



INTEGRATING GENDER INTO RESEARCH AND INNOVATION:

From practice to policy



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Who should read this brief

This knowledge brief is intended for decision-makers responsible for shaping the European research and innovation landscape and reforming it in a manner that will promote gender equality at institutional and implementation levels, but also anyone else interested in strengthening the gender dimension in Horizon-funded projects, especially those focusing on NBS and other environmental issues.

Objectives

This Knowledge brief is produced as part of the ModULar Tools for Integrating enhanced natural treatment Solutions in Urban water CycLEs (MULTISOURCE), an EU funded project striving at facilitating the systematic, city-wide planning of nature-based solutions (NBS) for urban water treatment, storage, and reuse. Its aim is to strengthen the integration of the gender dimension into EU research and innovation under the Horizon programmes. The brief starts with an **overview of the existing frameworks that promote gender equality in research and innovation at the EU level and then analyses how they are translated into practice in Horizon-funded projects. It also offers suggestions on how to further gender equality in projects that are funded through the Horizon programme**, with a focus on those searching for nature-based solutions.

The brief is based on knowledge acquired throughout the duration of MULTISOURCE, including the literature review on the interplay between NBS and gender, quantitative and qualitative research and knowledge gained on the gender mainstreaming practices within the project and in other Horizon-funded projects on NBS.



Existing frameworks promoting gender equality in research and innovation

The Treaty of Rome in 1957 paved its way for gender equality to become one of the key principles of the European union (EU). Since 1999 and the adoption of the [Communication from the Commission](#) entitled Women and Science. Mobilising women to enrich European research, gender equality also became essential in the EU's approach to research and innovation.

In 2012, the European Research Area (ERA) started devoting special attention to the promotion of gender equality in careers, the promotion of gender parity at the decision-making levels, and at the same time, applicants were asked to integrate, where relevant, sex and gender analysis into research and innovation. With Horizon 2020 programmes, the commitment to the integration of the gender dimension in strategies, programmes and projects was strengthened even further.

GENDER TERMINOLOGY

When we are born, we are assigned a **biological sex** based on our outward physical characteristics. Based on the gender binary system we are categorised as either female or male.

Gender is a socially constructed category that refers to the characteristics, social attributes and opportunities referring to women, men, girls and boys as perceived in a specific society.

The first step in achieving **gender equality** is equality written in laws, which has to be followed by actions ensuring equal opportunities and options for women, men and non-binary persons, or in other words legal, social, political, economic and social equality.



GENDER TERMINOLOGY

When an approach acknowledges the existence of the perceived and ascribed differences between men, women and nonbinary persons in our societies, analyses their impact on all genders and actively works towards ensuring equality, it is considered as a ***gender-sensitive approach***.

Gender mainstreaming is one of the tools that can be used to promote gender equality. It consists of integrating the gender perspective into the preparation, design, implementation, monitoring and evaluation of projects.

Yet the She Figures 2018 [report](#) and the interim [evaluation](#) of Horizon 2020 nevertheless identified that there is still room for improvement when considering and designing gender-sensitive approaches, including in relation to systemic structural barriers and unconscious bias. **Horizon Europe and the Gender equality strategy 2020 - 2025 strengthened this commitment** by requiring the adoption of Gender equality plans (GEP) for all public bodies, research organisations and higher education establishments in order to obtain Horizon Europe funding, the integration of the gender dimension into all research and innovation actions of the project proposal, as well as through promoting gender balance among researchers in projects and Horizon-related advisory boards.

An important novelty in Horizon Europe is the requirement of mainstreaming gender into all research and innovation activities. Every project proposal therefore has to address the following considerations:

- Reflection on why sex and/or gender could matter
- Consideration about the production of new knowledge on gender
- Inclusion of the sex and gender aspects as part of a multidisciplinary approach
- Consideration of social categories/factors intersecting with sex and gender

The Horizon calls for proposals reflect this process aimed at strengthening the gender-sensitive approach.

The Horizon 2020 calls for the years 2018-2020 required the following demands regarding gender equality:

- In the methodology section, the applicants are asked to describe, whenever it is relevant, how the gender dimension, ie sex and/or gender analysis, is taken into account in the content of the project. It is explicitly indicated that this does not refer to the gender balance in the teams carrying out the project, but that it has to relate to the contents of the planned research and innovation activities.
- When submitting the application, the CV / description of the profile of the person primarily responsible for carrying out the proposed research and/or innovation activities, which includes their gender, needs to be provided.

The Horizon Europe calls set in place additional request in relation to gender equality:

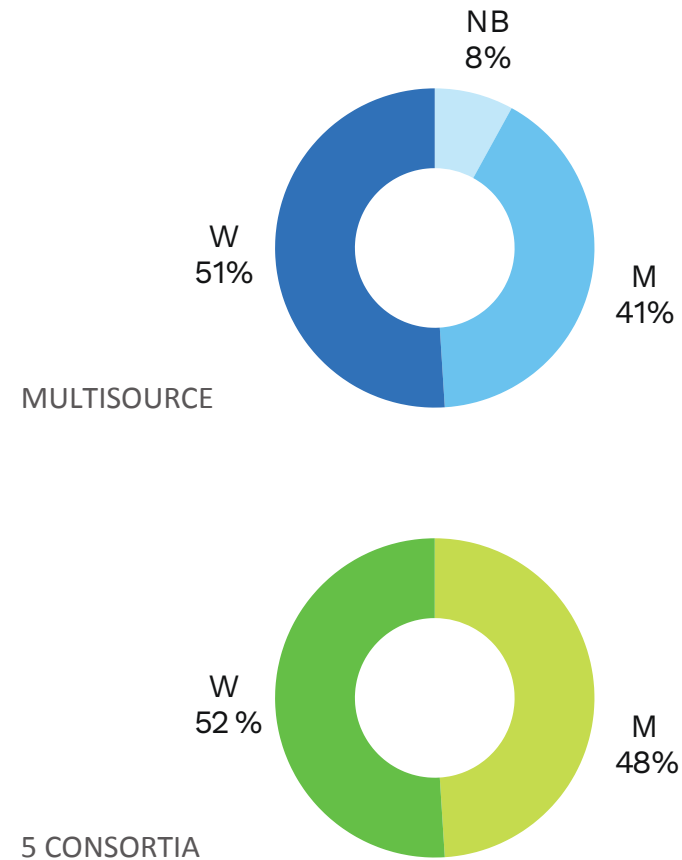
- The gender of the main contact person needs to be stated, offering a non-binary approach to self-identification.
- A list of researchers working on research and innovation within the project needs to be provided, disaggregated by gender.
- The section focusing on the excellence of the project sets forward the following criteria:
 - the call requires the consideration of gender as one of the aspects to be taken into account in the proposal, specifically the “appropriate consideration of the gender dimension in research and innovation content...”;
 - the section on methodology calls for an explanation on how expertise and methods from different disciplines will be brought together in pursuit of the project’s objectives.



