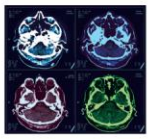
Advancing RTD through Gender-Fair Recruitment and Retention Strategies

genSET Workshop Briefing Materials



S systems & values
C collaborative partnerships
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This Briefing Materials Document provides background information for the genSET Capacity Building Workshop under the theme "Advancing RTD through Gender-Fair Recruitment and Retention Strategies", held in Vienna on the 19th & 20th May 2011. genSET is a FP7 Science in Society project funded by the European Commission.

Prepared by genSET partner organisation, Wissenschaftsladen Wien – Science Shop Vienna, April 2011

Project Patrons

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1. Introduction

> *"...there are thousands of gender and diversity research projects, publications and reports in all media; hundreds of gender and diversity best practices, networks, conferences, meetings, workshops; a huge number of programmes organized by governments, foundations, EU Commission; good and well known relevant HR tools, instruments; there are more and more qualified and career oriented women and gender and diversity sensitized firms in most of the European Union member-states." Michel Domsch, WIST expert (EC 2006, p. 37)*

We do not want to contribute to the abundance of material with an additional paper. It is impossible to fully inform you on all relevant research results within a few pages, let alone discuss conflicting data on special issues. You will find some material that relates to the topics we sent out, as well as some points of discussion. Here we have compiled some common concepts, relating to the topics and recommend some literature that gives a quick but not complete overview on relevant research results and discussions.

We have selected the resources in view of quite an inhomogeneous group of participants, from different backgrounds and diverse gender knowledge in different areas. If some of the presented texts are not known to you yet, it would be useful to read them and reflect on them before you come to the workshop.

2. Background: Women in Science in the European Union

Europe faces a shortage of scientists in several fields, which is likely to aggravate with the demographic trend of low birth rates and an ageing society. The number of young people attracted to science education and science careers is too low and too many highly educated people drop out. Additionally, in a worldwide contest for human resources, the European labour force is weakened by brain drain. The huge number of talented women not being recruited and retained is recognized as the largest share of untapped potential in the RTD development (EC 2007, p. 14; EC 2003; 2009a, 2005b, 2009b, 2009g¸ EP 2008). The under-representation of women in RTD also shows that Member States have not yet been able to fully establish citizens´ equality and non-discrimination.

In view of these challenges, several projects, expert groups, conferences and other initiatives are and have been launched on the EU level. In 1999, the EC set up a working group of national representatives, the so-called Helsinki Group, who compiled national reports and advocated national statistical monitoring. A few years later the European Platform of Women Scientists was established. In the European Union, gender activities intensified in the following years, specialising in different sub-areas, and working out recommendations for future research policies.

Based on the concept that the shortage of workforce was due to lack of interest in scientific issues in young people of both sexes, many activities focussed on trying to "sell" RTD as an interesting and exciting field. This might be questioned in view of the daily routine and working conditions of an average scientist. A more in-depth approach is trying to retain more people in RTD by making it more attractive. The idea that women have to be "fixed" in order to succeed in RTD has been largely replaced by the concept that it is the RTD system and science culture, which have to be adapted in order to meet present and future societal, environmental and economic challenges: including people from the broadest possible range of backgrounds and social groups fosters the flow of ideas and exchange of perspectives resulting in more sustainable outcomes (Cacace 2009). "Multi-skilled, highly creative and innovative inter-disciplinary teams are needed for a globally competitive industrial research: diversity is good for business and for generating new ideas." (EC 2003)

Coming back to Domsch' quotation, it is astounding that there is so much activity around the women in science issue, but gender equality in RTD comes about at such a slow pace that some fields do not see any progress at all.

The latest official statistics of the EC on women and science, the She-Figures 2009, show that the vertical and horizontal segregation of the sexes in RTD largely prevail (EC 2009e).

In accordance to other professions, the ratio between of women to men drops the higher their position is. With each step up the career ladder the proportion of women is sinking, which is often referred to as a "leaky pipeline" "glass ceiling", "sticky floor" or depicted as open scissors. Surprisingly, these pictures emerge in quite different science systems and cultures, although some countries seem to perform a little better or worse in terms of gender equality in RTD (EC 2009h).

