CALIPER
Gender Equality in STEM Research

Linking Research & Innovation for Gender Equality

D5.1. Internal engagement and change management strategy guideline

WP5 - Engagement, change management and sustainability

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Executive Summary

The objective of this document is to help the RPOs and RFOs involved in CALIPER to develop a tailored internal engagement and change management strategy. This task is part of WP5 (Engagement, change management and sustainability), which aims at creating the appropriate conditions for ensuring the acceptance of the Gender Equality Plan (GEP)'s measures. A key success factor for the acceptance, smooth implementation and sustainability of a GEP is a strong basis of engaged and motivated people.

The document presents, on the one hand, some theoretical insights to understand gender equality and discrimination and, on the other, a practical guideline addressing common obstacles in gender equality work (resistance) and how to overcome them, as well as success factors and good practices to foster structural change for gender equality in research organizations. These theoretical and practical knowledges will allow CALIPER research organisations to appropriately design an internal engagement and change management strategy and thus ensure the success of their respective GEPs. In addition to this, a last chapter presents the evaluation and monitoring process of engagement activities, including a presentation of the broad strategy adopted and KPIs for tasks 5.2 (Engagement of regional research and innovation ecosystem) and 5.3 (Awareness raising activities) and the description of the reporting procedure and template.

Contents

1 Introduction

1.1　　Purpose & Scope

This deliverable is part of WP5: Engagement, change management and sustainability. This WP aims at creating the appropriate conditions for ensuring the acceptance of the Gender Equality Plan (GEP)'s measures by the RPOs and RFOs involved in CALIPER, both at the institutional level and within STEM departments. A key success factor for the acceptance, smooth implementation and sustainability of a GEP is a strong basis of engaged and motivated people.

This deliverable is the first step in that direction. It presents conceptual notes to understand gender and discrimination and a practical guide to foster structural change. The objective of the deliverable is to provide the RPOs/RFOs involved in CALIPER with both a *theoretical and conceptual basis* to understand what is at stake in gender discrimination and gender equality and *practical knowledge* about success factors, potential obstacles and how to overcome them. These theoretical and practical knowledges will allow the organisations to appropriately design an internal engagement and change management strategy and thus ensure the success of their respective GEPs.

The present document does not constitute a fixed and standard roadmap for all, but rather a tool to be used and adapted by each RPOs/RFOs according to their specific context and needs. The promotion of gender equality requires a careful analysis of the institutional and external context of each organisation. Gender equality legislation, institutional procedures, starting points, internal support, existent gender equality structures and many other factors may differ between organisations. Therefore, a 'one-fits-all' approach would not be fruitful. Following this reasoning, the guideline describes a set of key issues that need to be taken into account by the RPOs/RFOs to successfully develop a customized internal engagement and change management strategy.

The deliverable has been developed through desk research. The scientific literature on Gender Studies has been consulted to build the theoretical understandings of gender as a variable structuring society and organizations, gender norms and the importance of awareness-raising and proactive action. The practical guide has been elaborated through the consultation of several EU projects specifically addressing gender equality in higher education, starting with EIGE's GEAR tool (2016). A particular attention was paid to EU projects and guidelines describing internal engagement and change management strategies (EIGE, 2012, 2019; EUA, 2018, 2019; FESTA, 2016; GENOVATE, 2016; LERU, 2019; STAGES, 2015). A completed list of the sources consulted can be found at the end of the deliverable.

1.2　　Intended audience

This document is primarily addressed to the RPOs/RFOs involved in CALIPER to support the implementation and sustainability of the GEPs. It can also be used by other higher education institutions that desire to foster structural change for gender equality.

1.3   Structure of the deliverable

Chapter 2 outlines **theoretical notions and concepts** to understand gender as a variable structuring society and organizations, gender norms and the role of awareness-raising and proactive action. **Chapter 3** first presents **common obstacles** for the promotion of gender equality and then a series of **key success factors** and practical actions to undertake in order to ensure internal engagement and structural change. **Chapter 4** addresses the **evaluation and monitoring** process for engagement activities. It presents the broad strategy adopted to carry out tasks 5.2 (Engagement of regional research and innovation ecosystem) and 5.3 (Awareness raising activities) and the description of the reporting procedure and template. Following those three chapters, a **glossary of terms** (the terms explained in the glossary are indicated by a star throughout the text) and the **list of resources** consulted are presented. In the **annex**, images from the Engagement activities report form can found.

1.4   Relation to other WPs & Tasks

The Internal engagement and change management strategy guideline, supports the whole project process. It is connected to WP1 (Analysis of external and internal conditions for GEPs development and acceptance) since, as mentioned above, the strategy should be adapted to the context and needs of each RPOs/RFOs. It is also an important base for WP2 (Design and Development of customised GEPs) and WP3 (Implementation of GEPs) given that the strategy is essential to ensuring support to the different actions and measures included in the GEP. The document also sustains the monitoring and evaluation (WP4), key processes to guarantee the sustainability of the GEP. Finally, this deliverable constitutes the first task of WP5 (Engagement, change management and sustainability), serving as a basis for the appropriate design and development of the tasks T5.2 and T5.3 (engaging with the innovation ecosystems and raising awareness and engagement activities, respectively).

2 Understanding gender and discrimination

In this chapter, we first outline some theoretical notions and concepts to understand gender as something that both individuals and institutions do on an everyday basis. Following the step, we discuss how gender is a variable structuring society and (research) organizations and the relevance of promoting structural change. We conclude this chapter by addressing gender norms and the role of awareness-raising and proactive action.

2.1   Doing gender

For a long time, **social inequalities** between women and men have been justified and legitimised on the basis of presumed 'natural differences' between the two groups. For instance, restrictions on women's access to education were explained by women's supposed low intellectual capacities and the attribution of care work to women was based on their assumed maternal instinct (LeGates, 2001). This understanding of differences between women and men rendered social change impossible. If differences are natural, then the roles and capacities of women and men are biologically-determined and thus immutable. In this sense, one of the most important contributions of the feminist movements[1] has been to *de*-naturalise both femininity and masculinity (Bereni, Chauvin, Jaunait, & Revillard, 2012). In other words, they put into question the alleged 'nature' of differences between women and men, used to justify social inequalities between them, and underlined instead the role of culture and education.

It is in this context that the term **'gender'*** was coined as opposed to 'sex' to highlight a conceptual shift from 'natural differences' to 'socially-constructed differences'. In this distinction, 'sex' refers to biologically-given differences (primary and secondary sexual characteristics) and 'gender' to the social construction* of personality traits and behaviours upon biology (Nicholson, 1994). The roles attributed to women and men are thus considered a social construction and therefore open to change, allowing for a modification of the status quo. The adoption of the term 'gender' also introduced a relational notion in the understanding of social inequalities (Scott, 1986), thus preventing inequalities from being framed exclusively as a women's problem, but rather as unequal gender relations.

It is however important to note that the sex/gender distinction can lead, and has led in some cases, to an understanding of gender categories as two natural and mutually-exclusive categories —women and men— thereby erasing other gendered realities and experiences such as those of intersex and transgender people. The sex/gender distinction draws on the dichotomy between nature and culture. It thus takes biological differences as given (the 'undoubted nature' of two kinds of body, of two kinds of human beings) and limits the influence of culture to social roles and personality. In this way, the sex/gender distinction inadvertently reifies the woman-man strict binarism. However, bodily differences related to the sexed body (e.g. genitals, reproductive systems, hormonal levels, chromosomes, breast tissue, hair growth) have been interpreted in different ways across time and place and they have not always followed a binary conception (Fausto-Sterling, 2000; Nicholson, 1994). In this sense, *gender* is a useful category of analysis because it requires us to historicize the ways sex and sexual difference have been conceived (Scott, 2010).

Physical differences involve a continuum of organ sizes, body parts shapes, hormonal levels and chromosome types rather than two clearly distinct sets (Achermann & Jameson, 2005). Indeed, the 'hermaphrodite'[2] was considered a real mix of genders by the ancient Roman medical tradition, but they

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[1] We speak about *movements* in plural because feminism is far from being a unitary and homogenous social and political movement.

[2] This term has been abandoned nowadays since it is considered offensive. 'Intersex' is the most accepted term employed today.

were ultimately considered a woman or a man from a legal point of view (Houbre, 2014; Thomas, 1991). This endeavour was part of the legal organisation of life: the legal definition of the roles, rights and duties of women and men, regardless of the truth of the natural fact. Therefore, in Roman law the binary division between women and men was a legal norm, not a natural presupposition. Nowadays, the classification of sexual characteristics into two categories requires *measuring* and *establishing the criterion* to separate them (the norm). Therefore, sexual dimorphism is not simply to be found 'out there' in nature, it is a **social norm**. This is evident in the very contested plastic surgery operations medically imposed on 'intersex' children[3] (Fausto-Sterling, 2000): they actually construct sexual dimorphism.

Historical and anthropological research has shown that definitions of women and men, femininity and masculinity, have **changed** over time and often differ from one culture to another (see, for instance, Brettell & Sargent, 2012). It is thus important to take into account this variability of conceptions across time and place to avoid anachronisms and ethnocentric* biases. Moreover, the woman-man binary has also been transgressed in different ways and at varying degrees by people throughout history, for instance, through cross-dressing, although there are inconsistencies in the way these practices were received by society (Bolich, 2007). From the 19th century, however, these transgressions have been defined by psychiatry and psychology in terms of pathology (Tosh, 2016). Numerous terms have been used to pathologize that transgression: transvestism, transsexuality, gender identity disorder, gender dysphoria, etc. Thus, terms such as 'transvestite' and 'transsexual' were initially coined by psychiatry and psychology to refer to people who did not fit in their definition of normality[4], thereby establishing what interests and ways of behaving, moving, dressing, feeling and expression were appropriate for women and which ones were appropriate for men.

The idea that humankind is divided into two groups –women and men– is so taken for granted in our society that only when someone tries to move between categories, such as trans* people, we begin to question what it means to be that category (Wiggins, 2017). It is thus important to **historize** the social conception of these two categories so that gender analysis continues to be a useful critical tool to understand social reality and inequalities. As Scott (2010) expresses it:

'Too often, "gender" connotes a programmatic or methodological approach in which the meanings of "men" and "women" are taken as fixed; the point is to describe differing roles, not to interrogate them. I think gender continues to be useful only if it goes beyond that approach, if it is taken as an invitation to think critically about how the meanings of sexed bodies are produced in relation to one another, how these meanings are deployed and changed. The focus ought to be not on the roles assigned to women and men, but on the construction of sexual difference itself' (2010, p. 10).

This approach implies looking at **how gender is *done*** both in everyday social interaction and at the organisational level through institutional regulations, norms and practices. Gender is thus a verb, rather than a noun (DePalma & Jennett, 2010), a 'performance' in the sense that it is something that is achieved (Butler, 1990, 1993), that is, something that we *do*. For instance, gender is done when a legal gender is attributed to someone based on their genitals at birth (Meadow, 2010) or when a transgender man is told how to 'behave like a guy' (Connell, 2010).

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[3] This type of surgery is often unjustified from a medical point of view, it rather responds to the social norm establishing sexual dimorphism (Mason, 2013).

[4] These terms are nowadays contested by many trans* people and activists because of their psychiatric connotation. Today the most commonly preferred terms are 'transgender' and 'trans*' (the star marking the inclusion of a diversity of experiences). However, the terminological controversy is an ongoing debate (see Aguirre-Sánchez-Beato, 2018; Elliot, 2009).