How are the existing frameworks translated into practice?

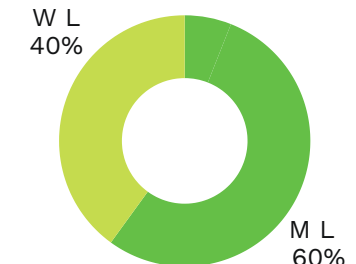
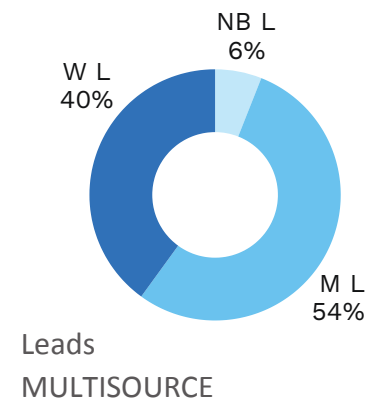
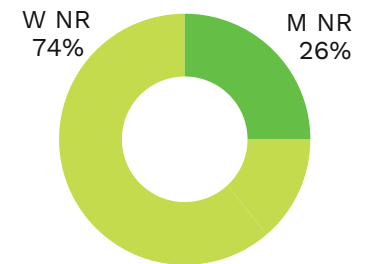
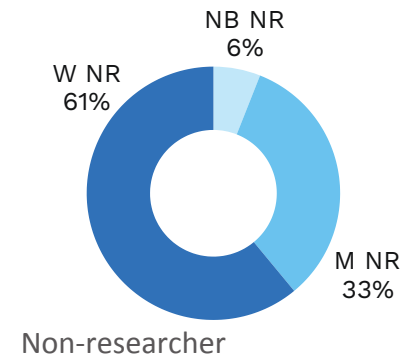
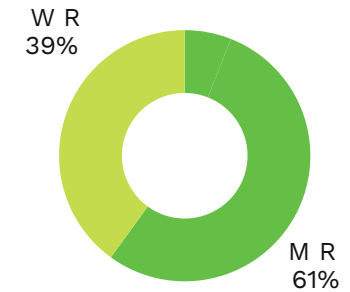
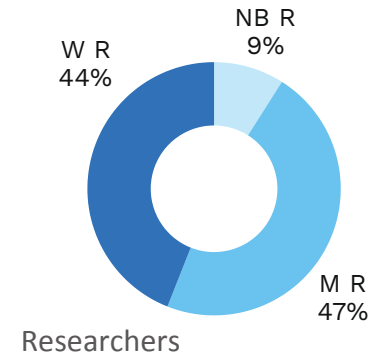
1) Gender balance

Data collected in February 2024 within MULTISOURCE shows that while participation of men (M), women (W) and non-binary (NB) persons is not fully equal, there are nevertheless high levels of gender balance in the consortium. In October and November 2024, additional data was collected among the following 5 consortia, financed by Horizon programmes: CARDIMED, NICE, MARCLAIMED, BOOST-IN, and NetworkNature (5 consortia), which devote their work to NBS or water management. As in MULTISOURCE, the organisations were asked to provide gender disaggregated statistics, using a non-binary approach. 11 organisations from the consortia delivered the information, out of which 4 shared cumulative, not gender disaggregated data. The binary data provided by the remaining 7 organisations show a similar structure to MULTISOURCE, in which 52 % of all employed were women and 48 % were men.



Despite the fact that there are slightly more than half women working in MULTISOURCE, their share among researchers (R) is lower and amounts to 44 % of all researchers, while they are more represented in the category of non-researchers, making up 61 % of non-researchers (NR). They fare the worst when it comes to their share of package or task leads (L), out of which 40 % are women. Men are overrepresented in the category of work package and task leads, as well as researchers, and underrepresented among non-researchers. Non-binary persons are slightly more represented in the category of researchers and under-represented in both categories of work package and task leads, as well as non-researchers.

While gender parity is present in the overall numbers of the 5 consortia, the figures were less encouraging with regards to gender disaggregated statistic in the researchers and non-researchers categories; women represented 39 % of all researchers and nearly 74 % of non-researchers. They represented 40 % of work package or task leads, the same as in MULTISOURCE.



The comparison of the above data with the data from 2006 and 2012, deriving from the evaluation of the Framework Programme 7, show that gender parity among analysed Horizon projects in 2024 has increased. In 2006 there were 16 – 17 % of women project coordinators, and in 2012 this number amounted to 19.2 %. Women represented 38 % of the workforce in all FP7 projects, 29 % of work package leads and 34 % of the researchers.



