

Project acronym: EFFORTI

Project full title: Evaluation Framework for Promoting Gender Equality in R&I

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Objective: GERI-3-2015, "Evaluation of initiatives to promote gender equality in research

policy and research organisations"

Type of action: RIA

#### **Full List of Indicators**

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#### Indicators distributed per category<sup>1</sup>

C A T E G O R Y

# 1 PERSONNEL

in regard to research organisations, universities, ministries, companies

RESULTS/
POLICY MEASURE
STRATEGIES

INDICATORS AT **TEAM LEVEL** 



ORGANISATIONAL

**LEVEL** 



## POLICY/ COUNTRY LEVEL



#### 1.1 GENDER EQUALITY DIMENSION: POSITION

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions

1.1.1 Increased number of women in academic and

- Composition of academic positions per team (AKKA, LDW, LEAP, NL, Rice, Stanford)
- Number of tenured/tenuretrack/non-tenured faculty (Toolkit)
- Perception of hampering performance due to increased costs of coordination and negotiating
- Horizontal/vertical segregation in positions (AU)
- Relative probability between the ability of men and women to reach a top position (NL)
- Period of time spent in academic positions (LEAP)
- Relative size of business enterprise in R&D sector (FI)
- Models of public involvement in S&T decision-making (MoRRI)
- Horizontal/vertical gender segregation in occupations and in economic sectors (ECNGD, 53)

<sup>&</sup>lt;sup>1</sup> Descriptions of the programmes can be found in the following: Advance IT (Laursen et al. 2015), AKKA (Lövkrona & Widén 2012), Athena SWAN (Munir et al. 2014), AU (Cacace et al. 2015), FI (DFF – Det Frie Forskningsråd 2013a), ECNGD (Reidl et al. 2017b), ESWN (Archie & Laursen 2013; University of Colorado n.d.), Gender-NET (Gender-NET n.d.-b), GenPORT (GenPORT 2016), GPGSR (UAB & EGERA 2016), JR (FFG & BMWA 2008), LDW (Davidson 2013), INTEGER (INTEGER n.d.), LEAP (Hassi & Laursen 2008), Michigan (Stewart, La Vaque-Manty & Malley 2004), MoRRI (MoRRI n.d.; Ravn et al. 2015a; 2015b), NL (Timmers et al. 2010), NZWIL (Harris & Leberman 2012), Rice (O'Brien et al. 2015), Stanford (Stanford University n.d.; Valantine et al. 2014), Toolkit (Frehill et al. 2015), Uppsala (Neu Morén 2012) YDUN (Damvad Analytics 2015).

other RTDI	between diverse members (ESWN,	Cohort/event history analyses of	Distribution of grade A staff across
positions	A4)	tenure and promotion (Toolkit)	age groups by sex (ECNGD, 64)
positions	<ul> <li>Gendered competency expectations</li> </ul>	<ul> <li>Proportion of doctorates becoming</li> </ul>	<ul> <li>Distribution of staff across gender</li> </ul>
	(GenPORT)	professors within a 12-year period	Distribution of staff across gender     Distribution of RFOs across gender
	<ul> <li>Women's participation in paid work</li> </ul>	(VINNMER)	Success rates of men and women
	(MoRRI)	Comparison between the proportion	applicants to positions
	(Worth)	of female faculty during the most	·
		recent academic year to the	Percentage of research evaluation panels in RFOs that included the
		proportion hired in the period of the	target of at least 40 % of
		past 3 years (Michigan)	underrepresented sex in boards
		Rate of change in composition of	(ECNGD, 64)
		faculty (Stanford)	Proportion of women in grade A
		<ul> <li>Number of newly appointed full pro-</li> </ul>	positions (ECNGD, 63)
		fessors (hired or promoted)	Proportion of women grade A staff
		(Stanford)	by main field of science (ECNGD, 63)
		<ul> <li>Encouragement to engage in</li> </ul>	Dissimilarity Index (MoRRI)
		decision-making (LDW)	Glass Ceiling Index (MoRRI)
		Share of female heads of RPOs	Glass Ceiling Index (Morki)     Gender wage gap (Morki)
		(Morri)	<ul> <li>Percentage of member state's</li> </ul>
		<ul> <li>Citizen preferences for active partici-</li> </ul>	funding programmes explicitly
		pation in S&T decision-making	including gender requirements
		(Morri)	(MoRRI)
STRATEGY 2. More	Increase in leadership positions by	Taken up leadership positions such	Measures addressing gender
women in leadership	women who participated in the	as rector, associate professor,	balance in decision-making (ECNGD,
positions	programme (Uppsala, NZWIL)	dean/as-sociate dean, centre	41)
1.1.2 Increased	<ul> <li>Experiences to be sought for</li> </ul>	director, head of department, leader	<ul> <li>Proportion of women heads of insti-</li> </ul>
number of	leadership roles (NZWIL)	of research (AKKA)	tutions in the higher education
women in	readership roles (NEVVIZ)	Composition of boards or	sector (ECNGD, 64)
decision-making		committees (AKKA, Athena SWAN,	<ul> <li>Proportion of women in leadership</li> </ul>
positions		Toolkit)	positions (AU)
F-23.4.0.10		Percentage of professional staff at	Distribution of gender among
		employment levels (NZWIL)	rectors
		<ul> <li>Kinds of leadership roles engaged</li> </ul>	Distribution of gender among
		since the programme (NZWIL)	reviewers
1			

		<ul> <li>Proportion of women on (company) boards, members and leaders (ECNGD, 64)</li> <li>Share of male and female members of boards in largest quoted companies, supervisory board or board of directors (ECNGD, 58)</li> <li>Percentage of women in advisory committees (MoRRI)</li> <li>Percentage of women in expert groups (MoRRI)</li> <li>Percentage of women in proposal evaluation panels (MoRRI)</li> </ul>	<ul> <li>Distribution of gender among heads of review panels</li> <li>Distribution of gender in recruitment or promotion boards</li> </ul>
1.2 GENDER EQU	JALITY DIMENSION: RECRUITMENT	CAPACITY	
STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions  1.2.1 Improved recruitment of talented women	<ul> <li>Number of new hired faculty (Toolkit)</li> <li>Negotiation of job offers (concerning salary, workload, office space) (LEAP)</li> <li>Reaction to female supporting treatment (Athena SWAN, ESWN)</li> </ul>	<ul> <li>Fairness of evaluation (Advance IT)</li> <li>Guidelines for recommendation letters (e.g. content; length; solid recommendation; professional portrayal) (Advance IT)</li> <li>Composition of search committees and applicant pool (Advance IT)</li> <li>Facts about contracts of newly hired faculty (e.g. base salary, funding source, benefits, technical support) (Toolkit)</li> <li>Relation between gender composition and success rate of the candidate pool (Stanford)</li> <li>Share of gender-balanced recruitment committees at RPOs (MoRRI)</li> </ul>	<ul> <li>Openness of labour market for researchers (ECNGD, 6)</li> <li>Degree of institutional autonomy (ECNGD, 6)</li> <li>Sex differences in international mobility of researchers during PhD/in post-PhD careers (ECNGD, 63)</li> </ul>

C A T E G O R Y

# **2** working conditions

## RESULTS/ POLICY MEASURE STRATEGIES

INDICATORS AT

TEAM LEVEL



ORGANISATIONAL LEVEL



POLICY/
COUNTRY LEVEL



#### 2.1 GENDER EQUALITY DIMENSION: WORK-LIFE BALANCE

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions

### 2.1.1 Improved compatibility of family and career

- Extent of experienced work-family conflict (Rice)
- Perceived challenges in balancing private life and work (AKKA, Athena SWAN)
- Satisfaction with current work-life balance (ESWN)
- Perception of influence of career break on career progress (Athena SWAN)
- Ability to balance work-life (LDW)
- Who is entitled to take parental leave (ECNGD, 32)
- Flexibility of parental leave arrangements (ECNGD, 33)
- Average duration of parental leave periods by sex (ECNGD, 36)
- Amount of professional high-quality time (FI)

- On-site child care is seen to reduce job stress (Rice)
- Range of institutional support (childcare; partner/spousal hiring; health accommodations; career planning; etc.) (LEAP)
- Work-life culture points enables work-life balance (family-friendly working conditions; flextime, workfamily policies, etc.) (Athena SWAN)
- Working time culture average working time compared to contracts, all-inclusive contracts, working on weekends, during the night, etc. (JR)
- Opportunity to bring family along during stay abroad (VINNMER)
- Modified duties in response to personal needs (Advance IT)

- Possible duration of maternity leave (ECNGD, 31)
- Possibility of paternity leave (ECNGD, 31)
- Possible duration of parental leave (ECNGD, 32)
- Legal right to reduce working time on request (ECNGD, 35)
- Compensation rate for wages for maternity/parental leave (ECNGD, 34)
- Protection against dismissal (ECNGD, 35)
- Additional paid leave for working parents (ECNGD, 34)
- Who is entitled to take parental leave (ECNGD, 32)
- Flexibility of parental leave arrangements (ECNGD, 33)

2.2 GENDER EQU	Perceived interpersonal conflicts related to family obligations; "mothers leave earlier from work" (HM Government 2016)  ALITY DIMENSION: JOB SATISFACT	<ul> <li>Support for returners (Athena SWAN)</li> <li>Possibility of paternity leave (ECNGD, 31)</li> <li>Share of entitled men and women using parental leave (ECNGD, 35)</li> <li>Regulations and initiatives supporting parents returning to work (ECNGD, 33)</li> <li>Number of sick days (Eurofound 2010)</li> <li>Fluctuation at the department/sex (Griffeth, Hom &amp; Gaertner 2000)</li> <li>Who is entitled to take parental leave (ECNGD, 32)</li> <li>Flexibility of parental leave arrangements (ECNGD, 33)</li> <li>Average duration of parental leave periods by sex (ECNGD, 36)</li> <li>Culture and attitude towards parental leave (AU)</li> <li>Employment by full-time and parttime status, sex (ECNGD, 49)</li> <li>Administrative/organisational practices on space allocation (Toolkit)</li> </ul>	<ul> <li>Average duration of parental leave periods by sex (ECNGD, 36)</li> <li>Employment rate by age of children and sex (ECNGD, 46)</li> </ul>
strategy 1. More women in R&D  2.2.1 Appropriate respect/recognition for (academic/	<ul> <li>Range of respect by boss/colleagues/ students (ESWN)</li> <li>Perception by others as a legitimate scholar (LEAP)</li> <li>Changes in salary and position from entry to exit/current position (JR)</li> </ul>	<ul> <li>Award or honour by institution (Toolkit)</li> <li>Events to create visibility and credibility and specific types of recognition for women (Advance IT, AKKA)</li> </ul>	<ul> <li>General gender pay gap (ECNGD, 62)</li> <li>Gender pay gap in RTDI (ECNGD, 62)</li> </ul>