2.2   Gender as a variable structuring society and (research) organisations

Gender is not the only **axis of social differentiation**, but it is probably the most ubiquitous one. In the great majority of societies and contexts nowadays, people are assigned to the category 'woman' or 'man' at birth on the basis of the sexual characteristics of the bodies, assumed to follow the norm of sexual dimorphism. As Meadow (2010) states, 'gender is perhaps the most pervasive, fundamental, and universally accepted way we separate and categorize human beings' (2010, p. 815). The categorisation of human beings into women and men has not only *identity effects* (in the sense of defining who we are), but also *social functions*: our societies are (unequally) organised along gender lines. The UN International Research and Training Institute for the Advancement of Women (UN-INSTRAW, 2008) defines gender as a **primary structural variable** that affects all social processes and organises the whole socioeconomic system, conditioning dynamics at the micro, meso and macro level. In most, if not all, societies nowadays women and men are attributed and carry out different tasks and functions. Women and men have also unequal access to social and material resources and power (UN-Women, 2018). These inequalities have been the object of feminist analysis and criticism, especially since the 1970s (see, for instance, Rubin, 1975; Beauvoir, 1976; Pateman, 1988).

Women and men are thus treated as two mutually exclusive categories in the great majority of societies, in which each category is attributed different tasks, functions, social positions, power, and resources leading to an overall disadvantage of women. In this sense, the establishment of **inequalities** between women and men requires first and foremost the constitution of differences between the two groups (Romero Bachiller, 2003). In other words, the (unequal) gendered organisation of society is constructed upon the differentiation between women and men as two essential* and permanent categories. Conversely, this differentiation has been historically constructed to sustain a particular (unequal) organisation of society and needs to be preserved in order to maintain it.

It is however important to stress that the particular social positions and functions assigned to women and men, as well as the very definition of the two categories, differ not only historically and geographically, but also according to other axes of differentiation such as race/ethnicity, sexuality, class, religion, body characteristics–the list is endless. From the 1980s, many feminist authors and scholars began to highlight the different oppressions to which some women were confronted, thereby criticising the universal stance on the 'woman subject' (in the singular) assumed by mainstream feminist perspectives at the time[5]. These theorists revealed that too often the problems described by feminists as belonging to *all* women were actually the problems of *some* women (usually white, middle-class, heterosexual women, especially from Anglo-Saxon countries), whereas the particular ways of oppression of less privileged women remained invisible. It is in this context that the concept of **intersectionality*** was coined by Kimberlee Crenshaw (1989) to emphasise the actual mutual construction of 'multiple oppressions'. Crenshaw argued that 'being Black' and 'being a woman' cannot be understood as two separate realities: they intersect and lead to unique experiences of oppression.

In spite of intersectional differences in the definition of 'woman' and 'man', the common denominator of the definitions in most societies and contexts nowadays is the **presumed permanent character of the gender binary**. In other words, although the definition of 'woman' and 'man' depends on the interaction of the category with other axes of differentiation in specific contexts (such as class, ethnicity, nationality, etc.), it is generally assumed that women and men are intrinsically different and they are assigned different positions and functions in society.

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[5] Such universal notion of women still remains in some feminist perspectives nowadays.

In this sense, **work** is one of the key processes through which 'gender relations are played out in contemporary societies' (Ferguson, 2013, p. 2). Women are still concentrated in areas traditionally associated with their gender roles (International Labour Organization, 2018). This is particularly the case of the service sector, in which women are over-represented in low-paid jobs such as cleaning and care work, whereas men dominate in better-paid jobs such as financial and business services and information and communications technology. In this sense, women's low pay is usually attributed to 'vocation', to the assumption that they use their 'natural' capacities rather than formal skills and, thus, they do not require an important monetary recompense (Perrons, 2010). It is, however, important to clarify that labour markets intersect with a wide range of inequalities beyond gender, such as class, ethnicity and nationality and, therefore not all women are in more vulnerable jobs than men. Still, labour markets are clearly gendered and gender segregation in employment 'both draws on and perpetuates gender and other inequalities' (Ferguson, 2013, p. 3).

Indeed, **vertical and horizontal gender segregation*** —the concentration of women and men in different sectors and different grades, respectively— is a deeply rooted characteristic of education systems and occupations across the European Union, which in turn limits access to certain jobs and leads to unequal pay (European Institute for Gender Equality-EIGE, 2018). Women are over-represented in both part-time and unpaid work, family or care reasons being the main motive why they do not seek full-time employment (EIGE, 2014). This impacts their economic independence, leading to a gender gap in pensions as a result of inequalities over the lifetime (EIGE, 2015).

The gender inequalities found in the general labour market are also found in higher education. **Universities and other research institutions** are also rooted in a gendered distribution of tasks, roles, positions, resources and power. According to the last She Figures Report (European Commission, 2019), gender inequalities are still very present in research and innovation at a European level. Data from 2016 indicate that women made up 47,9% of doctoral graduates. However, the proportion varied among different educational fields: in information and communication technologies and engineering women made up only 21% and 29% of doctoral graduates, respectively. Although tertiary educated women were the majority of professionals and technicians in the EU-28, in science and engineering only 40,8% of people employed as scientists and engineers were women. The unemployment rate of tertiary educated women was also nearly one point higher than that of men. Only one third of EU's researchers were women and their working conditions were worse than men's: the proportion of women researchers working part-time and under contract arrangements considered as 'precarious employment' were higher than that of men. Women are also less represented up the academic ladder: they made up only 24% of grade A academic positions. This proportion diminishes in the STEM field, women holding only 15% of grade A academic positions. Finally, women are also under-represented in the writing of academic papers.

Against this background, the Conclusions on advancing Gender Equality in the European Research Area (ERA) (Council of the European Union, 2015) establish three **objectives** in relation to **gender equality in research**:
1. Removing barriers to the recruitment, retention and career progression of female researchers;
2. Addressing gender imbalances in decision making processes;
3. Integrating the gender dimension in research and innovation content.

In order to achieve these objectives, universities and research organisations are encouraged to foster institutional change to promote gender equality, going beyond individual approaches.

> "**Institutional change** is a strategy aimed at removing the obstacles to gender equality that are inherent in the research system itself, and at adapting institutional practices. Within an institutional change approach, **the focus is on the organisation**. In the ERA, research organisations and higher education institutions are invited to implement institutional change relating to human resources management, funding, decision-making and research programmes. The main objectives of institutional change are to enhance women's representation and retention at all levels of their scientific careers and to promote the integration of the gender dimension in research and innovation content"
>
> European Institute for Gender Equality (2016, p. 7).

2.3   Gender norms: the importance of raising gender awareness and taking proactive action

Gender remains thus a fundamental principle upon which we classify people and gender relations structure society and (research) organisations. However, it is important to understand that such classification and societal structuration are not necessarily conscious or the product of a thoughtful decision —or it is not so in the vast majority of the cases. It is rather a **system** of which we are also part, a system governed by gender norms that we have internalized and of which we are not necessarily aware.

In spite of its chaotic appearance, everyday life is governed by **social norms or rules** (Coulon, 1987; Garfinkel, 1967). In other words, there is certain method and order both in interpersonal interactions and in organisational/institutional practices. It is as if everyday life was a rugby match with its set of rules establishing what players can and cannot do, when a move is considered a goal, etc. As "players" —as members of a particular society or organisation— we do know the norms because we adjust our behaviours to them. Norms, in this case gender norms, are to be found within the actions and practices themselves, both interpersonal and institutional. For instance, if every morning when we arrive to the office, we greet men with a shake of hands and women with a kiss, we know it is a social norm although it is not written anywhere. However, as members, we are not constantly thinking about what the norms are. Otherwise, everyday life would be constantly interrupted. Going back to the example of the rugby players, if they reflected upon their movements during the match all the time, these would be constantly hampered.

The overall **'invisibility' of gender norms** in organisations has two important implications for the promotion of structural and institutional change. The first implication is that this invisibility renders difficult the identification of the problem —gender inequalities, gender discrimination. A problem that is not seen is difficult or impossible to solve. Thus, the invisibility of gender norms hinders action for gender equality. The second implication, intimately related to the first one, is that the invisibility of gender norms prompts its reproduction. In other words, it guarantees the reproduction of the status quo by simple inertia. No efforts are really needed to maintain the order. This means that structural change for gender equality requires **awareness raising*** and **proactive action**.

Reflexivity is only possible when members abandon their everyday 'natural attitude' towards the world (Martínez-Guzmán, Stecher, & Íñiguez-Rueda, 2016). The abandonment of that attitude is prompted by a **disruption of the norms or rules**. For instance, if a rugby player breaks a rule during the match, the other players will remind the rule to the referee and will protest if the referee does not impose a penalty to the player who violated the rule. The latter would try to redefine the action to make it conform to the rule (in a professional rugby match it would not be possible to negotiate the rule itself, but this would be possible in

other contexts, for instance in organisations). The disruption of the norm can be a **discursive disruption** in the form of awareness raising activities (e.g. a sensibilisation campaign, a seminar in which participants are invited to reflect about their values and practices) or the **direct implementation of measures and actions** that effectively change the norm (e.g. gender quotas). Probably, the most successful strategy contains a combination of the two.

When a norm or rule is disrupted, in this case gender norms, members of the organisation will notice it, since it has been **unveiled** by the disruption. This is illustrated in Garfinkel's (1967) 'breaching experiments'. These are experiments in real-life situations in which someone breaches a social norm in a specific context. Their function is to unveil the inherent norm. For instance, someone stands up in the middle of the room during a master class and remains standing. Students will ask each other what the person is doing and why and the professor will ask if she or he has any problem. Sitting down while listening to a master class is the norm: to identify the norm, it is enough to violate it, to do something that is not supposed to be done.

However, it is also important to note that the identification of the norm does not automatically lead to its modification. Members who realise the norm through awareness raising or direct gender equality measures can more easily accept to change it; but they can also explain it, justify it and/or re-negotiate it so that the status quo is maintained. In other words, they can still show **resistance** to change. This resistance can be motivated by the desire to preserve the privileges of certain groups (e.g. white, middle-class men in decision-making positions), but also by a complex web of norms (related and unrelated to gender) that interact with one another. Indeed, gender norms are not isolated from other social norms that also regulate the organisation. For this reason, it is essential to know very well the specific context and culture of the organisation and to reflect and carefully design a strategy to foster structural change for gender equality.

In the next section of the document, we present a practical guideline in which we first describe resistance to the promotion of gender equality (the definition and types of resistance, common causes and how to deal with resistance). We then present practical success factors that need to be taken into account in order to develop an internal engagement and change management strategy. Many of the success factors presented stem from the empirical experience of other sister projects aiming at promoting gender equality in research and higher education. As already mentioned, this strategy will need to be adapted to the particular context of each RPO/RFO.

Summary of key conceptual notions

- The distinction between 'sex' (primary and secondary sexual characteristics) and 'gender' (social construction of the categories 'women' and 'men') has been very important to denaturalise femininity and masculinity, thereby making change possible. The argument of 'natural differences' has been long used to justify social inequalities between women and men.

- It is however important to do a critical use of 'gender' as an analytical tool. The analysis should not be limited to identifying differences between women and men, but to examine how these categories are constructed on an everyday basis. This includes examining not only the roles assigned to women and men, but also how sex and sexual difference are understood, how ways of identify, feel and express oneself are attributed (including gender identity* and gender expression*).

- Gender is a variable that unequally structures society and organisations, including higher education and research institutions.

- Gender interacts with other axes of social differentiation (intersectionality).

- We 'do gender' through social practices both at the interpersonal and organisational levels and this is not necessarily a conscious process. Gender norms are often invisible and this leads to their reproduction (inertia), reason why awareness-raising and proactive action are essential to foster change.

- Resistance to change may arise when we attempt to introduce changes. A careful understanding of the organisation's context and culture is essential to design a tailored and successful change management strategy.

3 Guideline for structural change: developing an internal engagement and change management strategy to promote gender equality

3.1 Resistance

It is not infrequent to face obstacles in the conception, implementation, management, monitoring and evaluation of the GEP. These can range from lack of impact drivers to pervasive forms of resistance. It is very important to take into consideration that GE work is not rapid and each obstacle needs to be addressed by a specific strategy. In this section, we present some frequent obstacles identified in the gender equality literature and how to deal with them.