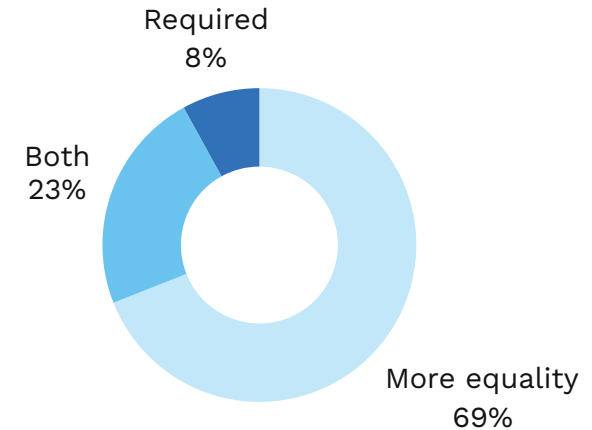
2) Gender equality plans

As Horizon Europe requires GEP for all public bodies, research organisations and higher education establishments to obtain Horizon funding, all MULTISOURCE partners that have to comply with this demand have by the end of 2024 adopted GEPs. One of the organisations that does not have to fulfil this criterion was in the process of adopting it, while the four remaining ones that fit into this category did not have them in place. 76,5 % of the consortium thus had a GEP in place. Slightly more than 50 % of the organisations that cannot apply to Horizon Europe without the GEP had the plan in force already before this requirement.

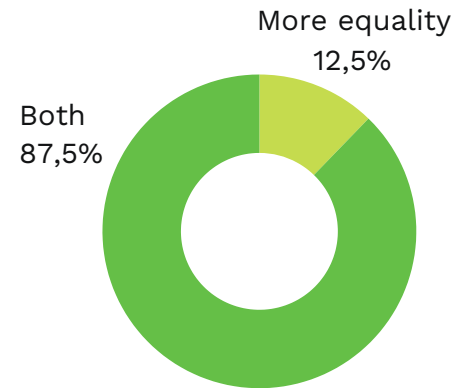
Nearly 70 % of the above organisations stated that they adopted the GEP because of the recognised need for more gender equality within their entity, 7,7 % due to the requirement, and 23 % listed both reasons. Only one organisation did not consult any internal or external gender expert in the process, while 77 % coordinated it internally with the office responsible for gender and/or social issues, 46 % attended training provided by the European Commission or other actors, and 54 % consulted external gender experts.

Within the 5 consortia, 5 out of the 11 organisations that provided information do not need to have a GEP to apply for funding, yet 2 of them nevertheless adopted it, which means that 72 % of all respondents have a GEP in place. 25 % of those that need to fulfil this requirement did so before it became mandatory, a substantially smaller number compared to MULTISOURCE.

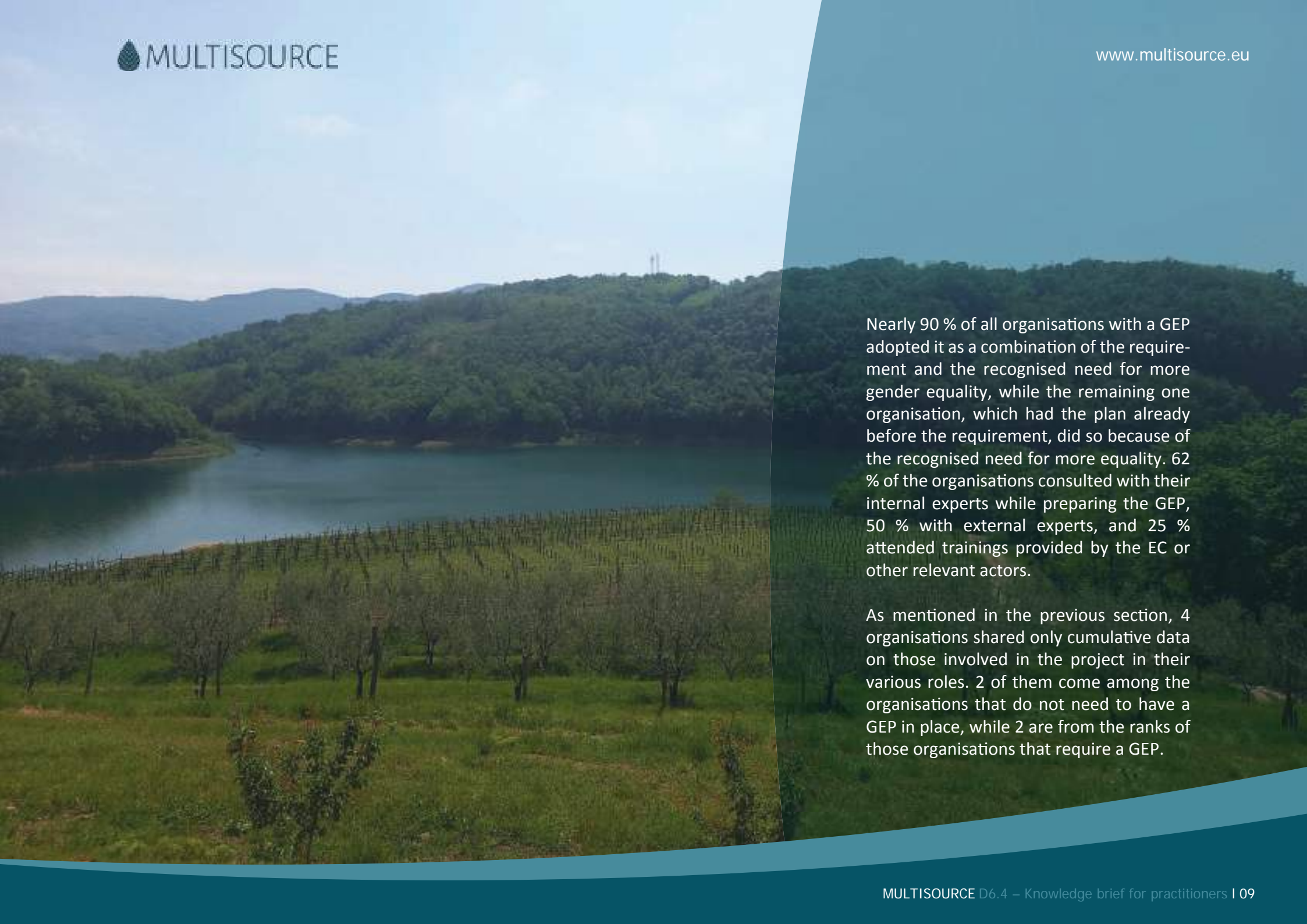
Reasons for adopting GEP



MULTISOURCE



5 CONSORTIA

A scenic landscape photograph showing a large body of water (a reservoir or lake) in the middle ground, surrounded by lush green hills and forests. In the foreground, there is a field of young trees, possibly an orchard or a reforestation site. The sky is a clear, pale blue. The right side of the image is partially obscured by a dark teal overlay containing text.