scientific/leader-	Transparent promotion system (van	Transparent promotion system (yes)	
ship) work	<ul> <li>Transparent promotion system (van den Brink et al. 2010)</li> </ul>	<ul> <li>Transparent promotion system (van den Brink et al. 2010)</li> </ul>	
Silip) Work	·	den Brillk et al. 2010)	
	Salary compared to colleagues		
	(ESWN)		
	Equality of attention (ESWN)		
	Experienced sex discrimination/		
	sexist remarks (ESWN)		
STRATEGY 1. More	<ul> <li>Satisfaction with career (ESWN)</li> </ul>	<ul> <li>Sense of valuing scholars and</li> </ul>	
women in R&D STRATEGY 2. More	Amount of social interaction in unit/	colleagues (ESWN)	
women in leadership	team (ESWN)	<ul> <li>Perception of people working in the</li> </ul>	
positions	Contribution to scientific field	area of R&I in regard to gender	
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	(ESWN)	equality, e.g. percentage of women	
2.2.2 Positive	Day-to-day intellectual stimulation	in R&I who believe they have equal	
individual job	(ESWN)	opportunities to pursue their	
rating	<ul> <li>Level of funding (ESWN)</li> </ul>	careers in comparison to men	
	Involvement in unit/team decision-	(MoRRI)	
	making (ESWN)	, ,	
STRATEGY 1. More	Perceptions of work climate (Athena	Measures on work	
women in R&D	SWAN)	environment/work practices (LEAP)	
	<ul> <li>Feelings of social isolation (ESWN)</li> </ul>	Cultural/professional features of	
2.2.3 Overall	<ul> <li>Sense of belonging to group (Athena</li> </ul>	work environment (LEAP)	
work climate	SWAN, LDW)	work environment (LLAF)	
STRATEGY 1. More	Sense of community (ESWN)	Change of house and an	A Danas de la
women in R&D	Composition of faculty workload (in	Share of hours spent on      Share of hours spent on	Measures due to labour law (AU)  The second of the se
	terms of number of taught courses	research/teaching/other activities	Time spent on unpaid work (ECNGD, 20)
2.2.4 Allocation	and supervised graduate students)	per sex (AU)	39)
of workload	(Toolkit)	Measures led to renegotiation of	Actual weekly working hours of full-
	Workload by gender (AU)	workload (LDW)	time employed persons in
	Main differences of working hours	Guidelines on how to argue a	academic/ scientific professions by
	between men and women in full-	release from one kind of activity (for	gender and country (ECNGD, 60)
	time employment (ECNGD, 59)	example teaching) to focus on	Actual weekly working hours of full-
		research (LEAP)	time employed persons in
			leadership positions by gender and
			country (ECNGD, 60)

2.3 GENDER EQU	2.3 GENDER EQUALITY DIMENSION: COMPETITIVENESS/PROMOTION AND CAREER			
strategy 1. More women in R&D strategy 2. More women in leadership positions  2.3.1 Transparent, non- biased and flexible promotion/ tenure criteria	<ul> <li>Diversity in team structure concerning tenure (Toolkit)</li> <li>Career opportunities (ECNGD, 61)</li> </ul>	<ul> <li>Contracts take major life events into account (e.g. child birth) (Advance IT, VINNMER)</li> <li>Flexibility in promotion policy (Athena SWAN)</li> <li>Assessment of number of submitted tenure applications and number of awarded tenures (Toolkit)</li> <li>Assessment of number of promotion applications and number of admissions (Toolkit)</li> <li>Assessment of fixed-term contracts vs. permanent positions/contracts (ECNGD, 61)</li> <li>Transparent promotion system (van den Brink et al. 2010)</li> </ul>		
strategy 2. More women in leadership positions  2.3.2 Strengthened confidence for promotion and responsible positions  2.3.3 Improved support to advance research career	<ul> <li>Knowledge of criteria for promotion (Athena SWAN)</li> <li>Rating of obstacles to get promotion/responsible position (ESWN)</li> <li>Rating of own contribution (ESWN)</li> <li>Awareness of research opportunities (Athena SWAN)</li> <li>Confidence in own ability (Athena SWAN)</li> <li>Revisions of career plan (VINNMER, LDW)</li> <li>Considerations about leaving current positions (Athena SWAN)</li> <li>Number of participants promoted after the programme (NZWIL)</li> </ul>	<ul> <li>Existence of rewards and incentives (Athena SWAN)</li> <li>Received personal and professional support from institution (VINNMER)</li> <li>Extent of support and encouragement from institution to adopt and enact the content of promotion programmes (Uppsala)</li> <li>Implementation of new tasks/respon-sibilities (VINNMER, LDW)</li> <li>Development of the number and proportion of women ISCED 5 graduates within a certain period of time (ECNGD, 44)</li> </ul>	<ul> <li>Awareness of gender-specific knowledge (AU)</li> <li>Participation of women and men in RTDI (ECNGD, 50)</li> <li>Gender-specific research funding programme in place (Gender-NET)</li> <li>Proportion of scientists and engineers (ECNGD, 15)</li> <li>Share of ISCED 6 STEM graduates in the whole population (ECNGD, 14)</li> <li>Share of tertiary educated population among the group of 25 to 34 years old by sex (ECNGD, 18)</li> </ul>	

	<ul> <li>Change in motivation to invest more effort in scientific career (Uppsala)</li> <li>Perception of own improvement of profession (Uppsala)</li> <li>Description of academic future (Uppsala)</li> <li>Perceived challenges to get a scientific position (Athena SWAN)</li> <li>Possibility to approach senior staff for assistance and tips (measuring the confidence) (LDW)</li> <li>Acts of support through upper manager (NZWIL)</li> <li>Received personal and professional support from unit/team (VINNMER)</li> <li>Experienced extent of support and encouragement from unit/team to adopt and enact the content of promotion programmes (Uppsala)</li> </ul>	<ul> <li>Development of the proportion of wo-men ISCED 6 graduates (ECNGD, 44)</li> <li>Development of the number and proportion of women ISCED 6 graduates differentiated by field of study (ECNGD, 44)</li> <li>Development of the proportion of women ISCED 6 graduates differentiated by narrow fields of study (ECNGD, 45)</li> <li>Employment rate by sex (ECNGD 46)</li> <li>Distribution of researchers across economic activities (NACE Rev. 2) in the business enterprise sector, by sex (ECNGD, 57)</li> </ul>	
2.4 GENDER EQU	ALITY DIMENSION: WORKPLACE		
STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions	<ul> <li>Perceived space allocation of faculty (Toolkit)</li> <li>Access to necessary facilities and work space (VINNMER)</li> </ul>	<ul> <li>Parking for pregnant women (AU)</li> <li>Study of actual space allocation of faculty at organisational level (access to the lab, square footage,</li> </ul>	
2.4.1 Equal work- space/facilities	<ul> <li>Ranking of workplaces' quality (Toolkit)</li> <li>Gender resource gap</li> </ul>	proximity to electrical power, years since last renovation, services) (Toolkit)	

of faculty (Toolkit)

• Study of perceived space allocation

• Gender resource gap

allocation

C A T E G O R Y

## **3** PROFESSIONAL CAPABILITIES

## RESULTS/ POLICY MEASURE STRATEGIES

INDICATORS AT

TEAM LEVEL



ORGANISATIONAL LEVEL



POLICY/
COUNTRY LEVE



#### 3.1 GENDER EQUALITY DIMENSION: LEADERSHIP

STRATEGY 2. More women in leadership positions

- 3.1.1 Increased confidence and ability of leader-ship roles
- Ability to apply and exercise learned leadership skills (LDW, Uppsala)
- Attractiveness and personal motives to take up leadership positions (AKKA)
- Growth of knowledge about local leadership and organisation culture (LDW)
- Perception of own role being a leader concerned with supporting women's opportunities (LDW)
- Contribution to the participant's self-perception as a primary investigator/project leader (YDUN)
- Tangible examples of leadership development skills in daily work (Uppsala)
- Visibility in the unit/team (AKKA)

- Implementation of leadership development programme (VINNMER)
- Assessing deans/chairs/committee leaders by assessment criteria, professional requirements, stereotypes (Advance IT)
- Organisational views of the advance-ment of women by structural features (Athena SWAN)
- Mentoring system from the very beginning when one enters the organisation (NaTE)
- Visibility of women at the university/ organisation (AKKA)
- Share of projects directed by women (LDW)

- Women with leadership positions (AU)
- Visibility of women at national level (AU)

3 2 CENDER FOL	<ul> <li>Strength of identification as a female leader (Uppsala)</li> <li>Increased self-awareness (Uppsala)</li> <li>Contributed to and/or leading meetings (LDW)</li> <li>Initiation/involvement in projects (LDW)</li> </ul> JALITY DIMENSION: PROFESSIONAL	I ACHIEVEMENTS	
STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions  3.2.1 Increased professional development of work skills (for career success)	<ul> <li>Time management improvement (ESWN)</li> <li>Building/extension of network and its usage to advance career (ESWN)</li> <li>Development of long-term career plan (ESWN)</li> <li>Improved ability to manage budgets (ESWN)</li> <li>Deepening of knowledge of own discipline (ESWN)</li> <li>Clarity about own value as a scientist (ESWN)</li> <li>Encouragement to undertake further training and pursue personal develop-ment opportunities (Athena SWAN)</li> <li>Knowledge about own career path and potential obstacles (ESWN)</li> <li>Knowledge about leadership and university governance (AKKA)</li> <li>Improved understanding of different departments'/sections' culture and procedures (AKKA)</li> <li>Improved negotiation skills (ESWN)</li> </ul>	<ul> <li>Availability of positions in the organisation (AU)</li> <li>Support and opportunities to publish (AU)</li> <li>Availability of training and workshops (Advance IT)</li> <li>Support to management of grant writing (Advance IT)</li> </ul>	<ul> <li>Availability of positions in the RTDI system (AU)</li> <li>Availability of research grants (AU)</li> <li>Availability of grants for staying abroad (AU)</li> <li>Availability of publishing grants (AU)</li> </ul>

	<ul> <li>Improved voicing of opinion/confidence to argue one's position (ESWN)</li> </ul>		
	<ul> <li>Confidence and preparedness in long-and short-term goals/path (ESWN)</li> </ul>		
	<ul> <li>Ability to identify and access mentors (ESWN)</li> </ul>		
	<ul> <li>Improved self-promotion skills (ESWN)</li> </ul>		
	<ul> <li>Supervising/mentoring others (ESWN)</li> </ul>		
	<ul> <li>Gaining a research or mission state- ment (ESWN)</li> </ul>		
	<ul> <li>Participation/strategic behaviour in committees (LDW)</li> </ul>		
	<ul> <li>Opportunities for publishing (VINNMER)</li> </ul>		
	<ul> <li>Number and level of career activities: participation in training,</li> </ul>		
	<ul><li>coaching, conferences, etc. (JR)</li><li>Quality of the activities for the</li></ul>		
	<ul><li>support of a scientific career (JR)</li><li>Gender differences in research focus</li></ul>		
STRATEGY 1. More	<ul><li>(FI)</li><li>Ability to create/enhance/sustain</li></ul>	Support to create/sustain networks	
women in R&D STRATEGY 2. More women in leadership	new networks/contacts/ collaborations (AKKA, Athena SWAN,	(AU)  Implementation of mentoring/	
positions	Uppsala)	coaching programmes/sessions	
3.2.2 Improve- ment of network	<ul> <li>Use of mentoring (promoting of career, obtaining of resources, useful</li> </ul>	<ul><li>(Advance IT, Athena SWAN)</li><li>Invitations of visiting scholars</li></ul>	
building and use	<ul><li>advices, etc.) (LEAP)</li><li>Identification of useful local "allies"</li></ul>	<ul><li>(Advance IT, Athena SWAN)</li><li>Invitation of female speakers (AU)</li></ul>	
	in encouraging GE (Michigan)	<ul> <li>Invitation of female panelists (AU)</li> </ul>	

