theories used in (basic) research as assumptions and frameworks.¹⁷ The gender dimension should be assessed whenever the research topic is focused on humans, when humans should use the research results or if the research will have any impact on humans.

RFOs can support the need for the inclusion of sex and gender considerations in any research where applicable by requiring applicants to reply to an existing criterion. This was a recommendation also in a LERU position paper by Maes et al. in 2012.¹⁸ The authors explicitly mention the life sciences, social sciences and humanities as fields in which to ensure that – given the applicability of the particular project – the integration of the gender dimension in the research is part of the research design or that gender action plans are part of the implementation strategy for projects, which should respond to particular needs and circumstances. It should also be emphasised that the inclusion of gender mainstreamed research in all funding programmes is complementary to and not counteracting the criteria for excellence (see the discussion on the assessment of criteria later on).

Irish Research Council (IRC): Question in Application Form about sex/gender dimension¹⁹

The explicit text of the questions in the application form is as follows and gives the possibility to answer this within 300 words:

¹⁵ EC (2009b): p. 10. <https://www.yellowwindow.com/genderinresearch>

¹⁶ Lasinger & Nagl (2019): p.46.

¹⁷ Schiebinger et al.: <https://genderedinnovations.stanford.edu/methods/concepts.html>

¹⁸ Maes et al. (2012): p.15.

¹⁹ IRC (2014): <http://igar-tool.gender-net.eu/en/reference/sexgender-relevant-text-from-irc-2014-call-documentation>

“Please read carefully the section on ‘Biological Sex/gender dimension’ in the Guide for Applicants for help in answering this question.

Does your proposed research programme involve any of the following (yes/no)?

- Humans as the research focus
- Animals as the research focus
- Human samples and/or data
- Humans involved as consumers, users, patients, or in trials
- Research on animals, animal samples and/or data
- Research outputs with implications for end-users or consumers

If you have answered NO, please explain why there is no potential biological sex and/or gender dimension to be considered in your proposed research.

If you have answered YES, indicate how potential biological sex and/or gender issues will be handled. In particular, you are asked to reference the points mentioned in the ‘Checklist for sex/gender in research content’ in the Irish Research Council’s *GUIDE FOR APPLICANTS 2014*.”

Another set of recommendations to include gender considerations in the research funding cycle has been formulated within the EU funded H2020 project Gender-Net by Puy et al.²⁰ The recommendation for RFOs is to make it a mandatory criterion for applicants to give information on whether sex and/or gender are relevant to the proposed research. If so, the applicants should be asked to outline how they will address these aspects in the entire research cycle, and if not, they should give a justification why these are not relevant. This integration cannot be achieved merely by filling out an extra textbox, hence the recommendation to instruct applicants to include these aspects throughout the proposal. Another recommendation is to inform the applicants about the evaluation criterion regarding gender in research content explicitly and to publish the underlying scoring system, if available. It is recommended to design a scoring system by which proposals which include gender into the research content throughout the entire research cycle score higher than proposals which omit to coherently include gender considerations.

However, experiences show that also this is a mutual learning process of RFOs and applicants, as also stated in the interim evaluation of H2020²¹. The CIHR has developed a guide for applicants²² to support them with this task. The Toolkit Gender in EU-funded research by the European Commission²³, includes a workflow illustrating the integration of gender

²⁰ Puy et al. (2015): p. 27 ff.

²¹ EC (2017): p. 173 f., 234.

²² <http://www.cihr-irsc.gc.ca/e/50836.html>

²³ EC (2009b): p.13

considerations into the research cycle, which now is well-known in the community (see Figure 1):