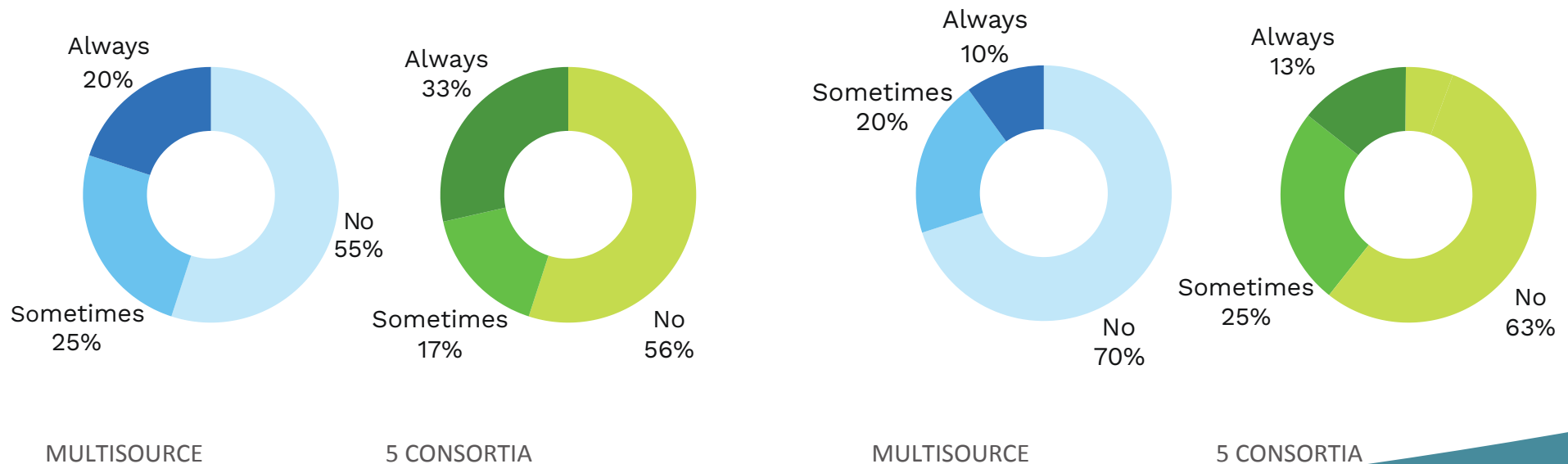
Nearly 90 % of all organisations with a GEP adopted it as a combination of the requirement and the recognised need for more gender equality, while the remaining one organisation, which had the plan already before the requirement, did so because of the recognised need for more equality. 62 % of the organisations consulted with their internal experts while preparing the GEP, 50 % with external experts, and 25 % attended trainings provided by the EC or other relevant actors.

As mentioned in the previous section, 4 organisations shared only cumulative data on those involved in the project in their various roles. 2 of them come among the organisations that do not need to have a GEP in place, while 2 are from the ranks of those organisations that require a GEP.

3) Gender mainstreaming

This tool for promoting gender equality demands more attention than the previous two. Results from surveys carried out among MULTISOURCE partners during the first half of 2024 show that two important steps, necessary for informed gender mainstreaming, ought to be performed more often. The first step is the collection of gender-disaggregated data, which 55 % of respondents never carry out and only 20 % always do. Only based on disaggregated data is a gender analysis possible, which partners stated that is never conducted in 70 % and always in 10 % of the cases.

In October - November 2024, surveys on gender mainstreaming were also carried out among the 5 consortia. 15 persons answered all 15 questions of the survey, while 16 omitted answering the last 3 question. Similar to the results in MULTISOURCE, 56 % of them never collect gender-disaggregated data, while 33 % always do, which is a significantly larger number compared to MULTISOURCE. The number of those that never conduct a gender analysis is slightly lower compared to MULTISOURCE and it amounts to 63 %, while 13 % always conduct it.



This difference could perhaps be attributed to the very starting point of the projects; in case of MULTISOURCE, 39 % of respondents stated that they are involved in projects that focus on a single and/or very dominant primary environmental benefit, while 33 % devote their time to an interplay of a few environmental benefits. The respondents from the 5 consortia, on the other hand, reported that in 17 % of the time they focus on a single environmental benefit and 6 % of the time on multiple environmental benefits, while the remaining 83 % stated that their projects focus on an interplay of environmental, social and economic benefits. This share was much lower in MULTISOURCE and amounted to 22 % of the respondents.

As part of both surveys, experts also provided descriptive information in the cases when their modus operandi was not gender-sensitive. With regards to the collection of gender-disag-

gregated data, they were of the opinion that it does not apply to their work, that there are no significant gender-based differences in the scope of their work or that other departments in their organisations / consortium are responsible for this task. Some stated that they try to collect disaggregated data, but are not sure when and where it is useful to do so, while in some instances this is forgotten or is simply not required. Similarly, a gender analysis is by many not perceived as relevant to their work (the focus is on technical aspects) or perhaps understood as relevant for only some elements of the work (i.e. a gender analysis of invited persons attending the event aimed at presenting project results or a balanced gender mix of genders among users). Some stated that they are not certain when and how to conduct such an analysis, while some conduct the impact of their work on humans as a homogeneous group or perceive that their work benefits the society as a whole, regardless of gender.



GENDER TERMINOLOGY

Gender-disaggregated statistics distinguishes between data collected for women, men and non-binary persons, recognising that groups are not homogeneous, reflecting the realities and different experiences of the lives of all genders.

