The set of PLOTINA indicators

Promoting gender balance and inclusion in research, innovation and training

PLOTINA

GA nr. 666008

Contact for this document

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About this set of indicators

This document presents a catalogue of both core and specific indicators for the assessment of the progress of RPOs in terms of implementation of self-tailored Gender Equality Plans / GEPs. Process, throughput, output, outcome and impact indicators are defined for the initial stage of monitoring the GEPs progress.

Indicators were developed and selected on the basis of specific PLOTINA actions with the aim to monitor the effective progress of the GEPs. We want to stress out that the monitoring instrument does not equal an impact assessment, which means that we don't ask the cause-effect question. The indicators, which are selected by the RPOs, do not necessarily follow a theory of change, meaning that they don't describe a coherent result chain, which describes the cause-end-effect relationship between inputs, activities, results and impacts. The impact of individual actions would occur temporally delayed in the broader environment of the target group and can therefore not be tracked in the self-assessment tool. Nevertheless, we are aware that most interesting results of GEPs might not get visible through the monitored indicators, as the selection criteria for indicators also depend heavily on the feasibility of data collection. Qualitative analysis which accompanies the monitoring instrument can however provide crucial complementary insights.

Data monitoring and evaluation approach

The present monitoring and evaluation concept defines indicators for **five main dimensions** in which GEPs shall achieve changes at RPO level:

1. **The governance bodies, key actors and decision-makers**

A key concept of PLOTINA is that governance bodies, key actors and decision makers have a crucial role in the successful implementation of any GEPs. Their level of awareness and knowledge on gender equality issues has a strong influence on gender equality policies, strategies and processes.

Thus, indicators will assess the existence of gender relevant policies and the gender compositions of governance bodies.

2. **Recruitment, retention and career progress**

PLOTINA is convinced that gender equality and diversity in research teams is crucial for RPOs for maximizing their research effectiveness. Despite the fact that women represent more than 50% of the population of students and graduates, at the top level (Grade A which corresponds in most countries to the role of full professor) the female share is only ~20% in all disciplines and 11% in science and engineering. Structural barriers in the process of recruitment and retention of researchers are still affected by organization aspects (Source: PLOTINA Dow).

Thus, indicators will assess the progress in overcoming barriers in recruitment, retention and career progression.

3. Work and personal life integration

As a matter of course in any GEPs is support provision for the work and personal life integration, which doesn't simply support the need to achieve integration between personal and working life, but it is also supportive for a positive work environment. Ineffective work and personal life integration policies and support might interfere with smooth career progression (Source: PLOTINA DoW).

Thus, indicators will assess work and personal life integration support services within the RPO as stimulated by the project.

4. Researchers and research: gender equality and sex and gender perspective

A further key concept of PLOTINA is that culture of research teams' work affects the gender equality in research programs. Cultural barriers, such as gender stereotypes, lack of women's empowerment, 'homo-sociality', all-boys team-networking, still persist within academic environments.

Another key concept of PLOTINA is that sex/gender aspects of research programs are crucial for enhancing the reliability of research outputs. PLOTINA partners have identified the following main gaps preventing the gender/sex dimension to be inserted in research programs and contents.

- Lack of specific requirements for consideration of gender in content and evaluation criteria for research programs.
- Lack of awareness and ignorance of the improvement of the quality of research if gender is considered (Source: PLOTINA DoW).

Thus, indicators will assess the grade of integration of sex/gender variables into research programs, gender equality among researchers, and the cultural change as stimulated by the project.

5. Integration of gender and sex dimension in teaching curricula

Finally, ensuring the integration of gender dimension in teaching curricula is another core objective of PLOTINA. A series of concepts, strategies and challenges to promote the insertion of sex and gender as a variable in teaching/training curricula (from the undergraduate level to the PhD one) will be defined in the project. Training will range from occasional seminars to complete degree programmes.

Thus, indicators will assess the progress of the insertion of gender/sex variables in teaching programs. However, all indicators in this subsection were defined as "specific".

Reflection on an intersectional approach

Being aware that social identities overlap or intersect each other, and of the fact that systemic injustice and social inequality occur on a multidimensional basis, PLOTINA is aware of the importance of including other identities further than the gender identity and sex category. However, this is hardly feasible to be included in the monitoring system at this stage, as there is a general lack of knowledge on the one hand and of data availability on the other hand in this area within most of the RPOs. Moreover, data related to dimensions, such as ethnicity, or religion is not eligible to be record by employers.

The following reflexion on the integration of the age dimension should demonstrate the difficulties of such an endeavour and underline its impossibility within the scope of the PLOTINA project.

Contemplating possible integrations of the age dimension within the context of the hitherto research span for D5.1 and D5.2, we've construed three imaginable and perhaps intuitive assumptions on some implications of age, along which we want to point out the problems and issues arising when trying to measure dynamic effects in a static context.

- Age as variable when considering applications, short-listings and appointments (see indicator 6.2.2): One could assume that women seeking employment are more successful if they are not "too" young (which would correlate to a certain degree with lack of experience) but also if they are not "too" old (which would imply a certain bias, not having anything to do with defined recruitment criteria but rather with the (unjustified discriminatory) views/expectations of the employer). The (methodological) suggestion would be that when looking at the age dimension on applications, one would detect some outliers in the age spectrum as having significantly less chance of being employed. The main issue standing in the way of such an interpretation is that only looking at the age also means not looking at other variable such as experience, education and other factors contributing to a matching between an individual and a job. Just looking at one variable is **methodologically insufficient to capture the effect of age alone**. A regression analysis would be more suitable, that however would require a "large enough" number of subjects and a far more complex database, as mentioned above. Within the scope of the PLOTINA Project there was the try to aggregate data on applications –short-listings – appointments, the RPOs however faced considerable difficulties in doing so, since most HR departments did not record such data segregated by gender (only two out of seven could provide data on all recruitment steps, with further two providing only data on applications). Due to the **data unavailability** we've come across it is only reasonable to assume that it would worsen with rising complexity requirements on the data such as including the further variable of age.
- Average age as proxy for career progression: A further contemplation was that the average age of men and women of the same Grade (A –D) should not significantly deviate from each other, i.e. if it did, this should be interpreted as structural barriers for the one or the other, e.g. women's' careers progressing slower due to family care obligations, slower promotions, biased faculties and so on. The problem in the quantification of this effect would be that for one, we would only look at the average age of the current staff without knowing for example their entry age – an individual could have entered the employment relationship at an older age and in fact progressed quite quickly in contrast to a younger person stagnating at the same position. A static view would clearly not be able to differentiate such fundamental structural possibilities. For the purpose of tracking career progression there was a suggested data aggregation in which certain individuals' careers were followed over a period of 15 years (from 2005 to 2015). It however failed to produce much insight since the number of individuals was small and again most RPOs deemed such data unavailable. We consider this the most suitable way which could also consider age at entry level and try to estimate whether it effects career progression.
- Age at entry level as indicator and resulting manifestation of unequal opportunities: Considering the age of individuals at entry level and possible deviations between men and women is another considerable indicator of women reaching a certain Grade at an older age because of structural difficulties. This however does not consider the possibility of transferring from another RPO where a researcher might have worked for a long period of time and actually have begun employment there at a much younger age.
- Age as "false positive" indicator: An interesting phenomenon and explanation we've come across during the work for D5.2 was that in one certain RPO in Grade D, on average women were significantly younger than their male co-workers. The RPO warned that this should not be misinterpreted as a fast career progression – a possible reason for this being that women tended to

leave such positions more quickly than men. The RPO speculates that women often couldn't/didn't want to bear the high uncertainty[1] young researchers often face, because they were often at an age deemed by society as best for child-bearing. For this reason it was suggested that instead of bearing in academia, many left to find financial security in the corporate sector or private enterprise.

- Age <u>standardization</u> issues: A more general scepticism arises from the fact that there is no concept for a possible standardisation. The creation of an indicator underlies the assumption that there is a conceivable "goal" one can set for the RPO. An example from the scope of the PLOTINA would be considering something as "gender diverse" or not. In this case it was defined as both sexes being represented by a share ranging from 40% to 60%. Shares below or above that interval were thus considered as indication of underrepresentation. There is however from our point of view - neither suggested by empirical argumentation nor theoretical reflexions known to us – no such threshold conceived for an appropriate "age equality" goal, since it is not uncommon in research that individuals switch back and forth between RPOs and the corporate sector, influenced not only by career pursuits but also geographic and habitual preferences as well as in pursuit of variety.

The points mentioned above are of course no permanent barriers and an undertaking to overcome them and measure possible effects of intersectionality can easily overcome them. Also, in no way do we imply that such effects are marginal or not worthwhile considering. We are convinced that average age differences in many conceivable situations actually are a manifestation of different opportunities or the result of different career paths which for women more often than men mean care work and having to accommodate and often decide between career and family. What we want to underline is that measuring these effects would require a deeper and methodologically more detailed investigation which is not possible to accommodate with the PLOTINA project design and the data availability.

Indicators – Introduction

The indicators serve to measure the progress of the different self-tailored GEPs. Thus, each RPO scores only those specific indicators which are relevant for them.

All indicators fulfill the "SMART" criteria: they are reliable, measurable, attainable, relevant (valid), time bound. They are objective and independent of those who measure. Some indicators cover one single aspect, while others are composite indicators, consisting of a number of aspects.

Generally, we distinguish between:

- **Core indicators**

Core indicators are basic and most relevant indicators for the assessment of change per dimension and university / faculty, school / department. Core indicators must be measurable for **all** RPOs and will be the basis for a comparative analysis of progress at RPO level. Here presented is a list of core indicators which were selected within the consortium. It is the outcome of a joint decision process with all project members and in accordance with the theory of change which underlies the PLOTINA project.

- **Case specific (auxiliary) indicators**

They are tailored for specific GEP for the assessment of change per dimension and units addressed by the GEPs. Although case specific indicators need to measure most relevant processes and results of

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[1] Not knowing whether they would get their contracts renewed and how far reaching these would be, doubting whether they would later on still be "employable", knowing that promotions were scarce and employment opportunities not necessary more lucrative with a higher academic degree or a longer experience in research.

individual GEPs, consistency and complementarity between the GEP specific indicators must be given. At least, harmonization between case specific indicators will be aspired where possible.