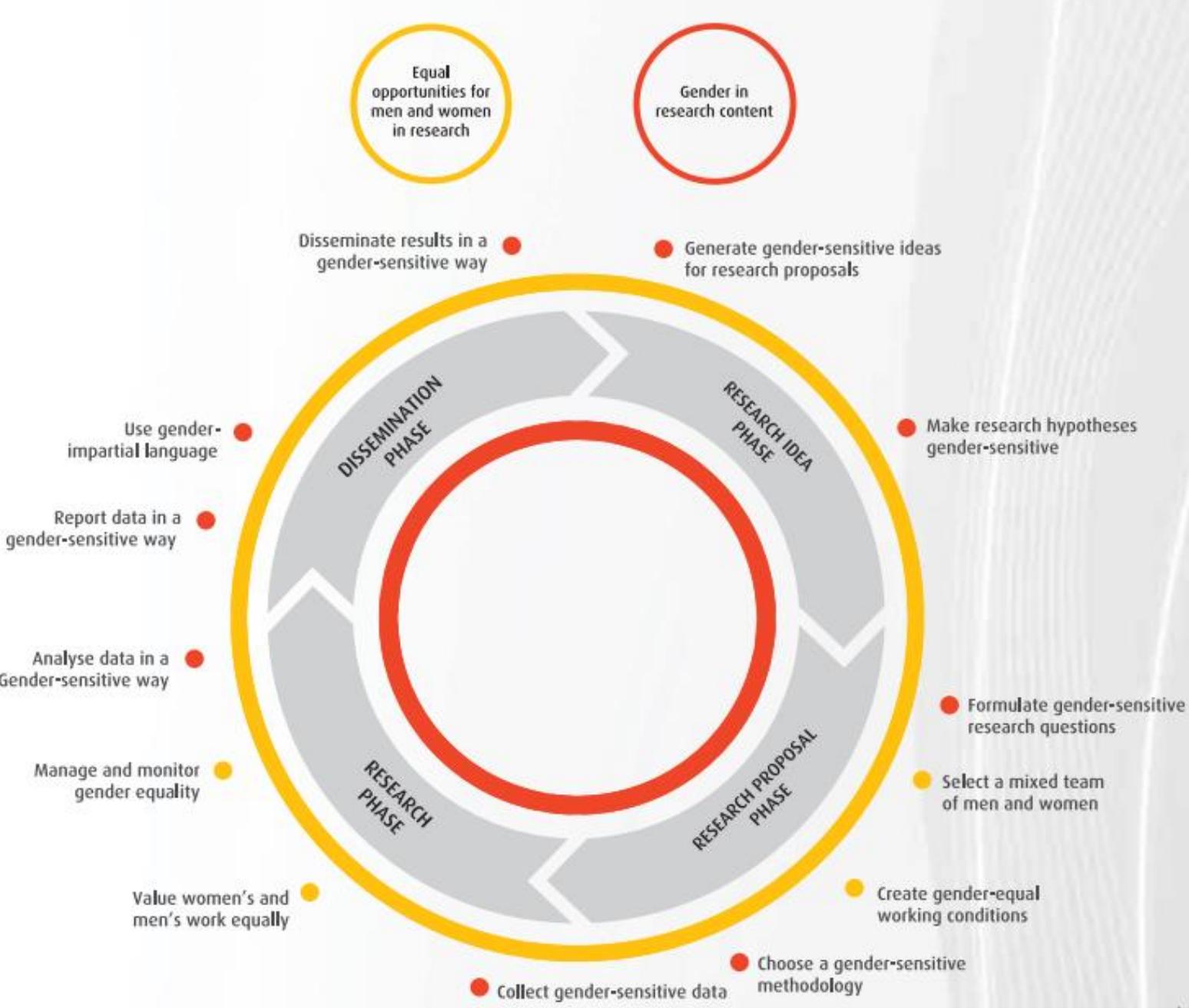


Figure 1: The Gender-Sensitive Research Cycle. Source: EC (2009b): p.13.

It is equally important in this regard to provide clear guidance and instructions to the applicants on how to address and consider sex and/or gender dimension in their research. A good example is given below, again by the IRC:

Irish Research Council (IRC): Guidance Provided in ‘Guide for Applicants’¹⁹

The Council funds excellent research and excellent research fully considers whether a potential biological sex and/or gender dimension is relevant to the research content and fully integrates sex/gender analysis where relevant, thereby ensuring maximise [sic] impact, societal benefit and optimising innovation. It is well established that, where relevant, not integrating sex/gender analysis into the design, implementation, evaluation and dissemination of the research can lead to poor results and missed opportunities. Whereas researchers in some fields, particularly in humanities and social sciences, are well practised at considering whether there may be a potential sex/gender dimension to their research, this is less true of some other fields. This is the case although many examples also show the importance of integrating sex/gender analysis across a range of fields including health and medical research, engineering, environmental research, and in the development of new technologies. A conscious decision to focus solely on one sex, or not to take into account gender issues, is a valid research approach as long as this is stated clearly in the project and the results are evaluated and disseminated as such. A problem only arises when the researcher has consciously ignored sex and/or gender as a valid variable or has not realised that a sex and/or gender dimension is relevant to their research. In this instance, extrapolation of the results to the population as a whole, when they only apply to half the population, is misleading and could have serious implications.

Given the context of the project GEECCO, we want to emphasise that the inclusion of sex and or gender dimensions is of high relevance also for the STEM field and not limited to health- and biomedical research or SSH, also due to the reasons described above in this section. As can be seen in Table 1, some funding agencies that are active in all scientific fields (including STEM) are only at the beginning of the implementation of a criterion covering the inclusion of gender in the research content. In contrast, others (such as funding agencies focussing on health research) are relatively advanced.

The following examples show how two RFOs have implemented the criterion “gender in the research content” in funding schemes open to all disciplines.

FWF: Gender criterion in all funding schemes²⁴

Since 1/1/2019 FWF has included a gender criterion in all funding schemes:

“All potential sex-specific and gender-related aspects in the planned project as well as the planned implementation of these research questions must be described in a separate section. This aspect should be addressed briefly in the text even if the applicant believes the project does not raise any sex-specific and gender-related issues.”

Positioning and reflecting on the research approaches in the planned project in terms of sex-specific and gender-related issues, for instance: Is the research approach likely to produce sex-specific and gender-related findings? If so, what findings? How and where are these integrated into the research approach? For information on checking the relevance of sex-specific and gender-related issues to a

²⁴ FWF (2019): p.9

project, see <https://www.fwf.ac.at/en/about-the-fwf/gender-issues/fix-the-knowledge/fix-the-knowledge-detail/>.

FFG: COIN (Cooperation & Innovation)²⁵

In the programme COIN, the following rule applies: If individuals (groups) are the subject of research, or the research results concern humans, a corresponding research design is required. Projects that do not require gender relevance with sufficient justification are rated here with the full number of points.

- In the section “Quality of the project” one sub-criterion is “Consideration of gender-specific topics”:
 - To what extent have gender-specific issues been considered in the planning?
 - Quality of analysis of gender-specific issues
 - Consideration in the methodological approach of the project

5.1 Potential application of gender criteria related to the research content

The goal of task 7.4 was not only to provide an overview and assessment of gender criteria for funding programmes, but also to list examples of how RFOs active in different research fields have implemented the gender dimension as criterion and how the gender dimension could be assessed in the different fields. Therefore, the next section will concentrate on different research domains, including STEM fields. The Toolkit: Gender in EU-funded research²⁶ was used as a guideline. The toolkit includes nine chapters on thematic research areas that are the basis for the following discussion. Undisputed, there are more potentially relevant areas, but for reasons of brevity we focussed on those listed by the toolkit. These areas are:

- Health
- Food, agriculture and biotechnology
- Nanosciences, nanotechnologies, materials and new production technologies
- Energy
- Environment
- Transport
- Socio-economic sciences and humanities
- Science in society

Each of the chapters in the Toolkit contains a descriptive introduction and explanatory section on how gender and the respective research field are interconnected, and a statement of why gender is relevant for the respective field. Each thematic focus area also includes a set of case studies to illustrate the relevance of gender for these fields and a section where further reading

²⁵ E.g. FFG (2020): p. 20, but also in previous guidelines

²⁶ EC (2009b): p. 19 ff.

for the respective topic is listed. Even though the information given was developed for the FP7, the European Union's Research and Innovation funding programme for 2007-2013, the information included in these sections is still relevant and in general very useful to gain a better understanding of sex, gender and domain-specific aspects.