Without a **gender analysis**, which identifies differences between women, men and non-binary persons relating to their relative position in a given situation or context it is not possible to integrate the gender dimension into projects. It also assesses the implications of any planned actions on all genders. If it reveals unequal benefits from planned actions, gender-specific activities and affirmative action can be taken to dismantle inequalities.

The concept of gender balance is perceived as more relevant compared to the above tasks. In MULTISOURCE, 64 % of respondents always consider it when conducting internal or external meetings and only 10 % never do. Also, when asked about the importance of gender mainstreaming in general and specifically about the possibilities of a more gender-sensitive approach in their work, the issue of equal representation was mentioned several times, may it be in research teams, at conferences or at decision-making positions. The responses from the 5 consortia show that gender parity in meetings is always reflected in 75 % of the responses and never in 19 %. As elaborated in the descriptive part of the survey, this higher percentage compared to MULTISOURCE is a result of the lack of need for gender balance, as the participation of both genders is well balanced, sometimes it is perceived that the attempt for parity is artificial, and in some cases it is believed that what matters is the presence of the relevant expert for the subject matter, regardless of their gender, as men and women are equal.

How to further promote gender equality in Horizon projects?

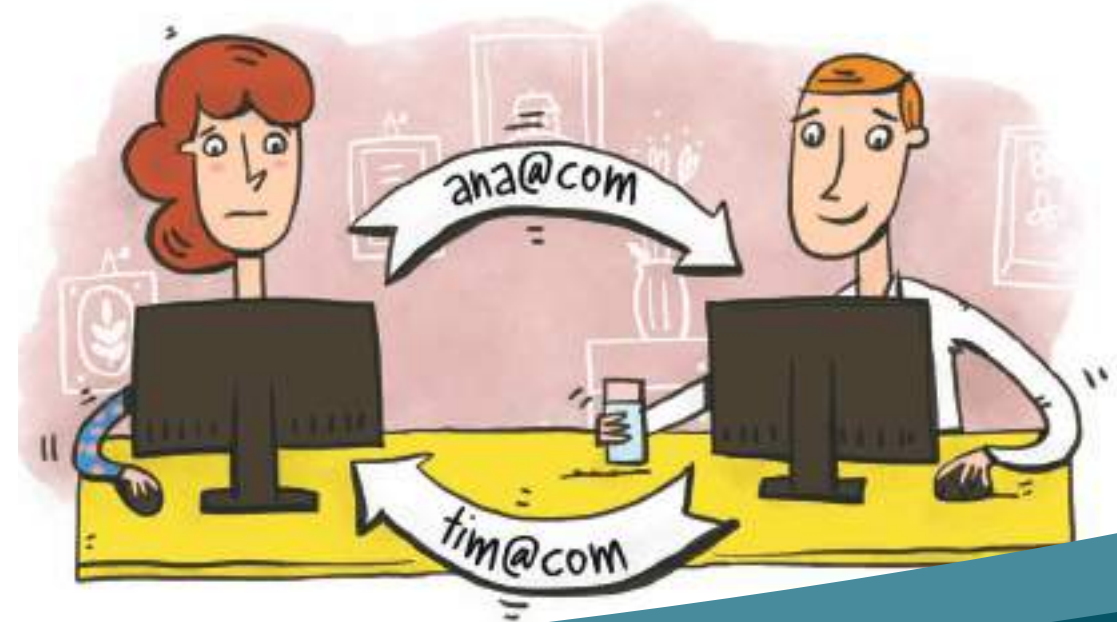
1) Institutional level

Ambitious GEPs

GEPs in many cases represent a top-down method that strives to foster a gender sensitive approach at all institutional levels. As a consequence, its impact might be limited, as experience often shows that GEPs might be primarily adopted as a requirement to obtain EU funding, which in reality often times does not permeate the internal functioning of the organisation. Despite this setback they are nevertheless an important step in the process of creating a more gender equal institutional environment. It is important to remember that any process that is directed at dismantling societal norms and stereotypes cannot lead to overnight change, but at the same time it is important to continuously reevaluate and propose new solutions that will increase the impact of GEPs on representation, work conditions and gender mainstreaming, such as:

- **Gender equality training:** As part of research, the question whether mandatory gender equality training would due to its compulsory nature yield results or it would have a counterproductive effect was asked to researchers and professors. While some opposed the idea, believing that it would do injustice to gender equality, others stressed the progress achieved due to GEPs within their own institutions. There

Tim and his colleague Ana changed the signature in the e-mail. He communicated with customers in the same way as always, only signing as Ana.



All of a sudden he had three times more work! He had to convince the clients that he was doing his job well, that he was a professional. Just because he signed with a woman's name, even though he didn't do anything different.



were also suggestions that it is imperative for training to stem from real-life examples, which prove the relevance of gender equality measures, which will be addressed in the last section of this chapter. A conclusion can be drawn from research that the existing Horizon mandatory requirement, calling for the GEP to be supported by training and capacity-building, be further elaborated, for example with a minimum amount of required gender training for all staff, including researchers and professors, which could also be based on mandatory annual or bi-annual thematic gender workshops.

- **Mandatory yearly reporting:** Yearly reporting on the status of the GEP is very common in institutions faring well with regards to gender equality. On the other hand, it is not uncommon for those institutions that adopt GEPs only with the aim of ticking the box to pay less attention to yearly reports. If they are to bring progress, they ought to be based on gender markers and indicators, which allow to track how well specific actions are creating change for all genders.

How to further promote gender equality in Horizon projects?

2) Calls for proposals

As mentioned, Horizon Europe has already taken positive steps in the direction of strengthening gender equality in research and innovation. There is, however, always room for improvement:

- ***In the award criteria it is currently stated that “appropriate consideration of the gender dimension in research and innovation content...”*** will be taken into account when evaluating projects. ***The term “appropriate” should be defined in more detail,*** the following criteria could be used in this regard:
 - o the project contains a gender analysis,
 - o the gender analysis is one of the foundations on which project activities have been built,
 - o the project contains at least 1 gender-specific deliverable that can be measured,
 - o where applicable, data collected in the project are disaggregated by sex,
 - o there is a commitment to report on gender equality results.