1 Core indicators within the key area: The governance bodies, key actors and decision-makers

<table>
<tr><td colspan="2">1.1   Representation in (main) governing body(ies), by gender (CIGOV1)</td></tr>
<tr><td>Description</td><td>This indicator measures the average share of women in the (three main) governing body(ies).</td></tr>
<tr><td>Rationale</td><td>The under-representation of women in main governing bodies is well documented. Equal participation of women and men in decision-making is a matter of justice, respect for human rights and good governance.</td></tr>
<tr><td>Target Value</td><td>The gender composition in the (three highest) governing body(ies) develops towards more gender balance with at least 40% of women[2].</td></tr>
<tr><td>Definition</td><td>Female and male average share among members of the (three highest) governing body(ies).</td></tr>
<tr><td>Data needed / Question(s)</td><td>Note: indicate the observed value in case of only one body. In case of two and three bodies, calculate the sum of women and men respectively in these two or three bodies. In case of four and more governing bodies, please consider only the three highest governing bodies

	Women	Men
How many women and men are represented in the governing body(ies)?	*F*	*M*
</td></tr>
<tr><td>Answer categories</td><td>absolute numbers</td></tr>
<tr><td>Time Reference</td><td>Last calendar year</td></tr>
<tr><td>Data Source</td><td>HRM</td></tr>
<tr><td>Type of Indicator</td><td>Impact</td></tr>
<tr><td>Specification</td><td>F … Number of Females
M … Number of Males
$\frac{F}{F+M}$ … Share of women in governing bodies

$$CIGOV1 = \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\[2mm] 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M} \\[2mm] 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$
</td></tr>
</table>

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[2] The EC set the target of 40% for the under-represented sex in panels and groups (see: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/promoting-gender-equality-research-and-innovation)

1.2 Representation in (main) advisory body(ies), by gender (CIGOV2)

Description	This indicator evaluates the average share of women and men in the (three main) advisory body(ies).
Rationale	The under-representation of women in academic decision making bodies is well documented. Equal participation of women and men in decision-making is a matter of justice, respect for human rights and good governance.
Target Value	50% of the members in the (three highest) advisory board(s) are female[3].
Definition	Average female and male share among members of the (three highest) advisory committee(s)
Data needed / Question(s)	Note: indicate the observed value in case only one advisory body. In case of two and three advisory bodies, calculate the sum of women and men respectively in these two or three bodies. In case of four and more advisory bodies, please consider only the three highest advisory bodies.
Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Impact
Specification	F … Number of Females M … Number of Males $\frac{F}{F+M}$ … Share of women in advisory bodies

Within the Data needed / Question(s) cell:

	Women	Men
How many women and men are represented in the advisory body(ies)?	*F*	*M*

Within the Specification cell:

$$CIGOV2 = \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M} \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$

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[3] The EC set the target of 50% for the under-represented sex in advisory groups (see: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/promoting-gender-equality-research-and-innovation)

1.3 Gender sensitive language and images in institutional documents (CIGOV3)	
Description	This indicator looks at the existence of a policy of the use of gender sensitive language and images in institutional official documents. If such a policy exists, it measures the extent of its implementation.
Rationale	In order to be more accurate, more respectful, and more consistent with the values of equality towards a particular sex or gender, gender sensitive language and images is an important precondition towards this goal.
Target Value	1. A policy on the use of gender sensitive language and images in the institutional documents exists. 2. Number of institutional documents using gender sensitive language has increased over time.
Definition	1. Existence of a policy on the use of gender sensitive language and images in the institutional documents. 2. Extent of institutional documents using gender sensitive language and images.

Data needed / Question(s)	1. *Is there a policy towards gender sensitive language and images in institutional documents?*
	2. *If yes, which of these documents use a gender sensitive language and images?*
	    a. Mission
	    b. Vision
	    c. Strategy documents
	    d. Marketing and outreach materials
	    e. Agenda on the website
	    f. Job advertisements

Answer categories	1. "Yes" or "no" 2. "Yes" or "no" per item
Time Reference	Last calendar year
Data Source	Key word search of the institutional documents and institutional websites
Type of Indicator	Output
Specification	Share of observed policy-applications to possible applications (6). For question 1, the answer might be "yes" or "no". In case of a "yes" the indicator function $\mathbb{1}(x_1)$ takes the value 1, otherwise 0. In the first case the indicator proceeds to calculate the impact of the policy. The **indicator function** is used as score function for question 2 as well, where for each sub question the policy might hold true or not, so that $$\forall i, i \in \{a, b, c, d, e, f\}: \mathbb{1}(x_{2i}) = \begin{cases} 1, & policy\ applies\ to\ document\ i \\ 0, & policy\ does\ not\ apply\ to\ document\ i \end{cases}$$ $$CIGOV3 = \begin{cases} \dfrac{\sum_{i=a}^{f} \mathbb{1}(x_{2i})}{6}, & \mathbb{1}(x_1) = 1 \\ 0, & \mathbb{1}(x_1) = 0 \end{cases}$$

1.4 Gender equality policy and structures (CIGOV4)

Description	This indicator looks whether or not a gender equality policy exists and if yes, how it is structured.
Rationale	Any GEPs need a bottom down approach where the existence of a gender equality policy and an implementation body is a prerequisite.
Target Value	1. Existence of a gender equality policy. 2. There are persons in charge for gender equality matters. 3. There is/are a group(s) of people in charge for gender equality matters.
Definition	1. Existence of a gender equality policy in place. 2. There are persons in charge with reference for gender equality matters. 3. There is/are group(s) of people with reference for gender equality matters.
Data needed / Question(s)	1. *Does a policy on gender equality exist?* 2. *Are there persons in charge of the policy?* 3. *Is/Are group(s) of people in charge of the policy?*
Answer categories	1. yes or no 2. yes or no 3. yes or no
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Impact
Specification	Share of existent measures (policy, responsible individuals and responsible groups) to possible measures (3). For all questions, the answer might be "yes" or "no". The **indicator function** is used as score function such that $$\forall\, i, i \in \{1,2,3\}: \mathbb{1}(x_i) := \begin{cases} 1, & x_i = \text{"}yes\text{"} \\ 0, & x_i = \text{"}no\text{"} \end{cases}$$ $$CIGOV4 = \begin{cases} \dfrac{\sum_{i=1}^{3} \mathbb{1}(x_i)}{3}, & \mathbb{1}(x_1) = 1 \\ 0, & \mathbb{1}(x_1) = 0 \end{cases}$$

2 Core indicators within the key area: Recruitment, retention and career progress

2.1 Share of funded and coordinated projects, by gender (CIREC1)	
Description	This indicator measures the share of women over different project types and roles: i) funded projects from H2020 and national competitive research programs, ii) funded projects which are locally coordinated.
Rationale	She Figures [1] states: *There is a persisting imbalance in the success of women in their calls for funding and there is also a marked difference in the propensity of women to apply for funding.*
Target Value	The share of women in projects funded by H2020 and national research programmes and locally coordinated increases over time.
Definition	Share of women and men funded projects and as local coordinators in H2020 and national research programmes.
Data needed / Question(s)	(see table below)

	Women	Men
What is the number of funded projects applied by women and men as **principal investigator in H2020**?	F_1	M_1
What is the number of funded projects conducted by women and men as **local coordinator in H2020**?	F_2	M_2
What is the number of funded projects applied by women and men as **principal investigator** *in* competitive **national** *research programmes?*	F_3	M_3
What is the number of funded projects conducted by women and men as **local coordinator** *in* competitive **national** *research programmes?*	F_4	M_4
Total	$F_5 = \sum_{i=1}^{4} F_i$	$M_5 = \sum_{i=1}^{4} M_i$

Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Research & Innovation Support Offices
Type of Indicator	Process
Specification	F_i … Number of female investigators/coordinators for specific category i M_i … Number of male investigators/coordinators for specific category i $i \in [1,5]$, referring to the numbering of cells' items in table above $\frac{F_i}{F_i + M_i}$ … Share of women in specific category i $\mathbb{1}(F_i > 0 \lor M_i > 0)$ … Indicator function being 1 if condition in parenthesis true, 0 otherwise

$$I_i = \begin{cases} \begin{cases} 1, if\ 0.4 \leq \dfrac{F_i}{F_i + M_i} \leq 0.6 \\ 2 * \dfrac{F_i}{F_i + M_i}, if\ 0.4 > \dfrac{F_i}{F_i + M_i} \\ 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), if\ 0.6 < \dfrac{F_i}{F_i + M_i} \\ 0, \qquad\qquad\quad F_i = 0 \wedge M_i = 0 \end{cases} \end{cases}$$

$$CIREC1 = \begin{cases} \dfrac{\sum_{i=1}^{4} I_i}{\sum_{i=1}^{4} \mathbb{1}(F_i > 0\ \vee M_i > 0)}, & F_5 > 0\ \vee\ M_5 > 0 \\ 0, & F_5 = 0 \wedge M_5 = 0 \end{cases}$$

3 Core indicators within the key area: Work and personal life integration

3.1 Demand and supply of basic child care (CIWRK1)	
Description	This indicator measures the existence of two types of basic child care service provisions. As far as possible it aims to identify a potential gap between the demand and the supply of services.
Rationale	Work and personal life integration is not simply essential for the health and well-being of individuals, but is also cost-efficient and stability enhancing both for the work-environment and the institution.[2] The provisions of the following child care services are considered by the PLOTINA consortium as important instrument to integrate work and life obligations.
Target Value	The gap between demand and supply of nurseries and kindergartens decreases over time. A possible gap of services between the demand and the offer sides decreases over time.
Definition	1. Two basic child care services are provided. 2. Relation between the demand and the offer sides in terms of availability.

Data needed / Question(s)	1. *Is there provision of a **nursery**? (yes/no)*
	    a. *If yes, how many places are available?*
	    b. *If yes, how many persons have applied for a nursery place?*
	2. *Is there provision of a **kindergarten**? (yes/no)*
	    a. *If yes, how many places are available?*
	    b. *If yes, how many persons have applied for a kindergarten place?*

Answer categories	• "yes" or "no" • Absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	P_N, P_K … Places available in nursery (N) /kindergarten (K) A_N, A_K … Applications for a nursery (N) /kindergarten (K) place $$N = \begin{cases} \dfrac{P_N}{A_N}, if\ P_N < A_N \\ 1, if\ P_N \geq A_N \\ 0, if\ the\ service\ not\ provided \end{cases} \quad K = \begin{cases} \dfrac{P_K}{A_K}, if\ P_K < A_K \\ 1, if\ P_K \geq A_K \\ 0, if\ the\ service\ is\ not\ provided \end{cases}$$ $$CIWRK1 = 0{,}5 * (N + K)$$

3.2 Provision of advanced child care services (CIWRK2)

Description	This indicator measures the existence of a number of advanced child care service provisions.
Rationale	Work and personal life integration is not simply essential for the health and well-being of individuals, but is also cost-efficient and stability enhancing both for the work-environment and the institution.[2] The provisions of the following work and personal life integration support services are considered by the PLOTINA consortium as important instrument to integrate work and personal life obligations.
Target Value	The set of potential advanced child care services enhances over time.
Definition	Different advanced child care services are provided.