In addition to the research fields mentioned above, we also want to include results from the literature reviews²⁷ which have been compiled in the course of the project GEECCO on Gender and

- Human-Computer Interaction
- Robotics
- Energy
- Mobility

In the following sections we provide a summary of the insights from both the toolkit and the literature reviews on the topics Energy and Transport/Mobility.

These insights are formulated as potential gender criteria that need to be considered in funding programmes during the evaluation of applications (the area “Specific activities of international cooperation” is not covered in this section, as this area was already addressed above in the section for gender balance). The cases below show existing examples of RFOs focussing on the respective fields in general or in specific calls.

RFOs could implement the following measures to emphasise the importance of the gender dimension:

- Implementing gender as a cross-cutting issue as it has been the case in H2020²⁸ where the evaluation of the excellence criterion included the gender dimension and is therefore required to be commented from all applicants
- Sensitizing researchers by providing questions or checkboxes for gender-sensitive areas in research ideas and hypotheses, project design and research methodology, research implementation and dissemination of research results
- Evaluating the inclusion of gender aspects already at the proposal stage and after finalizing the project, and including possible consequences if there are drastic deviations

²⁷ See Burtscher (2019) and Pillinger (2019)

²⁸ https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/gender_en.htm

Possible gender criteria in the research content to be answered from the applicants could be:

- Reflecting on the research questions and approaches in the planned project in terms of sex-specific and gender-related aspects, e.g. is the research question or the approach likely to introduce sex- specific and gender-related biases in the findings?
- Defining the impact on human end-users/society for each project already at the proposal stage (or why they are not relevant)
- Explaining if all genders benefit from the research outcome equally or why not.
- Explaining, already in the application, who will most likely use the results, when and how the results are expected to be used, who might be excluded and why
- Providing an explanation in case there is no potential biological sex and/or gender dimension to be considered in the proposed research

Health

Health research should include gender and sex by focusing, e.g. on risk factors, biological mechanisms, causes, timing, clinical manifestation, consequences and treatment of disease and disorders:

- Gender/sex differences in clinical research, e.g. research protocols, methodologies, analysis of results, gender balance in the researched population
- Impact of sex/gender on health (specific needs of women and girls, epidemiological profile, inequalities in the healthcare system (e.g. access), the structure of the health care system (availability, hierarchical system among healthcare staff)
- Combination of biological and social factors (exposure for illnesses at specific points in the life cycle, behaviour (reluctance) in medical treatment, social and economic consequences, health-seeking behaviour (e.g. user fees) and the interaction of sex/gender with other aspects of inequality

An example of a funding institution focussed on health research is the Canadian Institute of Health Research (CIHR). The box below presents how the CIHR has implemented the criteria.

CIHR (Canadian Institutes of Health Research)

The CIHR has a leading role internationally regarding the inclusion of gender aspects in the research content. It houses the funding Institute of Gender and Health (IGH), which is specifically dedicated to gender, sex, and health research. Already in 2010, it has implemented a criterion, requiring that all applicants have to indicate whether and if so, how they are taking sex/gender into account in their research:

- Are sex (biological) considerations taken into account in this study? Yes/No

- Are gender (socio-cultural) considerations taken into account in this study? Yes/No
- If YES, please describe how sex and/or gender considerations will be considered in your research design.
- If NO, please explain why sex and/or gender considerations are not applicable in your research design.

CIHR has also developed an online tool which applicants can refer to: the Gender, Sex, and Health Research Guide²².

Food, agriculture and biotechnology

In food, agriculture and biotechnology research, criteria can revolve around different uses of agricultural produce, roles, responsibilities and ownership and sustainability aspects:

- Equal representation within groups of stakeholders and to ensure their individual needs and interests are addressed (e.g. workforce in farming, consumers, regulatory bodies, farm ownership)
- Socio-physical differences (e.g. eating disorders, addictions, nutrition responsibility, use of food, accessibility)
- Different communication tools (e.g. consumer debates, dissemination of results/news)

The box below shows a statement on what role gender plays in a Canadian funding organization active in the field of agriculture and food security:

The Canadian International Food Security Research Fund (CIFSRF)²⁹

“From the beginning of CIFSRF, gender integration was a key feature of the program where gender concerns have been mainstreamed throughout the research funding cycle. For example, with a gender strategy as guidance, CIFSRF included gender criteria in the funding of proposals, supported research partners with gender capacity strengthening to engender research design and implementation, and consistently collected and reported on gender data. The introduction of these gender integration features should be understood as an evolution of practice within the program: it was initially conceived with a strong commitment to targeting women that evolved to an ambition to both address current gender gaps while also addressing underlying causes of gender inequalities.”³⁰

“For example, bio-physical researchers at times expected from gender experts readymade check-lists for gender integration while gender experts were reluctant to provide generic guidance but wanted qualitative research to understand the gender dynamics of, for example, the technology. When different expectations were managed, however, it seemed to contribute to gender outcomes.”³¹

²⁹<https://www.idrc.ca/en/initiative/canadian-international-food-security-research-fund>

³⁰ Danielsen et al. (2018), p.1

³¹ Danielsen et al. (2018), p.33.