•	Experienced value of the
	opportunity
	to network and discuss with peers
	(NZWIL)

- Value of having a mentor (male/ female) (Rice)
- Benefits of coaching/mentoring (Uppsala)

- Facilitation of informal get-together events (Advance IT, Athena SWAN)
- Existence of women-only groups/ networks (AKKA, Athena SWAN)
- Share of women local researchers who are considered as mentors (LEAP)

#### 3.3 GENDER EQUALITY DIMENSION: AWARENESS OF/COMMITMENT TO GENDER EQUALITY

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions STRATEGY 3. Gender dimension in research content and curricula

### 3.3.1 Increased gender awareness

- Scale of personal commitment to gender diversity (LEAP)
- Scale of empathy (GenPORT)
- Concernment in terms of gender awareness/knowledge (Michigan)
- Motivation and confidence in actively promoting gender equality (Michigan)
- Level of team deference (GenPORT, A23)
- Scale of organisational commitment to gender diversity (measurement through regulations, contracts' reformulation, founding of new initiatives) (AU)
- Perceived commitment of the university/institution to promote equality and diversity (Athena SWAN)
- Raised credibility to former and current GE work (Athena SWAN)
- Establishment of institutional datagathering (Advance IT, AU)
- Effect of data collection on the application process (Athena SWAN)
- Perceived general gender egalitarian-ism (Rice)
- Inclusion of the gender dimension in teaching/curricula (ECNGD, 66)
- Institution's commitment to promote equality and diversity (Athena SWAN)
- Share of staff/researchers who have received training on IGAR (Gender-NET)

- Content and manner of appropriate GE campaigns (AU)
- National R&I strategy/goals per country (ECNGD, 9)
- Equal opportunity/antidiscrimination legislation (ECNGD, 25)
- Overall strategic gender equality policies in RTDI in place (ECNGD, 39)
- Measures addressing GE in scientific careers (ECNGD, 41)
- Measures addressing GE in leadership positions in RTDI (AU)
- Bodies responsible for GE monitoring (AU)

	JALITY DIMENSION: <b>FUNDING TO F</b>	<ul> <li>Budget allocated to GE monitoring (NaTE)</li> <li>Dedicated person/department/team in charge of GE monitoring (NaTE)</li> <li>PROMOTE GE IN TERMS OF</li> </ul>	FEMALE CAREERS
STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions STRATEGY 3. Gender dimension in research content and curricula  3.4.1 Increased funding to promote GE	<ul> <li>Proportion of women receiving a grant (AKKA)</li> <li>Average size of grant distributed by gender (AU)</li> <li>Reasons for potential applicants not to apply/to apply for funding</li> <li>Offers of grants (AU)</li> </ul>	<ul> <li>Grants for early career development (Advance IT)</li> <li>Support for career and life transitions (e.g. returners), fieldwork, conferences, professional development (Advance IT)</li> <li>Proportion of women receiving a grant (AKKA)</li> <li>Offer of grants (AU)</li> <li>Distribution of project funds among men and women (AU)</li> <li>Research Funding Organisations Index (MoRRI)</li> </ul>	<ul> <li>Major funding agencies (national &amp; regional) (ECNGD, 22)</li> <li>Promotion of gender equality as a funding requirement (AU)</li> <li>Existence of formal governance structures for RRI within research funding and performing organisations (MoRRI)</li> <li>Share of research funding and performing organisations promoting RRI (MoRRI)</li> <li>Funder mandates (MoRRI)</li> <li>Share of men and women among applicants (AU)</li> <li>Share of men and women among successful applicants (AU)</li> </ul>

С Α Т Ε G 0 R Υ

# STRUCTURAL FEATURES

#### **RESULTS/ POLICY MEASURE STRATEGIES**

**INDICATORS AT TEAM LEVEL** 



**INDICATORS AT ORGANISATIONAL** 







#### 4.1 GENDER EQUALITY DIMENSION: GENDER EQUALITY CHALLENGES/BARRIERS

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions

#### 4.1.1 Decrease of **GE** barriers

- Perception of a gender-oriented receipt of attention (Athena SWAN)
- Perception of working up effort with respect to gender (Athena SWAN)
- Acknowledgement of gender issues in team (AKKA)
- Acceptance of cultural change (Athena SWAN)
- Value of gender-promoting measures (ESWN)
- Experienced sex discrimination/sexist remarks (ESWN)
- Gender bias in task allocation (Gender-NET)
- Level of visibility (Rice)

- Acknowledgement of gender issues (AKKA)
- Acceptance of cultural change (Athena SWAN)
- **Engagement of decision-makers** (INTEGER)
- Gender monitoring/reporting in regular monitoring instruments (INTEGER)
- Sustainability of gender equality initiatives (Athena SWAN, LDW)
- GE-dedicated administrative staff (Athena SWAN)
- Enacting of policy change (Advance IT)
- Science communication culture (MoRRI)

- Main challenges concerning GE in RTDI (ECNGD, 41)
- Percentage of schools (primary and secondary) that have programmes promoting GE issues in regard to career choices (MoRRI)
- Perception of gender roles in science amongst young people and their parents (MoRRI)
- Percentage of parents who believe their children (daughters) will have equal opportunities to pursue a career in STEM (MoRRI)
- Percentage of research institutions that document specific actions that minimise/reduce barriers in work/environment that disadvantage one sex (e.g. flexibility of working hours) (MoRRI)

		<ul> <li>Citizen science activities in RPOs (MoRRI)</li> <li>RPO support structures for researchers as regards incentives and barriers for data sharing (MoRRI)</li> <li>Integration of GE in key performance indicators (KPIs) (FI)</li> <li>Percentage of women taking part in research mobility programmes (MoRRI)</li> </ul>	Share of RPOs with gender in research content (MoRRI)
4.2 GENDER EQU	IALITY DIMENSION: <b>ORGANISATIOI</b>	NAL/CULTURAL CHANGE	
strategy 1. More women in R&D strategy 2. More women in leadership positions  4.2.1. Organisational/cultural change with regard to GE	<ul> <li>Perceived extent and pace of cultural change at team level (Athena SWAN)</li> <li>Experience of a cultural shift during career (LDW)</li> <li>Advices to a successful cultural/organisational change (Rice)</li> <li>Rating of communication paths and processes (INTEGER)</li> <li>Rating of transparency regarding decision-making bodies and criteria (Athena SWAN)</li> </ul>	<ul> <li>Establishment of gender equality structures and procedures (Gender-NET)</li> <li>Perceived extent and pace of cultural change at organisational level (Athena SWAN)</li> <li>Adaptations in guidelines, employee rights, spousal appointments (Rice)</li> <li>Capacity building as to GE (e.g. career development centre) (AU)</li> <li>General organisational consciousness and messages with symbolic value (Advance IT)</li> <li>Assessment of the effectiveness of existing equal opportunity/antidiscrimination legislation/measures (ECNGD, 28)</li> <li>Adoption of GE plans (ECNGD, 44)</li> <li>Ethics at the level of universities/RPOs (MoRRI)</li> </ul>	<ul> <li>Perceived extent and pace of cultural change at policy level (Athena SWAN)</li> <li>Ministries responsible for R&amp;I and GE (ECNGD, 21)</li> <li>Structures for GE (ECNGD, 26)</li> <li>Relevant policy initiatives to foster equality (ECNGD, 26)</li> <li>Policy-oriented engagement with science and GE (MoRRI)</li> <li>Percentage of RPOs that document specific actions aiming to change aspects of their organisational culture that reinforce gender bias (MoRRI)</li> </ul>

#### 4.3 GENDER EQUALITY DIMENSION: PREFERENTIAL TREATMENT

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions STRATEGY 3. Gender dimension in research content and curricula

#### 4.3.1 Equal treatment

- Perception of preferential treatment such as advice, access to lab or equip-ment, resources, recruitment, pro-motion, attention to meetings (Athena SWAN, ESWN)
- Perception of likelihood of male/female success in academia (Athena SWAN)
- Amount of free time, i.e. highquality time for the researcher to stimulate ideas, discussion, etc. (FI)

- GE unit/committee in place (Gender-NET)
- Gender in Research Content unit/ committee in place (Gender-NET)
- Facilitating mobility of female researchers (Gender-NET)

Legislation in place

#### 4.4 GENDER EQUALITY DIMENSION: FUNDING FOR STRUCTURAL TRANSFORMATION

STRATEGY 1. More women in R&D STRATEGY 2. More women in leadership positions STRATEGY 3. Gender dimension in research content and curricula

# 4.4.1 Increased funding to achieve structural transformation

- Proportion of women receiving a grant (AKKA)
- Average size of grant distributed by gender (AU)
- Reasons for potential applicants not to apply/to apply for funding
- Offers of grants (AU)

- Budget spent on GE measures (INTEGER)
- Grants for early career development (Advance IT)
- Support for career and life transitions (e.g. returners), fieldwork, conferences, professional development (Advance IT)
- Proportion of women receiving a grant (AKKA)
- Composition of applicants and those who received funding (YDUN)
- Offer of grants (AU)
- Distribution of project funds among men and women (AU)
- Research Funding Organisations Index (MoRRI)

- Major funding agencies (national & regional) (ECNGD, 22)
- Requirements for funding to promote GE (AU)
- Existence of formal governance struc-tures for RRI within research funding and performing organisations (MoRRI)
- Share of research funding and performing organisations promoting RRI (MoRRI)
- Funder mandates (MoRRI)
- Share of men and women among applicants (AU)
- Share of men and women among successful applicants (AU)

C A T E G O R Y

# 5 RESEARCH & INNOVATION/RRI

## RESULTS/ POLICY MEASURE STRATEGIES

INDICATORS AT

TEAM LEVEL



## ORGANISATIONAL LEVEL



POLICY/
COUNTRY LEVEL



#### 5.1: RESEARCH AND INNOVATION DIMENSION: RESEARCH OUTPUTS AND IMPACTS

#### 5.1.1 Scientific outputs

- H-index (Campbell et al. 2013, 2–3)
- Number of presentations at conferences
- New, altered or improved research tools and techniques, models and simulations (EC 2016)
- New advanced capabilities, methods, systems, infrastructures and technologies (EC 2016)
- Science prizes/rewards (WR)
- Stipends/scholarships/grants (WR)
- Consulting activities (WR)
- Membership in editorial boards/editors (WR)
- License income (patent, software, know-how, patents, trademarks)
   (WR)

- Percentage of publications from projects which are among the top 1 % highly cited (EC 2015b)
- Number of publications in peerreviewed high impact journals (EC 2015b)
- Percentage of publications published in the top 10 % impact ranked journals (EC 2015b)
- Publications' interdisciplinarity (FI)
- Number of citations/field-specific citation rates (FI)
- Percentage of women that are first authors of research papers (EC 2015a)
- Conferences/workshops papers and proceedings (EC 2016)

- Publications' interdisciplinarity (FI)
- Number of citations (FI)
- Country's share of publications (ECNGD, 6)
- Number and share of female authors (MoRRI)
- Scientific breakthroughs spurring innovation across sectors (EC 2016)
- Emergence of new technologies or fields of science in the EU (EC 2016)
- EU world-class excellence in science (EC 2016)
- Number of scientific papers in relation to the population size (ECNGD, 17)

