



Evaluation Framework for Promoting Gender Equality
in Research & Innovation

Key Results and Policy Recommendations



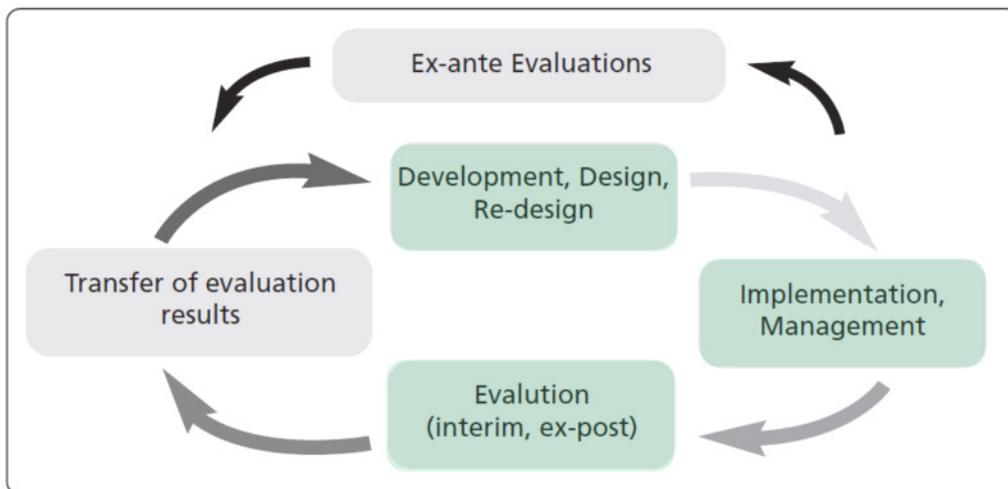
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Promoting Gender Equality in Research and Innovation – Key Messages and Recommendations - A Multi-Level Perspective

1 Introduction and synthesis of the overall aims of EFFORTI

The research work done in the course of the EFFORTI project led to a number of insights about the requirements for a sound and meaningful design, implementation as well as evaluation of gender equality (GE) interventions within research and innovation (R&I) systems. Before we list the main lessons learned and key recommendations, however, we will shortly define the main definitions and types of evaluations. We also introduce the policy cycle approach from which we overtook the basic concepts of policy design, policy implementation and policy evaluation that structured the formulation of the key messages and recommendations.

The following figure shows a simplified version of a policy cycle:



Source: Platform Research and Technology Policy Evaluation. (2012). *Evaluation Standards in Research and Technology Policy*. Vienna. Pdf.

The policy cycle typically starts with an ex ante evaluation that feeds into the development or design of an intervention. In a further step, the intervention has to be implemented and managed. (Shortly) after implementation, an evaluation can take place, either interim, accompanying or ex post. The evaluation results then feed into the design of a new measure or the re-design of an existing one.

Generally, evaluations can

- take place *ex ante*, **interim**, **ex post** or as an accompanying exercise
- address different levels and “objects” (single researchers / teams, projects, **programmes/ interventions**, institutions or whole R&I systems)
- serve different purposes: **legitimisation** for the allocation of public money, **targeting and controlling** of funding, improvement of the management and “**fine tuning**” of programmes, but also **learning**.
- investigate different types of effects, i.e. **outputs** as (measurable) results of the intervention, **outcomes** as broader effects on the beneficiaries but also **mid- and long-term effects / sustainable changes** (typically called **impacts**).
- look at **indirect** as well as **intended** and **unintended effects**

In the EFFORTI context, we mainly focused on interim or ex post evaluation, less on ex ante assessments. Furthermore, our level of observations were primarily programmes / interventions and not single researchers or teams respectively institutions. As regards the expected and observed effects of an intervention, we investigated all types of effects mentioned above, i.e. short-term outputs, mid-term outcomes as well as longer-term impacts. We also used the distinction between direct and indirect as well as intended and unintended effects.