Nanoscience, nanotechnologies, materials and new production technologies

In nanoscience, nanotechnologies, materials and new production technologies research, criteria can evolve around specific needs of individual users (for new technologies) and gender-sensitive communication and information content and procedures. It is mainly in the fields of health and environment where the nanoscience and materials coincide with sex and gender considerations, e.g. the possible toxicity of nanoparticles might affect women and men in different ways.

Energy

Like in many other strongly technology-oriented fields, in energy research, gender considerations are not easy to identify, also because of little existing research and data. In spite of this, the appropriate consideration of gender aspects in energy research is crucial. The integration of some of the following aspects could be assessed as part of the gender dimension:

- Gender differences in access to energy technologies, energy needs and the perception of (risk) technologies
- Differences in attitudes towards and use of energy and technologies
- Differences in consumption, efficiency and saving measures

EPSRC - Whole Systems Networking Fund³²

The Engineering and Physical Sciences Research Council (EPSRC) is the main funding body for engineering and physical sciences research in the UK. Funded by EPSRC, the Whole Systems Networking Fund aims to improve equality, communications and collaboration between those working in the field of whole systems energy.

The fund supports projects that are collaborative and cohesive, developing connections across interdisciplinary and disciplinary research and with industry and policymakers. The awarded projects bring new, diverse voices to the table and are moving beyond 'business as usual' approaches, tackling some of the geographical and/or social imbalances found in energy research in the UK.

Examples of funded projects are:

- Women's Whole Energy Systems Research and Industry Network (WERIN)³³
- Increasing Visibility of Underrepresented Groups in Energy Research (IVUGER)³⁴
- Gender balance in energy research³⁵
- Women Buying Green³⁶

³² <http://www.ukerc.ac.uk/programmes/networking-fund.html>

³³ <http://www.ukerc.ac.uk/programmes/networking-fund/werin.html>

³⁴ <http://www.ukerc.ac.uk/programmes/networking-fund/increasing-visibility-of-underrepresented-groups-in-energy-research-ivuger.html>

³⁵ <http://www.ukerc.ac.uk/programmes/networking-fund/gender-balance-in-energy-research.html>

³⁶ <http://www.ukerc.ac.uk/programmes/networking-fund/women-buying-green.html>

Environment

Considering gender in this research field includes gender roles and identities, as perceptions, needs and use of technologies, tools and services, as well as risk perception and impacts. These aspects are assumed to be highly gendered and therefore play a crucial role in sustainable management as in all human activities. In environmental research, the appropriate consideration of the following aspects could be assessed as part of the gender dimension:

- Different economic, social or health effects on different groups caused by climate change in general, natural hazards or environmental pollution
- Differences in consumption and other behaviour-related patterns (such as recycling, travel or food-choices) and the resulting effects
- Taking into account policies/standards/forecasting methods and impact analyses that consider gender knowledge

The box below is an example of an RFO focussing on research in environmental sciences and sustainable development (comprising a wide variety of fields, ranging from urban migration to aquatic pollutants). Formas is a Swedish national research council.

FORMAS - Consider gender and other critical perspectives

We are tasked with promoting gender equality perspectives and other critical perspectives that interact with them when we grant funding. If you are applying for funds from Formas, you should always consider whether questions relating to gender and other related perspectives are applicable to the project's research questions. Other related perspectives might include class or ethnicity, for example. In your application, you must describe how these perspectives will be handled in the project.³⁷

Transport

In transport research, assessing the gender dimension could include the consideration of the following aspects:

- Differences regarding the availability, use, preferences, habits of different means of transport
- Differences regarding safety aspects (real and perceived), ergonomic standards, mobility needs, user behaviour, expectations, accessibility
- Sex-disaggregated statistics for traffic census and modal split
- Consideration of transport policies that take gender into account

³⁷<https://formas.se/en/start-page/applying-for-funding/how-it-works/good-to-know-before-you-apply.html#h-Considergenderandothercriticalperspectives>

FFG: *Intelligent Transport Systems and Services plus – ways2go*³⁸

ways2go focuses on the mobility of people and supports research and development projects that serve to prepare new components, applications and mechanisms to better meet current and future social requirements and needs and at the same time provide economic policy impulses for innovative Austrian companies. The aim is to stimulate innovations in the socio-technical environment that enable or promote **user-friendly, sustainable, safe, accessible and socially just (everyday) mobility for all population groups**.

The involvement of users to take account of specific needs and to evaluate and optimize future-oriented applications is of crucial importance, as is the embedding of technological components in the social framework. The call text also addresses essential elements or potential fields, in which the in-depth research is likely to provide new solutions for the implementation of a promising, integrated, user-friendly multimodal transport system.

Socio-economic sciences and humanities & Science in society

Especially when the research addresses the society, gender-sensitive variables are highly relevant:

- Equal participation and opportunities in the labour market, education
- Broader participation, public engagement, ethical considerations (composition of the ethics committee)
- Sex-disaggregated statistics
- Including considerations on intersectionality

FFG: *General funding programmes*³⁹

The general programmes of FFG have always incorporated social aspects into the evaluation of research projects. Examples are the conservation of value for the society, the qualification level, labour and social law norms and much more. These social aspects in the evaluation scheme for the general programme also cover gender criteria, i.e. criteria that reflect equal opportunities for women and men alike. Among others, the applicants need to describe the “Gender aspect in the project content and positive consequences”.