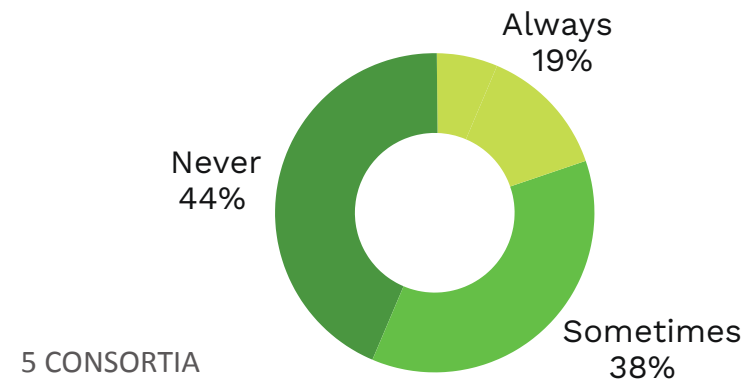
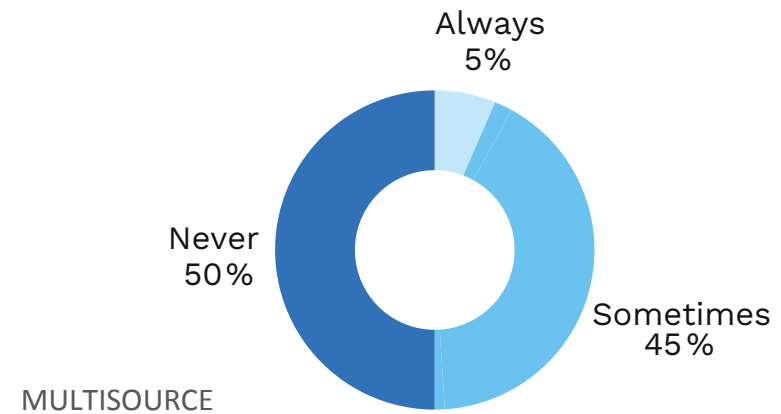


- **The current call asks for gender-disaggregated data about the researchers** involved in the project. **We suggest that this demand be broadened for all staff involved in the project.** Having more gender balance in all entities, participating in a project, may they be research organisations, universities, municipalities, enterprises or non-governmental organisations, would in the longer run promote gender equality in research and innovation. It would represent another effort in the battle against prevailing gendered roles and norms in STEM, which are presented in the section on gender balance in the previous chapter of this brief indicating that larger gender gaps are present in the category of leaders and non-researchers. In addition, the consortium could be required to ensure that the project's gender balance does not drop below the gender balance in the grant agreement stage (+/- 5%).
- The section on Methodology requires an explanation on **how expertise and methods from different disciplines will be brought together in pursuit of the project's objectives.** We would suggest to that an addition be made at the end of the sentence, namely: “, also regarding the gender and social justice dimension”. This addition would also cancel the need for the bullet following this demand, which calls for the integration of social sciences and humanities only in some – and not all cases.

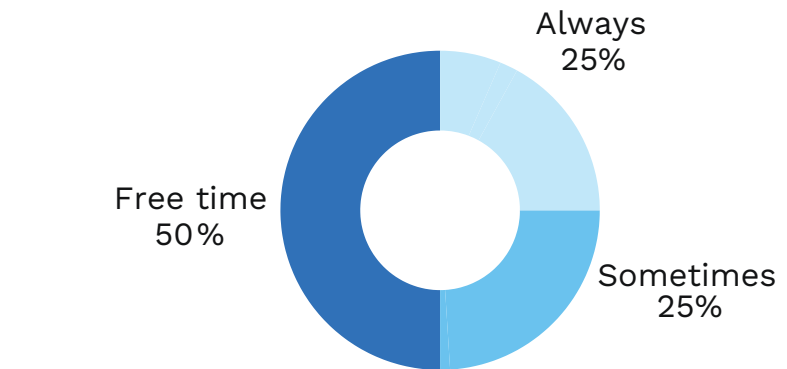
IGNORING GENDERED ROLES

The Research on the impact of applying a gender-sensitive approach on social equity and food sovereignty in urban gardens (UG), undertaken as part of MULTISOURCE, showed that gendered roles remain present in UG that did not integrate power asymmetry into their modus operandi. Women thus traditionally performed roles, such as garden care, social care and neighbourliness, while men took care of responsibilities related to building and leadership roles. On the other hand, UG that recognised power asymmetries in the society and systematically applied this lens in their work, albeit not directly related to gender, showed a positive impact on equity.

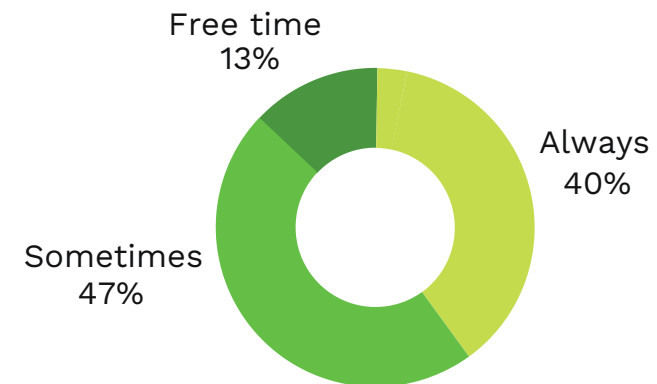
- The section on Project’s pathways towards impact would benefit from the addition of the category **“impact of the project on gender equality”** as part of the societal category list, making the “do no harm” principle as the minimum acceptable standard. The impact assessment on gender should not be voluntary, it should be mandatory with a possible explanation why it is not relevant. This assessment should include the current state of affairs, the existing research on the topic, in which way gender will be mainstreamed into the project and in what way this might impact gender equality.
- We suggest that all Horizon-funded projects include **gender experts** whose role is solely to support the gender equality goals of the project. Responses from the already-mentioned surveys show that organisations or experts dealing with gender issues are not frequently consulted with. More specifically, in MULTISOURCE this never occurs in 50 % of the time and always occurs in 5 % of the time, while in the 5 consortia experts are never consulted in 44 % of cases and always in 19 % of the time.