3.1.1 Definition and types of resistance

In the context of a Gender Equality Plan, resistance can be defined as "opposition to the change that implementation of gender equality policies promotes"(FESTA, 2016, p. 8). This opposition is related to the actions but also the non-actions of different actors and can stem from both individuals and organisations. Indeed, organisations can constrain actors' possibilities to implement change by means of everyday norms and practices.

Resistance has multiple dimensions characterised by different continuums on which it ranges. It is important to be aware of the different shapes resistance can take in order to be able to identify it and address it more effectively. These dimensions are the following (FESTA, 2016):

- **Active/passive resistance**. Active resistance refers to subversive action, to take action to prevent the implementation of gender equality (being critical, blocking, finding objections, ridiculing); whereas passive resistance related to the act of being silent and not doing anything (agreeing verbally but not following through, withholding information).

- **Explicit/implicit resistance**. This refers to the visibility of the resistance, the extent upon which resistance is overt or covert. In the first case, the person shows an apparent and open opposition to gender equality work. In the second case, the person does not want to openly show resistance and finds more discrete or obscure ways to express it. The second type of resistance is, of course, more difficult to identify and address.

- **Gender specific/non gender specific resistance**. Resistance can be directly directed to gender issues or not. For instance, it can be linked to a general resistance to change in the organisation. This renders gender equality work difficult to perform, but it does not focus explicitly on it so there may be ways to overcome it.

- **Individual/group resistance**. This dimension refers to the number of people involved in resistance. It can be an individual, a few or a group.

- **Personal/institutional resistance**. The first one is related to someone's particular motives, traits, feelings, etc., whereas the second one is associated with the institutional culture or its legal and administrative procedures. It is however important to note that people can change institutional culture and the other way around.

Video-resource about resistance to gender equality in higher education:

Gender Equality Academy (2020), *Bias and Resistances: Exploring Challenges to Gender Equality in Leadership and Decision-Making. Joint webinar with Gearing Roles*. URL: https://www.youtube.com/watch?v=l_brISZbQKY

3.1.2 Common causes of resistance

The causes of resistance can be different and they may overlap. The FESTA Handbook on resistance (2016) summarises them as follows:

- **Insecurity and anxiety**. Gender training and awareness may challenge people's identities and roles through a process of self-reflexivity. This critical view on the self is not always easily accepted.

- **Mistrust**. Mistrust can be directed towards the people responsible of implementing change or towards the institution itself.

- **Loss of face**. People may be defensive against change, especially those involved in planning actions in the past. Structural change for them may mean accepting they have been wrong.

- **Thread to job status**. More (female) competitors in promotion or hiring processes for future jobs may make (male) academics feel threatened and that their privileges will come to an end. This is particularly true in case gender quotas are foreseen.

- **Thread to meritocracy**. The notion of meritocracy is essential in academic discourse, understood as universal and gender neutral. Initiatives that attempt to advance a career on other grounds are considered a challenge to objectivity, meritocracy and excellence. However, meritocracy always implies selection and inclusions and rely on criteria that are not gender-neutral. This argument is often used in the STEM field, in which women's under-representation is denied, overlooked and explained as the result of women's own failures, rather that the result of inequalities.

- **Conformity**. Gender equality implies changes and giving up one's own habits and accepting a changing environment can increase discomfort. A high sense of conformity to the current situation can thus raise resistance.

- **Limited financial resources**. This is a common obstacle in gender equality work. Management has a critical role in avoiding the lack of financial resources.

- **Limited human resources**. Sometimes gender equality work is left to the personal commitment of few motivated staff who are already involved in other tasks and responsibilities.

- **Time burdens**. This type of resistance is related to lack of time of different priorities. This includes that arrangements take very long to be implemented because managers do not spare time to meet and the heavy workload of many academics, which gives them a convenient excuse not to be involved in gender equality work.

- **Lack of gender awareness**. Some people resist change because they are simply not aware of the problem. Academics may internalise the existing situation and not urge for change. It is thus very important to organise gender raising awareness activities.

- **Fear of gender issues or gender hostility**. The stereotypical cultural belief that not only define men and women as different but implicitly considers men superior to women, goes beyond individuals

and affects also organisations. Male-dominated organisations reinforce men's priorities and lifestyles. In those cases, gender hostility is shown in organisational cultures in which stakeholders feel uncomfortable to talk and work on gender equality. Moreover, gender is usually seen a matter that lies outside science in academic institutions, a 'women's matter', as though men do not have gender. Gender equality may be rejected as 'ideological' by both women and men.

- **Slow improvement**. As previously explained, gender equality work is not rapid and people involved in different projects may feel exhausted and lose interest and motivation. In this sense, it is importance to make visible concrete changes and benefits.

- **Being tired or feeling hopeless**. These are common feelings in gender equality work. People may feel dissatisfied because of work burden, lack of support and the slowness of change.

- **Changes of personnel in functional roles**. This is key for sustainability. The change of personnel in managerial positions may cause resistance. Newly arrived managers may not feel very supportive.

- **Illusion of having done enough**. This is a particular resistance in organisations that have already implemented some measures towards gender equality. Both staff and managers can have the illusion that all the work has already been done.

- **Low motivation or lack of interest**. People may not feel motivated to act if they think that the disadvantages are higher than the advantages and/or if they see a lack of interest from the top positions of the organisation. They may not see the benefit of gender equality work.

- **Low priority**. Actors may have other priorities and no time to invest in gender equality activities. Sometimes they also receive instructions to accomplish other type of tasks considered more important by managers.

- **Lack of self-confidence**. This can be the result of socialisation patterns (for instance, women's) but also of meeting cultures, structures and power dynamics of the organisation.

- **Looking for benefit or profit**. Some people will approach gender equality project in a career-centred way and look for their own benefit. In these cases, they tend to focus on short-term effects, ignoring the long-term ones.

The GEAR tool (EIGE, 2016) describes most of the afore-mentioned causes and add two more possible causes:

- **Lack of autonomy of the research organisation.** In some countries or regions, research organisations have limited autonomy to implement changes because they need to respect legal provisions. This is specially the case for hiring, recruitment and promotion regulations.

- **Absence of historical background in gender studies within the organisation.** Some research organisations have no experience or tradition of gender studies. This can represent an added obstacle since they will have to introduce and present the gender perspective to the community and to convince them of its relevance.

3.1.3 Dealing with resistance

Different initiatives have been suggested to avoid and overcome resistance towards the promotion of gender equality. These strategies need to be tailored for each specific research organisation and context. Successful strategies tend to focus on structural change, rather than personal or individual. The wording and communicational aspects -how the project is framed- also matters. For instance, the inclusion of the word 'women' in the project name can lead people to think that it does not aim at the benefice of all, but only of a specific group. The organisation of awareness-raising groups emphasizing that gender equality also benefits men and the whole community are useful to deal with resistance. The FESTA Guidelines (2016) presents five types of recommendations for avoiding and overcoming resistance:

- **Institutionalisation, diversity and inclusivity**. These actions aim at facilitating change towards gender equality and helping sustainability. They include involving more women and men in the organization in gender equality work in innovative ways, keeping gender equality issues on the organizational agenda and making gender initiatives more visible and providing and making visible up-to-date quantitative data on gender equality indicators in the organization.

- **Networking and collaboration**. These actions aim at strengthening the position of the project as well as empower those who are committed to change. They include collaborating with other appropriate projects at institutional, national, international levels, establishing contacts with key persons and strategic units, giving priority to reach people in different departments as well as those engaged in gender equality and building networks in and outside the organization.

- **Communication and dissemination**. It is important to effectively communicate the intended changes of the GEP both in and outside the institution. To achieve this, it is important to employ different strategies, find external influential sponsors, use a positive and encouraging language and clear, attractive, comparative information (e.g. data, findings, etc.) in all the communication processes, introduce the project more as an endeavour dealing with the whole "university environment" rather than solely with "gender" or women and provide evidence about the success of interventions.

- **Creating the capacity for change**. It is important that both staff working on gender equality and diversity units but also general staff are trained on gender equality and institutional change to guarantee change and its sustainability. This can be done by utilizing current national developments, events, policies regarding gender equality for the project initiatives, enhancing the gender awareness (by organizing trainings/briefings by gender experts), organizing enthusiastic kick-off meetings to engage the whole institution, mapping the institution/people and the context better, and creating seed funding by organization for supporting projects' proposal periods.

- **Teamwork and methodology**. The improvement of teamwork and the methodology employed is a good way to avoid resistances. This includes involving people with strong positional power, commitment and willingness, combining activities and tasks of different Work Packages in order to save time and energy, engaging both women and men in project initiatives, using regular meetings or other/formal events of the organization to address people who are not willing to join specific GE meetings, creating consensus between the stakeholders on the concepts used in the project, give priority to reach PhD students and research assistants in different projects/programs as the younger generations are better motivated to and fewer risks involved in change, working with competent, influential external experts and defining clearly what kind of change is intended.

In the following section, the most important success factors for the promotion of gender equality as structural change are developed in greater detail. These concern the communicational strategy (3.2), the involvement of stakeholders (3.3), success factors related to the GEP process (3.4) and finally, insights for a

successful sustainability of structural change (3.5).

3.2   Success factors (I) – Communicational strategy

3.2.1 Framing gender equality

Gender equality and the policies to promote it can be framed in different ways. **Framing** is about how reality is understood, how discourses make the world intelligible, a frame being an interpretation scheme structuring the meaning of reality. In this sense, Verloo (2005) suggests defining policy frame as 'an organising principle that transforms fragmentary or incidental information into a structured and meaningful policy problem, in which a solution is implicitly or explicitly enclosed' (2005, p. 20). There are thus different approaches to understand gender equality and different policy perspectives to address it.

The way we frame gender equality policies can appeal an audience and call for action or not (Verloo, 2007). For instance, GE can be framed as a business case or as a matter of justice. In the first case, the economic benefits and the higher efficacy of GE will be underlined, whereas in the second case GE will appeal to democratic values. The business case for GE is aligned with neoliberal conceptions of the university, which could be beneficial in some cases but may also entail some dangers. The justice argument can match the priority of some universities, but not of others.

It is thus essential to think about how we will strategically frame gender equality policies and set the priorities for change at our RPO/RFO. A different framing strategy will be used in different RPOs/RFOs according to their particular context, reason why carrying out an initial analysis of the institution is essential. Some key aspects of framing are:

- It is important to engage regular actors, to speak their language, to take into account their view and their context.

- Framing has always to be contextualised and may evolve together with the evolution of the context.

- Credibility and consistency are key to success: it is important to be convincing, to choose the facts to highlight and to avoid direct contesting.

- We should be aware of the rhetorical entrapment, in other words, all the framing we employ can be used against us. Reflexivity is in this sense a good practice – the ongoing thinking about the consequences of the frame used.

In a recent webinar training Verloo (Gender Equality Academy, 2020) also warns us about the framing of gender equality in times of the current pandemic. In her view, framings of the crisis become hyper dominant and thus arguments raise about postponing gender equality policies until everything comes to normality again, thereby diverting attention from gender equality. One possible counter-framing is to assert that the "normal" was already a problem and we should take up this momentum as an opportunity for change.

> Useful webinar training on gender equality policy framing:
> Gender Equality Academy (2020). *How to strategically frame gender equality policies & set priorities for change at your university?* URL: https://www.youtube.com/watch?v=jKd1obGfJds

The different arguments that can be employed to convince different stakeholders about the benefices of gender equality within higher education organisations are presented in the next section.

3.2.2 Opportunities and benefices of gender equality and diversity

The opportunities and benefices of gender equality for university and other research institutions are numerous. EIGE (2016) summarizes the main benefits of gender equality as follows:

- **It proves compliance with domestic and EU regulations**. Although gender equality regulations vary from one context to another, all research organisations and universities are required to respect some legal obligations regarding gender equality and non-discrimination. Gender equality work, specially gender mainstreaming*, lead organisations to comply more effectively with legal provisions.

