Gender STI Co-design Lab 2
Europe & America

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872427.

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LIST OF ABBREVIATIONS

AC	Associated Countries
CoP	Community of Practice
DEI	Diversity, Equity, and Inclusion
DoA	Description of Action – Annex I of the Grant Agreement
EC	European Commission
ERA	European Research Area
EU	European Union
EU-CELAC	European Union and the Community of Latin American and Caribbean States
H2020	Horizon 2020
IC	Innovation Camp Method
Lab	Gender in STI Co-Design Lab
MoU	Memorandum of Understanding
MS	Member States
RIA	Research and Innovation Action
R&I	Research and Innovation
R&D&I	Research, Development and Innovation
RFOs	Research Funding Organisations
RPOs	Research Performing Organisations
SDGs	Sustainable Development Goals
STI	Science, Technology and Innovation
STEM	Science, Technology, Engineering and Mathematics
WP	Work Package

EXECUTIVE SUMMARY

This deliverable describes the organisation, results and validation phase of the second Gender STI Co-Design Lab (hereafter the Lab) involving participants from America and Europe.

The Co-design Lab that took place between October and November 2022 addressed the Gender STI objectives to integrate the gender perspective in bilateral and multilateral agreements between the EU Member States (MS), Associated Countries (AC) and third countries through design thinking methods and participatory techniques.

The document describes the methods, participatory steps and tools that have been applied in the Lab to co-design shared solutions and prototypes for common challenges regarding gender inequalities in STI and to support the emergence of an international community of practitioners with similar challenging objectives. More specifically, the deliverable collects in detail "**what**" was done and how it was done in the Lab, reflects on the "**so what**" question, as to the sense and purpose of the challenge-based prototypes and their initial outputs, and finally draws some conclusions with a "**now what**" reflection on what was learnt and suggests possible priorities for future actions.

The report is organised in three overarching sections:

- The first section with the *Introduction* and *Organisation of the Co-design Lab*, relates to the **method and process:** what was done and how it was done, describing the Lab's preparation, adaptations, organisation, interactive sessions and throughput; the core method at the basis of the Labs is the Societal Innovation Camp Methodology, with its inclusive, agile, iterative, non-linear, incremental, entrepreneurial and pioneering discovery mindset. The Lab sessions involved **42** people in an intense cocreation process that led to seven prototypes of strategic actions and initiatives that can address the gender gap in STI.

- The second section relates to the **contents and results**, the challenges, emerging prototypes and the benefits and impact that they can bring to address the gender perspective in science technology and innovation. Seven prototypes were generated through the Lab sessions and we assessed how these can impact and benefit policy dialogues and agreements through the Gender STI prototyping matrix. This section is described in the chapters on *Challenges and prototypes*, *Prototype Actions and Recommendations* and on the *Gender STI Community of Practice.*

- The third and final part of the report presents the **conclusions and lessons learnt**.

While the deliverable covers in a comprehensive way all the possible facets of supporting the complex nature and global scope of the Gender STI project, the process has also been influenced by how the methods have been applied and adapted due to the Covid 19 pandemic. Actually, the emergence of Covid 19 restrictions has been an opportunity to innovate and increase inclusiveness by adapting the tools and processes and by combining asynchronous tasks and synchronous online workshops performed in different time zones by the global consortium and all the other stakeholders.

1 INTRODUCTION

The Gender STI project analyses the participation of women in STI and studies how gender equality is considered and promoted in international cooperation dialogues between European Union Member States, Associated Countries and 10 selected third countries.

In this context, the Gender STI project has hosted the first of a **series of Co-Design Lab workshops** (hereafter Labs) to address three priority objectives identified by the European Commission's gender equality strategy to promote gender equality in research and innovation:

1. Gender equality in scientific careers at all levels;
2. Gender balance in decision making bodies and positions; and
3. Integration of the gender dimension in research and innovation content.

These three forefront **challenges** that women face in science, technology and innovation (STI) are at the core of the work performed within the **Co-Design Lab sessions**.

The Co-Design Lab workshop aimed to identify key issues in these three areas and develop potential solutions through a facilitated design thinking process in order to contribute to integrate the gender perspective in STI bilateral and multilateral agreements. Participants discussed opportunities in their respective country or institution; and co-design potential solutions that could be implemented to foment greater equality in these areas in the weeks, months and years ahead.

The Lab sessions have created the environment to **co-design and prototype solutions regarding gender inequalities in STI dialogues**.

As a result, the project has established the **Gender STI Community of Practice** to scale up the experience of gender equality in STI at a European and international level, and acting as a driver of the **European Observatory on Gender in STI**, which is unique in Europe, will serve as a hub for gender equality in STI dialogues and will incorporate all project knowledge and materials

These actionable insights will feed the process to formulate policy recommendations to enhance the integration of gender equality in STI dialogues with third countries.

The sections that follow provide a description of the preparation and organisation of the Gender STI Co-Design Lab, as well as how the challenges, including background information, underlying issues, and guiding questions for the Lab sessions, resulted in the creation of prototypes of actions and recommendations that can feed the policy making process, with reference to international bilateral/multilateral agreements on gender equality in Science, Technology, and Innovation.