5.1.2 Networks	<ul> <li>Scientific collaboration across disciplines on new, high-risk ideas (EC 2016)</li> <li>Cross-country (also beyond EU) and cross-disciplinary research and innovation networks (incl. SMEs) (EC 2016)</li> </ul>	<ul> <li>Publication's international collaboration (FI)</li> <li>Number and percentage of joint public-private-publications out of all publications (EC 2015b)</li> </ul>	<ul> <li>Publication's international collaboration (FI)</li> <li>Percentage of international scientific co-publications (ECNGD, 6)</li> <li>Public-private co-publications (ECNGD, 6)</li> <li>Stronger pan-European collaboration across disciplines, sectors, value chains and technology levels (EC 2016)</li> </ul>
5.1.3 Training/ human capital  5.1.4 Strengthened R&I capacities/excell		Researchers trained (inc. PhD, post-docs, gender-balanced) (EC 2016)	<ul> <li>Improved attractiveness of researchers' careers across the EU (EC 2016)</li> <li>Strengthened human potential in R&amp;D in business and academia (incl. gender balance) across EU countries</li> <li>Reputation and excellence of Europe in scientific and technological research (modernisation of research institutions, vitality of research</li> </ul>
ence			environment, quality of research outputs in basic and applied research) (EC 2016)
5.1.5 Research priorities and outcomes in terms of GE	<ul> <li>Personal experience and interests (Stanford)</li> <li>Beliefs and unconscious assumptions (Stanford)</li> <li>Women's perception of their ability to be an entrepreneur and to hold themselves to a stricter standard of competence (FI, A29)</li> <li>Women's perception to hold themselves to a stricter standard of competence (FI, A29)</li> <li>Degree of fear of failure (FI, A28)</li> </ul>	<ul> <li>Professional career tracks and standards for promotion (Stanford)</li> <li>Turnover at RPOs (FI, A7)</li> <li>Composition of gendered product development (FI, A7)</li> </ul>	<ul> <li>Initiatives of public and private funders and other stakeholders (Stanford)</li> <li>Industrial funding and lobbying (Stanford)</li> <li>Military funding priorities and lobbying (Stanford)</li> <li>Health funding priorities and lobbying (Stanford)</li> <li>Regulatory environment (Stanford)</li> </ul>

			<ul> <li>Market research on competitors or particular market segments (Stanford)</li> <li>Configuration of academic disciplines (Stanford)</li> <li>Political and cultural initiatives and movements (Stanford)</li> <li>RTDI tax incentives (ECNGD, 9)</li> <li>Expenditures on RTDI sector in comparison to remaining sectors by public sector/domestic business (ECNGD, 7)</li> <li>Share of research projects with specific GE actions (MoRRI)</li> </ul>
5.2 RESEARCH A		ATION OUTPUTS AND IMP OLOGICAL IMPACTS)	ACTS (INCL.
5.2.1 Conventional innovation indicators	<ul> <li>Joint databases, platforms, testbeds (EC 2016)</li> <li>New common methodologies (EC 2016)</li> <li>Technology roadmaps (EC 2016)</li> <li>New or improved standards (EC 2016)</li> <li>Proof of scientific and technological feasibility (EC 2016)</li> <li>Awareness of market and end-user needs (EC 2016)</li> <li>Demonstrators of innovative solutions</li> <li>Business plans (EC 2016)</li> <li>New context-adapted solutions (technological and nontechnological, e.g financial,</li> </ul>	<ul> <li>Number of patent applications (EC 2015b)</li> <li>Number of awarded patents (EC 2015b)</li> <li>Number of patent applications by theme (EC 2015b)</li> <li>Number of awarded patents by theme (EC 2015b)</li> <li>New products, processes, and methods launched into the market (EC 2015b), according to societal challenges</li> <li>Improved products, services, processes launched onto the market (EC 2015b)</li> <li>Standardisation/norm-setting (Horvat 2011)</li> </ul>	<ul> <li>Women's representation among inventors in Europe (FI)</li> <li>RTDI expenditures in the business sector (ECNGD, 6)</li> <li>Community designs (ECNGD, 6)</li> <li>Community trademarks (ECNGD, 6)</li> <li>Number of patents per inhabitant/citizen (ECNGD, 18)</li> <li>Number and share of female inventors (MoRRI)</li> <li>Better innovation capability of EU firms (EC 2016)</li> <li>Number of young patenting firms per GDP</li> </ul>

	regulatory or business models) (EC 2016)  Innovative processes, products and service delivery systems (EC 2016)  Projects having sought additional or follow-up funding – private or public – incl. from regional/national schemes (EC 2016)	<ul> <li>New instruments/demonstrators</li> <li>Industrial spill-overs</li> <li>Spin-offs (WR)</li> <li>Set-up of knowledge and innovation communities gathering research, innovation and higher education (EC 2016)</li> <li>Networks of developers, providers and users of solutions involved in cocreation (value chain) (EC 2016)</li> <li>Private companies introducing innovations (self-reporting (yes/no) of participating firms, based on a common definition of "innovations new to the company or the market") (EC 2015b)</li> <li>Number and percentage of participating SMEs that have introduced innovations to the company or the market (EC 2015b)</li> <li>New, altered or improved ideas, products, designs, processes, services and business models (EC 2016)</li> <li>Turnover from innovation; sales of new to market and new to firm innovations (Fan)</li> <li>License and patent revenues from abroad (Fan)</li> </ul>	
5.2.2 Diffusion of innovation in products, services, processes			<ul> <li>Portfolio of demonstrated replicable, up-scalable and "contextualisable" innovative solutions (EC 2016)</li> <li>All forms of innovation that enable the transition to more sustainable</li> </ul>

		economies fostered, incl. through
		digital systems (EC 2016)
		<ul> <li>Improved market uptake and</li> </ul>
		replication of tested technologies
		(EC 2016)
		<ul> <li>Solutions brought closer to market</li> </ul>
		(increase in technology readiness
		level) (EC 2016)
		<ul> <li>Improved cost-effectiveness and</li> </ul>
		sustainability of solutions (EC 2016)
		<ul> <li>Improved manufacturing processes</li> </ul>
		and equipment of EU industry (EC
		2016)
		Improved time-to-market for
		European manufacturers and service
		providers (EC 2016)
		Improved sustainability across the
		entire product-service lifecycle (EC
		2016)
		Increased digitisation of industry and
		economy (EC 2016)
		New and better product-service
		offerings addressing customer needs
		(EC 2016)
		Creation of smart global value chains
		that enable value capture to Europe
		(EC 2016)
5.2.3		Innovations and technologies serving
Incorporation of		certain groups of women or men
knowledge about		more than others (Stanford)
sex and gender into engineering		Development of user-driven innova- tion (design innovation (JR, A22))
innovation		tion/design innovation (JR, A33)
processes		Degree of competition by image sha- ping by goodered productivity (IP)
processes		ping by gendered productivity (JR, A33)
		нээј

5.3 RESEARCH AND INNOVATION DIMENSION: ECONOMIC OUTPUTS AND IMPACTS (INCL. ENTRPRENEURSHIPS)			
5.3.1 Economic impacts		<ul> <li>Growth and job creation in participating SMEs (EC 2015b)</li> <li>Turnover of company, number of employees (EC 2015b)</li> </ul>	<ul> <li>EU technological leadership &amp; strengthened competitive position of European industry (incl. SMEs, start-ups) (EC 2016)</li> <li>Diffusion of innovation in the economy (incl. in SMEs) generating jobs, growth and investments (EC 2016)</li> <li>Share of enterprises cooperating with academia (e.g. patents filed by unis and public labs per GDP) (Fan)</li> </ul>
5.3.2 Entrepreneurship		<ul> <li>Risk finance – total investments mobilised via debt financing and venture capital investments (EU 2015b)</li> <li>Number of business ideas incubated (EU 2015b)</li> </ul>	<ul> <li>Share of women founding a company (FI)</li> <li>Average number of full-time equivalents in women-owned businesses (FI)</li> <li>Employment in fast-growing firms of innovative sectors (Fan)</li> <li>Ease of entrepreneurship index (Fan)</li> <li>Venture capital investments per GDP (Fan)</li> <li>Innovative enterprises as percentage of total enterprises by size and type of innovation (Fan)</li> </ul>
5.3.3 Strengthened framework conditions for R&I			<ul> <li>Leveraged private and public investment in R&amp;I (EC 2016)</li> <li>Leveraged demand for solutions for tackling societal challenges (EC 2016)</li> <li>More innovation-conducive regulatory frameworks (EC 2016)</li> </ul>

			<ul> <li>Innovative financing, business and governance models for innovative solutions adopting transdisciplinary and participatory approaches and promoting citizens' engagement (cocreation processes) (EC 2016)</li> <li>Increased availability of debt &amp; equity finance for R&amp;D and innovation-driven companies (EC</li> </ul>
5.3.4 Jobs, growth & competitiveness of participants (incl. SMEs)			<ul> <li>Enhanced innovation capability and competiveness of European enterprises in global market for innovative solutions (esp. SMEs) (EC 2016)</li> <li>Jobs maintained and created in business and academia (EC 2016)</li> <li>New business entities created or improved performance of existing businesses (EC 2016)</li> <li>Opening up of new markets for participants (EC 2016)</li> <li>Growth &amp; internationalisation of</li> </ul>
<b>5.4</b> GENDER EQU	ALITY DIMENSION: <b>GENDER-SENS</b>	ITIVE RESEARCH	participating SMEs (EC 2016)
STRATEGY 1. More women in R&D STRATEGY 3. Gender dimension in research content and curricula  5.3.1 Achieved gender equality in research process	<ul> <li>Gender balance in research team/research team composition (GPGSR, 9)</li> <li>Number of projects lead by women (GPGSR, 9)</li> </ul>	<ul> <li>Research includes or fosters participation of all agents in the process of investigation (GPGSR, 11)</li> <li>Equitably published results to ensure a balance of authorship in research (GPGSR, 12)</li> <li>Measures for research team-building and their regularity (JR)</li> </ul>	Awareness of and support to gender-sensitive research at system level (research councils, other RFOs) (AU)

STRATEGY 3. Gender	Research question has been	Percentage of research projects	Share of research projects with
dimension in research content and curricula	delimited (Stanford)	inclu-ding gender analysis/gender	gender dimension in content
content and carricula	,	dimen-sions in the content of	(MoRRI)
5.3.2 Research		research (MoRRI)	Share of RFOs promoting gender
quality:		Scientific production infused with	con-tent in research (MoRRI)
integration of the		power relations and based on hierar-	Share of gender-balanced research
gender		chical relationships between	evaluation panels in RFOs (MoRRI)
dimension/persp		different fields of knowledge	Percentage of research institutions
ective in research		(GPGSR, 6)	that provide training/support for re-
and content, in		Gender, sexuality and the body are	searchers in regard to the inclusion
research projects,		part of the processes of control in	of gender dimension in the content
patents, and		work organisations, especially of	of research (EC 2015a)
agreements		women (GPGSR, 6)	Competitive advantage through in-
		<ul> <li>Issues related to procreation and</li> </ul>	creased usability of products (FI,
		emotions are abandoned and ex-	A32)
		cluded (GPGSR, 6)	Measures addressing the integration
		<ul> <li>Reconsiderations of the significance</li> </ul>	of gender dimension in research
		of scientific validity in order to	(ECNGD, 42)
		visibilise hidden hierarchy of	
		organisations (GPGSR, 6)	
		<ul> <li>Importance in scientific analyses to</li> </ul>	
		attach to everything related to	
		gender inequalities and power	
		relationships (GPGSR, 6)	
		Gender appears in studies of any	
		subject (GPGSR, 6)	
		The project's title in terms of gender	
		and gender equality to describe	
		project (GPGSR, 9)	
		Existence/absence of knowledge on	
		sex and gender in research field	
		(GPGSR, 10)	
		Definition of research priorities con-	
		sidering who will benefit/be ignored	
		by research projects (GPGSR, 10)	