- **It creates better work environments**. Organisations are gendered and their staff should be able to freely develop their skills and work in a gender-friendly environment. Adopting a gender-sensitive approach is thus key to the well-being of staff. It is necessary to go beyond the legal provisions and actively prevent gender-based offenses

- **It fosters the attraction and retainment of talents**. Universities and research organisations are in constant competition for talent. Training qualified and creative researchers is costly and takes time. It is thus important to attract talented people and to avoid the abandonment of scientific careers. This is especially true for the 'leaky pipeline'* of women in science, which carries an important loss of knowledge and an organisational cost.

- **It leads to economic benefits**. On the one hand, gender equality is increasingly a increasingly widespread criterion to access public funding, since funding agencies are bound to the objectives of the European Research Area on gender matters (see description in section 2.2.). This is clearly the case of the EU work programmes of Horizon 2020. On the other hand, gender-balanced teams, gender expertise and gender dimensions of research can lead to a broader set of needs, expectations and usages of knowledge. Moreover, research outputs will achieve greater validity.

- **It increases excellence and research quality**. Intimately linked to the previous benefice, adopting a gender perspective in research and innovation can increase the quality of research, leading universities and research organisations to become more competitive. It allows addressing gender biases in research and teaching, building more evident-based knowledge. Additionally, teams with a balanced number of women and men tend to perform better.

- **It is a leverage for organisational change**. Gender equality work involves different kinds of staff and cooperation between them. This is a great opportunity to enhance the sense of community and belonginess. It also leads the organisation to higher transparency and accountability. It helps identifying biases that go beyond gender issues and thereby improve the institution us a whole.

- **It is a matter of fairness, democracy and credibility**. Regardless of their ethnic or national origins, social class, and general situation, women and men should have the same opportunities, resources and power. They should be able to participate equally in all areas of society, higher education and research. Gender equality and diversity will help universities and research organisations to reflect more accurately the reality of the society in which they are inserted and make sure that the different needs and interests of the population are taken into account.

In a similar vein, the League of European Research Universities, LERU underlines five important opportunities for universities of equality, diversity and inclusion (EDI) (LERU, 2019). These include:

- **To better reflect society and connect local and global challenges**. Universities need to take a full part in society, getting involved in the concerns of the general public and being agents of social change. This

can be more effectively achieved by representing the range of perspectives held by the national and regional communities they serve. The innovation that universities bring to society is not limited to technical innovations but includes also social and cultural innovation. Social inequalities should not thus start at the university level. A diverse staff and pool of students provides an enriched learning environment from everyone and guarantees the inclusion of different social perspectives, fostering creativity and showing an important commitment to fairness.

- **To discover and include the greatest talent**. It is important that universities and research organisations reconsider the definitions of excellence and success in the academic community. The lack of diversity should not be seen as an inevitable outcome of the insistence on excellence. The managing of research organisations through metrics and rankings exclude less tangible but also important assets such as the transfer of knowledge to society and teaching skills, thereby homogenising universities by narrowing the scope. It is thus necessary to take a broader and richer view of excellence to deconstruct the barriers for under-represented groups.

- **To fully realise the potential in all staff and students**. The current lack of diversity prevents talented staff and students from fully contributing to academia. Moreover, the commonly accepted notion that the current recruitment and selection system is only based on merit sends under-represented staff and students the message that they are less deserving. These messages are often internalised, thereby creating internal barriers leading to lower self-esteem and productivity. The inclusion of a diverse range of staff and students will optimally suit the recruitment and selection procedures to realise the full range of talent.

- **To enhance wellbeing across the institution**. By paying greater attention to equality and diversity, universities and research organisations can create a more engaging environment for work and study. Staff and students will feel valued and satisfied. This measure will benefit the recruitment, retention and performance of staff. It will not only lead to a sense of fairness, but it can also promote structural change: people feel empowered to challenge flawed work practices or harassment. It is also important to note that measures to include under-represented groups, for instance, actions to promote the reconciliation of work and family life or measures to diminish stress and anxiety, will have a widespread impact in the organisation, beyond minority groups.

- **To increase the validity and quality of our research results and knowledge production and transfer**. A special emphasis should be placed on considering how gender and diversity affects the framing of research questions and the taught curriculum. An inclusive agenda in research expands the range of perspectives to address more effectively different global challenges, such as climate change, poverty reduction or sustainable food production. This is crucial to avoid painful and costly mistakes. It is essential to make sure that research is valid, trustworthy and of high quality. A diversity of approaches, methods and perspectives increase research capacities as well as problem-solving potential.

> Key resource:
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> The GEAR tool (EIGE, 2016, pp. 13-16) provides a series of **examples of speaking notes** to support advocacy work for gender equality addressing different stakeholders, useful to quickly convince key staff members or colleagues about the benefices and opportunities of gender equality work. They are short notes providing convincing arguments to promote gender equality, tailored to address different staff profiles. Still, it is recommended to **adapt** them to fit your institution.

3.3   Success factors (II) – Stakeholder involvement

3.3.1 Involvement of internal stakeholders with different profiles and cooperation between them

Ideally, all kinds of stakeholders of the RPO/RFO should be mobilised in the developing and implementation of the GEP, from managers to students. This involvement will foster a sense of belonginess, thereby helping to overcome obstacles and resistances. The involved stakeholders will take ownership of the project and cooperate for its successful development.

The extent of involvement of the different stakeholders will depend on their profile. It is however important to clarify from the beginning what is asked from them, which are their responsibilities and their specific roles in the GEP. The GEAR tool (EIGE, 2016) identifies the following key stakeholders to be involved and their main tasks:

- **Gender equality office or unit**. Gender equality work needs a dedicated structure that implies, follows up and assess structural change. A GE unit is the best service to start a GEP. If it does not exist, it could be a good measure of the Plan itself. It guarantees that GE work is carried out and maintained. However, for this unit to be effective it needs more than one person working full-time, not to be isolated within the institutional structure and to be publicly supported by the high management of the RPO/RFO.

- **Senior or high management**. These are actors or actresses governing the organisation (rectors, chancellors, chairs of board or directors). They are a key stakeholder in the implementation of the GEP since they have the power to take decisions. Their role will be to show the public commitment of the RPO/RFO towards gender equality, to publicly endorse the GEP[6], to make available financial and human resources, to approve documentation, procedures and activities and to request updates on the implementation of the GEP.

- **Middle managers**. These actors and actresses are in charge of the everyday management of the RPO/RFO (faculty deans, heads of departments and services). They are an intermediate role between the high management and teaching/research staff and students. Their roles will consist of publicly supporting the GEP, ensuring its practical implementation, promoting incentives and asking the relevant units to provide information and data to assess the initial situation and monitor the GEP implementation.

- **Research and/or teaching staff**. These actors and actresses have a key role in changing how research is currently done by incorporating a gender dimension in research content. They can also foster change through teaching and their communication with students. They can actively act as role models for gender equality. Moreover, many measures of the GEP will be addressed to them, for instance human resources measures, and thus they need to be implicated and offered the opportunity to provide their views. Their roles will be to integrate and promote the gender perspective in research and teaching, to actively participate in GE activities and to foster change by debating the situation of the RPO/RFO.

- **Human resources department**. This is a key unit to promote gender equality and structural change by adopting unbiased and fairer procedures to achieve a gender-balanced composition of the staff and measures to guarantee equal career progression. Their roles include collecting sex-disaggregated data,

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[6] For instance, the video of the interventions of the director and the provost of Sciences Po (Paris) supporting gender equality.

developing gender-sensitive indicators, reviewing and/or modifying recruitment and selection procedures, reviewing and/or creating measures for the reconciliation of professional and personal life and setting an anti-harassment policy.

- **Students**. Structural change for gender equality includes raising students' awareness in relation to gender equality issues and encouraging them to integrate the gender approach in research. Moreover, current students are the teachers and researchers of the future. They can become a critical mass for gender equality. Their role will be to actively participate in the GEP activities, integrate gender in research and learn to identify biases.

In order to achieve sustainable change for gender equality **cooperation** among different stakeholders is essential. Involving key stakeholders is not enough to grant structural change. It is thus important to foster collaborations between them through the creation of networks. The involvement of different stakeholders with the same GEP working group(s) can be a way to do this. Many measures of the GEP will require the approval and/or the joint work of different units, it is therefore essential to connect them. It is also necessary to ensure a clear distribution of tasks and responsibilities.

3.3.2 Involvement of leaders

As it was highlighted above, the active engagement of leaders, both higher and middle management, is an essential aspect for the success of the GEP. This shows the institutional commitment to gender equality, presented as a priority for the RPO/RFO. The STAGES guidelines (STAGES, 2015) provide with five useful action schemes to engage leaderships.

The first action scheme consists of **connecting the Gender Equality Plan to institutional strategies and policies**. In this way, gender equality will be hooked to the mission of universities and research institutions. This can be done by supporting the quest for competitiveness, scientific impact and research funds, by supporting the quest for talent and by promoting science-society relationships through the gender and diversity approaches. In a similar vein, the GEAR tool (EIGE, 2016) highlights the importance of embedding gender equality into existing structures and management procedures in order to ensure their institutionalisation. It is important to anchor GE provisions into current structures and practices. For instance, gender-sensitive procedures should be incorporated into general recruitment processes and gender indicators should be included in general monitoring instruments. The following are concrete examples of the project STAGES:

- Supporting the quest for competitiveness, scientific impact and research funds:

"The team at the Alexandru Ioan Cuza University addressed the notion of scientific excellence to highlight its gendered dimensions and implications. A relevant internal debate was promoted on the correlation between scientific excellence and gender equality in research, through the organisation of public events and lectures on "Evaluation criteria of excellence without gender bias". The contribution of the gender perspective to scientific excellence was also deepened through the organisation of a training session on the integration of gender in a project's life-cycle, delivered by European experts from the Yellow Window Society. The training, which was attended by a large audience, also included the analysis of concrete examples drawn from two specific research fields: nanoscience and biotechnology" (STAGES, 2015, p. 35).

- Supporting the quest for talent:

> *"Close cooperation with internal units characterised the implementation of the Action Plan at Fraunhofergesellschaft, which enjoyed a significant endorsement from the leadership. The organisation's need to attract talented researchers to face global competition is one of the reasons which made it possible. The actions implemented under STAGES supported the Headquarters and the Equal Opportunity officers in promoting the conditions for the attraction, retention and productivity of female human resources, while at the same time responding to the growing attention to gender equality at the national level. This implied, however, the need to manage the Action Plan as an integrated part of organisational strategies and priorities, which somewhat limited the team's autonomy"* (STAGES, 2015, pp. 35-36).

- Promoting science-society relationships through the gender approach:

> *"The focus on gender medicine strongly marks the Action Plan implemented at the University of Milan, which included dedicated workshops and optional courses at the Faculty of Medicine. It also turned out particularly suitable to emphasise science-society relationships from a gender perspective, by highlighting topics such as the social determinants of health and related gender differences. In the framework of the Week of Women and Science, organised under the Action Plan during the Universal Milan EXPO, issues such as inequalities in life expectancy (and healthy life expectancy), between and within countries were presented and discussed in an event addressing the wider public, raising awareness of the potential social impacts of taking gender variables into serious consideration within the medical science"* (STAGES, 2015, p. 36).

A second action scheme is the **support of internal activities**, thereby proving the usefulness of the GEP to institutional leaders. The GEP can provide universities and research organisations with additional resources, opportunities and services for carrying out internal services or solving problems. This implies that the GEP should be flexible enough to accommodate leaders' needs and expectations. This can be done through the establishment of mutually beneficial relations with relevant internal structures, the redesign and adaptation of the GEP to support institutional policies and initiatives and by acting as an internal centre of expertise on GE that leaders can use (see practical examples in section 5.3.2). For instance:

- Establishing mutually beneficial relations with relevant internal structures:

> *"A 'cooperation paradigm' was developed and applied at the Alexandru Ioan Cuza University by developing practices for the creation of cooperative relations with the organisational structures which are involved in the dynamics of gender equality in research, such as the Human Resources Department, the university Doctoral Schools, Research Departments, Project Management Department, Media Communication, as well as faculties and academic departments. Under the paradigm, cooperation was sustained also with the university top management (Rectors Board, Senate Board and Senate Commissions) in order to institutionalise the new organisational structures and practices set up within the framework of the project"* (STAGES, 2015, pp. 36-37).