As mentioned above, the key messages presented in this document are divided along the three main elements of the policy cycle, i.e. design, implementation and evaluation. The policy recommendations are further differentiated according to three levels of observation: the micro level of single evaluators, the meso-level of organisations and the macro-level of countries. At the meso-level, we differentiate between Higher Education Institutes (HEI), Research Performing Organisations (RPO), Research Funding Organisations (RFO) as well as companies. At the macro-level, our recommendations refer to the single (EU member) states as well as the EU level.

Guided by the three EU key objectives for gender equality in research and innovation, i.e. (1) fostering equality in scientific careers; (2) Ensuring gender balance in decision-making processes and bodies; (3) Integrating the gender dimension in research and innovation content (<https://eige.europa.eu/gender-mainstreaming/toolkits/gear/objectives-gender-equality-research>, 21.06.2019), EFFORTI pursues the following overarching objectives:

- Develop an evaluation framework which enables a multitude of stakeholders - ministries, funding agencies, programme owners - to conduct a sound analysis of the research and innovation outputs, outcomes and impacts on gender equality (GE) measures across Europe, with a focus on the national level.

- Provide a concept and tools that are both sophisticated and practical for the evaluation of GE policies across European countries and policies, taking also into account the diversity in the organisational contexts.
- Derive general lessons for evidence-based and thus "good" policy-making in the field of GE within R&I systems.

As a key result of the project, the EFFORTI toolbox presents a multi-level and -purpose tool that enables to analyse and model the influence of measures aimed at promoting GE in research and innovation (R&I) systems.

The following key messages and lessons learned as well as the core recommendations are based on the conceptual and empirical work that has been done since the start of the EFFORTI project in June 2016. Furthermore, the inputs collected at the final conference of EFFORT in May 2019 are integrated as well. This international conference brought together renowned scientists, practitioners and policy experts in the field of gender, research and innovation studies but also representatives from industry. Acknowledging the experts' contribution and expertise in the field, inspirations from this exchange contributed to our final set of recommendations that are presented in the following along a macro, meso and micro (action) level.

2 Key Messages

Under EFFORTI, we identify and advocate/strongly emphasize the following universal messages that accompany processes of designing, implementing and evaluating GE initiatives and programmes, regardless of the action level or institutional surrounding.

2.1 Synthesis of our Key Messages for Design

To obtain the ERA (European Research Area) targets, a comprehensive legislation as well as structures for GE in R&I are necessary. A proper design of GE measures requires:

- Clear responsibilities,
- Effective implementation mechanisms,
- Sactions to promote (behavioural) change,
- Knowledge regarding evaluation methodologies, tools and statistics at the institution,
- Balance of individual and structural measures and knowledge of when and where to use a smart combination of both,
- Sufficient resources.

Further key messages for design are:

- A highly tailor-made design should involve all relevant stakeholders;
- The public formulation of the overall objectives promotes transparency;
- Programme owners should take care of data collection for evaluation already when designing a measure, a funding programme etc.;
- The context of the respective national research and innovation system, GE policy generally and specifically in R&I should always be taken into account when designing GE policy interventions and defining objectives;
- Monitoring of recruitment and promotion issues ensure transparency, awareness and accountability;
- Interventions aiming for a greater gender balance higher up the career ladder should be combined with more structural change interventions or initiatives;
- A reflection of the requirements and processes for organisational and cultural change and how they interact with the intervention is necessary;
- The consideration of the societal impact of GE interventions from the outset is a promising approach;
- A link between GE and research excellence can prevent resistance;
- The embeddedness of relevant monitoring and evaluation processes and procedures from the beginning is important.

2.2 Synthesis of our Key Messages for Implementation

- The governance framework is a key in facilitating or hindering GE interventions;
- Top-management commitment is essential for changing the management culture and developing gender competence;
- Target values, the transparency of data and a clear strategy enhance the obligation to actively promote GE;
- A suitable communication and promotion of GE is useful - interventions should not be perceived as funding women or men but about creating innovative and inclusive work life realities;
- Participation of all employees raises awareness for the topic, gains more acceptance for measures and increases the motivation, while decreasing resistance;
- The willingness and interest of staff members and the target group to participate is a decisive factor;
- The responsibility for what is done should lie within the organisation themselves, whilst the intervention is tailored to their needs (bottom-up buy-in);

- Monitoring and reporting duties on GE make GE measures even more binding and effective;
- Resources are the major facilitating factor for a successful GE intervention;
- Ensure gender expertise and awareness in your organisation.