		<ul> <li>Sample composition by sex (GPGSR, 11)</li> <li>Needs and expectations of research subjects as well as power relationships and gender assumptions (of research-ers and research subjects) have been considered and included (GPGSR, 10)</li> <li>Sex differences have been analysed (GPGSR, 11)</li> <li>Other "biological and socio-cultural" differences have been taken into account (GPGSR, 11)</li> <li>Analysis of gender has been set out and clearly explained in the dissemination of research results (GPGSR, 12)</li> <li>Gender-neutral, non-sexist language is used (GPGSR, 12)</li> <li>Active information search about controversial technology (Meijer et al. 2016)</li> </ul>	
strategy 3. Gender dimension in research content and curricula  5.3.3 Making of contributions to strengthening gender-sensitive research	<ul> <li>People/employees feel empowered making research more participatory, creative and inclusive (GPGSR, 7)</li> <li>Perception of improvement of people's and social groups' lives (GPGSR, 7)</li> <li>Perception of rebalancing power especially in relation to women at team level (GPGSR, 7)</li> </ul>	<ul> <li>Perception of rebalancing power, especially in relation to women at organisational level (GPGSR, 7)</li> <li>Level of scientific reflection of research projects (GPGSR, 7)</li> <li>Level of taking the role of the researchers and their relationship with their participants into account (GPGSR, 7)</li> <li>Research tools are adapted to the subject's language and worldview (GPGSR, 7)</li> </ul>	<ul> <li>Perception of rebalancing power, especially in relation to women at country level (GPGSR, 7)</li> <li>Increase of scientific knowledge about gender (GPGSR, 8)</li> <li>Policy requiring the integration of the gender analysis into research funding programmes in place (Gender-NET)</li> <li>Support to the inclusion of gender contents in research agendas by funders (ECNGD, 65)</li> </ul>

Legal concepts related to gender and Inclusion of the gender dimension in analysis techniques about mainresearch contents (ECNGD, 65) streaming gender perspectives in Relevance of national and regional public policies are included (GPGSR, levels in R&I policy and financing 7) (ECNGD, 23) Senior managers are involved in the Number of programmes which implementation of the policy that include measures aimed at integrates gender analysis into integrating the gender analysis research funding (Gender-NET) (Gender-NET) Number of calls that include dissemi-Number of topics which are gender nation materials and guidelines to flagged/tagged (explicit cross-cutting support applicants in the integration gender analysis) (Gender-NET) of the gender analysis into research Number of calls that include a manproposals (Gender-NET) datory requirement for applicants to Explicit integration of sex/gender indicate whether sex and/or gender analysis as one of the issues to be is relevant to their research proposal monitored in mid-term/final project (Gender-NET) reporting (Gender-NET) Number of calls that include a mandatory requirement for applicants who do not include sex and gender analysis to explain why not (Gender-NET) Number and percentage of proposals submitted that have responded 'Yes' to the sex/gender relevance question (Gender-NET) Number and percentage of 'Yes' respondents to the sex/gender relevance question that: Do not include explicit consideration to sex/gender in the content of the research approach/cycle; Provide inappropriate (inconsistent, apparent) explicit inclusion of sex/gender considerations in the

			research approach/cycle; Appropriately include sex/gender analysis across the research approach/cycle (Gender-NET)  • Amount and percentage of the total call budget spent on projects which include sex/gender analysis (Gender- NET)  • Amount and percentage of overall budget dedicated to enforcing the gender integration in research contents (e.g. gender training, gender experts, gender eligible costs in calls, etc.) (Gender-NET)
5.5 GENDER EQU	IALITY DIMENSION: <b>RESPONSIBLE</b> I	RESEARCH AND INNOVATION	ON (RRI)
5.5.1 Gender equality	<ul> <li>Encouragement of gender-balanced teams in the work environment (MoRRI)</li> <li>Active support of female colleagues within the teams (MoRRI)</li> <li>Considering gender aspects in the research design (MoRRI)</li> <li>Using a gender-sensitive language in publications (MoRRI)</li> <li>Explicitly dealing with gender issues in research projects (MoRRI)</li> <li>Percentage of women participants in [Horizon 2020] projects (EC 2015b)</li> <li>Percentage of women project coordinators [in Horizon 2020] (EC 2015b)</li> <li>Percentage of projects taking into account the gender dimension in</li> </ul>	<ul> <li>Percentage of member state's funding programmes explicitly including gender requirements (EC 2015a)</li> <li>Percentage of research institutions (including universities) that (a) have gender equality plans and (b) provide documentation of their implementation (EC 2015a)</li> <li>Percentage of research institutions that document specific actions that minimise/reduce barriers in work environment that disadvantage one sex (e.g. flexibility of working hours) (EC 2015a)</li> <li>Percentage of research institutions that document specific actions aiming to change aspects of their</li> </ul>	<ul> <li>Share of female heads of RPOs (MoRRI)</li> <li>Share of female researchers by sector (MoRRI)</li> <li>Share of RFOs promoting gender content in research (MoRRI)</li> <li>Dissimilarity Index (MoRRI)</li> <li>Share of RPOs with gender in research content (MoRRI)</li> <li>Glass Ceiling Index (MoRRI)</li> <li>Gender wage gap (MoRRI)</li> <li>Share of female heads of RPOs (MoRRI)</li> <li>Share of gender-balanced recruitment committees at RPOs (MoRRI)</li> <li>Number and share of female inventors and authors (MoRRI)</li> </ul>

research and innovation content (EC 2015b)  organisational culture that reinforce gender bias (EC 2015a)  • Percentage of research institutions that provide training/support for researchers in regard to the inclusion of gender dimension in the content of research (EC 2015a)  • Percentage of schools (primary and secondary) that have programmes promotting gender equality issues in regard to career choices (EC 2015a)  • Percentage of women on advisory committees (EC 2015a)  • Percentage of women in Early for the Country of gender equality issues in regard to career choices (EC 2015a)  • Percentage of women on advisory committees (EC 2015a)  • Percentage of women in expert groups (EC 2015a)  • Percentage of women on proposal evaluation panels (EC 2015a)  • Percentage of women in projects  • Percentage of women in [advisory groups, expert groups (EC 2015b)  • Share of gender-balanced recruitment committees of (MoRRI)  • Share of RPOs with GE play to share of gender of RPOs with GE play to share of gender balanced recruitment committees of (MoRRI)  • Share of RPOs with GE play to share of RPOs with GE pla	groups, dual experts, d of RPOs ans (MoRRI) th organisa- MoRRI) le recruit- icies
<ul> <li>Percentage of research institutions that provide training/support for researchers in regard to the inclusion of gender dimension in the content of research (EC 2015a)</li> <li>Percentage of schools (primary and secondary) that have programmes promoting gender equality issues in regard to career choices (EC 2015a)</li> <li>Percentage of women on advisory committees (EC 2015a)</li> <li>Percentage of women in expert groups (EC 2015a)</li> <li>Percentage of women on proposal evaluation panels, individe etc. (EC 2015b)</li> <li>Share of gender-balanced recruitment committees (MoRRI)</li> <li>Share of RPOs with GE plate (MoRRI)</li> <li>Share of organisations with tonal structures for GE (MoRRI)</li> <li>Share of RPOs with femalement and promotion polic (MoRRI)</li> <li>Gender of individual particular with contact person roles grant agreements (MoRRI)</li> <li>Percentage of women on proposal evaluation panels (EC 2015a)</li> <li>Percentage of women in projects</li> <li>Percentage of women in projects</li> </ul>	dual experts, d of RPOs ans (MoRRI) th organisa- MoRRI) le recruit- icies
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Percentage of women in projects     research participation (Meaning projects)	•
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throughout the whole life cycle (in  • Female graduates and account of the state of	ademic staff
full-time equivalent) (EC 2015a) by grade (MoRRI)	
Percentage of women that are     Development of number of num	
principal investigators on a project researchers in the whole	
(EC 2015a) and its subsectors (ECNGI  • Percentage of research projects	D, 10)
including gender analysis/gender	
dimensions in the content of	
research (EC 2015a)	
Percentage of women taking part in	
research mobility programmes (EC	
2015a)	
5.5.2 Ethics  • Submission of projects to ethical  • Documented change in R&I priorities  • New or improved ethical	standards
reviews) (MoRRI) attributable to appraisal of ethical or guidelines (EC 2016)	
<ul> <li>Conduction of ethical reviews of acceptability (EC 2015a)</li> <li>Ethics at the level of ynive</li> </ul>	ersities
projects (MoRRI)  • Percentage of research proposals for (MoRRI)	
which ethics review/institutional	

5.5.3 Public engagement	<ul> <li>Considering ethical issues when designing research (MoRRI)</li> <li>Contributing to the development of ethical standards (MoRRI)</li> <li>Contributing to training on ethical issues (MoRRI)</li> <li>Information for non-academics about research results through</li> <li>Written outputs (popular science books, chapters, articles in newspapers/magazines/blogs) (MoRRI)</li> <li>public lectures (MoRRI)</li> <li>appearances on TV/radio (MoRRI)</li> <li>science cafés, science festivals, researchers' nights (MoRRI)</li> <li>Involvement of citizens in the following phase(s) of the research by</li> <li>determining what research should be performed (MoRRI)</li> <li>conducting the research (data collection, data analysis) (MoRRI)</li> <li>discussing the consequences of research/its application (including technology assessment) (MoRRI)</li> <li>communicating and disseminating the results of the project (MoRRI)</li> <li>commercialising/exploiting results (Morribation)</li> </ul>	review board clearance process requires substantive changes in grant application or second ethics assessment (EC 2015a)  Public engagement funding percentage from R&I (EC 2015a)  Public influence on research agendas (EC 2015a)  Share of PE in R&I projects based on consultation, deliberation or collaboration (EC 2015a)  Media coverage (EC 2015a)  Media coverage (EC 2015a)  Social media/Web 2.0 attention (EC 2015a)  Museum visits and impacts (on visitors, stakeholders, local communities) (EC 2015a)  Civil society organisation activities and impacts (EC 2015a)  Training of communicators (EC 2015a)  Training of scientists/engineers (EC 2015a)  PR staffing (EC 2015a)  Social scientists' collaboration (EC 2015a)	<ul> <li>National Ethics Committees Index (NEC index) (MoRRI)</li> <li>Research Funding Organisations Index (MoRRI)</li> <li>Models of public involvement in S&amp;T decision-making (MoRRI)</li> <li>Policy-oriented engagement with science (MoRRI)</li> <li>Citizen preferences for active participation in S&amp;T decision-making (MoRRI)</li> <li>Active information search about controversial technology (MoRRI)</li> <li>Public engagement performance mechanisms at the level of research institutions (MoRRI)</li> <li>Dedicated resources for PE (MoRRI)</li> <li>Embedment of PE activities in the funding structure of key public research funding agencies (MoRRI)</li> <li>PE elements as evaluative criteria in research proposal evaluations (MoRRI)</li> <li>R&amp;I democratisation index (MoRRI)</li> <li>National infrastructure for involvement of citizens and societal actors in research and inposention</li> </ul>
	<ul> <li>communicating and disseminating the results of the project (MoRRI)</li> </ul>	<ul> <li>PR staffing (EC 2015a)</li> <li>Social scientists' collaboration (EC</li> </ul>	<ul><li>R&amp;I democratisation index (MoRRI)</li><li>National infrastructure for</li></ul>