- Redesigning and adapting the Action Plan to support internal policies and initiatives:

> *"Aarhus univesity's original Action Plan has also undergone change, particularly to adequately account for the high attrition rates among early-career women researchers. In fact, the issue was not covered by the university's gender equality initiatives for the period 2009-2014 and was consequently put in the spotlight by the STAGES team, which could in this way conveniently integrate its work with the efforts for equality made by the university"* (STAGES, 2015, p.37).

- Acting as an internal centre of expertise on gender equality that leaders can use:

> *"The team at Aelexandru Ioan Cuza University has been systematically providing consultancies on gender issues to internal structures, such as the university's Human Resources Department, the Projects Management Department and the International Relations Department. Based on the results of the Action Plan, policies and programmes on Human Resources excellence have been pursued, and the participation in international projects has been supported through specific consultancies"* (STAGES, 2015, p. 37).

A third action scheme is the **mapping of leaders**, not only in relation to their profile and function, but also in relation to their attitudes towards gender equality and their inclusion in an Advisory Board (see concrete examples in section 5.3.3.). It is important to understand that leaders are not homogenous, either as groups or as individuals. They have different sensitiveness towards gender equality issues and policies. The mapping and selection of leaders reduces the amount of time wasted over indifferent or hostile leaders and allows for the inclusion of those who are open and supportive.

- Identifying relevant internal leaders and their attitudes towards gender equality:

> *"At the very beginning of the project, because of the far-reaching and time-consuming university restructuration process, the team at the Aarhus University adopted a "small steps" approach, trying to overcome the problem of establishing contact with the leadership. It entailed directly contacting faculty management (for actions relevant to their area of responsibility), or sub-top levels of the Human Resources Department, so to establish cooperation, offering support and gaining credibility. With time, it was possible to scale up to the central leadership, thanks to the Action Plan's increased visibility and connections, and the conclusion of the restructuration process"* (STAGES, 2015, p. 38).

- Selecting leaders from different levels and sectors to include in the Advisory Boards:

> *"An External monitoring board has been set up at the FRAUNHOFER-GESELLSCHAFT, whose members professionally deal with issues connected to the Action Plan on a daily basis. In fact, they are the persons at the level of the headquarters who are responsible for Personal Affairs, Gender Diversity Management, and Equal Opportunities, amongst others"* (STAGES, 2015, p. 38).

A fourth action scheme includes the **use of active and participatory methods** to involve leaders. These activities can go beyond their involvement in advisory boards. For instance, by involving leaders in action design and implementation of the GEP and by promoting leaders' involvement with bottom-up groups

and experiences (see concrete examples in section 5.3.4). This allows leaders to develop an interest and emotional feeling towards gender equality, helping them to engage personally with the GEP. It is important to foster interaction between the leaders and researchers and staff members by creating particular occasions.

- Involving leaders in action design and implementation:

> *"The use of the Group Model Building methodology proved extremely successful at RADBOUD UNIVERSITY to promote leaders' involvement in gender issues and urge them to take action. In fact, this technique combines an awareness-raising component about the features of gender-related problems in the specific units the leaders are responsible for, and an action-oriented, consensus-building component. The latter aims at supporting the participants in the formulation of tailored measures to address the identified problems, something that happened at both the institutes concerned"* (STAGES, 2015, p. 39).

- Promoting leaders' involvement with bottom-up groups and experiences:

> *"The team at the Radboud University organised periodic meetings of representatives of the newly-established Halkes Women's Network, mostly addressing young women researchers, with the Rector and Vice-Rector of the university. These meetings, which also involved representatives of the university network of women full professors, touched on different issues, including: the participation of the university in national gender equality programmes; the opportuneness of gender targets for internal boards and commissions and different career levels; the initiatives organised by the two networks, with the aim of involving leaders and widen their outreach. The existence of a network of women full professors with a tradition of annual meetings with the leadership made it easier for the young researchers to get to meet the leaders, while cooperation between the two networks strengthened their influence and weight"* (STAGES, 2015, p. 39).

> **Key resource**
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> The "Toolkit For Integrating Gender Equality and Diversity in Research and Innovation Systems" (GENOVATE, 2016) provides with a range of **useful participatory methods and tools** to promote a sustainable change process. These methods include: the gender app, gender observations, gender system analysis, value exercises, world café, the critical incident technique, personas and the action plan for change.

Finally, the fifth action scheme consists of **gaining internal legitimacy through external support**. The involvement of external institutions and experts to provide advice and support to the GEP can be helpful in increasing its internal visibility and legitimacy. This can be carried out by building relations and partnerships with external institutions and groups and by involving external experts (see section 5.3.5. for practical examples). In the case of CALIPER, this task is already foreseen in the creation of a Research and Innovation Hub for each RPO/RFO.

- Building relations and partnerships with external institutions and groups:

> *"Close cooperation was established by the team at the University of Milan with the Health Department of Lombardia Region, centred around the common interest and focus on gender medicine. It entailed jointly organising public initiatives included in the original Action Plan (such as two Workshops on gender medicine), as well as additional ones. The cooperation brought many advantages: institutional support, greater visibility and outreach, additional resources. The flexibility and adaptability of the team was important: an action was brought forward and another added to maximise the benefits of cooperation. The integration of the respective networks of relations was also a key factor: the team, including members of the Medicine board, mainly focused on inviting international guests and advertising within the university, whereas the Lombardia Region team activated the regional network of experts and the possible targets of the initiative"* (STAGES, 2015, p. 40).

- Involving external experts:

> *"Both internal and external experts have been involved in the Action Plan at the Alexandru Ioan Cuza University, in particular in the delivery of training modules for the university's top and middle management. Training sessions were provided by internal experts from the Network of Women in Academia and Research, established under the Action Plan, as well as by invited European specialists in gender equality in science. To this end, and since the beginning of the project, the team was committed to build relations and partnerships with European institutions and gender experts from many European bodies, networks and universities such as ERC, LERU, CNRS France, EIGE, EPWS, Gender Summit, Yellow Window, TUWien etc."* (STAGES, 2015, p. 41).

3.3.3 Involvement (and/or establishment) of gender equality and women's networks

No action can be effective without the mobilisation of a critical mass of empowered people. The successful development and implementation of a GEP requires the action of networks of people, networking being understood as any kind of bottom-up mobilisation, even when it does not result in the establishment of formal networks. However, although this is an essential aspect of the GEP success, the STAGES project (STAGES, 2015) also warns us that networking is a highly context-sensitive activity. In some institutions, promoting networks focused on gender (not to speak women-only groups) is considered ideological or belittling for women, while in other this is a current and accepted practice. Indeed, feminist scholarship has showed the usefulness of this type of groups to increase awareness about gender equality. It is therefore crucial to find the appropriate networking strategies. STAGES (2015) suggests two action schemes to involve networks.

The first one is the **establishment or the support of networks for gender equality**. Due to their flexibility in relation to objectives, activities and membership, networks are powerful tools for change. In this sense, networks can be developed and supported to pursue different objectives, from lobbying, to support the implementation of the GEP and from doing research to raise awareness. This can be done by promoting and facilitating new gender equality networks and by supporting other existing networks.

- Promoting and facilitating networks:

> *"The Network of Women in Academia and Research was established at the Alexandru Ioan Cuza University as a transformational agent for the promotion of gender equality in science with a strategic orientation towards diversity in its composition by gender, age, professional position, leadership position. The Network has more than 90 members and it cooperated in many actions in the framework of the Action Plan. Its development over the years benefited from the synergy with the Centre for Gender Equality in Science, established under the project, as well as with the working groups of the UAIC-STAGES team, such as the UAIC Research Group on Gender Equality in Science and the UAIC-STAGES Multimedia Communication Group"* (STAGES, 2015, p. 46).

- Supporting other networks:

> *"A network for the promotion of gender equality already existed at the Fraunhofergesellschaft, made up of Equal Opportunities officers elected at each institute. Through the actions implemented within the Action Plan, and particularly the Annual Report of Equal Opportunities officers and the online Gender Diversity Toolbox, the team worked to revitalise it by strengthening the relations among the officers. To this end, a series of thematic workshops was inaugurated under the Action Plan, involving Equal Opportunities officers in disseminating the practices implemented in their institutes and included in the Toolbox, addressing their colleagues. These workshops also had the unplanned effect of mobilising the officers around their role and standing within the organisation, an effect which can potentially play a role in renewing and strengthening equality structures"*(STAGES, 2015, p. 47).

The second action scheme is to **integrate top-down and bottom-up approaches**, by involving networks in planning, empowerment and negotiation activities. One of the most important assets of networks is their capacity of connecting top-down and bottom-up approaches, thereby creating new spaces for dialogue and negotiation across the organisation. They can act as 'neutral' platforms for drawing stakeholders, staff and leaders into the GEP. This can be carried out by involving networks in action design and implementation and by supporting and connecting internal actors.

- Involving networks in action design and implementation:

> *"The Network of women researchers established at the University of Milan was closely involved in the design of selected activities in the Action Plan. The strategy involved promoting activities explicitly targeting women and designed according to a gender perspective, but relevant (and open) to everybody. The interesting feature is that this practice reverses the normal situation, where it is women who generally have to adapt to programmes and services thought in a "neutral", that is, male perspective. This was applied to the design of two courses: the School of International Publishing and the School of European Projects Drafting and Management for post-doctoral and early career researchers. Even though publishing and research funding are a need for all researchers, particularly the young, the design was based on the obstacles more frequently met by women researchers, as they emerged from network discussions"* (STAGES, 2015, p. 47).

"The main objective of the Action Plan implemented at the Fraunhofergesellschaft was to support the exchange of gender equality-oriented measures and policies across the organisation and its many institutes. This implied continuous cooperation both with the headquarters and with the Equal Opportunities officers, which led to strengthening not only the officers' network, but also the relations between the officers and the headquarters. Efforts aimed at the dissemination of the practices in the online Gender Diversity Toolbox, moreover, prompted Equal Opportunities officers to establish direct contact with the researchers in their institutes –something which didn't always represent current practice– to discuss with them most urgent issues to be addressed and the measures to be implemented" (STAGES, 2015, pp. 47-48).

3.3.4 Involvement of men in gender equality work

'In order to improve the status of women and promote gender equality, more attention should be paid to how men are involved in the achievement of equality, as well as to the positive impact of gender equality for men and for the well-being of the society as a whole'.

Council Conclusions on Men and Gender Equality, 1 December 2006

Gender equality work needs the involvement of as many motivated people as possible. This also includes men. Moreover, as already mentioned above, gender depicts a social relation that involves men and women. Therefore, gender equality work should not be limited to a 'women's issue', men need to be involved as well.

As Egeberg Holmgren & Hearn point out (2009), men can take different positionings on gender equality. They include recognising and opposing men's privileges, prioritising the 'costs of masculinity' and highlighting men's differences. The first one includes a broadly positive attitude towards feminism. The second one relates to a focus on men's rights and father's rights policy and politics. The last one focuses on emphasizing differences between men by sexuality, race, etc. It is thus important to be aware of them in order to choose the most appropriate strategy to involve men in the GEP.

EIGE's (2012) study report 'The involvement of men in gender equality initiatives in the European Union' provides important insights about the inclusion of men in GE work in relation to both the causes of their detachment and factors potentially increasing their involvement in gender equality.