2.3 Synthesis of our Key Messages for Evaluation

- Evaluation is always a unique process: a one-size-fits-all approach is not suitable;
- Evaluation can foster structural and cultural change by delivering empirical evidence for different kinds of benefits (scientific, economic, societal etc.);
- The direct attribution of a long-term impact to a specific intervention is not possible: Evaluators should rather speak about contributions given the complex and dynamic environments;
- Thus: In relation to the very slow pace of structural change, the most ill-placed assumption regarding the intervention is that its impacts can and should be observed in a short period of time and its success is directly measurable;
- The often observed lack of information and indicators regarding the intervention hinders effective monitoring and evaluation;
- The intensity and quality of programme evaluations is highly dependent on the national evaluation cultures;
- The I-O-O-I (Input-Output-Outcome-Impact) approach
 - is useful to structure thinking in the evaluation logic
 - supports and guides choices of relevant indicators identified through the EFFORTI toolbox, relevant indicators could be easily identified
 - But it is important to emphasise the non-linearity of inputs from an intervention over processes to actual and measurable types of GE and R&I effects
- The theory of change approach
 - helps to mitigate the risks related to complexity in dynamic contexts
 - allows to open the black box - how and why a policy works, and in which context and how to assess it
 - has proved to be a valuable tool to think about how different factors may contribute to the impact
 - was deemed useful to identify possible R&I outcomes and impacts of GE interventions
- Evaluations face a dilemma between context sensitivity and reduction of complexity

- Context sensitivity and methodological pluralism is a quality criterion for evaluations. Not only the measure itself, but also its context is decisive for its impact
- Reduction of complexity: Evaluation is a complex concept itself implemented in complex systems – design & instrumentation must consider the complex systems in which the interventions operates. We cannot present reality as a simple causal model – the models we use should address the complexity of systems. Complex systems involve multiple variables interacting in non-linear ways to produce outcomes and impacts. Linear causal relations between interventions and impacts are challenging to establish.

The following recommendations refer to stakeholders commissioning an evaluation (policy-makers at ministries, funding agencies or organisations) as well as evaluators.

3 Recommendations

3.1 Macro level: Member States / EU

*Recommendations for the **Design & Implementation** of a GE intervention*

- Promote the implementation of GE support structures like gender equality offices and particularly gender equality plans (GEPs) as key policy instrument;
- Support research performing and funding organisations (RFOs, RPOs) to implement GEPs;
- Design and introduce GE award and certification schemes for R&I organisations (as a magnet for students and researchers and prerequisite to access funding);
- Improve the wide-spread dissemination of gender knowledge and high-level support of GE policy in the EC, the member states and RFOs;
- Foresee sufficient resources for your GE interventions, the resources should at least correspond to the targets associated with the measure;
- Build up expertise on GE;
- Follow up, monitor and evaluate existing policies;
- Make data collection, monitoring and evaluation permanent – be transparent;
- Be clear and transparent on the objectives of your evaluation: is the evaluation formative or summative? Does it serve the legitimization of funding, steering of funding decisions, accountability or learning?
- Reflect the target groups of the evaluation: is it only the owner of the intervention, the sponsor, the beneficiaries, broader stakeholder groups?
- Plan your evaluation in a way that the results are available in due time;