3. Reasons for Underrepresentation

The distributions of talents in men and women fail to explain the statistics: cognitive abilities of women even in the most pessimistic studies do not mirror the small number of female researchers in higher positions. Girls perform as well as boys or even better in school, and cognitive tests show their excellent abilities in all relevant fields. Nevertheless women meet difficulties getting into medium and higher positions in RTD and are severely underrepresented in several fields. Identified barriers are the lack of role models especially for female adolescents. Experts agree that this lack of female presence in higher RTD positions cannot be solely explained by female preferences for certain disciplines: statistical analyses of the career development shows that the number of women gets smaller the higher the positions are (i. a. Rees 2002), just pumping more young women into the system will not do ("leaky pipeline"). Women of all disciplines meet (in)visible barriers to reach key positions ("glass ceiling"). Disciplines in which a higher number of female students have been graduating for decades already, do not show better gender balance in the senior and higher positions. The more women in a discipline, the more women drop out at each step of the career ladder. Historically, the rise of women in a professional field has often been connected with a drop of social prestige and average earnings. Nevertheless, there is broad consensus that a critical mass of women would be necessary to engage more females in fields which are extremely male dominated.

Multiple factors that do not have much to do with the performance or abilities of scientists, can contribute to the obvious disproportion of female graduates and their employment in medium and higher positions, among others:

- A common perception bias which binds "genius" to mostly men and boys (of Western origin),
- Male networking traditions (informal exchange of favours),
- Poor working conditions with poor work-life-balance in science jobs,
- Rising pressure for geographic mobility,
- Bias in the presently used methods of determining "excellence",
- Strong hierarchisation of academia,
- High risks of science careers for young people,
- Rejection of candidates with other than (typically male) straight career paths,
- Over-competitive behaviours in view of scarce resources

Apart from gender stereotypes, these factors do not create barriers to female researchers only, but their effects are more likely to accumulate in women than in men. Generally, experts question more and more, if the system presently gives the brightest and most responsible heads the best chances to reach key positions in RTD (see, e. g., EC 2000, 2003, 2004, 2005a, 2009i, 2008a, 2008b, 2009a).

NOTE: You find condensed summaries on gender issues in the European Union in PRAGES – Guidelines for Gender Equality Programmes, page 21- 36 (Cacace 2009) and in the She-Figures 2009, Executive Summary (EC 2009e).

4. Topics for the Workshops that were commented by Participants

As a participant, we wanted you to have you a say in developing the workshop agenda, and so in Winter 2010 and Spring 2011 we asked you about your specific interest in gender-fair recruitment. We asked you to give

feedback on a preliminary list of possible workshop topics in the field of recruitment and retention, and to name your priorities. This helped us to tailor the workshop programme to your needs and demands as far as possible.

The feedback was quite inhomogeneous, showing different needs in the diverse research organisations who will participate. In the following, we compile some information on the suggested topics. This makes it easier for you to decide, which issues you want to deal with in Vienna.

After the workshop in Vienna, some additional support and web conferences on issues will be offered, which are important for developing, refining or implementing gender policies at your organisation in the field of recruitment and retention.

4.1) Learning from mistakes - when Gender Action Plans do not work optimally. How to counteract hidden barriers and detrimental processes behind the curtains.

Certain gender policies are considered as good or best practices by different authors, and have generally shown to improve the situation of women researchers. But when it comes to more specific objectives of gender policies and how they should be evaluated, we did not find sufficient scientifically founded material to answer detailed questions. Quantitative goals, like the numbers of women in certain positions can be retrieved relatively easily. Much more difficult is assessing the quality of working places, the informal power relations, the daily struggles between researchers, the chances to perform meaningful work, the degree of independence, etc. They appear in qualitative research reports, but monitoring them systematically would meet some methodical problems.

There will be much more expertise among the participants attending our workshop in Vienna than we can offer here: many of you come from gender equality units and can contribute first-hand experience on barriers, resistance and circumvention of gender policies on an institutional level. Prof. Richard Gamauf can also bring in a legal perspective. Hence we reduce our contribution to a few well-known examples:

- Public universities are obliged to offer vacancies publicly. Nevertheless, the job description can be narrowed down to a profile that is improbable to be met by anybody else but the candidate favoured from the very beginning.