Men can hesitate to be involved in gender equality issues for **several reasons**. First, in some contexts, gender equality is not on the public agenda at all. Second, gender equality is too often seen as a 'women's problem', with little understanding of the role of men. Third, there is important pressure on men to conform to traditional roles and stereotypes. For instance, traditional masculine attitudes can make it difficult for men to acknowledge vulnerability and to ask for help. Fourth, groups and institutions -such as the peers and the media- also contribute to reinforcing traditional stereotypical roles. Fifth, many men also show resistance to change in relation to greater gender equality, especially when this implies giving up privileges (e.g. higher-status job, better pay). Sixth, there is a lack of male role models in society and the media involved in gender equality activities. Finally, the involvement of men in GE work is sometimes perceived as a distraction from the fundamental task of empowering women.

In order to address the reasons avoiding or diminishing men's active involvement in the promotion of gender equality, EIGE's (2012) study report suggests some **measures and initiatives**:

- Efforts should not be limited to addressing men's empathy or resistance, but they should be directed as well towards addressing the real problems that some men experience.

- It is essential to go beyond men who are already active or interested and convince those who are still not involved that participating in gender equality work is worthwhile. A good strategy to do this is to 'seize the momentum', especially those moments in which there are changes in men's lives (e.g. becoming a father, experiencing illness).

- It is also extremely important to show and prove the benefits of gender equality for men in terms of personal, family and social life. The message can focus on the fact that it is great to be 'a new man'.

- The support from women and women's group is also important. This allows to avoid hostility and to build alliances.

- It is required to take into account diversity among men. An intersectional approach should also be applied to men's situations and roles.

- Finally, it is also recommended that men feel really listened to, although this should not imply that men take over activities and campaigns.

3.3.5 Involvement of external stakeholders (research & innovation ecosystem)

'Together, the three types of actors — or four, if we count the users and citizens as a separate actor — develop a new motor of innovation, with intertwining common interests, values, narratives, strategies and investments. Thus, in the process of transforming their own roles, universities, companies and governmental agencies develop their connective tissue, or triple helix […]. It is in this process that the embeddedness of innovation in the regional ecosystem becomes crucial'.

European University Association (2019, p. 66)

As already discussed above (section 3.3.2), external support provides internal legitimacy to the GEP and helps convincing internal leaders about the importance of promoting gender equality within research organisations. Moreover, universities and research institutions play a very important role in regional innovation systems. The European University Association -EUA (2019) identifies four main changing roles of universities within them:

- **Universities provide human capital for innovation**. They educate students and prepare them for different roles. An important question is whether or not there are enough graduates and whether or not they have the necessary competences and skills. This is definitely key question in STEM fields. In many countries there is a lack of human resources in STEM and this lack can be partly explained by the low numbers of female graduates. Collaborations between universities and the regional research and innovation system can address the lack of human resources in STEM at a regional (or national) level.

- **They contribute to knowledge production** for private and public value creation. Universities have an important role as motor of regional (or national) innovation systems and can give access to a 'global pipeline' of knowledge to regional stakeholders in their innovation processes. As discussed above (section 3.2.2), one of the benefits of integrating the gender approach into research content is the increased validity and quality of research results, knowledge production and knowledge transfer. In this sense, regional research and innovation ecosystems can benefit from collaborations with universities' GE initiatives to create knowledge and innovation that takes into account the needs of a diverse

society.

- **Universities participate in knowledge exchange for innovation systems**. Universities' engagement with external stakeholders is essential for the innovation system. This collaboration goes beyond technology and knowledge transfer to the concept of multi-actor co-creation. Gender equality work requires creativity and innovation to address common obstacles in attaining the three ERA objectives, which is best achieved through collaboration and strategic partnership.

- **Universities contribute to strategic transformation by embedding innovation**. Their role in innovation is associated with a far-reaching institutional transformation agenda. The collaboration with external stakeholder can lead universities to redefine their own strategic priorities according to the needs of the regional innovation ecosystem.

The previous insights are key arguments that can be used to convince both internal leaders and external stakeholders about the creation of different kinds of collaborations to foster gender equality both in research organisations and regional innovation ecosystems.

EUA (2018) also offers the following recommendations for universities to support them in building successful innovation ecosystems:

- Continue developing entrepreneurship as a key transversal competence in students and staff.

- Engage with regional stakeholders, including public authorities, businesses and civil society to seize new opportunities.

- Provide incentives to diversify university research and education career models beyond scientific publication merits so that universities can better fulfil their "third-mission".

- Continue activities aimed at increasing public engagement and promote open innovation to enhance universities' impact on innovation ecosystems.

- Recognise the importance of communicating the role of universities as regional lead institutions in developing internationally competitive knowledge regions.

To help develop common agendas across the diverse cultures of different sectors, the involvement of external stakeholders require common values and narratives, social ties and expectations, which are most easily established in regional proximity (EUA, 2018). This new connectivity rests on five pillars:

- **Connective leaderships**. Usually, only some key individuals are the key leaders of a collective drive. Vital leadership is thus essential in establishing collaborations between universities and the research and innovation ecosystem. These include university rectors or presidents, important entrepreneurs in anchor companies, outstanding researchers, leaders of students and student associations and the heads of intermediary agencies.

- **Common norms and narratives**. Core values and common narratives are important to establish solid collaborations with external stakeholders. Regional histories play a key role in regional development. This creates a feeling of connectedness and leads to the willingness of joining forces towards common goals. This includes historical references, collaborative behaviour, high trust, communicative culture, iconic projects or events (established as symbols of the possible).

- **Connective strategies**. Processes of strategic development are important connective platforms. In this case, thematic clusters constitute key platforms for regional strategic positioning, serving as

multifunctional platforms that encompass technology and market foresight, formal and informal exchange of companies and researchers active in the thematic area, service hubs and shared infrastructures.

- **Connective institutional structures**. Recently, universities, governments and companies have gone beyond traditional forms of research collaboration projects to exchange ideas on educational and training needs to ensure optimal connectivity. They have set up networks, services or organisations whose aim is to connect researchers and external actors to develop a common innovation agenda. Organisational, social and spatial coherence is however essential for the success of this collaboration. There should be common decision-making procedures, formal and informal events to build trust and mutual support and common collaborative spaces guaranteeing geographical proximity.

- **Connective spaces**. The spatial dimension is key in collaborations. This includes research infrastructures and campus development projects.

These pillars can help establishing different collaboration with the research and innovation ecosystem in order to, not only gain internal support for the GEP to be implemented, but also to foster change beyond the research organisation's walls. Indeed, RPOs and RFO's can become a key actor in the promotion of gender equality at a regional level, thereby addressing all the phases of the 'leaky pipeline' of women in STEM and promoting different ways -more inclusive and diverse- of doing research and developing innovation.

3.4   Success factors (III) – The GEP process

Following the involvement of different actors and actresses, some elements at the process level have also an important role to play in the success of the GEP development and implementation. The GEAR tool (EIGE, 2016) underlines the following aspects for success:

- **Setting clear targets and objectives.** Gender equality needs to be understood by the whole RPO RFO community and considered relevant by all its members. It is therefore essential to be very practical and concrete in the formulation of the GEP objectives and the setting of targets so that the Plan can be effectively supported and owned by all the members. Objectives need to be long, mid and short term, in order to respond to failures, successes and challenges. The objectives need to be clear and concrete for each intervention measure and area and accompanied by a clear distribution of responsibilities.

- **Flexibility and resilience.** It is necessary to adopt a flexible approach on how to reach the previously clearly defined objectives. There is a need to find a balance between the planned activities and the eventual re-formulation of the Plan. In CALIPER project, the design of the GEP is indeed conceived as a reiterative process in which, after a first implementation of the Plan, it will be assessed, revised and adapted accordingly. The ability to adapt to emerging needs and interests is key to success.

- **Availability of sex-disaggregated data.** Sex-disaggregated data are very important to assess the status of gender inequalities within the RPO/RFO and to design actions and measures to improve the situation. This guarantees that the proposed actions are evidence-based, facilitating the overcoming of potential resistances. However, it is also important to note that the lack of quantitative data should not be accepted as an excuse not to entail gender equality work. As LERU's (2019) report on EDI[7] asserts,

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[7] Equality, diversity and inclusion.

> *"Qualitative data from group surveys or discussions or from individual testimonials are valuable complements to statistics and institutional-level metrics. The university 'story' can best be told by its individual members, whether they are in leadership positions or less visible in the organisation. They can provide inspiration and can give depth and a human dimension to the facts and figures."*

- **Competence development.** Designing, implementing and monitoring a GEP requires knowledge and expertise. It is therefore very important to enhance the knowledge of different stakeholders, for instance, by encouraging them to participate in capacity-building and training activities.

- **Monitoring instruments.** The establishment of follow-up mechanisms is essential. These can take different forms: implementation clusters, regular surveys or data collection and/or qualitative indicators integrated in governance and management monitoring systems. The existence of these instruments increases the validity and sustainability of the GEP measures, thereby supporting gender mainstreaming. Qualitative and quantitative indicators need to be SMART: specific, measurable, attainable, realistic and time-related.

- **Evaluation.** The evaluation of the GEP is key for effectiveness and sustainability. It can be mid- or long-term. The evaluation allows the institution to monitor the implemented actions, to learn from previous initiatives and to redress eventual mistakes. It also provides visibility and measurability of the actual progress, which cannot always be formally attributed to specific measures. This is particularly important because the achievement of gender equality and the integration of the gender perspective in research content require time.

3.5   Success factors (IV) – Institutionalisation

Institutionalisation is key in the promotion of structural change for gender equality, since for change to be structural it has to be irreversible. It is important that the policies and measures adopted during the GEP are not erased or removed because of leadership turnover or budget cuts. Therefore, the GEP should contemplate how the actions it promotes are going to be maintained over time. However, it is also important to note that, at the same time, actions and measures evolve and are adapted. The STAGES project (2015) presents some useful insights about the complexity of this issue.

A first important insight is the **creation of new internal bodies** to ensure the continuity of selected measures of the GEP. For this, the new body has to be institutionalised and funded. According to STAGES project (2015), this is one of the most effective ways to guarantee change long enough to have it rooted in the organisation. A dedicated body can carry out research and policy assessments, launch new actions, negotiate with leaders, mobilise stakeholders and capitalise on its own experience.

> *"A new university centre for research on gender has been set up in 2015 at the University of Milan. On the occasion of the renewal of the Interdepartmental Centre "Women and Gender Differences", in charge for coordinating the implementation of the STAGES Action Plan, its name and profile were changed. The new Centre for Coordinated Research GENDERS - Gender & Equality in Research and Science was officially created having a more explicit focus on gender in science and marked by the official inclusion of departments of the faculties targeted by the STAGES project, the Faculty of Medicine and the Faculty of Agricultural and Food Sciences. The new Centre is taking up the role of assuring the implementation of the Sustainability Plan devised by the team and discussed within the STAGES boards. Continuing the work of STAGES is mentioned in the Statute among the main objectives of the new Centre"* (STAGES, 2015, p. 42).

A second insight focus on **contributing to policy-making** to promote change in internal strategies and regulations. This strategy has a particular important impact on the organisation. Impact can be indirect by affecting the general strategies of the institution or more direct by developing new gender-relevant provisions or even the design of equality plans.

> *"Through the results of their research and data collection activities, and through the advice constantly provided to the leadership of their organisations, the teams at Aarhus, Alexandru Ioan Cuza and Radboud universities had the occasion to contribute to the formulation of internal strategic documents (Equality or Strategic Plans) introducing provisions for gender equality in science. In all cases the timing was particularly favourable, since these documents had to be drafted when the Action Plans were established, visible and authoritative and had already produced relevant results"* (STAGES, 2015, p. 43).

The third insight concerns the **institutionalisation of actions and programmes**, thereby implanting gender equality measures in the regular functioning of the organisation. However, it is important to pay attention to the process from the project team to the organisation in order to avoid the risk that new measures are adopted in a bureaucratic and routinised approach. Staff needs to be trained so that the scope or potential for change is not diminished in this transition. This is the reason why it is essential to continue following the actions after institutionalisation.