Human-Computer Interaction (HCI)

Gender is often present in HCI work, but often in an implicit and not appropriately reflected way but rather making use of gender stereotypes. Gender stereotypes and roles impact how

³⁸ Funding scheme currently not active. Translated from German:

https://www.ffg.at/sites/default/files/allgemeine_downloads/thematische%20programme/programmdokumente/ausschreibungsleitfaden_iv2splus_2011_111017.pdf

³⁹ <https://www.ffg.at/en/general-programme-overview>

people interact, also with computers.⁴⁰ The recommendations for RFOs formulated in the *Literature Review: Gender Research in Human Computer Interaction*⁴¹ comprise:

- Importance to consider who is participating in studies, who are the end-users, creators
- Enabling diverse target groups to participate (e.g. reconsider where and when workshops/study interventions take place)
- Considerations of intersectionality and diversity should prevent from making assumptions about standard users
- Require explanations why the proposed project includes gender aspects

Robotics

What Pillinger presents in the paper *Gender and Feminist Aspects in Robotics* is that similar to HCI, there is also a need for a thorough reflection of gender(ed) aspects in robotics research. In robotics research the appropriate consideration of the following aspects could be assessed as part of the gender dimension:

- Reflecting on where robots should be in use, and where should they not be in use? Which groups of persons are affected by the use of robots and how?
- Considerations on the use of humanoid robots and the consequences:
 - Addressing the question why robots should be gendered or not, and which implications the gendering has.
 - Reflecting the implications if studies point to higher values of (social) acceptance for feminine, masculine or gender-neutral robots? Can a genderless or genderfluid robot be in use instead of a gendered robot?

As these examples from the different scientific fields show, there are differences in the research content depending on the research fields. These considerations can give further insights and guidelines to the RFOs when designing their funding programmes and defining their criteria, and for evaluators when assessing the projects.

A summary of the presented criteria, measures and recommendations can be found below in Table 5.

⁴⁰ Breslin & Wadhwa (2017): p. 71

⁴¹ Burtscher (2019): p. 29 ff.

Table 5: Gender in the Research Content

GENDER IN THE RESEARCH CONTENT	
Elementary criteria, measures and recommendations for RFOs	
Criteria for funding programmes	Measures of RFOs
Focus on programme design	
The programme design is based on gender-sensitive ex-ante evaluation	<ul style="list-style-type: none"> • Include an impact study on gender equality in the methodology of the programme preparation • Include relevant findings on gender equality into the text of the programme
Focus on call's execution	
Obligation to assess the gender dimension of each project proposal in the call's documentation	<ul style="list-style-type: none"> • Require an evaluation of the gender relevance for each project proposal • For projects where gender is relevant, require the integration of the gender dimension into the definition of objectives, methodology and impact of the research project
Space for the description of the gender relevance in the application form	<ul style="list-style-type: none"> • Create a new question in the application structure to state the relevance • Ensure the applicants are aware how to address the gender-relevant aspects of their research project in the application form, e.g. to also include it in the respective areas of project proposals such as methodology or impact
Focus on project evaluation	
Assessment of the gender-relevance in each project proposal	<ul style="list-style-type: none"> • Evaluate the correctness of the conclusion about the gender ir/relevance. In case of gender-relevant projects, evaluate the integration of the gender dimension into the project design.
Training of evaluators of project proposals to assess the gender dimension in the research content	<ul style="list-style-type: none"> • Create guidelines and provide trainings to all reviewers, panellists and jury members on how to recognise the correct assessment of gender dimension and its integration into the research content • Ensure that at least one expert on gender issues in the research content is present at each panel meeting
Focus on project execution	
The integration of the gender dimension is part of the evaluation and monitoring activities of the project in realisation (if relevant)	<ul style="list-style-type: none"> • To familiarize the project investigator with the need to include progress on the integration of the gender dimension into periodic reports of funded project (if applicable) • Provide appropriate guidance and advice to project rapporteurs on monitoring the integration of the gender dimension in relevant projects

Specific trainings or studies on gender are eligible costs of the project's activities	<ul style="list-style-type: none"> • Ensure that these costs are considered eligible in the internal RFO regulations • Ensure that the possibility of claiming these costs is known to the applicants
Recommendations for RFOs	
<ul style="list-style-type: none"> • Be aware that there is no scientific discipline which would be a priori irrelevant for considerations of the gender dimension in the research content. The relevance is determined by whether the research is directly or indirectly related to humans or not. • Be aware that it is relevant to consider the gender dimension both in projects in basic research and applied research or innovation. • Keep in mind that while all disciplines and all types of projects are relevant to the evaluation of the gender dimension, this does not mean that all research projects require its integration. • For a valid, evidence-based decision about relevance or irrelevance, it is essential to assess each project accordingly, even for projects which might be considered gender-irrelevant "at first glance". • There should be no penalty for correctly argued gender-irrelevant projects. • Whilst it is sufficient to correctly justify if the gender dimension is not relevant for a project, projects in which gender aspects are relevant these need to be integrated into the methodology and impact/innovation. • The intersections of gender with ethnicity, sexual orientation, social status, age, ... should also be considered. Which of these variables are relevant for the particular topic should be reflected, the corresponding data collected and analysed, including their relation to sex/gender variable. 	

6 Critical reflection and assessment of common criteria

This section covers the assessment of evaluation criteria, with a focus on gender-sensitive criteria. Even the best criterion has limited impact if it is not taken into consideration when evaluating the research quality. Therefore, a culture of "walk the talk" is necessary, where announced policies are put into practice. This includes the implementation of criteria and consequences for not complying with existing criteria, which will be discussed in the next section.

6.1 Implementation of gender criteria

While the consistent and holistic integration and consideration of gender criteria must be the ultimate goal of organizations working towards the inclusion of the sex and gender dimension into the research content, it does not reflect the current status quo in most organizations. As the inclusion of such criteria is at a relatively early stage in most cases, it has to be taken into account that this will most likely be a continuous process of introducing these changes, where different steps, stages and levels of progress follow one after the other. Nevertheless, what should be avoided is to introduce gender criteria, which do not feed into the qualitative and/or quantitative evaluation of an application. Another critical aspect are the evaluators of the gender dimension. Therefore, a person with sufficient gender expertise should be invited to join an evaluation panel.