- Consideration of career breaks can remain merely hypothetical, if evaluators are influenced by their internet research on the candidates' publications and backgrounds.

- Theoretically, part-time employees should be able to better combine family life and labour, albeit with lower income. Much of this depends on the employer. Many cases are known, where young researchers earn from part-time employment, when they unofficially work full time.

- Leaders have been shown to push up the career ladder those who are likely to strengthen the leaders' own positions. If they now support a handful of female followers or admirers instead of men exclusively, the change is merely cosmetic.

- In organisations seemingly reaching high gender balance, male employees may "opt out" and invest more time and effort into different research institutions so that they can gain additional scientific reputation from elsewhere.

Sociologists have dismantled the myth of the scientists as pure intellectual idealists working solely for the sake of human discovery, and shown them as ordinary humans with emotions, ambitions and vulnerabilities, behaving as irrational as everybody else. Scientific reputation is far from being merely meritorious. There is a huge body of literature showing how informal processes influence decision making and how reputation is ascribed to and negotiated. (see, e.g., Merton 1973, Bourdieu 19884). Because such processes often remain invisible, they are difficult to control and they built serious obstacles for gender policies.

Apart from these complications and weaknesses, there is no doubt that pro-active gender policies are still necessary. As the She-Figures 2009 put it, the relations between sex and age groups "reject the hypothesis of a spontaneous movement towards equality" (EC 2009e).

Experts agree that successful gender action plans need clearly defined objectives, monitoring, evaluation and sanctions, otherwise not much progress can be expected. As explained before, quantitative goals are more likely to fulfil these criteria. The European Commission, for example, has set a target of at least 40% women in all working groups, projects, committees and panels during FP6 and FP7, albeit this proportion has not been met until now (i. a. EC 2003b, 2009c).

4.2) Alternatives to prevailing assessment/evaluation schemes of scientific productivity and quality in science and research. Can anonymous procedures improve fairness?

The problem of how to determine scientific quality has not yet been satisfactorily solved. Nowadays, the reputation of a scientist or an institution depends largely on the number of publications in renowned scientific journals, but an overwhelming body of research shows that publication as well as citation and citation rates are a poor tool to measure quality of research, both in terms of reliability and validity. That peer reviews can guarantee scientific "excellence" has been proven wrong several times. Basically, peer review can filter out obviously mistaken articles, but not guarantee their quality. Often only time shows, if the presented work proves valuable for the scientific community or leads them into a cul-de-sac. It has been shown that a pressure towards high publication rates produces some undesired side effects. Most of all, it favours quantity over quality (EC 2004, p. 16 – 19; EC 2009a, 2008a). Merton´s and Zuckerman's "Matthew effect" (Merton 1968) impacts more strongly on those at the bottom of hierarchies in RTD (where most women scientists are found). Margit Osterloh and Bruno Frey have convincingly analysed how the "publish or perish" dictum challenges also the integrity of (young) researchers, who are often pressed to change papers on the demand of editors, even if they disagree to the changes (Frey & Osterloh 2006; Osterloh & Frey 2008). Other researchers found veritable networks of authors mutually referring to each other and so enhancing their reputation ("citation cartels"). Using the number of patents to assess productivity is less often applicable and develops some biases of its own (see, e.g., Mowery et. al. 2001).

These problems are widely recognized and also reflected in the European Charter for Researchers: *"the importance of bibliometric indices should be properly balanced within a wider range of evaluation criteria, such as teaching, supervision, teamwork, knowledge transfer, management of research and innovation and public awareness activities"* and *„Co-authorship should be viewed positively by institutions when evaluating staff, as evidence of a constructive approach to the conduct of research"* (EC 2005b).

The discussions how to find better ways to evaluate the quality of scientific work might open a window for more equality in RTD, especially when it becomes well-known that stereotyping is simply a part of us that never might be fully eliminated.

If peer reviews are not anonymous, articles by female authors are more likely rejected (Budden et al. 2008a, 2008b, 2008c). This finding is in accordance with psychological experiments carried out in different settings, in which probands of both sexes judged texts less favourably, when they believed them to be written by a female author (Paludi 1983). It would be also consistent with the sometimes appearing notion that women seem to publish not quite as often, but that their papers were "more important" if published. (The use of citation numbers as proxy for "quality" or "importance" remains questionable to us.)