	communication company, science museums) (MoRRI)		
5.5.4 Science education	<ul> <li>Work with school pupils (e.g. open days, joint projects) (MoRRI)</li> <li>Development of science education material (e.g. kits, websites, explanatory booklets, DVDs) (MoRRI)</li> <li>Work in partnership with schools and/or teachers (MoRRI)</li> </ul>	<ul> <li>Education institutions/research disciplines: presence of RRI education/training (EC 2015a)</li> <li>R&amp;I project level: encouraging or requiring RRI education/training (e.g. in an integrated ethical, legal and social aspects model) (EC 2015a)</li> <li>Percentage of research projects with at least one educational resource deliverable (EC 2015a)</li> <li>Percentage of research projects involving STEM teachers or students (EC 2015a)</li> <li>Number of projects registered (EC 2015a)</li> </ul>	<ul> <li>Textbook knowledge about science and technology (MoRRI)</li> <li>Share of STEM graduates (MoRRI)</li> <li>Science competence in secondary school pupils (PISA) (MoRRI)</li> <li>School hours in STEM subjects in primary and secondary school (MoRRI)</li> <li>Science communication culture (MoRRI)</li> <li>Science communication budget (MoRRI)</li> <li>Number of science museum visitors per million inhabitants of a country (MoRRI)</li> <li>Strategic approach to citizen science (MoRRI)</li> <li>Citizen science projects (MoRRI)</li> <li>Importance of societal aspects of science in science curricula (MoRRI)</li> <li>EU and national levels: presence of RRI descriptors in the qualification frameworks for lower and higher education (EC 2015a)</li> <li>Science and innovation awarenessraising activities (incl. science shops, science cafés, exhibitions) (EC 2016)</li> </ul>
5.5.5 Open access	<ul> <li>Use of open access publications (MoRRI)</li> <li>Publish open access (green or gold) (MoRRI)</li> <li>Use of publicly available data (MoRRI)</li> </ul>	Percentage of research projects with a virtual environment that is updated and actively used with a threshold frequency (to be defined) (EC 2015a)	<ul> <li>OAL (Open Access Literature)         (MoRRI)</li> <li>Data publications and citations per country (MoRRI)</li> <li>Social media outreach/take up of OAL and open research data (MoRRI)</li> </ul>

	<ul> <li>Providing publicly available data (MoRRI)</li> <li>Implementing research data management plans (MoRRI)</li> </ul>	<ul> <li>Percentage of data repositories that include explanation and commentary to facilitate use (EC 2015a)</li> <li>Percentage of research projects with daily laboratory notebooks online (EC 2015a)</li> <li>Percentage of research projects that report real added value by an open science mechanism (for themselves and/or other actors) (EC 2015a)</li> </ul>	<ul> <li>Public perception of open access (MoRRI)</li> <li>Funder mandates for open access publishing (MoRRI)</li> <li>RPO support structures for researchers as regards incentives and barriers for data sharing (MoRRI)</li> <li>Number of OA journals/publications per country (MoRRI)</li> <li>Number of OA repositories (MoRRI)</li> <li>Open Data Barometer (ODB) (MoRRI)</li> </ul>
5.5.6 RRI/ governance	Percentage of projects where citizens, civil society organisations and other societal actors contribute to the co-creation of scientific agendas and scientific contents (EC 2015b)	<ul> <li>Activities of funders to promote RRI (EC 2015a)</li> <li>Number of funding mechanisms to support RRI activities (EC 2015a)</li> <li>Amount of money invested in RRI projects (EC 2015a)</li> <li>Number of references in applications to RRI (EC 2015a)</li> <li>Number of collaborative RRI projects (EC 2015a)</li> <li>RRI-related training at RPOs (MoRRI)</li> <li>Responsible R&amp;I principles embedded in EU higher education (EC 2016)</li> </ul>	<ul> <li>Identification of formal and informal networks of R&amp;I that promote RRI, at both the national and the EU level (EC 2015a)</li> <li>Involvement of the wider public in RRI debates, measured e.g. through social media (EC 2015a)</li> <li>Involvement of the wider public in RRI policy, the development of policy, protocols (EC 2015a)</li> <li>RRI awareness and support to implementation at system level (AU)</li> <li>Composite indicator of RRI governance (MoRRI)</li> <li>Existence of formal governance structures for RRI within RFO and RPO (MoRRI)</li> <li>Share of RFO and RPO promoting RRI (MoRRI)</li> </ul>

5.6 RESEARCH AND INNOVATION DIMENSION: SOCIETAL CHALLENGES				
5.6.1 Research priorities & outcomes in terms of GE	A desire to address societal problems (Stanford)	A desire to address societal problems (Stanford)	Composition of innovation policy put-ting more emphasis on social and service innovations (JR, A26)	
5.6.2 R&I indicators		<ul> <li>Publications in peer-reviewed high impact journals in the area of the different societal challenges (EC 2015b)</li> <li>Percentage of publications published in the top 10 % impact-ranked journals by subject category (EC 2015b)</li> <li>Number of patent applications and patents awarded in the area of the different societal challenges, by theme (EC 2015b)</li> <li>Number of prototypes, testing (feasibility/demo) activities, clinical trials (EC 2015b)</li> <li>Societal challenges – number of joint public-private publications (EC 2015b)</li> <li>Number of projects with new innovative products, processes and methods</li> <li>New products, processes, and methods launched into the market (EC 2015b), according to SC</li> </ul>	<ul> <li>Better contribution of R&amp;I to tackling societal challenges (EC 2016)</li> <li>Stronger global role of the EU, steering the international agenda to tackle global societal challenges (EC 2016)</li> </ul>	
5.7 RESEARCH AND INNOVATION DIMENSION: SOCIETAL AND ENVIRONMENTAL IMPACTS				
5.7.1 Societal impacts		Responsible R&I principles     embedded in EU higher education     (EC 2016)	Improvement of societal awareness, understanding and engagement to	

		tackle societal challenges through
		R&I (EC 2016)
		Better societal acceptance of
		innovative solutions (EC 2016)
		• Increased awareness of innovations
		among industry, research, user and
		policy communities (EC 2016)
		Reinforced research integrity and
		ethics standards (EC 2016)
		More effective promotion of gender
		equality and the gender dimension
		in research and innovation content
		(EC 2016)
		Improved quality of life
		Reduced direct and indirect costs
		linked to societal issues (EC 2016)
		Improved research and innovation
		culture in EU (EC 2016)
5.7.2		Improved environmental
Environmental		performance (climate change,
impacts		biodiversity, sustainability) (EC 2016)

#### Explanation of the EFFORTI categories, dimensions and subdimensions

Category 1, personnel, refers to personnel in research organisations, universities and ministries, as well as personnel in companies. In dimension 1.1, (development in the) composition of academic and RTDI positions, it is relevant to evaluate GE in regard to personnel in terms of both gender equality in decision-making and increased number of women in academic and other RTDI positions (subdimension 1.1.1). Relevant indicators can be related to gender segregation and history of tenure/promotion in personnel groups, contextual circumstances or barriers for change, etc. Equality in decision-making includes parameters such as funding programmes that include gender requirements, encouragement to engage in decision-making, probability of women reaching a top position (e.g. full professorship), gender wage gap, etc. Academic and other RTDI positions (i.e. positions in RFOs, economic sector, etc.) include, for instance, women in decision-making positions (top academic positions, heads of RFOs, etc.), doctorates, professors, principal investigators (PIs), administrative staff, etc. Subdimension 1.1.2, increased number of women in decision-making positions — more specifically than subdimension 1.1.1 — provides indicators for measurements specifically targeting the number or share of women in top leadership positions (e.g. company leader, company board leader/member, recruitment/promotion board member, reviewer/head of review or evaluation panel, rector, professor, dean, centre director, head of institution/department), different leadership roles, etc.

Dimension **1.2**, recruitment capacity, is relevant in, for instance, evaluations focusing on changes in terms of recruitment, including (recent) recruitment history – procedures and structures (e.g. whether and/or how there have been improvements/changes in the overall recruitment of talented women, and whether this was an intentional strategy). The respective subdimension, improved recruitment of talented women (**1.2.1**), includes indicators such as initiatives targeting female personnel, composition of search/recruitment committees, applicant pool, mobility of researchers, contracts, job negotiations, recruitment evaluations, etc.

<u>Category 2, working conditions</u>, relates to institutional[ised] factors as well as factors related to e.g. family policy, employees' perceptions of the working conditions, and internal career/tenure possibilities (such as promotion issues).

Dimension **2.1**, work-life balance, is especially relevant for evaluations that take into account employees' possibilities of balancing career objectives and private/family life. This is also illustrated in subdimension **2.1.1**, improved compatibility of family and career, which includes indicators such as career planning, influence of work breaks on career progress, parental leave policy and flexibility, (actual) working time, possibilities for reduced working time/part-time, etc.

Dimension 2.2, job satisfaction, includes four subdimensions ranging from appropriate respect/recognition for work (2.2.1) and positive individual job rating (2.2.2), to overall work climate (2.2.3) and allocation of workload (2.2.4). Indicators in the first subdimensions are mainly concerned with aspects of sex discrimination and gender pay gap (2.2.1), as well as inter-collegial relations, scientific contribution, received funding, and perceptions of career opportunities (2.2.2). Subdimensions 2.2.3 and 2.2.4 include indicators such as employees' social well-being and (results from) employee well-being studies (2.2.3), as well as

workload compositions, working time/time spent on paid and unpaid tasks, and (guidelines for) negotiating workload or work tasks (2.2.4).<sup>2</sup>

Dimension **2.3**, competitiveness/promotion and career, is specifically oriented towards parameters concerning promotions/possibilities for future promotion, the history of/possibilities for career progression, employees' perceptions/experiences of career competitiveness, and other career parameters. Subdimension **2.3.1**, transparent and flexible promotion/tenure criteria, is relevant for evaluators particularly interested in measuring tenure and includes indicators such as fixed-term vs. permanent positions, (contractual) handling of major life events, promotion policies, flexibility in promotion arrangements, etc. Subdimension **2.3.2**, strengthened confidence for promotion and responsible positions/improved support to advance research career, consists of indicators for evaluators interested in how employees navigate in regard to possibilities for promotion and career progression, e.g. developments in the participation of men and women in RTDI (e.g. proportion of scientists and engineers), but also employees' awareness of research [project] opportunities, personal as well as professional institutional/managerial support, career obstacles/challenges, etc.

Dimension **2.4**, *workplace*, relates to the quality of the workplace: for instance, subdimension **2.4.1**, *equal workspace/facilities allocation*, includes indicators such as employees' access to appropriate workspace as well as other facilities and services.

<u>Category 3, professional capabilities</u>, is concerned with aspects regarding (female) leadership (**3.1**), different kinds of measurable achievements (e.g. skills, networks, collaborations, mentoring) and women's visibility (**3.2**), overall organisational awareness of or commitment to gender equality goals (**3.3**), as well as funding promoting women's careers (**3.4**).