During the proposal evaluation, some RFOs work with points or scales. If gender criteria are in place and points are linked to them, some RFOs have mechanisms in place by which proposals that fulfil the criteria can be rated higher than those which do not. A more rigorous suggestion within the EU funded H2020 project Gender-Net by Puy et al.⁴² is to guarantee that proposals which do not properly include the gender dimension, even though it is relevant, are not funded.

We also want to emphasize the following recommendations given in the FESTA Expert Report⁴³, i.e. that even the most gender-sensitive recruitment and selection criteria need a transparent and gender-sensitive process, as the design of the selection process and the criteria applied in it are closely interrelated. If the selection process itself is set up in a non-transparent or disorderly manner, implemented criteria can be overlooked or overseen (intentionally or unintentionally) by evaluators. Vice versa, criteria which are not gender-sensitive but biased can affect properly framed selection procedures. In order to guarantee a

⁴² Puy et al. (2015): p. 27 ff.

⁴³ Lübke et al. (2015)

reliable selection procedure, the criteria should not be changed when evaluating different candidates or projects but rather standardized for the entire duration of the evaluation, as changes of the criteria applied during the process facilitate the emergence of biases. Therefore, in addition to the inclusion of gender sensitive criteria in RFO practice, an essential recommendation for RFOs is to make selection criteria transparent, explicit and precise.

Another aspect which is not elaborated on in this document, as the focus is on the criteria, was described by Puy et al. in the Gender-Net report⁴⁴: hand in hand with the creation of criteria for the selection of projects, it is important to ensure that the requirements are integrated in the evaluation and monitoring guidelines and briefings for funded and ongoing projects. A step further is to create an accreditation scheme framework at institutional, call, or topic level aimed to certify funded projects which have successfully integrated the sex/gender analysis into their contents.

6.2 Gender sensitivity and excellence

The question if RFOs include gender criteria in their portfolio of evaluation criteria was also part of the analysis of questionnaires of 19 RFOs collected in T7.1 of the GEECCO project. A section on evaluation criteria regarding gender mainstreaming was part of this analysis. Scientific excellence/quality and innovation were the primary evaluation criteria that most participating RFOs have in place, followed by the quality of the team or the researcher. Therefore, we will focus on these two aspects, i.e. the quality of the proposed research and the quality of the researchers in this section. Less frequently mentioned was the impact or the feasibility of the project. Gender was hardly ever listed as a criterion with high impact during the evaluation. However, some exceptions can be found in the report *Best practice examples of gender mainstreaming in Research Funding Organizations*.⁴⁵

To date, there are very different practices in RFOs regarding the relation of quality-focused criteria, i.e. excellence, and gender aspects. The European Commission has been committed to emphasising that "*integrating gender/sex analysis in research and innovation (R&I) content (...) helps improve the scientific quality and societal relevance of the produced knowledge, technology and/or innovation*". Other organizations do not make definite statements and keep the evaluation of gender aspects separate from assessing the quality or do not assess these

⁴⁴ Puy et al. (2015): p. 30.

⁴⁵ E.g. FemPower Calls of the Vienna Business Agency, Vinnova, FFG (e.g. COIN programme), FWF, TACR (Zéta program); http://www.geecco-project.eu/fileadmin/t/geecco/geecco/GEECCO_report_best_practice.pdf

aspects at all. Fortunately, more and more RFOs are currently adapting this, as shown above in Table 1.

The concept of scientific excellence is subject to long-standing debates in the academic and policy-making community, and a full account thereof would go beyond the scope of this document. Nevertheless, a brief summary and overview of the debate on scientific excellence and the problematic matters of the concept with gender (in)equality is presented. Scientific excellence according to Genova et al. (2014) *“is the ability of a scientist or an institution to impact on a field of study producing a major change, leading other scientists towards asking new questions, producing new, important, useful contributions to knowledge, and using new methodologies. The quality of excellence must be proven by a number of means such as publications, citations, funding, and students, and must be recognised by the peers and by the bestowal of various honours, prizes, and other awards.”*⁴⁶ Several other aspects, such as independence, mobility or managerial skills, are also closely entangled with the evaluation of “excellence”. Concerning the gender discourse, this has consequences as explained by Rees (2011) *“it is those in the senior positions, on boards and on science committees, whose careers developed when there were fewer women academics, who determine what is regarded as excellent”*⁴⁷. While assessing the quality of the researcher or the team, gender aspects may indirectly be addressed (e.g. consideration of career breaks) but if only standard or traditional indicators are in use, this can have negative effects for female or younger researchers. The Swedish Research Council, for example, states: *“The quality of the proposed research is the most important criteria [sic] in project funding and person funding programmes for all scientific councils. Natural sciences and Life Sciences underline also the quality of the researcher in project funding, which includes, among others, long experience and many publications, both significant for a professor. Since most professors in Sweden are men, this specific criterion may hit female researchers. There may of course be a risk for conflict between the goal of equal funding between the two sexes [sic] and the criteria “the quality of the researcher”.*” The SRC addresses this risk via quotas, i.e. the proportion of women and men who receive research grants should correspond to the proportion of women and men who have applied.

A similar effect was shown by van den Besselaar & Sandström (2017) who performed a large data analysis on scholarly production of 47,000 researchers. They wanted to ascertain if there is gender bias in the publication quantity of male and female researchers and concluded that *“...women are vastly underrepresented in the group of most productive researchers”* (p. 1). As publication record still is one main criterion for quality in research (productivity and impact

⁴⁶ Genova et al. (2014): p. 24f.