Data needed / Question(s)	1. *Is there a provision of **subsiding childcare** for **conference** purposes? (yes/no)*
	2. *Is there a provision of **child care** services **during conferences**?*
	    a. *If yes, for the overall University?*
	    b. *If yes, in some departments?*
	3. *Is there a provision of summer camps for children? (yes/no)*
	4. *Is there a provision of **emergency child care** services? (yes/no)*
	5. *Is there a provision of **lactation** and **baby-care rooms**? (yes/no)*

Answer categories	"yes" or "no"
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	For each question $i, i \in [1,5]$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$ In case the **second question** is answered with "yes", a further sub-question provides the weight for this question, according to the function: $f(x_2) = \begin{cases} 1 & , x_{21} = "a" \\ 0.5, & x_{22} = "b" \end{cases}$ $$CIWRK2 = \left[\sum_{i=1, \neq 2}^{5} \mathbb{1}(x_i) + \mathbb{1}(x_2) * f(x_2) \right] \Big/ 5$$

3.3   Provision of services for work and personal life integration (CIWRK3)

Description	This indicator measures the existence of work and personal life integration service provisions.
Rationale	Work and personal life integration is not simply essential for the health and well-being of individuals, but is also cost-efficient and stability enhancing both for the work-environment and the institution.[2] The provisions of the following work and personal life integration support services are considered by the PLOTINA consortium as important instrument to integrate work and personal life obligations.
Target Value	The set of potential work and personal life integration services enhances over time.
Definition	Different work and personal life integration services are provided.
Data needed / Question(s)	1. *Is there a provision for **eldercare**[4]? (yes/no)* 2. *Is there a provision for **teaching relief support** for **new parents** so that returners don't fall further behind in research? (yes/no)* 3. *Is there a **service** provisions for **dual career couples**? (yes/no)* 4. *Is there a service provision for **family members with special needs** (e.g. disability)? (yes/no)*
Answer categories	• "yes" or "no"
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	For each question $i, i \in [1,4]$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$. $$CIWRK3 = \frac{\sum_1^4 \mathbb{1}(x_i)}{4}$$

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[4] Elderly care can encompass a i) structure where academics can leave their parents who needs assistance, ii) the provision of a professional assistance that the university gives when academics need it, for instance when they have to go abroad for a Conference where they stay out of office for some days, iii) the provision of an economic assistance for academics who need such service, iv) the possibility to agree the teaching hours with the people who have need of assistance (for instance not to ask academics to teach till 9 pm and/or in other Campus of the University, since in this hours they do not have the possibility to have assistance at home for their parents, or v) they take more time to get home if some urgency emergencies.

3.4 Standard procedure for parental leave (CIWRK4)

Description	This indicator looks whether or not there is a standard procedure to parental leave.
Rationale	If men and women are equally likely to take parental leave, employers will be less reluctant to hire women of childbearing-age. And fathers who engage more with their children tend to report greater life satisfaction and better physical and mental health than those who care for and interact less with their children [3]. However, the use of parental leave among men shows still significant gender inequality.
Target Value	1. A standard procedure for parental leave exists; 2. At least one man has taken parental leave.
Definition	1. Existence of a **standard procedure** for parental leave; 2. Parental leave is taken by at least one man.
Data needed / Question(s)	*1. Does a standard procedure for parental leave exist?* *2. If yes, has at least one man taken this leave?*
Answer categories	1. "Yes" or "no" 2. "Yes" or "no"
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	For each question $i, i \in \{1,2\}$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$ $$CIWRK4 = \frac{\sum_1^2 \mathbb{1}(x_i)}{2}$$

4 Core indicators within the key area: Researchers and research: gender equality and sex and gender perspective

4.1 Number of scientific papers including sex/gender variables and dimensions (CIRES1)	
Description	This indicator looks at the number of scientific papers including sex/gender variables and dimensions, released by RPO's researchers.
Rationale	European Commission, among others, aims to encourage and equip scientists to rethink their work under a sex-and-gender-conscious lens.
Target Value	Increased number of scientific papers including sex/gender variables and dimensions in total.
Definition	Number of scientific papers including sex/gender variables and dimension.
Data needed / Question(s)	*What is the number of published scientific papers which include sex/gender variables and dimensions on the RPO level?*
Answer categories	Absolute Numbers
Time Reference	Last calendar year
Data Source	Keyword-based queries searching for specific terms in the title, keywords or abstracts of papers; in SCOPUS - https://www.scopus.com Guidelines for data gathering are provided in an extra file.
Type of Indicator	Impact
Specification	N: Number of scientific papers including sex/gender variables and dimension. $$CIRES1 = N$$

5 Specific indicators within the key area: The governance bodies, key actors and decision-makers

<table>
<tr><td colspan="2">5.1   Ratification of the European Charter for Researchers (SIGOV1)</td></tr>
<tr><td>Description</td><td>This indicator looks whether or not the RPO has ratified the European Charter for Researchers or other equivalent equal opportunity strategies.</td></tr>
<tr><td>Rationale</td><td>European Charter for Researchers and the Code of Conduct [3] for the Recruitment of Researchers incorporates the principles of equal opportunity to ensure that the most capable person is selected for a position on the basis of merit, and refers to the right of every individual to be given scrupulously fair consideration for any job for which they are skilled and qualified.</td></tr>
<tr><td>Target Value</td><td>The European Charter for Researchers is ratified by the RPO.</td></tr>
<tr><td>Definition</td><td>The European Charter for Researchers is ratified by the RPO.</td></tr>
<tr><td>Data needed / Question(s)</td><td>Is the European Charter for Researchers ratified by the RPO?</td></tr>
<tr><td>Answer categories</td><td>"yes" or "no"
"other equal opportunity strategies"</td></tr>
<tr><td>Time Reference</td><td>Last calendar year</td></tr>
<tr><td>Data Source</td><td>Appointed equality delegates</td></tr>
<tr><td>Type of Indicator</td><td>Process</td></tr>
<tr><td>Specification</td><td>For the question, the answer x might be "yes" or "no". The indicator function is used as score function: $\mathbf{1}(x) := \begin{cases} 1, & x = \{\text{yes, other equal opportunity strategies}\} \\ 0, & x = "no" \end{cases}$

$$SIGOV1 = \mathbb{1}(x)$$</td></tr>
</table>

5.2 Provision of gender disaggregated data in RPO's periodic report (SIGOV2)

Description	This indicator looks at the existence of gender disaggregated data in RPO's periodic reports.
Rationale	In order to make women's performances and achievements in research and innovation visible and to monitor them, accurate data are required.
Target Value	Periodic reports are released with gender disaggregated data.
Definition	Release of (a) periodic report(s) with gender disaggregated data.
Data needed / Question(s)	*Is/are periodic report(s) released with gender disaggregated data?*
Answer categories	"yes" or" no"
Time Reference	Last calendar year
Data Source	HRM, RPO website
Type of Indicator	Process
Specification	For the question, the answer x might be "yes" or "no". The indicator function is used as score function: $\mathbf{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$ $$SIGOV2 = \mathbb{1}(x)$$

5.3 Meetings for GEPs implementation (SIGOV3)

Description	This indicator looks how many meetings are organised by the group in charge for the implementation of the GEPs.
Rationale	Any GEP needs a top down approach where the existence of a gender equality policy and an implementation body is a prerequisite. Moreover, for a successful implementation of the GEP in the RPOs it needs a group that takes care of promoting, implementing and monitoring the actions included in the GEP inside the RPOs.
Target Value	There are regular meetings for monitoring and assessing the GEP's implementation.
Definition	Numbers of meetings organised by the group in charge to monitor and assess the GEP implementation
Data needed / Question(s)	*How many meetings per year does the group in charge of the GEP organise to monitor and assess the GEP implementation?*
Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	HRM/CUG
Type of Indicator	Impact
Specification	N:number of meetings $$SIGOV3 = \begin{cases} 1, & \dfrac{N}{12} > 1 \\ \dfrac{N}{12}, & \dfrac{N}{12} \leq 1 \end{cases}$$

5.4 Gender equality guidelines or guiding principles (SIGOV4)

Description	This indicator looks whether or not gender equality guidelines or guiding principles exist to ensure gender equality and to overcome indirect and unconscious discrimination by assessment and evaluation committees.
Rationale	Any GEPs need a top down approach where the existence of gender equality guidelines is prerequisite.
Target Value	1. Existence of gender equality guidelines or guiding principles. 2. Number of bodies/services which comply with gender equality guidelines or guiding principles has increased over time.
Definition	1. Existence gender equality guidelines or guiding principles. 2. Number of bodies/services using gender equality guidelines or guiding principles.

Data needed / Question(s)	1. *Do gender equality guidelines or guiding principles exist?*
	2. *If yes, which of these bodies/services consider gender equality guidelines?*
	    a. *Human resource management*
	    b. *Governing body(ies)*
	    c. *Heads of Departments*
	    d. *Finance and Accounting*

Answer categories	1. "Yes" or "no" 2. "Yes" or "no" per item
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	If question 1 is answered with "yes", i.e. gender equality guidelines or guiding principles exist, for each following question $i, i \in \{a, b, c, d\}$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$. $$SIGOV4 = \frac{\mathbb{1}(x_1) \sum_a^d \mathbb{1}(x_i)}{4}$$

5.5 Awareness training on gender sensitive issues (SIGOV5)

Description	This indicator looks at the existence of an awareness raising training policies for i) members of recruitment selection committees, ii) HRM, iii) decision makers, and iv) public communication officers, v) administrative staff, vi) research staff (grade A, B, and C), vii) early stage researchers (grade D) and if they exist, the share of those attended compared to the total number of these person groups. Definition of 'training': at least ½ a day (3-4 hours)
Rationale	Working on promoting gender equality should form an inherent part of the activities of members of recruitment selection committees, HRM, decision makers and public communication officers in order to create the preconditions for sustainable growth in research. Awareness raising trainings supports any gender equality plans.
Target Value	1. Awareness raising training policies on gender issues of members of recruitment selection committees, HRM, decision makers and public communication officers exist. 2. If yes, the share of those attended awareness raising trainings on gender issues compared to the total number members of recruitment selection committees, HRM, decision makers and public communication officers, administrative staff members, researchers on grade A, B, C, and D increases over time.
Definition	1. Awareness raising training policies on gender sensitive issues for members of recruitment selection committees, HRM, decision makers, public communication officers, administrative staff, professors and researchers; 2. The share of those attended awareness raising training on gender issues compared to the total number of members of recruitment selection committees, HRM, decision makers, public communication officers, administrative staff, professors and researchers increases over time.

Data needed / Question(s)	*Does a policy on awareness training on gender sensitive issues exist:*
	1. For members of recruitment selection committees?
	    • *If yes, what is the share of those attended compared to the total number of members of recruitment selection committees?*
	2. For HRM?
	    • *If yes, what is the share of those attended compared to the total number of HRMs?*
	3. For decision makers?
	    • *If yes, what is the share of those attended compared to the total number of decision makers?*
	4. For public communication officers?
	    • *If yes, what is the share of those attended compared to the total number of public communication officers?*
	5. For administrative staff members?
	    • *If yes, what is the share of those attended compared to the total number of administrative staff members?*
	6. For researchers (Grade A, B, C)?
	    • *If yes, what is the share of those attended compared to the total number of professors and researchers?*
	7. For early stages researchers (Grade D)?
	    • *If yes, what is the share of those attended compared to the total number of early stages researchers?*

Answer categories	1. "yes" or "no" 2. Percentage
Time Reference	Last calendar year
Data Source	HRM

Type of Indicator	Process
Specification	The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$ for each question i, $i \in [1,7]$. In case of a "yes", the z_i entries represent the shares of staff per department i having attended the/a training. $$SIGOV5 = \begin{cases} \dfrac{\sum_1^6 z_i}{\sum_1^6 \mathbb{1}(x_i)}, & \sum_1^6 \mathbb{1}(x_i) > 0 \\ 0, & \sum_1^6 \mathbb{1}(x_i) = 0 \end{cases}$$