As the title of dimension **3.1**, *leadership*, reveals, the subdimension *confidence and ability of leadership roles* (**3.1.1**), consists of indicators such as leadership positions, leadership skills, leadership development programmes, organisational culture, support to women's opportunities (e.g. mentoring systems), etc.

Dimension **3.2**, professional achievements, provides a variety of indicators measuring achievements related to professional developments of work skills (**3.2.1**) and network building and use (**3.2.2**). Subdimension **3.2.1** contains indicators such as organisational understanding, improvements in time and budget management, participation in and development of career activities (e.g. networks, coaching, career plans), support for writing applications and for publishing, available workshops, etc. Subdimension **3.2.2** consists of indicators related to contacts/networks, collaborations, coaching and mentoring programmes (including indicators for measuring women's visibility and arrangements/networks for women).

Dimension **3.3**, awareness of/commitment to gender equality, is primarily concerned with indicators aiming to measure commitment to gender equality. Subdimension **3.3.1**, gender awareness, includes indicators such

<sup>&</sup>lt;sup>2</sup> While, for instance, subdimensions 2.1.1 and 2.2.4 include similar indicators regarding working time, workload and flexibility of working arrangements, indicators in dimension 2.1 *work-life balance* mainly have employees with family responsibilities as their focus, while indicators in dimension 2.2 *job satisfaction* do not (necessarily) take family responsibilities as their point of departure – here the interest is in the more general (perceived) fairness of different aspects of the working conditions (some of which might also be found in studies with a particular focus on employees with children, as in dimension 2.1 and its subdimensions).

as national strategies, legislation and goals, overall promotion of gender equality and diversity (as a value), (history) of gender equality and diversity initiatives and campaigns, studies initiated on GE issues and initiatives, inclusion of the gender dimension in teaching/curricula, etc.

Dimension **3.4**, funding to promote gender equality in terms of female careers, and subdimension **3.4.1** are particularly concerned with indicators for evaluating which funding and grants are available and how they are distributed in terms of gender equality, e.g. funding requirements promoting GE, proportion of women receiving grants, average size of grants distributed by gender, etc.

<u>Category 4, structural features</u>, contains broader aspects related not to the women in question, but to relevant structures in organisations (e.g. RPOs, universities, companies), such as the organisational logic and culture in which barriers for gender equality can be found.

Dimension **4.1**, gender equality challenges/barriers, is especially relevant when analysing institutionalised inequalities/barriers for gender equality in organisations. Consequently, subdimension **4.1.1**, decrease of gender equality barriers, provides the evaluator with a diverse range of indicators at team, organisational and policy/country levels, centred around structural matters such as general acknowledgement of and attentiveness to GE issues and challenges, perceptions of gender roles in STEM, initiation of cultural change, citizen science activities in RPOs, RPOs with gender in research content, employees' experiences of sexism, etc.

Dimension **4.2**, organisational/cultural change (with regard to gender equality, **4.2.1**), also provides the evaluator with indicators at all three levels of evaluative analysis, including indicators such as GE policy initiatives and policy-oriented engagement with science and gender equality, clear communication paths and transparency in decision-making bodies, ethics in universities/RPOs, and adoption of GE plans/actions targeting gender bias in organisational culture in RPOs. Subdimension **4.2.1** also includes indicators such as (experiences of) successful implementation of cultural changes/shifts, career development capacity, etc.

Dimension **4.3**, *preferential treatment*, places particular focus on the gender perspective regarding (perceptions of) differences in the work culture and climate for women and men. Consequently, subdimension **4.3.1**, *equal treatment*, contains indicators for the evaluation of perceptions of preferential treatment, differences in women's and men's academic careers, time available for academic activities such as idea stimulation, discussions, etc., as well as indicators such as GE legislation and policies and existence of a GE unit/committee.

Dimension **4.4**, funding for structural transformation, pays attention to increased funding to achieve structural and cultural change in organisations, and budget spent on gender equality measures; it also considers offers and opportunities of grants to women researchers and focuses on the proportion of women receiving grants.

<u>Category 5, research and innovation/RRI</u>, provides evaluators with an overview of the most important research and innovations indicators including RRI mentioned in the respective academic literature, but also reflecting recent discourses at the EU level regarding the evaluation of H2020 and collection of RRI indicators. Category 5 is divided into seven dimensions and 25 subdimensions. Dimension **5.1** is dedicated to *research outputs*. Different types of scientific outputs play a prominent role and build the subdimension **5.1.1.**, reflecting a variety of primarily bibliometric indicators like number of articles and number of citations, but also international co-publications and interdisciplinarity. A further subdimension is constituted by scientific

networks which are assumed to differ between male and female researchers (5.1.2), training and human capital effects like number of researchers trained, but also (gendered) attractiveness of research careers, (5.1.3), strengthened R&I capacities (5.1.4) as well as research priorities and outcomes in terms of GE (5.1.5).

Dimension **5.2**, innovation outputs and impacts including technological ones, is divided into three subdimensions. The first one, conventional innovation indicators, collects the most frequently mentioned indicators from comparative overview reports compiled by the OECD or the EC. It involves patent indicators as well as effects on norms and standards, spill-overs and spin-offs but also product and process innovations (**5.2.1**). Subdimension **5.2.2** collects indicators which measure the diffusion of innovations (**5.2.3**), laying special emphasis on innovations that foster sustainable economies. The last subdimension refers to the incorporation of knowledge about sex and gender into engineering and innovation processes (**5.2.3**) and asks, for example, whether innovation and technologies serve certain groups of women or men more than others, or examines the degree of competition by image shaping by gendered productivity.

Dimension **5.3**, economic outputs and impacts including entrepreneurship, involves four subdimensions. In this area, one can find numerous indicators used in classical impact evaluation studies at the European level: for example, within subdimension **5.3.1** (economic impacts) — indicators on growth and job creation, turnover, co-patents between science and industry. Subdimension **5.3.2**, entrepreneurship, involves indicators regarding risk financing as well as the share of women founding a company. Subdimensions **5.3.3** (strengthened framework conditions) and **5.3.4** (jobs, growth, competitiveness) mention only indicators at the macro level which will presumably be only measurable in the long run, i.e. opening up of new markets, jobs maintained and created, and growth of SMEs, to mention some of them.

Dimension **5.4**, *gender-sensitive research*, provides suggestions for measuring research from a gender perspective. Where subdimension **5.4.1**, *achieved gender equality in research process*, contains indicators addressing the share of female project leaders, gender balance in research teams and in authorships, team building, awareness of/support for gender-sensitive research in RFOs, etc., subdimension **5.4.2** is centred around questions of *research quality*, i.e. whether a *gender dimension/perspective in research and content*, *in research projects*, *patents*, *agreements* is integrated into the research in question. This includes measures such as exclusion of issues related to procreation as well as "emotional issues" and gender mainstreaming in research/research content. The latter includes indicators such as RPOs providing support for the inclusion of a gender dimension, RFOs promoting gender content, gender balance in research evaluation panels in RFOs, sample composition by sex/analysis of sex differences (e.g. regarding product usability or social media and open access outreach), share of research projects including gender analysis/gender dimension, inclusion of analysis of power relations and gender inequalities, (awareness of) hierarchical dimensions in perceptions of scientific validity, etc.

The subdimension **5.4.3**, contribution to strengthening gender-sensitive research agenda, consists of indicators related to different aspects of reflexivity, ethics and responsibility as well as diversity and gender awareness. The indicators included in this subdimension are, for instance, (support for engagement in) participatory, creative and inclusive research, (perceptions towards and) awareness of (gendered) power relations, awareness of the relationship between researcher and informant/participator, inclusion of concepts of and techniques for gender mainstreaming in public policies and policies on the inclusion of gender analysis in research funding programmes, (senior managers involved in the) implementation/integration of gender analysis in research funding/calls and proposals (including senior managers involved, measures related to public engagement, share of calls that include dissemination

material/guidelines for applicants, research calls that include a "comply or explain" principle, share of budget spent on this matter, etc.), increase of scientific knowledge on gender, (programmes targeting the) inclusion of the gender dimension in research contents, etc.

Dimension 5.5 is dedicated to the collection of RRI indicators at the micro, meso and macro levels. The basis for this collection are EU-funded projects and expert groups and it thus follows the EC approach to defining RRI as consisting of 5 crucial RRI keys, i.e. gender equality (subdimension 5.5.1), ethics (5.5.2), public engagement (5.5.3), science education (5.5.4), open access (5.5.5) and, lastly, RRI/governance (5.5.6). The GE indicators collected here refer to all three ERA objectives, e.g. more women in R&I, more women in leadership positions and better consideration of gender aspects in research. Ethics shows indicators which describe new standards or guidelines or the National Ethics Committee Index but also, for instance, the percentage of research proposals for which ethics reviews required any changes. Public engagement addresses questions about the role the general public plays during all stages of research and innovation processes but also includes indicators which refer to organisational strategies to foster public engagement. Science education involves indicators to describe the development of science education material, engagement in partnership with schools, science communication culture and budget in the EU member states. Open access involves the most recent indicators at the macro level like open access literature and public perception of open access, but also indicators which describe the relevance of OA for the daily practice of European researchers. Finally, RRI/qovernance reflects the emergence of formal and informal RRI networks as well as the number of projects showing co-creation of scientific agendas or the existence of RRIrelated trainings at RPOs.

Dimension **5.6**, societal challenges, involves research priorities and outcomes in terms of GE (subdimension **5.6.1**), as well as more traditional research and innovation indicators like publications and patents, but with a special focus on the societal challenges (subdimension **5.6.2**). Lastly, we added the dimension **5.7** to describe further societal (**5.7.1**) and environmental impacts (**5.7.2**) which both refer primarily to the macro level and are partly linked to the RRI indicators above.

## Sources for the indicators: Smart practice examples

Programme	GE measure	Source
Advance IT	Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers (ADVANCE) founded by NSF. The program has three tracks with distinct purposes, but the evaluation at hand focus on the Institutional Transformation (IT) track.	Laursen, Sandra L.; Austin, Ann E.; Soto, Melissa & Martinez, Dalinda (2015): "Strategic Institutional Change to Support Advancement of Women Scientists in the Academy", in Women in the Geosciences: Practical, Positive Practices Toward Parity (eds. M. A. Holmes, S. OConnell and K. Dutt), John Wiley & Sons
AKKA – Akademiska Kollegors Ansvar (Academic Colleagues Responsibility)	AKKA is a gender integrated leadership program at Lund University. The program started in 2004 and is still running every second year (AKKA I, II, III, IV and V).	Lövkrona, Inger & Widén, Kajsa (2012). AKKA vitbok: ledarskapsprogrammet AKKA vid Lunds universitet år 2004-2011: erfarenheter från ett genusintegrerat ledarskapsprogram. AKKA styrgrupp, Lunds universitet.
Athena SWAN	The Athena SWAN Charter award scheme operates by making Gold (significant sustained progress and achievement), Silver (significant record of achievement and progress) and Bronze (solid foundation of policies and practices to eliminate gender bias and an inclusive culture that values female staff). Awards at both institutional and departmental level twice per year. Furthermore, it provides workshops, guidance and opportunities to share effective practice via its website. Any (mainly UK based) HEI that is committed to the advancement of the careers of women in STEMM can become a member of the Charter.	Munir, Fehmidah; Mason, Carolynne; McDermott, Hillary; Morris, John; Bagilhole, Barbara & Nevill, Mary (2013): "Advancing women's careers in science, technology, engineering, mathematics and medicine: evaluating the effectiveness and impact of the Athena SWAN Charter", Loughborough University.
Earth Science Women's Network (ESWN)	It is a women-only grassroots organization intended to contribute to the mentoring of women in the atmospheric sciences. The ESWN was established in 2002 and has increased to an international membership of over 2000 women in the Earth sciences spanning more than 50 countries (2015).  The actual activities of ESWN is mainly 1) an online forum and electronic network, 2) Inperson networking events at national meetings and workshops (1-3 hours), 3) intensive professional development workshops (1-3 days); 4) and informal meal or get-together events.	Archie, Tim & Laursen, Sandra (2013): "Summative Report on the Earth Science Women's Network (ESWN) NSF ADVANCE PAID Collaborative Award (2009-2013)", Ethnography & Evaluation Research, University of Colorado Boulder.