⁴⁷ Rees, T. (2011): p. 136.

correlate strongly and lead to highly cited publications), this situation negatively affects the opportunities of female researchers. Furthermore, “*Gender differences in age, authorship position, and academic rank do explain quite a part of the productivity differences*” (p.1). This means that men are generally older and in higher positions and therefore have higher productivity levels. Moreover, women more often can be found in the middle author positions and not last author positions and thus are less often perceived as being the leader of a group or team. Male researchers also show a faster career than female ones. This influences receiving grants and is an important factor for RFOs who organize the evaluation and assessment of researchers and their output and careers (track record). Furthermore, it shows that traditional criteria for success and quality keep the status quo and penalize groups of researchers, such as women and young researchers. This challenges the standard evaluation procedures and opens up new formats and alternatives to traditional peer review such as double-blind peer review and/or randomization⁴⁸.

6.3 Alternatives to traditional approaches

The Global Research Council (GRC) published a booklet on “Supporting Women in Research: Policies, Programs and Initiatives Undertaken by Public Research Funding Agencies”⁴⁹ in which, among others, actions that consider “Research Opportunity” instead of “Track Record Only” (e.g. taking into account career interruptions, “academic age”, reconsidering excellence criteria/ scientific output) are presented. Shifting the focus from the researcher “track record” to “research opportunity” is stated as one of ten potential actions that GRC participants could use to promote gender equality in the document “Statement of Principles and Actions Promoting the Equality and Status of Women in Research”⁵⁰ by the GRC. The following example from the Health Research Council (HRC) of New Zealand is from this document:

Assessing funding applications “blind” to increase fairness and transparency⁵¹

New Zealand’s Health Research Council (HRC) Explorer Grants were launched in 2012 and at that time were a unique approach to research funding. Funding applications are short and assessed “double-blind”. Reviewers do not know who is behind the idea and are not influenced by the track record of the team. The scheme was launched to address concerns that assessing committees were risk-adverse in making funding decisions meaning that truly ground-breaking opportunities were being missed. It also reduces the potential for prejudice based on an applicant’s gender or other perceived personal characteristics. All proposals that meet set criteria are equally eligible to receive funding.

⁴⁸ For example, the funding scheme “Experiment” of Volkswagen foundation with a randomization element: <https://www.volkswagenstiftung.de/unsere-foerderung/unser-foerderangebot-im-ueberblick/experiment>

⁴⁹ GRC (2019)

⁵⁰ GRC (2016): p. 2

⁵¹ GRC (2019): p. 22.

This new approach has resulted in a 16% increase in the number of female applicants since the first round in 2016. In 2018, 50% of all applicants were female. The scheme has gained international attention and is being looked to as an example of best-practice for funding mechanisms. Informal feedback from a number of stakeholders indicates general support for this investment mechanism. A survey of applicants indicated that Explorer Grants are regarded as a fair and transparent approach to research funding. New Zealand's Ministry of Business, Innovation and Employment (MBIE) works closely with HRC, as a funding agency, to promote science and innovation in New Zealand.

The assessment procedure of the Explorer Grants does not only include double-blind peer review, but there is a random final selection of proposals to be funded.

Explorer Grants – Random selection⁵²

There are three steps in the assessment:

1. A proposal's eligibility to be considered for funding is assessed (by the HRC Research Investment Manager, and the Assessing Committee Chair).
2. Compatibility of the proposal with the scheme's intent is confirmed by the assessing committee. All eligible proposals will be assigned to a subpanel of 3 assessors (and a reviewer with cultural expertise if appropriate), who will be asked to assess (not score) for each proposal that the two criteria listed below are met:
 - a. The research is potentially transformative
 - b. The proposal is exploratory but viable
3. Random selection of proposals to receive funding: All proposals that have been judged compatible with the scheme's intent are equally likely to receive funding. These proposals will be randomly ordered, with funding offered to the first ordered proposals up to the limit of the available budget. The funding recommendations will be presented to the HRC Council for approval.

The box below presents another example for an alternative assessment framework, i.e. the "*Research Opportunity and Performance Evidence*" (ROPE)⁵³ from ACR. It is a selection criterion, to help mitigate the effect of career interruptions, including as a result of childbirth and caring responsibilities.

Australian Research Council (ACR): Research Opportunity and Performance Evidence

ROPE was first introduced in 2011 and subsequently introduced to all National Competitive Grants Programme (NCGP) funding schemes. It replaced the selection criterion of 'track record relative to opportunities'. ROPE was introduced to help provide a more realistic consideration of a researcher's capabilities and assist those who have had career interruptions for family and other reasons.

⁵² HRC (2019): 15f.

⁵³ ARC (2014)

ROPE aims to ensure the assessment processes accurately evaluate an investigator's career history relative to their current career stage, and considers whether their productivity and contribution is adequate to the opportunities that have been available to them.

ROPE provides a framework within which the quality and benefit of achievements is given more weight than the quantity or rate of particular achievements. It considers working arrangements, career histories and personal circumstances and provides an acknowledgement of research performance given the opportunities available. It therefore differentiates in two aspects: Research Opportunity and Performance Evidence:

1. Research Opportunity is designed to provide assessors with an accurate appreciation of career history against a timeline of years since graduation from highest educational qualification. Assessors will recognise research opportunities and experience in the context of employment situations including those outside academia and the research component of employment conditions. Periods of unemployment, or any career interruptions for childbirth, carers' responsibilities, misadventure, or debilitating illness will be taken into account. Access to research mentoring and other research support facilities and any other relevant aspects of career experience or opportunities for research will complete the considerations.