5.6   Perception of gender equality in RPOs policies, by gender (SIGOV6)

Description	This indicator looks at the academic staff perception by gender concerning the the relevance of policies on gender equality their RPOs, expressed as the median of the survey answers in Likert scale*.
Rationale	The EC states [4]: *The need to monitor the development of gender equality policy is underpinned by evidence that research performance is limited by direct and indirect sex discrimination, that gender equality at all levels contributes to achieving excellence and efficiency (European Commission, 2012c).*
Target Value	Increase of academics in the RPO, who believe policies on gender equality are relevant in their RPO.
Definition	Academics' perception by gender concerning relevance of policies on gender equality in their RPO.
Data needed / Question(s)	<table><tr><td></td><td>*Women*</td><td>*Men*</td></tr><tr><td>*Do you think that policies on gender equality are relevant in your RPO?,*</td><td>M_F</td><td>M_M</td></tr></table>
Answer categories	* Likert scale scoring: 1. Strongly disagree; 2. Disagree; 3. Neither agree nor disagree; 4. Agree; 5. Strongly agree. The median can be found by firstly arranging the survey answers in an ascending (or descending) order. In the case of an odd number of survey participants, the median is just the middle value. In the case of an even number of survey participants the median is defined by the mean of the two middle values. Therefore possible entries are only following values: 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5 and 5.
Time Reference	Gender Audit (T0) and follow up surveys (T1&2)
Data Source	Survey
Type of Indicator	Perception
Specification	M_F, M_M: Median of the interviewed women and men, respectively. The Likert scale entries are standardized as follows $$0 \leq S_{F,M} = (M_{F,M} - 1)/4 \leq 1$$ $$SIGOV6 = \left\{ \frac{(S_F + S_M)}{2} + (1 - |S_F - S_M|) \right\}/2$$

6 Specific indicators within the key area: Recruitment, retention and career progress

<table>
<tr><td colspan="4" style="background:red;color:white">6.1 Gender diverse recruitment selection committees (SIREC1)</td></tr>
<tr><td>Description</td><td colspan="3">This indicator looks first if a policy exists for the gender diverse composition of selection committees of job applicants and second at the composition of the selection committees in terms of gender.</td></tr>
<tr><td>Rationale</td><td colspan="3">Empirical evidence shows that more diverse groups with a greater breadth of perspectives make better decisions. Committee members from underrepresented groups may cushion against unintentional stereotyping.</td></tr>
<tr><td>Target Value</td><td colspan="3">The gender diversity in the composition of recruitment selection committees increases over time.</td></tr>
<tr><td>Definition</td><td colspan="3">1. Existence of a policy that selection committees of job applicants need to be gender diverse composed.
2. Percentage of gender diverse composed recruitment selection committees out of all recruitment selection committees in (at least three) departments, for applicants of jobs on grade A, B, and C.</td></tr>
<tr><td>Data needed / Question(s)</td><td colspan="3">1. Do you have a policy in place that selection committees of job applicants need to be gender diverse composed?
2. If yes, …</td></tr>
</table>

	Committee for grade A job applicants	Committee for grade B job applicants	Committee for grade C job applicants
How many selection committees do exist in total in department (1) NAME?	$nc_{A,1}$	$nc_{B,1}$	$nc_{C,1}$
How many of these selection committees employed are gender diverse composed (40% of the under-represented gender)?	$dc_{A,1}$	$dc_{B,1}$	$dc_{C,1}$
How many selection committees do exist in total in department (2) NAME?	$nc_{A,2}$	$nc_{B,2}$	$nc_{C,2}$
How many of these selection committees employed are gender diverse composed (40% of the under-represented gender)?	$dc_{A,2}$	$dc_{B,2}$	$dc_{C,2}$
How many selection committees do exist in total in department (3) NAME?	$nc_{A,3}$	$nc_{B,3}$	$nc_{C,3}$
How many of these selection committees employed are gender	$dc_{A,3}$	$dc_{B,3}$	$dc_{C,3}$

	diverse composed (40% of the under-represented gender)?
Answer categories	1. "yes" or "no" 2. absolute numbers
Time Reference	Last calendar year (starting with 2015)
Data Source	HRM
Type of Indicator	Process
Specification	The indicator function $\mathbb{1}(nc_{i,j}) \begin{cases} 1, if\ nc_{i,j} > 0 \\ 0,\ if\ nc_{i,j} = 0 \end{cases}$ The share function $s(nc_{i,j}, dc_{i,j}) = \begin{cases} \frac{dc_{i,j}}{nc_{i,j}}, if\ nc_{i,j} > 0 \\ 0,\ if\ nc_{i,j} = 0 \end{cases}$ $$SIREC1 = \sum_{j=1}^{3} \sum_{i=A,B,C} s(nc_{i,j}, dc_{i,j}) \Bigg/ \left(\sum_{j=1}^{3} \sum_{i=A,B,C} \mathbb{1}(nc_{i,j}) \right)$$

6.2 Applications versus shortlists and appointments for jobs on grade A, B, C, by gender (SIREC2)

Description	This indicator aims to identify a potential gender bias in the process between the application, the stage of the shortlisting and the appointment. It allows to measure if a potential selection bias exist. It is constructed by comparing the percentage share of female and male applicants with the percentage share of women and men on the short list as well as appointed women and male for jobs on grade A, B, C. Data for this indicator has to be collected on the basis of the RPO system of application.
Rationale	Although the formal selection standards towards gender equality might be properly implemented, there are multiple ways in which the notion of gender inequality may occur.
Target Value	The share of women and men as well as the share of female to male applicants on the short list equals the share of female to male applicants either on the RPO, or departments or schools/ faculties level.
Definition	Share of women and men i) appointed and ii) short listed divided by share of women among all job applicants on grade A, B, C.
Data needed / Question(s)	*(Choose the organisational level according to the data availability).*

On the RPO level?	Grade A		Grade B		Grade C	
	F	*M*	*F*	*M*	*F*	*M*
How many women and men have applied for a job on grade A, B, C on the RPO level?						
How many women and men are on the short list for a job on grade A, B, C on the RPO level?						
How many women and men are appointed for a job on grade A, B, C on the RPO level?						
On the department level?	Grade A		Grade B		Grade C	
Name three departments	*F*	*M*	*F*	*F*	*M*	*F*
How many women and men have applied for a job on grade on A, B, C in department (1) NAME?						
How many women and men are on the short list for a job on grade A, B, C in department (1) NAME?						
How many women and men are appointed for a job on grade A, B, C in department (1) NAME?						
How many women and men have applied for a job on grade on A, B, C in department (2) NAME?						
How many women and men are on the short list for a job on grade A, B, C in department (2) NAME?						
How many women and men are appointed for a job on grade A, B, C						

		Grade A		Grade B		Grade C	
		F	M	F	M	F	M
	in department (2) NAME?						
	How many women and men have applied for a job on grade on A, B, C in department (3) NAME?						
	How many women and men are on the short list for a job on grade A, B, C in department (3) NAME?						
	How many women and men are appointed for a job on grade A, B, C in department (3) NAME?						
	On the schools/ faculties level? *Name three schools/ faculties*						
	How many women and men have applied for a job on grade on A, B, C, in school/faculty (1) NAME?						
	How many women and men are on the short list for a job on grade A, B, C school/faculty (1) NAME?						
	How many women and men are appointed for a job on grade A, B, C school/faculty (1) NAME?						
	How many women and men have applied for a job on grade on A, B, C school/faculty (2) NAME?						
	How many women and men are on the short list for a job on grade A, B, C in school/faculty (2) NAME?						
	How many women and men are appointed for a job on grade A, B, C in school/faculty (2) NAME?						
	How many women and men have applied for a job on grade on A, B, C school/faculty (3) NAME?						
	How many women and men are on the short list for a job on grade A, B, C in school/faculty (3) NAME?						
	How many women and men are appointed for a job on grade A, B, C in school/faculty (3) NAME?						

Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Impact
Specification	Notation: **Variables A**, **S** and **H** denote numbers of "applicants", "applicants on short list" and "appointments/hired applicants" respectively. **Indices F** and **M** (on the down right side of the variable) denote whether the applicant is female or male respectively, as **A**, **B** and **C** (on the upper right side of the variable) denote the respective academic grade the applicant has applied for. $$\mathbb{1}\big(\{S_i^j, A_i^j, H_i^j\}\big) := \begin{cases} 1, & \textit{if all arguments includied} > 0;\ i \in \{F, M\} \wedge j \in \{A, B, C\} \\ \mathbf{0}, & \textit{otherwise} \end{cases}$$

$$
f\left(A_F^j, A_M^j\right) =
\begin{cases}
1, & 0.4 \leq \dfrac{A_F^j}{A_F^j + A_M^j} \leq 0.6 \\[2ex]
2 * \dfrac{A_F^j}{A_F^j + A_M^j}, & 0.4 > \dfrac{A_F^j}{A_F^j + A_M^j}, A_F^j \vee A_M^j > 0 \\[2ex]
2 * \left(1 - \dfrac{A_F^j}{A_F^j + A_M^j}\right), & 0.6 < \dfrac{A_F^j}{A_F^j + A_M^j} \\[2ex]
0, & A_F^j \wedge A_M^j = 0
\end{cases}
$$

$$
y\left(S_i^j, A_i^j\right) =
\begin{cases}
\mathbb{1}\left(S_F^j, S_M^j, A_F^j, A_M^j\right) * \left(1 - \left|\dfrac{S_F^j}{A_F^j} - \dfrac{S_M^j}{A_M^j}\right|\right), & A_F^j \wedge A_M^j > 0 \\[2ex]
0, & A_F^j \vee A_M^j = 0
\end{cases}
$$

$$
SIREC2 =
\begin{cases}
0, & \displaystyle\sum_{j=A,B,C} \mathbb{1}\left(S_i^j, A_i^j\right) + \mathbb{1}\left(S_i^j, H_i^j\right) + \mathbb{1}\left(H_i^j, A_i^j\right) + \mathbb{1}\left(A_F^j, A_M^j\right) = 0 \\[2ex]
\dfrac{\sum_{j=A,B,C} y\left(S_i^j, A_i^j\right) + y\left(S_i^j, H_i^j\right) + y\left(H_i^j, A_i^j\right) + f\left(A_F^j, A_M^j\right)}{\sum_{j=A,B,C} \mathbb{1}\left(S_i^j, A_i^j\right) + \mathbb{1}\left(S_i^j, H_i^j\right) + \mathbb{1}\left(H_i^j, A_i^j\right) + \mathbb{1}\left(A_F^j, A_M^j\right)}, & otherwise
\end{cases}
$$

The equation above is particular for the RPO-wide case. In case of a departmental or faculty-level calculation on should proceed analogously and in a second step include all of the departments/faculties, which can range between one and three, using a double sum operator.