- Describe your main expectations as regards the evaluation elements before the evaluation is commissioned: Do you expect the analysis of broader impacts, including the non-intended? Do you expect future options and recommendations?
- Ensure that the evaluation team has the relevant expertise and experience to evaluate (GE) interventions in research and innovation;
- Decide whether you define the applied evaluation design, approach and methods in advance or whether you leave it to the evaluators to suggest appropriate approaches;
- Ensure an effective spending of money for evaluations: the budget for an evaluation should be large enough to allow sophisticated methodological approaches and the integration of multiple stakeholder perspectives but do also have a reasonable relationship to the budget for the intervention itself: Thus, for smaller measures it might be more worthwhile to conduct an evaluation internally whereas for complex, large and experimental programmes, external expertise should be mandatory;
- Be aware that research and innovation systems are complex with a variety of stakeholders and vested interests: thus it is not always clear whether an intervention works in the desired way and which effects of an intervention can be achieved;
- Be aware of methodological limitations in evaluation research and practice: as control group approaches are not always feasible, a clear attribution of an observed effect to the intervention is difficult;
- Make comprehensive use of existing (monitoring) data / ensure that suitable monitoring data exist in order to avoid too many primary data collections among the beneficiaries and thus evaluation fatigue;
- If possible, ensure that data on the baseline, i.e. the situation before the start of the intervention, is available;
- If quantitative targets have to be defined when designing a measure, these should be selected on a situation-specific basis: For example, percentage targets for the proportion of women in the workforce should be based on the proportion of women in the number of graduates in relevant fields of study.

The work done by evaluators – and thus the effectiveness of the evaluation itself – can be significantly improved if the policy-makers integrate the following elements in their design:

- Analysis of the initial situation and the need for action;
- Definition of targets (including suitable indicators), priorities and potential target conflicts;
- If possible, the targets should be SMART (specific, measurable, achievable, relevant, time-bound);
- Description of (alternative) relevant problem solutions;
- Assumed suitability of the measures for the goal attainment;

- Timetable for the implementation of the measures / intervention;
- Criteria and procedures for the evaluation.

To improve further learning and to ensure a sufficient quality management, evaluation reports should be publicly available.

However, given the complex and non-linear character of interventions, their results are often not predictable and cannot always be planned in detail.

3.2 Meso level: Institutions (RFOs, HEIs/RPOs, Industry)

3.2.1 Research Funding Organisations (RFOs)

*Recommendations for the **Design** of a GE intervention*

- Ensure GE in all RFO committees;
- Create new internal GE bodies;
- Improve the quality of topic writing by involving GE experts;
- Design and introduce GE award and certification schemes for R&I organisations (and as a prerequisite to access funding);
- Provide funding to institutions to analyze the impact of GE in research teams on R&I performance.

*Recommendations for the **Implementation** of a GE intervention*

- Improve gender aspects in monitoring and the process of "gender-flagging" funded projects;
- Incorporate KPI (Key Performance Indicators) recording;
- Pay attention to sustainability.

*Recommendations for the **Evaluation** of a GE intervention*

- Conduct an evaluation of the effects of gender criteria in R&I funding;
- Promote stakeholder engagement and close exchange;
- Contextualize better and include stakeholder opinions and diverse interpretations;
- Help promoting evaluation culture by making stakeholders aware of the motivation and utilities of an evaluation;
- Pay attention to the criterion of sustainability.

3.2.2 Research Performing Organisations (RPOs)

*Recommendations for the **Design** of a GE intervention*

- Design interventions based on existing information and evidence;
- Connect GE to institutional strategies;
- Involve leaders in the design of interventions;
- Create new internal GE bodies;
- Build evaluation in the design of interventions from the beginning;
- Integrate relevant data collection and processing systems into gender equality interventions for a more effective evaluation;
- Initiate institutional change through the implementation of GEPs:
 - Design materials and provide resources for trainings and workshops to sensitize researchers and human resource managers for GE (general and field-specific) with the aim to include gender issues in their research, university curricula and R&I programmes (i.e. trainings on unconscious bias)
- Ensure gender balance and gender competence on decision-making bodies throughout the corporate hierarchy: Visible representation of women in decision-making and executive positions;
- Increase the number of women in senior management from 15 to 35 percent
 - Characteristics of the nomination process: Pool consists of externals, goal is vague and dynamic (related to board views), time for measure should be planned
- Ensure gender balance in research teams: Define a percentage of minimum representation of one sex, based on the available pool;
- Remove barriers to the recruitment, retention and career advancement of female researchers.