> *"The optional Courses on gender medicine activated in different hospitals of the Faculty of Medicine of the University of Milan are managed with increasing autonomy by the structures involved. This is the result of the choice of tailoring the courses to the main specialisations of each hospital, so as to facilitate their progressive integration in their standard training offer. This also helped finding available teachers, interested in developing their specialisation by a more substantial inclusion of the gender dimension. In all events, a transition phase was envisaged by the team. During the transition, the team will still support and follow implementation, with a gradually decreasing effort. The reasons behind this choice are twofold. On the one hand, obvious organisational considerations suggest continuity in action delivery. On the other, some time is needed to convey the original understanding and aims of the actions which guided their design and implementation"* (STAGES, 2015, p. 43-44).

4 Evaluation and monitoring

Engagement activities will take place during **the whole project (M1-M48)** since RPOs and RFOs will need to engage different stakeholders all along the process. However, these activities will take place **specially during the GEP design** (particularly to involve the middle and high management and external stakeholders) and **the GEP implementation** (the involvement of people who will directly imply the Plan is essential).

Engagement activities are **included in Tasks T5.2** (Engagement of regional research and innovation ecosystems) **and T5.3** (Awareness raising activities) and will be led and monitored by **ViLabs** (T5.2) and **STU BA** (T5.3). In this chapter, the **broad strategy** adopted to carry out each task is described in the first two sections, together with a presentation of the respective **key performance indicators.** Following the step, the **monitoring and reporting process and template form** for the engagement activities is presented. Some images of the reporting **template form** are included in the Annex.

4.1   Engagement of regional research and innovation ecosystems (T5.2 - ViLabs)

The collaboration of multiple stakeholders from academia, business, and public sector, as well as from civil society with the RPOs/RFOs involved in CALIPER, can drastically influence the set up and the gradual adoption of the structural changes towards gender balance. In this respect, Task 5.2 builds on a distinctive innovative element of CALIPER, which is the establishment of research and innovation ecosystems between the involved RPOs/RFOs and the aforementioned stakeholders.

The aim is to **create synergies** among stakeholders and the RPOs/RFOs and engage the former with the design and implementation actions of the Gender Equality Plans during CALIPER's lifetime. The engagement of external stakeholders is going to complement the whole process of GEPs development and eventually impact positively on their **institutionalization** and **sustainability** beyond project completion. Thus, Task 5.2 is responsible to i) to map existing opportunities of facilitating the engagement and access to the market of STEM researchers and submit this process as a public deliverable in June 2021 (Month 18) and ii) to implement **engagement activities**, which are projected to take place throughout all CALIPER phases.

That is, **each partner RPO/RFO** is going to engage the research and innovation ecosystems during both the design and the implementation of their tailored GEPs.

During the GEP design phase, engagement activities will focus on engaging external stakeholders to **foster awareness** about i) **CALIPER's scope** to contribute on gender equality in the involved research organisations and how this is going to be achieved through GEPs and ii) **draw feedback** from their insights on gender gaps and barriers to greater gender equality in their respective fields.

During the GEP implementation phase, engagement activities will i) **facilitate the endorsement** of the GEPs' activities inside the project's partners institutions as they showcase an active connection of internal gender balancing strategies with the conditions of the innovation ecosystems of each RPO/RFO and ii) **extract feedback** from the stakeholders' side on the actual structure and effectiveness of these tailored strategies.

In addition to the above, Task 5.2 specifies the organisation of **9 events** dedicated to female innovation around STEM areas. Therefore, **each RPO/RFO** involved in CALIPER is going to carry out their own event (CALIPER FemTech Event) with a double fold aim: i) it will highlight and value **women's led innovations** presenting startups and spin offs and examples of gender sensitive product development/ design and ii) it will work as a means of raising awareness and **attracting more girls to STEM research**.

In order to assess the impact of the organised engagement activities, Task 5.2 entails specific milestones. Hence, the aforementioned events held by each RPO/RFO are projected to be initiated by **November 2021**

(M23 of CALIPER's lifecycle). Also, the engagement activities that each RPO/RFO is going to implement are going to be assessed based on impact that they are going to achieve on specific goals set for CALIPER project.

This assessment is linked to **key performance indicators, suitable to measure how the engagement activities are going to help reaching specific objectives and impacts set for CALIPER project.** In this respect, the engagement activities will be benchmarked according to the following elaboration that stems from project's Grant Agreement:

- **20** External RPOs/RFOs adopt actions to prevent and contrast gender bias in attracting more female students to STEM studies and careers.
- **50 new linkages** developed within each innovation ecosystem of the partnering RPOs and RFOs.
- **More than 80 RPOs/RFOs** engaged and influenced by the project to initiate their own GEPs
- **9 new stable events/initiatives** organized to attract girls to STEM studies.
- **40 RPOs/RFOs** endorsing the CALIPER Charter on Institutional Change for Gender Equal Research and Innovation Hubs.
- **9 FemTech events** to raise awareness on STEM related research organised by RPOs
- **More than 400** female students and researchers to FemTech events of CALIPER.

4.2   Awareness raising activities (T5.3 – STU BA)

Through the change management strategy, the emphasis is put on engaging middle management and internal and external stakeholders that will be highly influential for the GEPs implementation and wider sustainability. One of the key CALIPER project roles is to raise awareness and support the creation of the environment which is user-friendly for gender equality and for the structural changes enabling higher proportion of women in decision-making activities. Improving gender representation through GEPs will access the gender balance to determine the opportunities to improve the current situation. Building gender expertise into the GEPs through the WGs operating includes the engagement activities to ensure the GEPs that are able to get into practice and rather effective. The increased gender responsiveness in structural changes in RPOs/RFOs should lead to and result in more relevant and effective environment. The **goal** of engagement activities is to create a more favourable environment for the acceptance of the GEPs measures what will contribute to sustainable CALIPER objectives.

An established tool for the engagement activities is the organization of **Internal Workshops** at each RPOs/RFOs on September 2021 (M21). These Internal Workshops will be focusing also on further T1.3 and 1.4 outputs discussions to overcome the obstacles and to understand the problems of internal environment of each RPOs/RFOs. The second tool listed within WP5 key performance indicator is the **online raising awareness sessions** undertaken within **three rounds** in April 2021(M16), in April 2022 (M28) and finally in December 2022 (M36). The purpose of this online raising awareness sessions is to provide additional content to support the GEP Working Groups in raising internal awareness and increase engagement throughout the different steps of the structural change process.

To build up the truly relevant added value of these online sessions, the contribution of each participating organization will be needed. Each RPO/RFO will be asked for data collection by carrying out the questionnaire survey sent by the Task 5.3. Leader.

The focus spectrum will include the following areas:

1) Engagement of all managerial levels and staff throughout the process (creating a supportive environment for structural change),

2) Already developed and implemented individual internal engagement (tools, ways and means) within

the internal environment of each RPOs/RFOs,

3) The smoothness of communication with high level top management (obstacles and resistances),

4) Support activities and tools to increase the engagement and awareness (suggestions, expectations).

5) The survey will be created in accordance with the current situation of the engagement activities development of each member within the project consortium.

4.3   Reporting procedure and template

The targets presented above necessitate the contribution of all the involved RPOs/RFOs in CALIPER. It is therefore essential for Task 5.2 and Task 5.3 that the engagement activities carried out by each RPO/RFO are monitored by the corresponding task leaders.

A **single** **reporting template form** (Excel document[8]) is provided to document a pre-defined set of information regarding every engagement activity performed. An image of the form can be found in the Annex.

Once an RPO/RFO has completed an engagement activity for T5.2 or T5.3, it will use the template to **provide data regarding the activity**. In this sense, filling in the reporting template will be a follow up update about the type of the engagement activity, the participants, the scope, and the content of it. Such information is purposeful to reach an effective evaluation **on whether and how the aforementioned indicators have been met**.

CALIPER project will collect this information, monitor and evaluate it internally in a **three-month basis**, which means that each RPOs/RFOs must fill in the template form every three months and send it to the appropriate task leader. As the monitoring and reporting of engagement activities involves two tasks (T5.2 and T5.3) and two task leaders (ViLabs and STU BA), **ViLabs** will be the leader in charge of collecting the reporting forms and will share the information with STU BA. A kind reminder containing the template form will be sent by ViLabs during each data collection period.

Then, the official documentation of the engagement activities is going to take place in **two public deliverable reports** in December 2021 (Month 24) and in December 2023 (Month 48).

In order to facilitate the reporting of activities, both **engagement activities** (**WP5**) and **dissemination and communication activities** (**WP6**) will be collected at the **same time** in the **same Excel file**. It is therefore important to clarify the **distinction** between the two types of activities:

a) **Engagement** activities (WP5):

The **scope** of engagement is to interact with internal (middle and higher managers, rectors etc.) and external actors (stakeholders from other research organisations, industry members, policy makers, civil groups) who can influence the GEPs implementation and wider sustainability.

Engagement means that CALIPER partners introduce the project and its actions to the above actors and **secure their commitment** either as their endorsement of the project, their interest to replicate project's actions or even active feedback regarding the GEPs development.

b) **Dissemination & Communication** activities (WP6):

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[8] The Excel document can be found in the project's official repository.

Dissemination and communication **share information** and implement awareness raising activities about CALIPER targeted to different stakeholders such as external research organisations, industry members, policy makers and even society.

They have a wider scope and address larger audiences; their goal is to **spread the word** about CALIPER and promote the actions carried out by the project. The dissemination and communication activities can be implemented in greater frequency and in more varying forms.

To fill in the form, the RPO/RFO should first **select the type of activity** to be reported ("Engagement" or "Dissemination and communication") and complete it accordingly (see Image 1 in the annex). Regarding the **Engagement template**[9], RPOs and RFOs will be asked to provide **information** concerning the following elements (see Images 2 and 3 in the annex):

1. Data related to the **activity**: the scope of the activity and the level of target audience (internal or external), the type of external activity, the name of the external stakeholder(s) involved in the activity, the type of internal activity, the title of the presentation, the venue and date of the activity, the url of the activity and/or the publication. Please note that it is necessary to provide only the information that applies in each case.

2. Data about the **audience** reached should also be provided: gender, type (e.g. researchers, industry, policy-makers, etc.) and whether the audience comes from a STEM field or not.

3. Photos, links, videos and other kinds of **materials** documenting the activity can also be added.

4. The main **conclusions** of the activity in relation to the engagement of the internal management and/or external stakeholders need to be described.

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[9] The Dissemination and communication template has already been described in D6.1.

Glossary of terms and definitions

- **Androcentrism** is the evaluation of individuals and cultures based on male perspectives, standards, and values. The term refers to a male-centered worldview which does not necessarily present explicitly negative views of women and girls, but positions men and boys as representative of the human condition or experience and women and girls as diverging from the human condition. It is a complex, subtle, and often unacknowledged form of sexism, existing on a continuum which includes misogyny and patriarchal attitudes, but it is also informed by patriarchal cultures in which men are granted more power and influence, and thus the right to evaluate and interpret individuals and cultures. Androcentrism exists in all fields of study and cultural expressions, including the arts, sciences, medicine, law, fine arts, and media (Hibbs, 2014a).

- **Awareness raising** is a process which helps to facilitate the exchange of ideas, improve mutual understanding and develop competencies and skills necessary for societal change. **Gender awareness raising** means providing reliable and accessible information to build a better understanding of gender equality as a core value of democratic societies. As a gender mainstreaming method, gender awareness raising is crucial for integrating a gender perspective into policies, programmes, projects and services that respond to the different needs of women and men (EIGE, 2019).

- **Diversity** means accepting that each individual is unique and these differences should be respected. These differences include race, ethnicity, gender, sexual orientation, socioeconomic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies. Understanding diversity allows for the exploration of these differences in a safe, positive, and fostering environment. Diversity is about understanding each other and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual and among individual (Patrick & Kumar, 2012, cited in GENOVATE project, 2016)

- **Doing gender** refers to the understanding of gender as a routine, methodical, and a recurring accomplishment undertaken by women and men, involving complex perceptual, interactional, and micro political activities that cast particular pursuits as expressions of masculine and feminine natures. Gender is seen as an achieved property of a situated conduct, so gender is seen as an emergent feature of a social situation and as means of legitimating one of the most fundamental divisions of society (West & Zimmerman, 1987, cited in GENOVATE project, 2016).