If perception and judgment are most probably biased in peer review, research shows that even less objectivity must be assumed when it comes to more direct assessment processes in recruitment of candidates.

The problem of unconscious discrimination is not only discussed in RTD, but in the labour market as a whole. In a recent review of some 27 experimental studies, dealing only with probable interventions that effect gender bias in hiring, there is a good sample of studies on this issue (Isaac et al. 2009). In the last years, mostly in view of disadvantaged young people with an exotic name and complexion, some large enterprises have started to experiment with anonymous hiring procedures (Krause et al. 2010, Antidiskriminierungsstelle des Bundes,

Behagel et al. 2009). There are not many evaluations yet, but a study shows a rise in women getting job offers when applications were anonymized (Åslund & Nordström Skans 2007; Anderson 2008).

Anonymous procedures are no panacea and have their limitations, irrespective if they are applied in peer review or recruitment. Most of all, they cannot fully neutralize stereotyping, because they can be applied only at the beginning of an recruitment procedure, and as long as no face to face interviews are conducted. Nevertheless, there is evidence that women and young researchers can gain from double-blind reviews. And there is evidence that those who have not yet climbed up the career ladder, actually prefer them (Budden et al. 2008b).

Standards for the selection of evaluators and assessors would be another mean to improve justice. As it is now, "activities in research funding, including peer review, continue to be dominated by men, in some cases overwhelmingly so", but "the recruitment procedures, in particular for peer reviewers, whose choice may be crucial, are often not clear." (EC 2009h, p. 6)

Usually, "productivity" is determined without correlating it to the financial costs borne by the public, which systematically disfavours scientists working with relatively low research funds. But if a cost-benefit-ratio would be taken into account when assessing scientists, their contributions might look more gender-balanced (i. a. EC 2009a).

4.3) How to get support from the institutions members: reasons why gender-fair employment and retention are good for everybody and help to ensure a sustainable RTD system.

How do not only women benefit from gender fairness in recruitment and retention at research organisations and why should all employees embrace sound gender policies.

In your feedbacks, many of you were most interested in exchange knowledge and experiences on the difficult issue of advocating gender policies. Additionally, Prof. Alison Woodward can support you as an expert on political strategies, their chances and pitfalls.

We summarize here some common concepts frequently presented in literature:

In some (but not all) respects, gender imbalances can be regarded more as a symptom rather than as disease, they can serve as indicators for general problems within the present science system at large. Among others, the huge body of gender research shows how highly talented individuals can be driven out of the system.

Experts agree that multiple factors lead to a disadvantage of women in RTD. These factors do not just add up, but enforce each other. Some of them are related to prejudices against women, to their education or to general conflicts of interests between the sexes. But some factors are shared with other groups, if singled out. All those factors are more likely to accumulate in women than in men. Some examples:

- Stereotypes disadvantage not only women. Discrimination can be also based on prejudices against ethnical backgrounds, age, handicaps, social class, which is often addressed by "diversity management". But (unconscious) discrimination can be based on all sorts of physical aspects, like height or voice. We do not intend to compare the effects of possible prejudices with gender stereotypes, because women account for more than half of the world population and can additionally suffer from all these stereotypes. Nevertheless, gender justice may be advanced, when researchers advocate for fairer and a more objective evaluation and recruitment procedures in their own interest.
- Work-life balance must not be seen as a woman's issue. A recent report shows that sex does not explain the preferences of researchers in this respect (sustainable careers).
- It could be questioned, if institutions (and society at large) work best if led mostly by men who do not engage in family care.
- That women suffer from them in science and research does not necessarily mean that working conditions are optimal for all men, or even the majority of men.

Apart from this, the reputation of a research institute may gain from implementing reasonable well-funded gender policies.

In the European Research Area, gender mainstreaming becomes a standard for modern management (although we find it sometimes water-down). National governments develop gender policies of their own. Since FP5 the EC regularly evaluates their projects in respect to gender criteria, and plans to monitor gender issues even more closely in WP7 (EC 2001, 2009c, 2009d, 2009f).