6.3 Negotiated starting salaries, by gender and by job grade (SIREC3)

Description	This indicator is constructed by calculating the percentage differences between aggregated negotiated starting salaries with potential benefits and access to resources and salary according to the official salary scale of new employees differentiated by gender and job levels.
Rationale	Research shows that women don't perform as well as men in negotiations. Often women avoid negotiation altogether, accepting the first offer presented by a prospective employer. Consequently, the gender pay gap often commenced already at the entry salary stage.
Target Value	Starting salary including benefits and access to resources is equal between men and women for jobs where the salary is negotiated, per jobs on grade A, B, and C.
Definition	Ratio of female starting salaries including benefits and access to resources divided by the official salary scale of new employees to male starting salaries divided by the official salary scale of new employees, per jobs on grade A, B, and C.
Data needed / Question(s)	

At job **grade A:**	Salary	
What is the starting salary according to the official salary scale of employees at university?	S_A	
	Women	Men
What are the on average negotiated entry salaries including benefits and access to resources for women and men?	F_A	M_A

At job **grade B:**	Salary	
What is the starting salary according to the official salary scale of employees at university?	S_B	
	Women	Men
What are the negotiated entry salaries including benefits and access to resources for women and men?	F_B	M_B

At job **grade C:**	Salary	
What is the entry salary according to the official salary scale of employees at university?	S_C	
	Women	Men
What are the negotiated entry salaries including benefits and access to resources for women and men?	F_C	M_C

Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Impact
Specification	

$$SIREC3 = \sum_{i=A,B,C} \mathbb{1}\left(|F_i - M_i| < \frac{S_i}{4}\right)\left(1 - 4 * \frac{|F_i - M_i|}{S_i}\right)/3$$

6.4 Positive actions in recruitment processes (SIREC4)

Description	This indicator looks whether or not positive gender action policy(ies) related to recruitment processes are in place.
Rationale	Positive action is a strategy to equalize the outcomes of recruitment processes. Such a policy could be that *"In the case of the same qualification, the underrepresented gender is selected preferentially"*
Target Value	Policies for positive actions for the underrepresented gender in the recruitment process are implemented.
Definition	Policies for positive actions for the underrepresented gender in the recruitment process are implemented.
Data needed / Question(s)	• *Is a positive action policy available that in the case of the same qualification, women are employed preferentially?* • *Is a positive action policy (e.g. briefings, guidelines, etc. regarding awareness rising of the members of the selection committees) available to favor an equal recruitment processes?*
Answer categories	"yes" or "no"
Time Reference	Last calendar year
Data Source	Policy documents
Type of Indicator	Process
Specification	For each following question $i, i \in \{1,2\}$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$. $$SIREC4 = \frac{\mathbb{1}(x_1) + \mathbb{1}(x_2)}{2}$$

6.5 Inclusion of gender issues in the induction process (SIREC5)

Description	This indicator is to assess whether there is an induction process for newly recruited staff and to what extent provides information about institutional/departmental policies with a focus on equality and diversity policies.
Rationale	Often, members of staff are not aware of policies, practices, and opportunities in the institution/department including gender equality and diversity policies (maternity/paternity/parental leave, flexibility, other services), career development etc. On arrival they are keen to learn about their new job. Once established in post they are much harder to communicate with.
Target Value	All staff should have an induction which makes they feel familiar with the gender related policies and services.
Definition	Induction processes covering gender related information.
Data needed / Question(s)	1. Is there an induction process in the department/institution? 2. If yes, do induction processes for newly recruited staff include material and/or information on equality and diversity policies, services and opportunities for work and personal life integration, career progression?
Answer categories	*Yes/No*
Time Reference	Last calendar year
Data Source	Department and central sources
Type of Indicator	Process
Specification	For each following question $i, i \in \{1,2\}$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$. $$SIREC5 = \frac{\mathbb{1}(x_1) + \mathbb{1}(x_2)}{2}$$

6.6 Positive actions in research evaluation (SIREC6)

Description	This indicator looks whether or not positive gender action policies related to research evaluation, with effects on career progression, are in place.
Rationale	Positive action is a strategy to equalize the outcomes of career progression. Such a policy could consider maternity, paternity and parental leave periods into the assessing and the evaluating of research production.
Target Value	Existence of policies for positive actions for research evaluation.
Definition	Policies for positive actions for research evaluation, with effects on career progression, exist.
Data needed / Question(s)	*Are positive action policies that consider maternity, paternity and parental leave periods when assessing and evaluating research production in order to foster career progression available?*
Answer categories	"yes" or "no"
Time Reference	Last calendar year
Data Source	Policy documents
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIREC6 = \mathbb{1}(x)$$

6.7 Career Support Schemes (SIREC7)

Description	This indicator looks whether or not there is a career support schemes established at RPOs.
Rationale	The aim is to address the 'leaky pipeline' phenomena, which is especially relevant for women in STEM.
Target Value	1. Career support schemes exist in the RPO. 2. The share of women and men participating at career support schemes has developed towards gender balance.
Definition	1. Existence of career support schemes. 2. Ratio of female and male researchers participating in career support schemes.
Data needed / Question(s)	*1. Is there a career support scheme available in the RPO?* *2. If yes,*

	Women	*Men*
How many women and men participate in career support schemes?	F	M

Answer categories	1. "Yes" or "no" 2. Absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	The answer to the first question might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_1) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$.

$$SIREC7 = \begin{cases} 0, & \mathbb{1}(x_1) = 0 \\ \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M}, \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases} & otherwise \end{cases}$$

6.8   Initiatives for raising awareness on female role models (SIREC8)

Description	This indicator looks at the existence of awareness raising initiatives female role models in science.
Rationale	While women are relatively well represented at the lower grades of the academic career, at the top ("grade A") the female share is ~20% in all disciplines and 11% in Science and Engineering.
Target Value	Awareness raising initiatives on female role models targeting academic staff and the broader community.
Definition	Existence of awareness raising initiatives on female role models and gender diversity in teams.
Data needed / Question(s)	*Do awareness raising initiatives on female role models exist?*
Answer categories	Yes or No
Time Reference	Last calendar year
Data Source	Institutional data warehouse.
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = \text{"yes"} \\ 0, & x = \text{"no"} \end{cases}$. $$SIREC8 = \mathbb{1}(x)$$

6.9 Initiatives for raising awareness on gender diversity in research teams (SIREC9)

Description	This indicator looks at the existence of awareness initiatives on female researchers' contribution in science by looking at the visibility of gender diversity in research teams (e.g. at the occasion of in researchers nights).
Rationale	While women are relatively well represented at the lower grades of the academic career, at the top ("grade A") the female share is ~20% in all disciplines and 11% in Science and Engineering.
Target Value	Awareness raising initiatives on gender diversity in research teams exist.
Definition	Existence of awareness raising initiatives on gender diversity in research teams.
Data needed / Question(s)	*Are there initiatives for raising awareness of the gender diversity in research teams in public documents and/or events?*
Answer categories	Yes or No
Time Reference	Last calendar year
Data Source	Institutional data warehouse.
Type of Indicator	Process
Specification	The answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIREC9 = \mathbb{1}(x)$$

6.10 Empowerment trainings for career progression (SIREC10)

Description	This indicator looks at the existence of empowerment trainings career progression for researchers as a useful tool for their career development. Definition of training: at least ½ day (3-4 hours)
Rationale	It is a useful tool to support researchers in their academic careers
Target Value	1. Empowerment trainings for career progression of researchers exist; 2. The share of female and male researchers who attended empowerment trainings for career progression is balanced
Definition	1. Empowerment trainings for career progressions of researchers exist; 2. Ratio of female and male researchers in empowerment trainings for career progression.
Data needed / Question(s)	*1. Are there empowerment trainings for the career progression of researchers?* *2. If yes,*

	Women	Men
How many researchers attended empowerment trainings for the career progression of researchers?	F	M

Answer categories	1. "Yes" or "no" 2. Absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	The answer to the first question might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_1) := \begin{cases} 1, & x = \text{"yes"} \\ 0, & x = \text{"no"} \end{cases}$.

$$SIREC10 = \begin{cases} 0, & \mathbb{1}(x_1) = 0 \\ \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M}, \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases} & otherwise \end{cases}$$

6.11 Trainings for leadership (SIREC11)

Description	This indicator looks at the existence of training for leadership skills for researchers (in particular for the underrepresented gender) as a useful tool for their career development. Ideally, it would include the following: leading a team/a meeting/a project, raise awareness of different leadership styles. If it exists, it measures i) ii) the ratio of female and male attendees of leadership training. Definition of training: at least ½ day (3-4 hours)
Rationale	It is a useful tool to support researchers in their academic careers.
Target Value	1. Trainings on leadership skills development for researchers (in particular for the underrepresented gender) exist; 2. The gender balance between female and male researchers who attended trainings on leadership skills development has increased over time.
Definition	1. Trainings on leadership skills development for researchers exist; 2. Ratio of female and male researchers in trainings on leadership skills development.
Data needed / Question(s)	3. *Is training on leadership skills development for researchers on job grade A, B, C, and D available?* 4. *If yes,*

	Women	Men
How many researchers on job grade A attended trainings on leadership skills development?	F_A	M_A
How many researchers on job grade B attended trainings on leadership skills development?	F_B	M_B
How many researchers on job grade C attended trainings on leadership skills development?	F_C	M_C
How many researchers on job grade D attended trainings on leadership skills development?	F_D	M_D

Answer categories	3. "Yes" or "no" 4. *Absolute numbers*
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	The answer to the first question might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_1) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$.

$$f(F_i, M_i) = \begin{cases} 1, & 0.4 \leq \dfrac{F_i}{F_i + M_i} \leq 0.6 \\[2mm] 2 * \dfrac{F_i}{F_i + M_i}, & 0.4 > \dfrac{F_i}{F_i + M_i} \\[2mm] 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), & 0.6 < \dfrac{F_i}{F_i + M_i} \end{cases}$$

$$SIREC11 = \begin{cases} 0, & \sum_{i=A,B,C,D} \mathbb{1}(F_i, M_i > 0) = 0 \\ \sum_{i=A,B,C,D} f(F_i, M_i) \Big/ \sum_{i=A,B,C,D} \mathbb{1}(F_i, M_i > 0), & otherwise \end{cases}$$

6.12 Trainings for soft skills (SIREC12)

Description	This indicator looks at the existence of trainings for soft skills for researchers and key actors as a useful tool for their career development. Ideally, trainings would address the following topics: communication, team work, time management. If the trainings exist, the indicator measures the ratio of female and male attendees of soft skills training. Definition of training: at least ½ day (3-4 hours)
Rationale	It is a useful tool to support researchers in their research/academic careers and key actors in everyday decision-making.
Target Value	1. Trainings on soft skills development for researchers and key actors exist; 2. The share of female and male researchers who attended trainings on soft skills development develops towards gender balance.
Definition	3. Trainings on soft skills development for researchers and key actors exist; 4. Ratio of female and male researchers in trainings on soft skills development.
Data needed / Question(s)	5. *Is training on soft skills development for researchers on job grade A, B, C, and D available?* 6. *If yes,*

	Women	Men
How many researchers on job grade A attended trainings on soft skills development?	F_A	M_A
How many researchers on job grade B attended trainings on soft skills development?	F_B	M_B
How many researchers on job grade C attended trainings on soft skills development?	F_C	M_C
How many researchers on job grade D attended trainings on soft skills development?	F_D	M_D

Answer categories	5. "Yes" or "no" 6. Absolute numbers
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	If trainings exist then

$$f(F_i, M_i) = \begin{cases} 1, & 0.4 \leq \dfrac{F_i}{F_i + M_i} \leq 0.6 \\[2ex] 2 * \dfrac{F_i}{F_i + M_i}, & 0.4 > \dfrac{F_i}{F_i + M_i} \\[2ex] 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), & 0.6 < \dfrac{F_i}{F_i + M_i} \end{cases}$$

$$SIREC12 = \begin{cases} 0, & \displaystyle\sum_{i=A,B,C,D} \mathbb{1}(F_i > 0 \wedge M_i > 0) = 0 \\[3ex] \displaystyle\sum_{i=A,B,C,D} f(F_i, M_i) \Big/ \sum_{i=A,B,C,D} \mathbb{1}(F_i, M_i > 0), & otherwise \end{cases}$$