Programme	GE measure	Source
Leadership	The program creates different learning spaces	Davidson, Penny (2013): "Charles
Development	which include interactive workshops, individual	Sturt University Leadership
for Women	readings, mentoring, and peer support groups.	Development for Women
(LDW)	The Charles Sturt University's LDW program has	evaluation 2006-2012", Women
	three broad learning components:	Steering Committee.
	1) The core workshop program consists of an	
	initial 4 day workshop, a two-day leadership skill	
	development workshop mid-year, and a one-day	
	workshop at the end of the year. Participants are	
	directed to a set of readings which are referred to	
	in the workshops.	
	2) Self-learning peer groups which select their	
	own learning goal and strategy	
	3) Mentor relationship where participants are	
	able to identify their preferred mentor, and every	
	effort is made to match to the participant's	
	preference.	
Leadership	LEAP's main goal is the advancement of female	Hassi, Marja-Liisa & Laursen,
Education for	faculty in STEM, the LEAP components were also	Sandra (2008): "Leadership
Advancement	offered to men and non-STEM faculty members.	Education for Advancement and
and	,	Promotion - Faculty Climate
Promotion		Survey", Technical Report for
(LEAP)		University of Colorado.
University of	The evaluation focuses on one of UM ADVANCE	Stewart, Abigail J., LaVaque-Manty,
Michigan	Project's interventions: the creation of a faculty	Danielle & Malley, Janet E. (2004).
(UM)	committee called Science and Technology	Recruiting female faculty members
	Recruiting to Improve Diversity and Excellence	in science and engineering:
	(STRIDE), which was designed to improve the	Preliminary evaluation of one
	recruitment and hiring of women through a	intervention model. Journal of
	process of peer education conducted by senior	Women and Minorities in Science
	science and engineering faculty members.	and Engineering, 10(4).
Higher	The study is a meta-evaluation analysing the	Timmers, Tanya M.; Willemsen,
Education in	effect of all gender equality measures	Tineke M. & Tijdens, Kea G. (2010 <u>).</u>
the	implemented within Higher Education in the	Gender diversity policies in
Netherlands	Netherlands during the period 2000-2007. It	universities: a multi-perspective
(NL)	identified 29 different gender equality policy	framework of policy measures.
	measures in official documents obtained from 14	Higher Education, 59(6), 719-735.
	universities. The measures were classified either	
	as applying an individual, cultural or structural	
	perspective. However, by survey and conducting	
	interviews with 27 HR staff members across the	
	universities, it was only sufficiently evident that	
	19 measures were actually implemented.	
The New	The program was designed by women, for	Harris, Candice A., & Leberman,
Zealand	women consisting of 20 participants per cohort	Sarah I. (2011). <u>Leadership</u>
Women in	from the eight universities of New Zealand. The	development for women in New
Leadership	target population is women at upper-middle	Zealand universities: Learning from
(NZWIL)	levels in universities in academic and general staff	the New Zealand women in

Programme	GE measure	Source
	positions and catered for women who are in, or	<u>leadership program</u> . Advances in
	aspire to be in, leadership positions.	Developing Human Resources.
	It provides opportunities for participants to	
	examine leadership attributes and reflect on	
	strategies; increase knowledge of a range of	
	management competencies relevant to higher	
	education, the tertiary education sector, and of	
	the research funding environment to develop	
	strategies for securing grant monies; and build	
	personal and national networks.	
Rice	Rice University in Texas has for two decades	Ridgway O'Brien Katharine;
University	implemented several gender equality initiatives	Martinez, Larry; Ruggs Enrica N.;
	and evaluated those continuously. It did receive	Rinehart, Jan; Hebl, Michelle R.
	in 2006 a five-year National Science Foundation-	(2015),"Policies that make a
	funded ADVANCE Institutional Transformation	difference: bridging the gender
	grant. This program both sustained and extended	equity and work-family gap in
	existing initiatives as well as establishing new	academia", Gender in
	ones.	Management: An International
		Journal, Vol. 30 Iss 5 pp. 414 – 426.
Stanford	Establishment of the McCormick Faculty Awards	Valantine, Hannah; Grewal, Daisy;
University	to provide women assistant professors with	Ku, Manwai Candy; Moseley, Julie;
,	funding for protected time to pursue research.	Shih, Mei-Chiung; Stevenson, David
	Three awards of \$60,000 for two years are made	& Pizzo, Philip A. (2014). <u>The</u>
	each year. A total of 12 awards were made during	gender gap in academic medicine:
	2006–2010, serving approximately 8% of women	comparing results from a
	assistant professors.	multifaceted intervention for
		Stanford faculty to peer and
		national cohorts. Academic
		Medicine, 89(6), 904-911.
Toolkit for	Increasing the Participation and Advancement of	Frehill, Lisa et al. (2005): Toolkit for
Advance IT	Women in Academic Science and Engineering	Reporting Progress Toward NSF
	Careers (ADVANCE) founded by NSF. The program	ADVANCE: Institutional
	has three tracks with distinct purposes, but the	Transformation Goals, ADVANCE
	evaluation at hand focus on the Institutional	<u>Institutional Transformation</u>
	Transformation (IT) track.	
Leadership	The program consists of 2 two-days off-site	Neu Morén, Elisabeth (2012).
development	workshops, a number of full-day seminars,	Ledarprogrammet för kvinnor vid
program for	individual coaching, and subsequently a mentor	Uppsala universitet: Utvärdering av
women at	platform. In the period covered by the evaluation	de tre första programmen 2008-
Uppsala	55 women has participated and completed the	2011. Uppsala Universitet.
University	program.	
VINNMER	The measure operates by financially bolstering	Anaya-Carlsson, Karla (2012):
programme	opportunities for researcher qualification through	"Sammanställning av 2012
	increased national and international mobility for	enkätresultat av VINNMER - Marie
	women in fields of strategic importance to	Curie international qualification
	Sweden.	och national qualification", Vinnova
		(Not published externally,
		requisition from Erik Litborn).

Programme	GE measure	Source
Younger	The actual implementation of the measures took	DAMVAD Analytics (2015):
women	the form of 17 research grants of maximum 4	Undersøgelse af YDUN-
Devoted to a	years of length and up to 4.5 million DDK. YDUN's	programmets kortsigtede effekter
university	main objective was to support women, but men	og betydning. Det Frie
career (YDUN)	were also allowed to apply. However, only	Forskningsråd, Styrelsen for
(1201)	women were awarded grants.	Forskning og Innovation. ISBN: 978-
	Trainer were arranged granter	87-93151-82-6.
Gender in EU-	The toolkit and training, commissioned by the	http://www.yellowwindow.be/gen
funded	European Commission, build capacity for	derinresearch/index.html
research:	integrating gender perspectives into research and	
toolkit and	for exploring ways to promote gender equality in	http://www.uab.cat/doc/good-
training	R&I. The toolkit and training sessions provide	practices
	practical tools to integrate gender perspectives,	
	including equal opportunities for women and	
	men researchers in project teams and the gender	
	sensitivity to R&I.	
	The toolkit examines the link between gender-	
	conscious research content and research	
	excellence and analyses case studies based on	
	concrete examples drawn from nine specific	
	research fields at DG Research and Innovation:	
	health; food, agriculture and biotechnology;	
	nanosciences, materials and new production	
	technologies; energy; environment; transport;	
	socioeconomic sciences and humanities; science	
	in society; and specific activities of international	
	cooperation.	
Laura Bassi	The "Laura Bassi Centres of Expertise" (LBC)	
Centres of	programme, commissioned by the Federal	Heckl, Eva; Dörflinger, Aliette
Expertise	Ministry of Science, Research and Economy	(2014): Begleitende Evaluierung
(LBC)	(BMWFW), establishes centres of excellence at	der Impulsaktion "Laura Bassi
programme	the interface between academic and industrial	Centres of Expertise"
p. 68	research under the leadership of female scientists	http://www.w-
	and seeks to increase visibility of female	fforte.at/fileadmin/Redaktion/Date
	accomplishments in science as well as increase	n/Downloadbereich/Endbericht Z
	female participation in the long-run. The	wischenevaluierung LBC.pdf
	development and implementation of the	kmu Forschung Austria, Vienna
	programme was a response to the low number of	Kina rorsenang Aastria, vierma
	female directors of research centres focused on	
	applied science research in cooperative research	
	fields.	
Programs for	The University of Pennsylvania increased	Sheridan, Jennifer, Fine, Eve,
Advancing	recruitment of women physicians by including	Pribbenow, Christine, Handelsman,
Women's	information about the University's broad goals	Jo, & Carnes, Molly (2010).
Leadership in	and public health mission in job descriptions, as	Searching for Excellence and
Medical	well as providing information about the	Diversity: Increasing the Hiring of
Schools	University's family-friendly policies (such as	Women Faculty at One Academic
3010013	daycare facilities and mentoring programs) in	Women raculty at one Acquemic
	uayeare facilities and mentoring programs) in	

Programme	GE measure	Source
	"resource packets" for both women and men	Medical Center. Academic
	applicants. This strategy tripled the	Medicine, 85, 999-1007.
	representation of women in surgery over eight	
	years.	Morton, Melinda, Bristol, Mirar,
		Atherton, Peter, Schwab, William,
		& Sonnad, Seema (2008).
		Improving the Recruitment and
		Hiring Process for Women Faculty.
		Journal of the American College of
		Surgeons, 206 (6), 1210-1218.
Promotion of	Courses on Gender Medicine for students in the	Cacace, Marina; Balahur, Doina;
research and	Faculty of Medicine were organised. A pilot	Bleijenbergh, Inger; Falcinelli,
teaching on	course at the Policlinico Hospital Unit was	Daniela; Friedrich, Michaela &
gender issues	replicated and extended to include the San Paolo	Kalpazidou Schmidt, Evanthia (Eds)
at the	and the Sacco Hospitals. A number of professors	(2015). Structural Transformations
University of	and researchers involved as teachers in the	to Achieve Gender Equality in
Milan	courses included a gender medicine perspective	Science: Guidelines. European
	in their own courses.	Commission.
		https://www.rri-tools.eu/-/stages-
		guidelines-structural-
		transformation-to-achieve-gender-
		equality-in-science
Database of	The Center of Excellence Women in Science	equaticy in science
Women	(CEWS) in Germany has created a database that	https://www.gesis.org/en/cews/ce
Scientists	contains the contact information of several	ws-home/
	thousand German-speaking women scientists for	
	research and management positions.	

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