- Surveys have shown that in MULTISOURCE, experts have dedicated time to integrate gender and the social dimension in their work in 25 % of the case, while in the 5 consortia this occurs in 40 % of the time. To avoid that gender is sometimes or never mainstreamed in 75 % or 60 % of the time, we suggest that ***each partner be requested to have a designated person, a gender focal point, that will dedicate their time to mainstreaming gender into project activities.*** The surveys in addition confirmed that dedicated funding was one of the factors that would motivate experts to further include the gender and social dimensions in their work.
- We suggest that ***gender budgeting*** be part of each project proposal and that ***every project proposal be in all stages evaluated by a gender expert.*** Research shows that Artificial intelligence mirrors the gender bias in our society, which makes it inadequate to assess project proposals.



MULTISOURCE

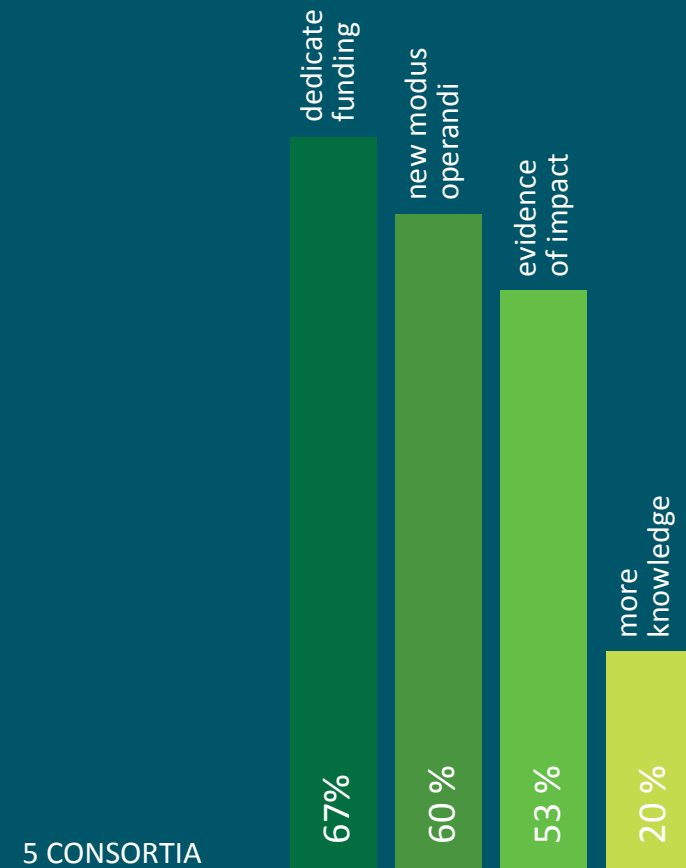


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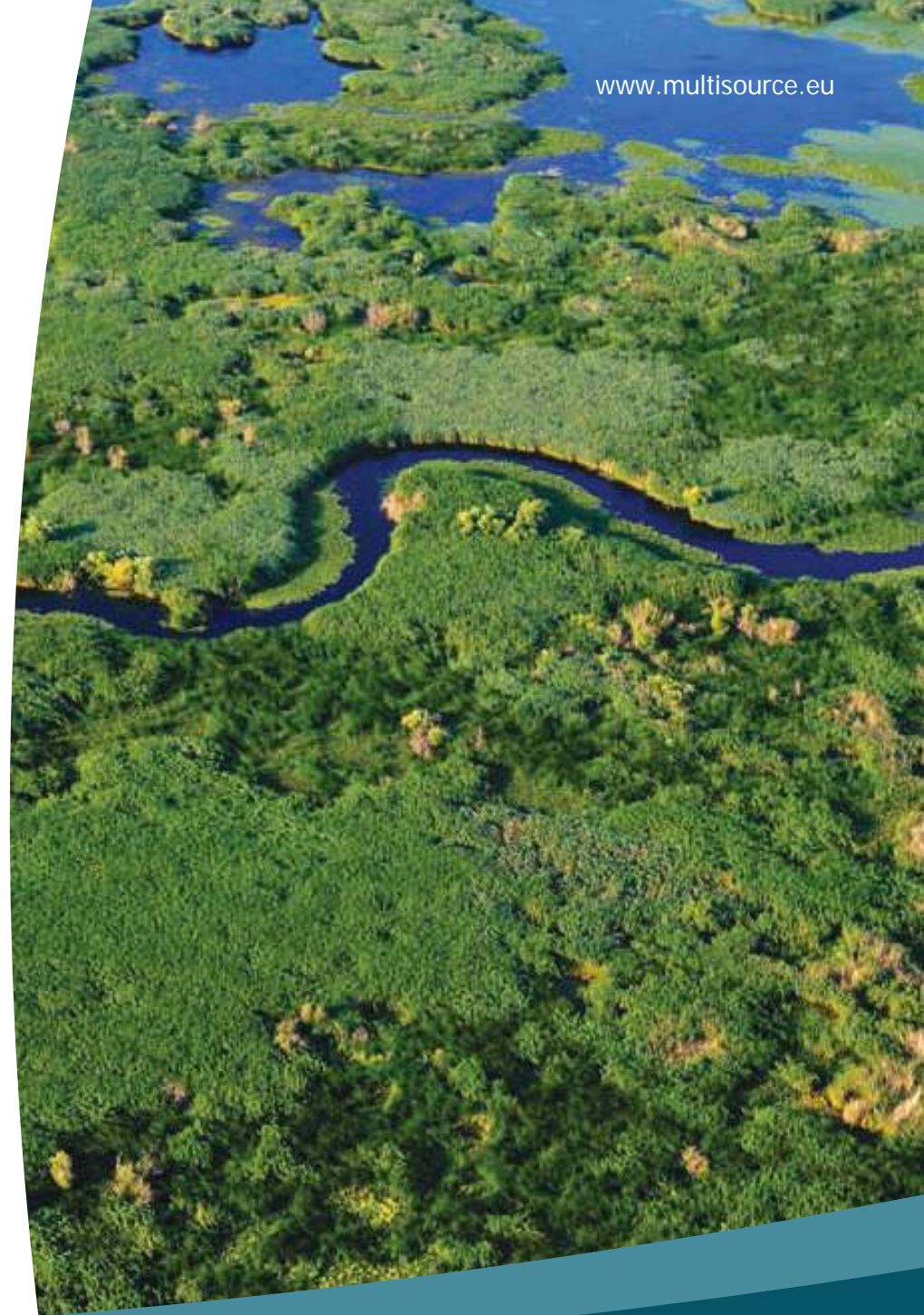
3) Research Executive Agency (REA)