6.13 Training for researchers on research funding skills (SIREC13)

Description	Based on the signed participant lists, the indicator measures the share of women and men in targeted seminars on research funding.
Rationale	In order to equip and empower researchers with the necessary skills for successful research funding applications, targeted seminars are an appropriate instrument for this goal.
Target Value	Share of women and men participating targeted seminars on research funding has developed towards gender balance over time.
Definition	Share of women and men participating targeted seminars on research funding.
Data needed / Question(s)	

	Women	Men
How many women and men participated in targeted seminars on research funding?	*F*	*M*

Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	Signature lists of targeted seminars
Type of Indicator	Process
Specification	

$$SIREC13 = \begin{cases} 0, & F \wedge M = 0 \\ 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M}, \quad otherwise \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$

6.14 Mentoring programme (SIREC14)

Description	This indicator looks at the existence of mentoring programmes and if they exist, whether it is mandatory for academics on the job grade C to have a mentor. Definition of 'mentoring': min. 6-8 meetings per semester.
Rationale	Mentoring relationships have powerful positive effects on (young) researchers in a variety of academic situations. Mentoring is an instrument for career development.
Target Value	1. Mentoring programmes are in place. 2. For academics on the job grade C it is mandatory to have a mentor.
Definition	1. Mentoring programmes are in place 2. For academics on the job grade C it is mandatory to have a mentor
Data needed / Question(s)	1. *Do you have a mentoring programme in place?* 2. *If yes, is it mandatory for researchers on the job grade C to have a mentor?*
Answer categories	1. "Yes", or "no" 2. "Yes" or "no"
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	For each question $i, i \in \{1,2\}$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = \text{"yes"} \\ 0, & x_i = \text{"no"} \end{cases}$ $$SIREC14 = \frac{\sum_1^2 \mathbb{1}(x_i)}{2}$$

6.15 Perception of gender equality in career advancement, by gender (main focus: STEM area) (SIREC15)

Description	This indicator looks at the perception of gender equality in STEM disciplines in terms of career opportunity at Grade A, expressed as the **median** of the survey answers in Likert scale*.
Rationale	While women are relatively well represented at the lower grades of the academic career, at the top ("grade A") the female share is ~20% in all disciplines and 11% in Science and Engineering. A summary metric of statistics on vertical segregation in academic careers is given by the Glass Ceiling Index7 which was 1.8 in 2010 [5].
Target Value	Reduction of number of academics who think that gender equality is not given in STEM area.
Definition	Perception of academics by gender as to whether science careers towards the grade A are differently accessible for both women and men, represented by the median.
Data needed / Question(s)	

	Women	Men
Do you think that policies and services supporting work and personal life integration are satisfying in your RPO?	M_F	M_M

Answer categories	* Likert scale scoring: 1. Strongly disagree; 2. Disagree; 3. Neither agree nor disagree; 4. Agree; 5. Strongly agree. The median can be found by firstly arranging the survey answers in an ascending (or descending) order. In the case of an odd number of survey participants, the median is just the middle value. In the case of an even number of survey participants the median is defined by the mean of the two middle values. Therefore possible entries are only following values: 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5 and 5.
Time Reference	Gender Audit (T0) and follow up surveys (T1 & 2)
Data Source	Survey
Type of Indicator	Perception
Specification	M_F, M_M: Median of the interviewed women and men, respectively. The Likert scale entries are standardized as follows $$0 \le S_{F,M} = (M_{F,M} - 1)/4 \le 1$$ $$SIREC15 = \left\{ \frac{(S_F + S_M)}{2} + (1 - |S_F - S_M|) \right\}/2$$

7 Specific indicators within the key area: Work and personal life integration

7.1 Policies on work and personal life integration (SIWRK1)	
Description	This indicator measures the existence of policies supporting work and personal life integration.
Rationale	Work and personal life integration is not simply essential for the health and well-being of individuals, but is also cost-efficient and stability enhancing both for the work-environment and the institution[5]. The provisions of the following work and personal life integration support services are considered by the PLOTINA consortium.as important instrument to integrate work and personal life obligations.
Target Value	The set of policies supporting work and personal integration enhances over time.
Definition	Different policies supporting work and personal integration exist.
Data needed / Question(s)	*1. Does a policy related to parenting friendly working hours exist?* — Yes / no *2. Does a policy related to extended leave for the care of family members exist?* — Yes / no *3. Does a policy related to maternity cover (budgeting for temporary replacement of employees that have requested a maternity leave) exist?* — Yes / no *4. Does a policy for positive actions for improving time organization (academic time allocation schedules for teaching, research and core meeting hours) exist?* — Yes / no *5. Does a policy permitting breastfeeding exist?* — Yes / no *6. Does a flexitime policy exist?* — Yes / no *7. Does a policy related to staggered hours exist?* — Yes / no *8. Does a policy permitting to work part time hours for personal reasons exist?* — Yes / no *9. Does a policy permitting paid extended leave for personal reasons exist?* — Yes / no *10. Does a policy permitting unpaid extended leave for personal reasons exist?* — Yes / no *11. Does a policy permitting working from home exist?* — Yes / no *12. Does a policy related to mobility[6] exist?* — Yes / no *13. Does a policy permitting job sharing exist?* — Yes / no *14. Does feasibility plan for the creation of new welfare services (e.g. house chores, summer camp organization, child-care in case of conference or congress) exist?* — Yes / no
Answer categories	"Yes" or "no"
Time Reference	Last calendar year

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[5] Mukhart, F. (2012). Work life balance and job satisfaction among faculty at Iowa State University *Iowa State University*

[6] Giving the option of moving to a working-place that is closer to the hometown, when the institution has more than one centres.

Data Source	HRM
Type of Indicator	Process
Specification	For each question $i, i \in [1,14]$, the answer x_i might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_i) := \begin{cases} 1, & x_i = "yes" \\ 0, & x_i = "no" \end{cases}$ $$SIWRK1 = \frac{\sum_1^{14} \mathbb{1}(x_i)}{14}$$

7.2 Contacts with individuals during maternity, paternity and parental leave (SIWRK2)

Description	This indicator looks whether or not there is a standard procedure to ensure that contacts are maintained during maternity, paternity and parental leave.
Rationale	Maintaining contact with colleagues and the organization during the maternity, paternity and paternal and parental leave helps to stay updated and integration after the parental leave works faster therefore.
Target Value	Contacts with individuals during maternity, paternity and parental leave are maintained.
Definition	Standard procedure to ensure that contacts with individuals during maternal, paternal and parental leave are maintained.
Data needed / Question(s)	*Is there a standard procedure to ensure that contacts with individuals are maintained during the maternity, paternity and parental leave?*
Answer categories	"yes" or "no"
Time Reference	Last calendar year
Data Source	Appointed gender equality delegates
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$ $$SIWRK2 = \mathbb{1}(x)$$

7.3 Perception of work and personal life integration, by gender (SIWRK3)

Description	This indicator looks at the perception of satisfaction among academic staff of the work and personal life integration supports and policies available in their RPOs.
Rationale	The knowledge on the perception of the European RPOs policies and practices relating to work and personal life integration will facilitate the recognition of problems related to gender inequalities that might interfere with smooth career progression.
Target Value	Increase of academic staff being satisfied with work and personal life integration support and policies available.
Definition	Median of the grade of satisfaction of the academic on the work and personal life integration support and policies available in their RPOs.

Data needed / Question(s)		*Women*	*Men*
	Do you think that policies and services supporting work and personal life integration are satisfying in your RPO?	M_F	M_M

Answer categories	Likert scale for judgement: 1- Strongly disagree; 2- disagree; 3- neither agree nor disagree; 4- agree; 5- strongly agree
Time Reference	Gender Audit (T0) and follow up survey (T1&2)
Data Source	Survey
Type of Indicator	Perception
Specification	M_F, M_M: Median of the interviewed women and men, respectively. The Likert scale entries are standardized as follows $$0 \leq S_{F,M} = (M_{F,M} - 1)/4 \leq 1$$ $$SIWRK3 = \left\{ \frac{(S_F + S_M)}{2} + (1 - |S_F - S_M|) \right\}/2$$

8 Specific indicators within the key area: Researchers and research: gender equality and sex and gender perspective

8.1 Gender composition of research teams who got public funding (SIRES1)

Description	This indicator looks at the average composition of research teams who got public funding.
Rationale	Women tend to be engaged more in research teams who received national or regional/local funding than in teams that receive European or non-European funding, since international projects are more demanding in terms of time and input. Therefore, difficulties appear in reconciling research and private life, which mostly negatively affect women's careers.[7]
Target Value	Average number of women participants in research teams who received European or non-European funding increases over time.
Definition	Average number of women and average number of men participants in the research teams that received any kind of public funding for their research
Data needed / Question(s)	<table><tr><td></td><td>Women</td><td>Men</td></tr><tr><td>*What is the number of women and men in research teams who received non-European funding?*</td><td>F_1</td><td>M_1</td></tr><tr><td>*What is the number of women and men in research teams who received European funding?*</td><td>F_2</td><td>M_2</td></tr><tr><td>*What is the number of women and men in research teams who received national funding?*</td><td>F_3</td><td>M_3</td></tr><tr><td>*What is the number of women and men in research teams who received local/regional funding?*</td><td>F_4</td><td>M_4</td></tr></table>
Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Research & Innovation Support Offices
Type of Indicator	Process
Specification	$$f(F_i, M_i) = \begin{cases} 0, & F_i = 0 \land M_i = 0 \\ 1, & 0.4 \leq \frac{F_i}{F_i+M_i} \leq 0.6 \\ 2 * \frac{F_i}{F_i+M_i}, & 0.4 > \frac{F_i}{F_i+M_i}, \quad otherwise \\ 2 * \left(1 - \frac{F_i}{F_i+M_i}\right), & 0.6 < \frac{F_i}{F_i+M_i} \end{cases}$$

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[7] Source: EC Directorate-General for research science, economy and society (2009): The gender challenge in research funding: Assessing the European national scenes related ec.europa.eu/research/science-society/document_library/pdf_06/the-gender-challenge-in-research-funding-report_en.pdf gender bias in research funding (31-01-2017)

$$g\left(\sum_{i=1}^{4} F_i, \sum_{i=1}^{4} M_i\right) = \begin{cases} 1, & 0.4 \leq \dfrac{\sum_{i=1}^{4} F_i}{\sum_{i=1}^{4} F_i + \sum_{i=1}^{4} M_i} \leq 0.6 \\[2ex] 2 * \dfrac{\sum_{i=1}^{4} F_i}{\sum_{i=1}^{4} F_i + \sum_{i=1}^{4} M_i}, & 0.4 > \dfrac{\sum_{i=1}^{4} F_i}{\sum_{i=1}^{4} F_i + \sum_{i=1}^{4} M_i} \\[2ex] 2 * \left(1 - \dfrac{\sum_{i=1}^{4} F_i}{\sum_{i=1}^{4} F_i + \sum_{i=1}^{4} M_i}\right), & 0.6 < \dfrac{\sum_{i=1}^{4} F_i}{\sum_{i=1}^{4} F_i + \sum_{i=1}^{4} M_i} \end{cases}$$

$$SIRES1 = \begin{cases} 0, & if \ \sum_{i=1}^{4} \mathbb{1}(F_i > 0 \ \wedge \ M_i > 0) = 0 \\[2ex] \dfrac{\sum_{i=1}^{4} f(F_i, M_i) + g(\sum_{i=1}^{4} F_i, \sum_{i=1}^{4} M_i)}{\sum_{i=1}^{4} \mathbb{1}(F_i > 0 \ \vee \ M_i > 0) + \mathbb{1}(\sum_{i=1}^{4} F_i > 0 \ \vee \ \sum_{i=1}^{4} M_i > 0)}, & otherwise \end{cases}$$