The ARC considers that Research Opportunity comprises two separate elements:

- Career experiences (relative to opportunity)
- Career interruptions

There are many ways to capture this information and the details below outline some of the key considerations. In all schemes, for the purposes of ROPE, investigators should provide a brief description of career circumstances which may have positively or negatively influenced their research productivity, for example:

- The number of years since graduation with highest educational qualification
- The opportunities for research in the context of:
 - employment situations, including those outside academia
 - the research component of employment conditions
 - any periods of unemployment, part-time employment or other interruptions
 - childbirth, carers' responsibilities, misadventure or debilitating illness
- If university-based, whether the Investigator is contractually a research-only, teaching and research, teaching-only, teaching and administration, research and administration, administration-only academic, researcher in business, programme or project manager or other business role, giving any additional information (for example, part-time status) needed to understand the employment situation. The description should indicate the percentage of current role in each of these areas, as well as the percentage of time spent over the past ten years in these roles
- If industry-based, whether the Investigator's role is industry, research and administration, research in business, programme or project manager or other business role, giving any additional information (for example, part-time status) needed to understand the employment

situation. The description should indicate the percentage of current role in each of these areas, as well as the percentage of time spent over the past ten years in these roles

- The research mentoring and research support facilities available to the investigator
- Any other aspects of career or opportunities for research that are relevant to assessment and that have not been detailed elsewhere in the proposal (for example, any circumstances that may have limited research and publications or affected the time available to conduct and publish their research)
- Applicants should provide a total FTE for periods of unemployment, part time employment or interruptions for childbirth, carers' responsibilities, misadventure or debilitating illness.

2. Performance Evidence is designed to provide assessors with information that will enable them to contextualise research outputs relative to the opportunity of a participant. Both research output assessment and contextualising within disciplinary expectations of research impact⁵⁴ are required. In addition to standard academic publications, research outputs can include grey literature, consultancy reports or reviews, patents and policy advice, competitive grants and other research support, higher degree student completions, major exhibitions, compositions or performances, plant breeding rights, registered designs, invited keynote and speaker addresses and other professional activities and contributions to the research field.

The ARC considers that evidence of performance can be articulated in a combination of ways, including, but not limited to:

- Recent significant research outputs – a list of outputs split into five categories (over a particular number of years):
 1. scholarly books
 2. scholarly book chapters
 3. refereed journal articles
 4. refereed conference papers only when the paper was published in full in the proceedings
 5. other (for example, major exhibitions, compositions or performance).
- ARC grants awarded as a Chief Investigator, Partner Investigator, Fellow or Awardee (over a particular number of years).
- Ten career-best research outputs – full reference and statement (30 words) explaining and justifying the impact or significance of the output.
- Most significant contributions to the research field of the Proposal. A statement of how the Investigator's research has led to a significant change or advancement of knowledge in their field, and an outline of how these achievements will contribute to the proposal.

Further evidence in relation to research impact and contributions to the field (over a particular number of years) – including, but not limited to:

⁵⁴ <https://www.arc.gov.au/policies-strategies/strategy/research-impact-principles-framework>

- Research outputs other than academic publications where other research outputs might include patents, IP licences, plant breeding rights, registered designs, other research support income, relevant consultancies, policy advice and other professional activities; and
- Description of research impact relative to opportunity and in the context of discipline/end user benefits.

These examples show that there are alternatives to evaluating researchers and research projects only according to traditional metrics and the track record of the involved persons. Even if these only show a fraction of possible criteria that could be implemented, it is a clear statement by these funding institutions to work towards gender equality and equality in general. These exemplary criteria are very diverse in their set-up and in the environment in which they are embedded, showing that also regarding alternative criteria, including gender considerations, there is no clear one-fits-all solution. The different organizations need to adapt the possibilities to their needs. There still are many challenges, and the examples listed in this section are at the forefront internationally, i.e. far from being currently the standard in RFOs. One of the challenges for the future is the integration of intersectionality into research approaches, i.e. how other significant factors intersect with sex and/or gender. This needs to be considered by researchers and RPOs but – of course – also requires thought by RFOs when designing funding schemes and assessing grant proposals and thereby naturally which criteria should come into play.

7 Conclusion and Outlook

As shown above, several ways and possibilities exist to implement criteria for gender balance in teams, decision bodies and the integration of the gender dimension in the research content in general as well as different research fields.

Regarding criteria for gender balance in research teams, this is the criterion with which most RFOs start gender mainstreaming their funding programmes. Therefore, this is also the criterion where the highest number of RFOs already have policies and measures in place.

When looking at the gender balance in decision making bodies, some progress can be observed in the last years, i.e. there are several RFOs which have started to change the composition of panels and reviewers in order to achieve gender balance. Even if there are mostly no hard quotas in place, many RFOs strive to achieve a ratio of at least 40% of the underrepresented gender. Another matter which has not been subject of this document is the composition of governing bodies or boards of RFOs. These bodies very frequently are also not gender-balanced, but the composition of these boards is often outside the direct sphere of influence, as other superior bodies such as ministries nominate the members.

The design of criteria on the integration of the gender dimension in the research content is, without doubt, the most challenging endeavour for RFOs. There are different interconnected factors to consider, depending on the scientific fields in which an RFO is active, the way an RFO is organized (and therefore how flexible it is), if the RFO mainly funds basic or applied research and several other aspects. What seems crucial for the successful implementation of such criteria is to emphasize that the consideration of sex and gender aspects in research projects is a matter of quality: an excellent research project is not excellent if it does not consider and explain the relevance of potential implications of gender- or sex-specific aspects. This complements the last section, in which alternatives to traditional concepts for evaluation standards were discussed. However, today's scientific system is still very heavily based on these concepts, and therefore strategies to transform this system need to be identified.

For the future, there is still some work ahead for several RFOs. Even though the criteria related to gender balance in research teams and decision making are relatively “easy” to implement, these are not yet standard. Regarding the integration of the gender dimension in the content, one of the significant challenges for the future will be the consideration of intersectionality in assessment criteria.

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