Existing experience shows that in case of GEPs support from the management / leadership is crucial, as it increases their perceived legitimacy and importance of the plan. The support of REA towards gender equality, as the manager of various Horizon programmes, is of paramount importance, which could be advanced with the following actions:

- **Support of projects aimed at developing and promoting gender-sensitive teaching in STEM and gender-sensitive research**, both as part of regular Horizon-funded projects and stand-alone projects. Research within MULTISOURCE indicates that evidence that gender mainstreaming has impact is perceived as an important step that would motivate experts to further include gender into their work, alongside dedicated funding, a more intersectional modus operandi and more knowledge. These suggestions were then tested in the survey, conducted among the 5 consortia, which showed that 53 % of the respondents agreed with this claim. In many areas, gender knowledge still needs to be generated, a very good example of this is the nexus between gender and NBS for water treatment in countries of the Global North.



- **REA could support the creation of a Horizon gender expert group**, which would include all gender experts involved in Horizon-funded projects that would meet twice per year in order to exchange good practices and existing challenges. Organising yearly meeting of gender focal points could also be beneficial. Based on their area of expertise, gender experts could cooperate in smaller working groups dealing with specific identified challenges.
- **Regular training of all REA staff in gender issues**, as well as ensuring that all panels include a gender expert.
- **REA could execute an evaluation of Horizon-funded projects in order to identify the factors contributing to the level of dedication towards gender issues** within projects, such as consultations with gender experts, level of dedication to gender issues in the project proposal and its implementation, projects with a strong gender/social component vs more technical projects, dedication to successful implementation of GEPs, gender parity etc.





- In order ***to monitor and evaluate the progress achieved in mainstreaming gender into Horizon Europe projects***, the following indicators are proposed:
 - o the share of total funding dedicated to projects that integrate gender into their activities, as well as the share of the overall funding dedicated to activities directly related to gender (ie the salaries of gender experts, gender focal points, specific activities such as round tables etc),
 - o the share of all persons involved in projects that have gained knowledge on gender equality, gender mainstreaming and unconscious bias,
 - o the share of key players involved in developing and implementing Horizon Europe programmes, including topic drafters, programme officers and call coordinators, moderators and rapporteurs, proposal evaluators and project reviewers, mission board members and national contact points, which have gained knowledge on gender equality, gender mainstreaming and unconscious bias,
 - o the share of women involved in projects, making sure that information is available for researchers and non-researchers, as well as work package and task leads,
 - o the share of deliverables that have gender as their primary goal and the share of deliverables that gender is a deliberate objective.

VARIED IMPACT ON GROUP - SEX

NBS can also be used to reduce microplastic pollution. Little is known about the impact of microplastics on human health, some studies have drawn the potential correlation between them and health issues, such as cardiovascular disease, cancer, low male fertility and fetal development. While some research exists on the impact of microplastic on male and female hormones and consequently their fertility, they neglect the fact that hormones are important not only for fertility and reproduction. They also play an important role in brain health, and research has shown that women's and men's brain age differently. According to research, women account to 2 out of 3 people diagnosed for Alzheimer's disease, are twice as likely as men to experience major depression and are 3 times more likely to be diagnosed with autoimmune diseases. These changes start in the mid 50s, so in addition to the need of conducting sex-disaggregated research about the impact of microplastic, it also needs to be age-disaggregated.



VARIED IMPACT ON GROUPS - GENDER

Research shows that the differences in the functioning of the brain are not only a consequence of genetics, but are also determined by gender-related socialisation and expectations. When it comes to mental health, women tend to internalise negative feelings, while men externalise them. Depression and anxiety are thus much more common in women, while alcoholism, suicide and aggression are in men. An important reason for this is gender inequality due to which men have more power than women in our societies. This leads to lower incomes for women for the same job and education, and research shows a negative impact of lower salaries on mental health. Due to societal expectations, women carry the brunt of the burden of unpaid care and domestic work, which is also associated with greater mental health burden. Another consequence of unequal power and social roles is a lower self-worth and self-perception among women, as well as sexual and gender-based violence, which is in 90 % perpetrated against women. Those factors also contribute to depression and anxiety. To fully understand the nexus between NBS, microplastic pollution, sex and gender, a broad interdisciplinary panel of experts would need to tackle the issue.



The overall goal of MULTISOURCE is to, together with local, national, and international stakeholders, demonstrate a variety of about Enhanced Natural Treatment Solutions (ENTS) treating a wide range of urban waters and to develop innovative tools, methods, and business models that support citywide planning and long-term operations and maintenance of nature-based solutions for water treatment, storage, and reuse in urban areas worldwide. The project includes seven pilots treating a wide range of urban waters. Two individual municipalities (Girona, Spain; Oslo, Norway), two metropolitan municipalities (Lyon, France; Milan, Italy), and international partners in Brazil, Vietnam, and the USA will contribute to each of the main project activities: ENTS pilots, risk assessment, business models, technology selection, and the MULTISOURCE Planning Platform. The use of urban archetypes in the Planning Platform will enable users to quickly classify regions (in both developed or developing countries) suitable for the application of nature-based solutions for water treatment (NBSWT) and compare scenarios both with and without NBSWT.

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