*Recommendations for the **Implementation** of a GE intervention*

- Involve leaders in the implementation;
- Gain internal and external support to implementation;
- Institutionalise GE actions and programmes;
- Provide trainings for the internal pool;
- Establish and promote a post-doc career center to strengthen the internal pool for both sexes;
- Conduct a welcome study (example: Lund University);
- Build networks for PhDs, post-docs and change agents;

- Ensure constant monitoring and data collection on the effects of newly implemented initiatives;
- Focus on improving the quality of data collection;
- GEPs: Conduct audits of procedures and practices with relevant data to identify gender bias at organisational level;
- Pay attention to sustainability.

*Recommendations for the **Evaluation** of a GE intervention*

- Build evaluation in the design of interventions from the beginning;
- Measure impact of GE interventions outside the organisation (training potential leaders for other institutions) ;
- Make sure to measure outcomes including unintended outcomes, i.e. other than originally planned by the intervention: emergent character;
- Create and conduct surveys on GE included in annual institutional surveys (e.g. work climate, job satisfaction, etc.);
- Organize Regular exchange and meetings with the whole staff to discuss the results of interventions;
- Set targets and monitor progress via indicators at organisational level;
- Pay attention to the criterion of sustainability.

3.2.3 Industry

*Recommendations for the **Design** of a GE intervention*

- Connect GE to institutional strategies;
- Involve leaders in the design of interventions;
- Create new internal GE bodies;
- Integrate evaluation in the design of interventions from the beginning;
- Be aware that top management commitment and involvement is a critical success factor in pushing forward an effective GE agenda;
- Embed GE plans and strategies into the overall corporate strategy and ensure interconnected maneuvering;
- Provide organisations with career-related data (career track, history, breaks, promotions, etc.) to get a gender-specific overview on career progress, promotions etc.;
- Integrate GE with other sustainable development goals (SDGs).

*Recommendations for the **Implementation** of a GE intervention*

- Involve top management and ensure continuous commitment and dedication;
- Make sure that necessary financial and human resources are provided to exploit capacities to the fullest;
- Ensure fair and transparent recruitment and promotion practices;
- Make sure that recruiters are also gender-mixed and have received training on bias;
- Make promotional efforts to reach out to women;
- Empower women by providing team support, training and coaching;
- Provide coaching and training for future (female) leaders and sensitize staff and current leadership for unconscious bias and gender-based discrimination;
- Prioritize and foster a structural and cultural change that is long-term, sustainable and holistic;
- Be aware of complex career dynamics;
- Introduce a regular reporting to the Board of Directors;
- Install responsible board members;
- Link Incentives to the achievement of objectives across the board;
- Integrate top-down and bottom-up approaches.

*Recommendations for the **Evaluation** of a GE intervention*

- Conduct GE monitoring and controlling:
 - Continuously track and monitor business performance as a measurable proof of positive GE effects to be presented to the board ('convince')
 - Innovation scoreboard
 - Measure GE effects for anticipative and corrective actions (with respect to strategy, recruitment & promotion, rewards, organisational climate, mission & vision)
- Pay attention to sustainability.

3.3 Micro-Level: Evaluators

- Be aware that the direct attribution of a long-term impact to a specific intervention is not possible: Evaluators should rather speak about contributions given the complex and dynamic environments;
- Take into consideration emerging issues;
- Consider which evaluation approach provides the highest quality evidence in a particular context;

- Consider context ahead of method choice;
- Have as your starting point your theory and assumptions and not your method;
- Adopt a holistic approach that considers the constantly emerging issues created by team, organisational and system dynamics;
- Incorporate evaluation from the beginning in the design of intervention;
- Start from theory in your assumptions and not from your instrument / methodologies;
- Be prepared: Assessing GE programmes also in terms of their R&I impacts can enrich evaluations, but may not always be feasible;
- To identify the specific relevant context of a measure to be designed or evaluated, evaluators should have a look at relevant secondary data and conduct expert interviews. Interviews are necessary because the context is always very specific for each measure, so it cannot be entirely represented on a meta level.