NOTE: We recommend reading Alison Woodward, Going for gender balance, in particular First Part, Chapter One, pp. 15-27 and parts of Reconfiguring State Feminism in the European Union: Changes from 1995-2006

4.4) How can experience with family work and other non-academic labour be valued and fostered at organisational level in order to attract scientists with caring responsibilities?

Maybe institutions would gain from personalities, who have richer biographies and broader life experiences than the pattern of moving from school to university and then into a science career, which still constitutes the norm. Scientists and researchers have to constantly accumulate reputation by gaining grants and/or publicising, which monopolizes their living time. Employers in RTD traditionally expect exclusive engagement on a science career. (Historically, science positions, fitted to an upper-class family model of a male bread-winner married to a housewife freeing him from daily reproductive work.). Persons with irregular career paths, part-time workers or persons taking family responsibilities are still considerably disadvantaged. But more recently, experts dispute such uniform and straight career models and discuss the advantages of more "atypical" biographies. The European Carter for research points out the *"the value of geographical, intersectoral, inter- and transdisciplinary and virtual mobility as well as mobility between the public and private sector"* (EC 2005b). "Mobility" is not reduced to physically moving to other countries (which is more difficult for parents), but seen as broadening one's horizon by collecting a variety of different working and life experiences. As a science shop we believe that RTD could gain, if researchers would have more working experience in social environments different from their own.

Following measurements can partly counterbalance career breaks mostly due to child birth, but other reasons for pausing may be accepted as well (care for elderly, diseases, educational breaks, etc.).

- Instead of biological age, an "academic age" relates performance to the starting point of a career, doing more justice to those who graduate at a later stage of research.
- Only the "best" 5 -10 publications in the whole academic life are taken into account (i. a. Single Labour Market 2008)
- In the USA many universities give women on "tenure track" some more time before they are evaluated (however, according to our research they seem to give only one year, mostly).

Some experts pledge for a removal of all age limits for most (grant) applications and age related criteria from the assessment of performance, because these measurements could make some problems of non-linear biographies obsolete.

4.5) (Informal) job requirements apart from traditional scientific abilities: networking, fund raising, self presentation, rhetoric skills, readiness for mobility and loosening social bonds, teaching or organisational skills? Which of them are necessary for high quality research, which should not play any role in recruitment and retention?

The feedback we received on this issue are relatively controversial. We suggest distinguishing them between informal job requirements that should not play a role in an ideal world, although it is a fact that they receive more and more weight, when science organisations are pressed to become economic enterprises.

Merit and talent are not sufficient conditions to become a successful scientist. Resources, time, social networks, encouragement – unevenly distributed between the sexes – are necessary prerequisites.

Apart from scientific abilities such as methodological and theoretical expertise there are other job requirements which qualify a researcher or scientist for a vacant position. Some of them are more formal, some of them less, some of them are obvious or well-founded, some of them seem to be obscure, with the result that sometimes personnel decisions are hard to comprehend. Such requirements can follow the indicators applied in international university rankings (see The Times Higher Education World University Rankings and the CHE Rankings, e.g.) and agreements on objectives and performance with ministries and other sponsors. They can be constant acquisition of external funds, mobility (proven by having had positions at preferably prestigious universities), having received prestigious awards, and being well-connected with the business world. And they can be ones not mirrored by university rankings, but giving a university a better standing or image among its peers and society at large, such as regular participation in large scale international projects, giving well-attended public lectures, being invited to give keynote lectures, visibility in news media, strong persuasion and negotiation skills, and having exclusive access to research infrastructure such as an important archive or measuring device. The most obscure requirements are not made explicit, some of them are not even conscious ones. Fitting into a certain group, that is, having a physical appearance and voice resembling to certain stereotypical images, a well-known family name or the desired habitus and hexis (Bourdieu 1977, 1984), e.g., regularly is an important requirement for being accepted.

4.6) Mobility as a recruitment barrier and its impact on work-life-balance. Can policies avoid the discrimination of introverted personalities and/or highly socially responsible scientists? Can dual-career approaches mitigate some effects? Is geographical mobility always necessary or can it be (partly) replaced by long distance online cooperation?