- **Essentialism** is the denoting of nonnegotiable qualities that identify or make a thing, person, encounter, or event what it is and not something else. Within various disciplines, the issue of essentialism arises when clarity of identity and belonging to a collective are called for or threatened, such as in recognitions, protections, or refutations of essentialist criteria for gender, sexual orientation, race, developmental norms, and other concerns (Dubose, 2014).

- **Ethnocentrism** is the evaluation of individuals and cultures based on the perspectives, standards, and values of another cultural group. This evaluation relies on the assumption that one's own racial or ethnic group is the most important, valuable, and superior. However, the term ethnocentrism may obscure implicit hierarchies within these perspectives, standards, and values; cultural evaluation relies largely on the perspectives of the dominant culture in a given situation, based on a hierarchical ordering of ethnic groups. Ethnocentrism may be seen as a subtle and often unacknowledged form of racism which operates on a continuum which includes explicit racism, and shadeism or pigmentocracy – hierarchies within racialized groups which value lighter skin tones more highly – but is also informed by the history of colonialism and globalization (Hibbs, 2014b).

- **Gender** is the study of the meanings for sex and sexual difference in a given context, it is a useful category of analysis that requires us to historicize the ways sex and sexual difference have been conceived (Scott, 2010).

- **Gender equality** refers to that all human beings are free to develop their personal abilities and make choices without the limitations set by strict gender roles. Gender equality means that the different behaviours, aspirations, and needs of women and men are considered, valued, and favoured equally (European Commission, 2011b, cited in GENOVATE project, 2016).

- **Gender expression:** people's manifestation of their gender identity, and the one that is perceived by others. Typically, people seek to make their gender expression or presentation match their gender identity/identities, irrespective of the sex that they were assigned at birth (European Institute for Gender Equality, 2020a).

- **Gender identity:** each person's deeply felt internal and individual experience of gender, which may or may not correspond to the sex assigned at birth, including the personal sense of the body (which may involve, if freely chosen, modification of bodily appearance or function by medical, surgical or other means) and other expressions of gender, including dress, speech and mannerisms (European Institute for Gender Equality, 2020b).

- **Gender mainstreaming:** Gender mainstreaming is the (re)organisation, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated into all policies at all levels and all stages, by the actors normally involved in policymaking. Mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. The ultimate goal is to achieve gender equality (European Institute for Gender Equality, 2020c).

- **Gender perspective** is the perspective taking into account gender-based differences when looking at any social phenomenon, policy or process (European Institute for Gender Equality, 2020d).

- **Glass ceiling** are artificial impediments and invisible barriers that militate against women's access to top decision-making and managerial positions in an organisation, whether public or private and in whatever domain. The term 'glass' is used because these impediments are apparently invisible and are usually linked to the maintenance of the status quo in organisations, as opposed to transparent and equal career advancement opportunities for women and men within organisation (European Institute for Gender Equality, 2020e)**.**

- **Horizontal gender segregation** refers to the concentration of women and men in particular sectors and occupations (European Commission, 1998).

- **Innovation** refers to the driving force of economic growth and competiveness7, which provides real benefits for citizens, consumers, and workers. Innovation speeds up and improves the way we conceive, develop, produce, and access new products, industrial processes, and services. It is the key not only to creating more jobs, building a greener society, and improving our quality of life, but also to maintaining our competitiveness in the global market (European Commission, 2015, cited in GENOVATE project, 2016).

- **Intersectionality** is variously understood as an analytic tool and as a theoretical framework which has its origins in critical race and feminist theory. As an analytic approach, it uses multiple axes of identity as a framework to examine the relationships among multiple dimensions and modalities of social relations and subject formations as simultaneously experienced by individuals and the hierarchical power relations that are central to this positioning. As a theoretical framework, it attempts to explain

how various social locations such as race, class, ability, gender, health status, and other dimensions of identity intersect, including social practices, institutional arrangements, and cultural ideologies and the outcomes of these interactions in terms of power (Treloar, 2014).

- **Leaky pipeline** is a metaphor used to describe the progressive "evaporation" or disappearance of women as they advance in the career (Dubois-Shaik & Fusulier, 2013).

- **Quadruple helix** refers to government, industry, academia, and civil participants working together to create the future and drive structural changes far beyond the scope of what any one organization or person could do alone (European Commission, 2011a, cited in GENOVATE project, 2016).

- **Social constructionism** is a philosophy that attempts to make sense of reality. It is as a social scientific method originated in the latter half of the 20th century and often is associated with postmodern thought. Social constructionism as a scientific term first entered the academic lexicon with the publication of Peter Berger and Thomas Luckman's *The Social Construction of Reality* in 1966. Rooted in both sociological and psychological theory, social constructionism is a philosophical system that draws its method from a number of philosophical and scientific disciplines, including anthropology, critical analysis, hermeneutics, phenomenology, psychology, semiotics, and sociology, among others. Social constructionism asserts that knowledge is social in origin; knowledge is not predetermined by some natural order (Allen, 2017).

- **Social innovation** concerns new ideas that address pressing unmet needs. We simply describe social innovations as innovations that are both social in their ends and in their means. Social innovations are new ideas (products, services, and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations (Murray, Caulier-Grice, & Mulgan, 2010, cited in GENOVATE project, 2016).

- **Stakeholder involvement** refers to participants and stakeholders of innovation systems who are equal partners. Innovation includes the embedded gender equality and diversity dimension in research and decision-making bodies. The reason for stakeholder involvement is that innovations are created in mutual, close and frequent relationships between different kinds of institutions and companies. The number of participants does not affect results, but how they interact and how they form relationships, a condition that gives participants access to each other's network (Mowery & Rosenberg, 1999, cited in GENOVATE project, 2016).

- **Sticky floor** is the expression used as a metaphor to point to a discriminatory employment pattern that keeps workers, mainly women, in the lower ranks of the job scale, with low mobility and invisible barriers to career advancement (European Institute for Gender Equality, 2020f)**.**

- **Vertical gender segregation** is the concentration of women and men in particular grades, levels of responsibility or positions (European Commission, 1998).

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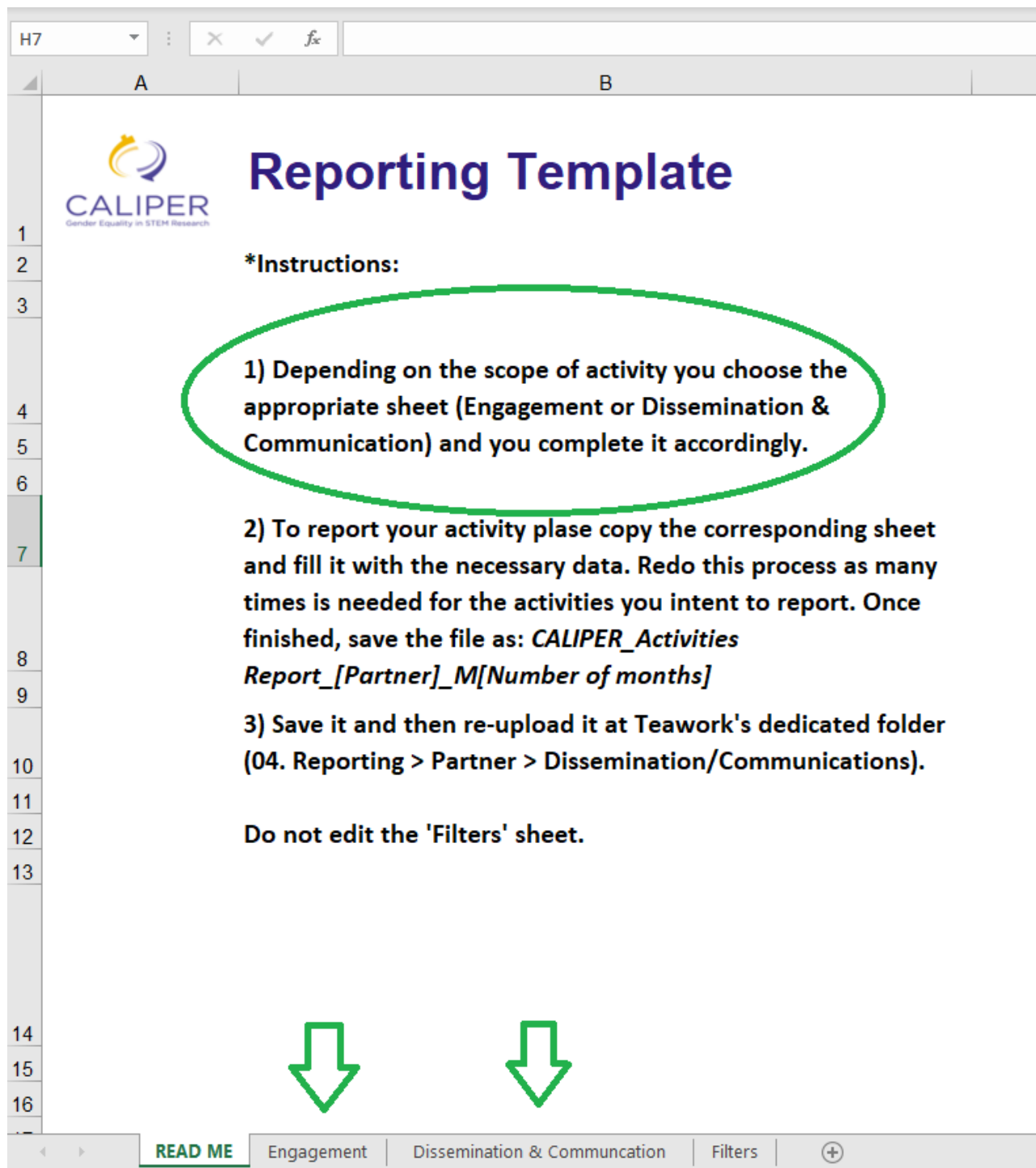
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Annex: Engagement Activities Report Form

Image 1. Reporting template form.

Engagement Template

Partner

Scope of the activity

Level of Target Audience

Type of activity (only for External Stakeholder meetings)

Organisation of a Workshop

If 'Other' please specify

If it does not fit to any of the enlisted types above, please describe the kind of the activity.

Name of Organisation of External Stakeholders (only for External Stakeholder meetings)

Name of the Organisation, Institution, Department, Business, Group, etc. of the External Stakeholders

Title of activity / event (if applicable) or Number of Regular Internal GEP WG

Slogan of the engagement activity or Number of Regular Internal GEP WG meeting

Venue (if applicable)   **Date**

City, Country   dd/mm/yyyy

Title of the presentation (if applicable)

Presentation title

url of the activity (if applicable)

url of the publication (if applicable)

Image 2. Reporting template form (continuation).

Type of audience reached. Please indicate ESTIMATED number of individuals reached per type of audience and their gender						
Academia & Unversities	Policy Makers/Government sector	Industry/Business sector	Civil society	Students	Media	Other
Number: Female / Male	Number: Female / Male	Number: Female / Male	Number: Female / Male	Number: Female / Male	Number: Female / Male	Number: Female / Male

Type of audience reached. Please indicate how many of the audience came from STEM fields	Type of audience reached. Please indicate how many of the audience came from other fields (Please indicate fields too)
STEM	Other
Number	Number

Please copy below any photos or copy relevant links (e.g. to videos, presentation files, announcement screenshots, etc.)

A. Significant Conclusions
Please report the significant conclusions of the meeting important to connect with the higher-middle management and/or the external stakeholders.

B. Significant Conclusions
Please report the significant conclusions of the meeting important to connect with the higher-middle management and/or the external stakeholders.

C. Significant Conclusions
Please report the significant conclusions of the meeting important to connect with the higher-middle management and/or the external stakeholders.

Image 3. Engagement template form (continuation).