8.2 Networks on gender issues research (SIRES2)

Description	This indicator looks at the existence of networks/groups in the RPOs that are focused either on research in gender issues or on gender issues in research.
Rationale	Networking fosters the exchange of information and ideas among individuals.
Target Value	Networks and groups that are focused either on research on gender issues or on gender issues in research exist.
Definition	Networks and groups that are focused either on research on gender issues or on gender issues in research exist.
Data needed / Question(s)	*Do networks and groups exist that are focused on research on gender issues or on gender issues in research?*
Answer categories	"Yes" or "no"
Time Reference	Last calendar year
Data Source	HRM, RPOs websites and appointed equality delegates
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIRES2 = \mathbb{1}(x)$$

8.3 Provision of an annual RPO gender report (SIRES3)

Description	The indicator looks at the existence of an annual gender report.
Rationale	In order to make women's performances and achievements in research and innovation visible accurate data are required.
Target Value	An annual gender report is released.
Definition	Release of an annual gender report.
Data needed / Question(s)	*Is an annual gender report released?*
Answer categories	"yes" or "no"
Time Reference	Last calendar year
Data Source	HRM, RPO website
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIRES3 = \mathbb{1}(x)$$

8.4 Participation in training seminars on integrating sex/gender analysis methods, by gender and field of research (SIRES4)

Description	Based on the signed participant lists, the indicator measures the development of **numbers of participants or applicants** in internal training seminars or on the use of sex/gender analysis methods, as well as the ratio of female and male attendees towards more gender balance (40%), per field of research.
Rationale	In order to support researchers to develop gender literacy, the facilitation of training seminars in the use of sex and gender analysis methods is considered as a powerful instrument.
Target Value	The ratio of female and male participants who attended internal training seminars on the use of sex/gender analysis methods has developed towards more gender balance (40%).

Definition	1. Existence of the **provision** of trainings seminar on integrating sex/gender analysis.
	2. **Share** of women and men attending training seminars on the use of sex/gender analysis methods, by **field of research**:
	  a. Natural sciences
	  b. Engineering and technology
	  c. Medical sciences
	  d. Agricultural sciences
	  e. Social sciences
	  f. Humanities

Data needed / Question(s)	1. *Is/are training seminar(s) on integrating the sex/gender dimension into research analysis provided?* 2. *If yes, how many women and men participated in these training seminars, per field of research?*

	Women	Men
Natural sciences	F_1	M_1
Engineering and technology	F_2	M_2
Medical sciences	F_3	M_3
Agricultural sciences	F_4	M_4
Social sciences	F_5	M_5
Humanities	F_6	M_6
TOTAL	$F_7 = \sum_{i=1}^{6} F_i$	$M_7 = \sum_{i=1}^{6} M_i$

Answer categories	1. "Yes" or "no" 2. absolute numbers
Time Reference	Last calendar year
Data Source	Signature lists of internal training seminars on the use of sex/ gender analysis methods
Type of Indicator	Process

Specification	The answer to question 1, x_1 might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_1) := \begin{cases} 1, & x_1 = "yes" \\ 0, & x_1 = "no" \end{cases}$.

$$f(F_i, M_i) = \begin{cases} 0, & F_i = 0 \wedge M_i = 0 \\ \begin{cases} 1, & 0.4 \leq \dfrac{F_i}{F_i + M_i} \leq 0.6 \\ 2 * \dfrac{F_i}{F_i + M_i}, & 0.4 > \dfrac{F_i}{F_i + M_i} \\ 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), & 0.6 < \dfrac{F_i}{F_i + M_i} \end{cases} & otherwise \end{cases}$$

$$SIRES4 = \begin{cases} 0, & \sum_{i=1}^{7} \mathbb{1}(F_i > 0 \wedge M_i > 0) = 0 \\ \left.\sum_{i=1}^{7} f(F_i, M_i) \middle/ \sum_{i=1}^{7} \mathbb{1}(F_i > 0 \wedge M_i > 0)\right., & otherwise \end{cases}$$

8.5 Sex and/or gender analysis as requirements in RPO's internal calls (SIRES5)

Description	This indicator looks how widespread requirements of descriptions of how sex and/or gender analysis are taken into account is implemented in RPO's internal calls for project.
Rationale	The European Commission states, *"The gender dimension (…) enhances the societal relevance of the produced knowledge, technologies and innovations. It also contributes to the production of goods and services better suited to potential markets. To support this process, it is essential to devote resources to the gender aspects of research."*[8]
Target Value	In the RPO's internal calls for projects the requirement for description of how sex and/or gender analysis is addressed and widely established.
Definition	Existence of the **requirements** in internal calls for research proposals to describe how sex/gender analysis is taken into account (see the Horizon2020 proposal template).
Data needed / Question(s)	*In RPO's calls for projects, is it required to describe in the research proposal how sex and/or gender analysis is taken into account?*
Answer categories	*"yes" or "no"*
Time Reference	Last calendar year
Data Source	Project evaluators
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIRES5 = \mathbb{1}(x)$$

[8] Source: EC Gender Advisory Group (2015): For a better integration of the gender dimension in Horizon 2020 Work Programme 2016-2017

http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=18892&no=1 (25-05-2016)

8.6 Research presentations at international level, by gender (SIRES6)

Description	This indicator looks at the share of female and male researchers who presented their research results at international level.
Rationale	Career progression nowadays depends a lot on researcher's international reputation. However, women's careers are still characterized by vertical and horizontal segregation, which in effect influences their international standing.
Target Value	The ratio of female and male researchers who presented their research results at international level has developed towards more gender balance (40%) over time.
Definition	Share of women and men who presented their research results at international level.
Data needed / Question(s)	

	Women	Men
What is the number of women and men who presented their research results at international level?	F	M

Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Research & Innovation Support Offices
Type of Indicator	Process
Specification	

$$SIRES6 = \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2*\dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M} \\ 2*\left(1-\dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$

8.7 Co-authored articles in scientific publications (SIRES7)

Description	This indicator looks at the number of researchers who have published co-authored articles in scientific publications.
Rationale	She Figures states: *In recent years, women in the EU-28 have been significantly under-represented in research (scientific publications) & innovation outputs (patents).*
Target Value	The ratio of female and male researchers who published co-authored articles in scientific publications has developed towards more gender balance (40%) over time.
Definition	Share of women and men who have published co-authored articles in scientific publications
Data needed / Question(s)	<table><tr><td></td><td>Women</td><td>Men</td></tr><tr><td>What is the number of women and men who have published co-authored articles in scientific publications?</td><td>F</td><td>M</td></tr></table>
Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Library
Type of Indicator	Process
Specification	$$SIRES7 = \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M} \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$

8.8   Single authored articles in scientific publications (SIRES8)

Description	This indicator looks at the number of researchers who have published single authored articles in scientific publications.
Rationale	She Figures states: *In recent years, women in the EU-28 have been significantly under-represented in research (scientific publications) & innovation outputs (patents).*
Target Value	The ratio of female and male researchers who published single authored articles in scientific publications has developed towards more gender balance (40%) over time.
Definition	Share of women and men who have published single authored articles in scientific publications
Data needed / Question(s)	<table><tr><td></td><td>Women</td><td>Men</td></tr><tr><td>What is the number of women and men who have published single authored articles in scientific publications?</td><td>F</td><td>M</td></tr></table>
Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Library
Type of Indicator	Process
Specification	$$SIRES8 = \begin{cases} 1, & 0.4 \leq \dfrac{F}{F+M} \leq 0.6 \\ 2 * \dfrac{F}{F+M}, & 0.4 > \dfrac{F}{F+M} \\ 2 * \left(1 - \dfrac{F}{F+M}\right), & 0.6 < \dfrac{F}{F+M} \end{cases}$$

8.9 Number of PhD thesis including sex/gender analysis (SIRES9)

Description	This indicator measures the development of PhD theses including sex/gender variables and / or dealing with sex/ gender specific content in terms percentage of all PhD theses.
Rationale	The European Commission states, "The gender dimension (…) enhances the societal relevance of the produced knowledge, technologies and innovations. It also contributes to the production of goods and services better suited to potential markets. To support this process, it is essential to devote resources to the gender aspects of research."[9]
Target Value	Number of PhD thesis including sex / gender variables and dealing with sex/ gender specific content has increased.
Definition	Number of **PhD theses** including sex/gender variables and / or dealing with sex/ gender specific content.
Data needed / Question(s) / Question(s)	*How many these PhD thesis included sex/gender variables and / or deal with sex/ gender specific content?*
Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	Search in titles, abstracts and keyword of PhD thesis (gender sensitive key word search)
Type of Indicator	Process
Specification	N … Number of PhD thesis including sex / gender variables and dealing with sex/ gender specific content. $$SIRES7 = N$$

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[9] Source: EC Gender Advisory Group (2015): For a better integration of the gender dimension in Horizon 2020 Work Programme 2016-2017

http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=18892&no=1 (25-05-2016)

8.10 Application for the international PLOTINA competition and/or awards for integration of sex/gender variables in research (SIRES10)

Description	This indicator measures: the existence and the sustainability of PLOTINA competition for the best gender aware research case studies, in each RPO at departmental or institutional level, or the existence of prizes acknowledging the research quality resulting from the integration of the sex/gender variables.
Rationale	Given PhD students recognition for excellent gender aware research case studies means for them i) differentiation of the quality of its achievements from others, ii) more visibility, iii) validation and endorsement of the achievement, and iv) has a reinforcing effect to other PhD students to consider also the submission of a gender aware research case study. Likewise is it also an additional activity towards mainstreaming the core values of PLOTINA.
Target Value	1. Sustainable funding of the PLOTINA competition (by an external partner, by the RPO, by both, by others). 2. Number of gender aware research case studies submitted to the PLOTINA competition or to awards increases over years.
Definition	1. Existence of sustainable funding of the PLOTINA competition or of the prizes for the integration of the sex/gender variables; 2. Number of gender aware research case studies submitted to the international PLOTINA competition or to the other prizes by female and male PhD and master students in total AND the share of applications of women and men, per field of science.
Data needed / Question(s) / Question(s)	1. *Is ether the PLOTINA or other competition for integration of gender/sex variables into research sustainably funded?*

	Women	Men
2. How many applications of female and male PhD students were submitted either to the PLOTINA or other competition for the best gender aware research case studies?		
Natural sciences	F_1	M_1
Engineering and technology	F_2	M_2
Medical sciences	F_3	M_3
Agricultural sciences	F_4	M_4
Social sciences	F_5	M_5
Humanities	F_6	M_6
Total	$F_7 = \sum_{i=1}^{6} F_i$	$M_7 = \sum_{i=1}^{6} M_i$