Although the European Charter of Research values equally *"geographical, intersectoral, inter- and transdisciplinary and virtual mobility as well as mobility between the public and private sector"* (EC 2005b), researchers are presently forced to relocate frequently and to prove extensive "international experience". It is questionable if the prospect of changing residence every few years make science and research professions more attractive for young people, in particular for young women. Psychological research proves that most people depend on a stable social net for their emotional well-being.

Among others, the question of geographical mobility also appears in a recent study lead by Prof. Ulrike Felt (2009), which dealt with the living and working conditions of young researchers in Europe.

In the literature on international cooperation, we find that in the near future technical progress might make the question of physical mobility obsolete, because virtual communication could largely replace it (see Nader Ale et al. 2008, e. g.).

4.7) How to grant fair visibility and opportunities for performing meaningful research to all scientists at an institute irrespective of their sex? Which rules lead to an optimal balance of fair competition and cooperation and improve team productivity?

At present, experts widely agree that the inclusion of women in RTD is essential for obtaining high quality research results. There are numerous examples of research becoming lop-sided because of the exclusion of women. There is also growing belief that gender mixed teams, if well managed, would perform better than single sex teams. Optimal management would need some specification, because the literature is also full of examples, where putting men and women into constant collaboration backfired. Here are some examples:

- Women can be involuntarily turned into assistants of careerists (a problem they share with young male researchers)

- Workload might be distributed according to traditional gender roles, most of the paperwork landing on the women's desks
- Journalists, academia, the public in general, tend to attribute important discoveries to the male members of a team. Margaret Rossiter calls this mechanism "Matilda Effect", which has turned the intellectual contributions of women invisible for centuries (Rossiter 1993)
- A team might be dominated by a few, who exploit the team's efforts
- It can be exhausting, if more traditional team members cannot accept women as authorities or react negatively when women disagree with their professional expertise
- Women may underperform due to stereotype threat (Inzlicht & Ben-Zeev 2000)

Who works best under which conditions is also a question of involved personalities. Some psychological experiments have found that individuals need different degrees of competition, and that more women than men rejected direct personal competition and preferred cooperation (Niederle & Vesterlund 2009). Differences between male and female social groups were found as well, female groups cooperating more often in flatter hierarchies with less clear leadership. Male groups sometimes form steep hierarchies (Berdahl & Anderson 2005, Schwarz 2005). Sex-specific behaviours and communication styles were found (see, e. g., Furumo & Pearson 2007). In some experiments, women show higher risk-avoidance (which should not be interpreted a weakness). When estimating their own abilities in psychological experiments, the average man reveals considerably more over-confidence than the average woman (see, e. g., Burks et al. 2010).

The literature is inconsistent: which team composition would be optimal, cannot easily be deduced from real projects or entrepreneurial data, because too many factors interfere.

4.8) Gender budgeting, thematic orientation of organisations, distribution of research funds and jobs, gender-fairness in personnel development and job creation. Can organisations make research strategy plans more sustainable and gender-fair by stronger regard for the demands of citizens?

Citizens as voters (a little more than half of them are female) are asked to accept raising investments of governments into the RTD sector. Hence, the question arises how "the public" could be involved in deciding which direction science and research should take. At present, academic insiders and large enterprises can influence research policies by lobbying for their preferred research topics, while citizens have small chances to push research questions that seem most relevant to them.

The overturning pace of RTD discoveries and products demand for public debate about relevance and responsibility. RTD needs to justify its usefulness in face of climate change and shortage of natural resources. A future knowledge based society can only be developed and maintained by well-educated and able citizens, possessing "scientific literacy" and interest in critical reflection. The lecturing of the "public" would be ideally replaced by communication processes. Scientists have to contribute more visibly to wider goals of societal progress and help to mitigate societal problems and be more open to interdisciplinary cooperation (EC 2010, 2009a; Cacace 2009). The changing of the traditional ("masculine") RTD landscape can bear new employment chances for women.

NOTE: We recommend reading Chapter VI of Knowing and Living in Academic Research. Convergence and Heterogeneity in Research Cultures in the European Context (Felt 2009), that is, Ulrike Felt's concluding remarks, in particular the last sub-chapter, Reassembling gender dimensions, pp. 238 - 246.

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