Answer categories	1. "yes" or "no", if yes, *by an external partner?, or by the RPO? Or by both? Or by others?* 2. Absolute numbers
Time Reference	Last calendar year
Data Source	PLOTINA competition jury
Type of Indicator	Process
Specification	The answer to question 1, x_1 might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x_1) := \begin{cases} 1, & x_1 = "yes" \\ 0, & x_1 = "no" \end{cases}$.

$$f(F_i, M_i) = \begin{cases} 0, & F_i = 0 \wedge M_i = 0 \\ \begin{cases} 1, & 0.4 \le \dfrac{F_i}{F_i + M_i} \le 0.6 \\ 2 * \dfrac{F_i}{F_i + M_i}, & 0.4 > \dfrac{F_i}{F_i + M_i}, otherwise \\ 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), & 0.6 < \dfrac{F_i}{F_i + M_i} \end{cases} \end{cases}$$

$SIRES10$

$$= \begin{cases} 0, & \sum_{i=1}^{7} \mathbb{1}(F_i > 0 \wedge M_i > 0) = 0 \\ \left[\mathbb{1}(x_1) + \left(\sum_{i=1}^{7} f(F_i, M_i) \middle/ \sum_{i=1}^{7} \mathbb{1}(F_i > 0 \wedge M_i > 0) \right) \right] / 2, & otherwise \end{cases}$$

8.11 Perception of the gender/sex variables in research contents, by gender (SIRES11)

Description	This indicator looks at the perception of academic staff of the integration of the sex/gender variables in research contents and on the usefulness of that integration in order to increase innovation and excellence.
Rationale	The European Commission states, "The gender dimension (…) enhances the societal relevance of the produced knowledge, technologies and innovations. It also contributes to the production of goods and services better suited to potential markets. To support this process, it is essential to devote resources to the gender aspects of research."[10]
Target Value	Increase of academic staff (all grades) who perceive sex/gender variables in research contents as useful.
Definition	Percentage of members of academic staff that believes that the integration of the sex/gender variables in research contents is useful to increase innovation and excellence.
Data needed / Question(s)	<table><tr><td></td><td>*Women*</td><td>*Men*</td></tr><tr><td>*In your opinion, is the integration of the sex/gender variables in research contents useful to increase innovation and excellence?*</td><td>M_F</td><td>M_M</td></tr></table>
Answer categories	Likert scale for judgement: 1- *Strongly disagree; 2- disagree; 3- neither agree nor disagree; 4- agree; 5- strongly agree*
Time Reference	Gender Audit
Data Source	Survey (It could be conducted within the entire RPO or a representative sample of it)
Type of Indicator	Perception
Specification	M_F, M_M: Median of the interviewed women and men, respectively. The Likert scale entries are standardized as follows $$0 \leq S_{F,M} = (M_{F,M} - 1)/4 \leq 1$$ $$SIRES11 = \left\{ \frac{(S_F + S_M)}{2} + (1 - |S_F - S_M|) \right\}/2$$

[10] Source: EC Gender Advisory Group (2015): For a better integration of the gender dimension in Horizon 2020 Work Programme 2016-2017

http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=18892&no=1 (25-05-2016)

9 Specific indicators within the key area: The integration of gender and sex dimension in teaching curricula

9.1.1 Courses on specific gender dimensions, per field of research (SIINT1)

Description	This indicator measures the existence of courses devoted to gender in different dimensions, for undergraduate students and students on the MA-level, per field of research. For example: history of women, women and literacy, gender accounting, etc.
Rationale	In order to mainstream the gender literacy and - knowledge among students, courses on gender issues for students are a strong instrument.
Target Value	Number of courses for students devoted to the inclusion of sex/ gender variables into research increases over time and these modules are more balanced among the fields of research.
Definition	Number of **courses** devoted to gender issues for both **undergraduates** and students on the **MA-level**, **per field of research**.
Data needed / Question(s)	

How many specific courses devoted to gender issues are available?	Undergraduates	MA-level
Natural sciences	U_1	M_1
Engineering and technology	U_2	M_2
Medical sciences	U_3	M_3
Agricultural sciences	U_4	M_4
Social sciences	U_5	M_5
Humanities	U_6	M_6

Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	RPO teaching programme (key word search in title, content and bibliography of the modules).
Type of Indicator	Process
Specification	$$SIINT1 = \sum_{i=1}^{6} U_i + M_i$$

9.2 Sex/ gender variables in teaching modules/courses, per field of research (SIINT2)

Description	This indicator measures the development in the numbers of teaching modules /courses including sex / gender variables for undergraduate students and students on the MA-level, per field of research.
Rationale	In order to mainstream the gender literacy and - knowledge among students, sex/ gender variables should be embedded in any teaching curricula for students.
Target Value	Number of modules/courses including sex/ gender variables for students increases over time and these modules are more balanced among the fields of research.
Definition	Number of **modules** /courses with integration of sex/ gender variables for both **undergraduates** and students on the **MA-level**, **per field of research**.
Data needed / Question(s)	*How many modules have integrated sex/gender variables?* / *Undergraduates* / *MA-level* (see table below)
Answer categories	absolute numbers
Time Reference	Last calendar year
Data Source	RPO teaching programme (key word search in title, content and bibliography of the modules).
Type of Indicator	Process
Specification	$$SIINT2 = \sum_{i=1}^{6} U_i + M_i$$

How many modules have integrated sex/gender variables?	*Undergraduates*	*MA-level*
Natural sciences	U_1	M_1
Engineering and technology	U_2	M_2
Medical sciences	U_3	M_3
Agricultural sciences	U_4	M_4
Social sciences	U_5	M_5
Humanities	U_6	M_6

9.3 Training seminars or guidelines on integrating sex/gender in teaching curricula (SIINT3)

Description	The indicator looks whether or not internal training seminars or guidelines on how to integrate of sex/gender dimension in teaching curricula exist.
Rationale	In order to foster the integration of sex/gender variables in teaching curricula, trainings seminars or guidelines for teachers are supportive.
Target Value	1. Existence of the **provision** of trainings seminar on the integration of sex/gender variables in teaching curricular. 2. Existence of the provision of guidelines on the integration of sex/gender variables in teaching curricular.
Definition	1. Existence of the **provision** of trainings seminar on the integration of sex/gender variables in teaching curricular. 2. Existence of the provision of guidelines on the integration of sex/gender variables in teaching curricular.
Data needed / Question(s)	1. *Is/Are there a training seminar(s) on the integration of the sex/gender dimension into teaching curricula?* 2. *Are there guidelines on the integration of the sex/gender dimension into teaching curricula?*
Answer categories	1. "Yes" or "no" 2. "Yes" or "no"
Time Reference	Last calendar year
Data Source	HRM
Type of Indicator	Process
Specification	The answer x might be "yes" or "no". The indicator function is used as score function: $\mathbb{1}(x) := \begin{cases} 1, & x = "yes" \\ 0, & x = "no" \end{cases}$. $$SIINT3 = \mathbb{1}(x)$$

9.4   Students attending classes reflecting sex/ gender variables, by gender (SIINT4)

Description	This indicator measures the female share of students attending classes that reflect sex / gender variables
Rationale	In order to improve the gender literacy and - knowledge among students, their participation in teaching classes which reflect on sex/ gender variables is a powerful instrument.
Target Value	The ratio of female and male of undergraduate students and students on the MA-level attending teaching classes including sex/ gender variables has developed towards more gender balance (40%).
Definition	**Number** of female and male **undergraduate** students and students on the **MA-level** enrolled in teaching **classes including sex/ gender variables** AND the **ratio** of female to male students.
Data needed / Question(s) / Question(s)	
Answer categories	Absolute numbers
Time Reference	Last calendar year
Data Source	Enrolment numbers and signature lists (or other that apply); Evaluation questionnaire
Type of Indicator	Process
Specification	

Data needed table:

	Women	Men
1 How many female and male undergraduate students have taken teaching classes including sex/gender variables?	F_1	M_1
2 How many female and male students on the MA-level have taken classes including sex/gender variables?	F_2	M_2

Specification:

$$f(F_i, M_i) = \begin{cases} 0, & F_i = 0 \land M_i = 0 \\ 1, & 0.4 \leq \dfrac{F_i}{F_i + M_i} \leq 0.6 \\ 2 * \dfrac{F_i}{F_i + M_i}, & 0.4 > \dfrac{F_i}{F_i + M_i}, otherwise \\ 2 * \left(1 - \dfrac{F_i}{F_i + M_i}\right), & 0.6 < \dfrac{F_i}{F_i + M_i} \end{cases}$$

$$SIINT5 = \begin{cases} 0, & \mathbb{1}(F_1 > 0 \land M_1 > 0) + \mathbb{1}(F_2 > 0 \land M_2 = 0) \\ \dfrac{f(F_1, M_1) + f(F_2, M_2)}{\mathbb{1}(F_1 > 0 \land M_1 > 0) + \mathbb{1}(F_2 > 0 \land M_2 > 0)}, & otherwise \end{cases}$$

9.5 Perception of the gender/sex variables in teaching programs, by gender (SIINT5)

Description	This indicator looks at the perception of academic staff that believes the integration of gender equality issues in teaching programs is useful to increase gender literacy and knowledge among students.
Rationale	In order to mainstream the gender literacy and knowledge among students, gender equality should be embedded in any teaching curricula for students (undergraduate and MA levels).
Target Value	Increase of academic staff (grade A, B, C) and students (undergraduate and MA levels) who perceive integration of gender equality issues in teaching programs as useful.
Definition	Median of members of academic staff and students that believes the integration of gender equality issues in teaching programs is useful to increase gender literacy among students.
Data needed / Question(s)	*In your opinion, is the integration of gender equality issues in teaching programs useful to increase gender literacy among students?*
Answer categories	*Likert scale of judgement: 1 - Strongly disagree; 2- disagree; 3- neither agree nor disagree; 4- agree; 5- strongly agree*
Time Reference	Gender Audit
Data Source	Survey
Type of Indicator	Perception
Specification	

	Women	Men
In your opinion, is the integration of the sex/gender variables in research contents useful to increase innovation and excellence?	M_F	M_M

M_F, M_M: Median of the interviewed women and men, respectively.
The Likert scale entries are standardized as follows

$$0 \leq S_{F,M} = (M_{F,M} - 1)/4 \leq 1$$

$$SIINT5 = \left\{ \frac{(S_F + S_M)}{2} + (1 - |S_F - S_M|) \right\}/2$$

10 References

[1] EC, 'She Figures Handbook 2015', 2015.
[2] F. Mukhtar, 'Work and personal life integration and job satisfaction among faculty at Iowa State University', Paper 12791, 2012.
[3] EC, 'The European Charter and Code for Researchers', n.y. [Online]. Available: http://ec.europa.eu/euraxess/index.cfm/rights/whatIsAResearcher. [Accessed: 26-Jul-2016].
[4] EC, 'Indicators for promoting and monitoring Responsible Research and Innovation. Report from the Expert Group on Policy Indicators for Responsible Research and Innovation'. Jun-2015.
[5] Deloitte, 'Researchers' Report 2013. Final Report', 2013.