2 THE ORGANISATION OF THE SECOND GENDER STI CO-DESIGN LAB

The Gender STI Co-Design Lab's design and implementation followed the steps outlined in the methodological handbook.[1]. All activities have been and are being carried out in accordance with the Labs' iterative design thinking principles and action learning mindset. This implies a continuous learning and adaptation process to meet the needs and opportunities that emerge from the Lab process.

The diagram below depicts the flow of the Co-Design Lab, from the preliminary process setup to the prototyping phase, as well as the roadmap leading to the next steps.

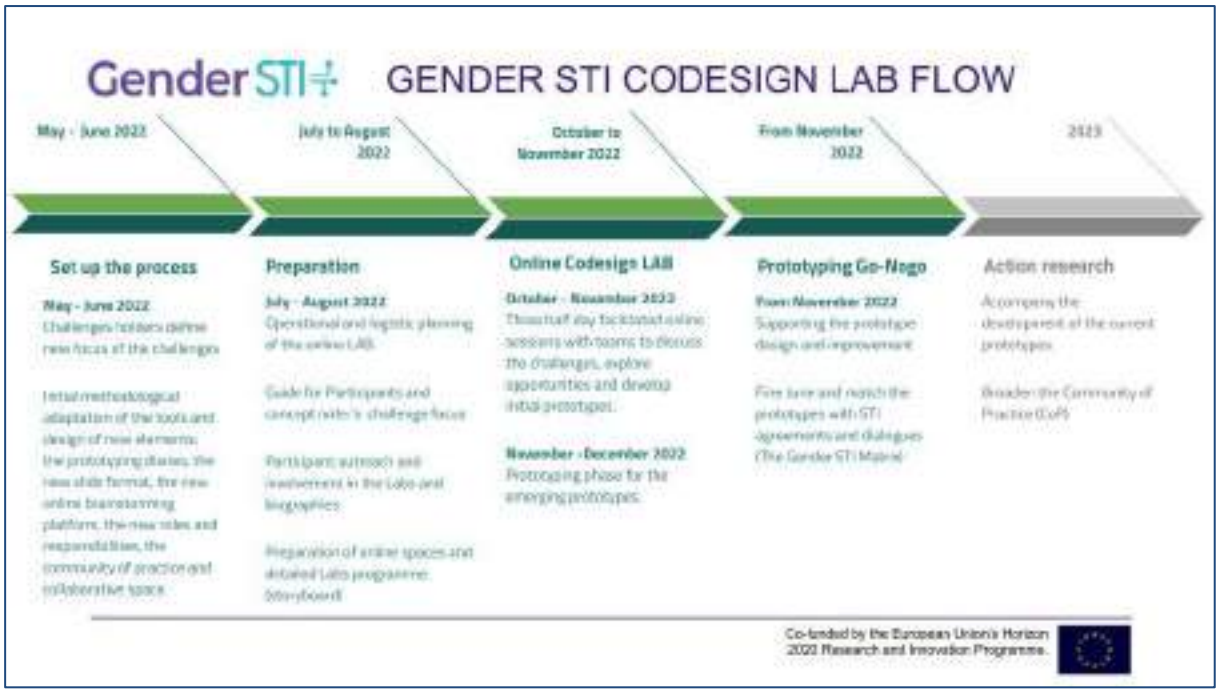


Figure 1: The Gender STI Co-design Lab roadmap X

2.1 The organisation of the second Gender STI Lab

The preparation and design of the Lab began with internal retrospective reflections among the core team members so as to continue to innovate and streamline the process and approach of the online Lab sessions format based on 3 half-day synchronous and asynchronous activities. The Lab's organisation also required the integration and adaptation of a mix of online visualisation tools and platforms to cater for the needs of online facilitated sessions. The design, redesign and adaptation of the process has been led by the FUTOUR facilitation team.

The D3.1 Methodological Handbook on the GENDER STI Co-Design Labs served as the foundation for the process design and adaptation, as well as the definition of the challenges and questions that would be used in the Lab 2 sessions.

The core team established for the first Lab continued to work to organise and run the subsequent Labs. This team was led by FUTOUR as process and WP3 leader and involved partners TU Graz, UPM and VTT taking the role of challenge holders for each challenge (the

[1] See the deliverable D3.1 – Methodological Handbook on the GENDER STI Co-Design Labs

organisations taking the lead in describing the challenges and addressing specific questions within the challenges), as well as INMARK for the scientific coordination with the expert advice of CNRS and SPI for the support in the following Go-No-Go phase.

The **challenges addressed in the Gender STI Co-design Lab** were based on the **three objectives of the EC Gender Equality Strategy in R&I**:

- **Gender equality in scientific careers at all levels**. The challenge holders for this first challenge were TU Graz.
- **Gender balance in decision-making bodies and positions.** The challenge holders for this second challenge were UPM.
- **Integration of the gender dimension in research and innovation content (sex and gender analysis).** The challenge holders for this challenge were VTT.

On the basis of the experience and feedback gained from the first Gender STI co-design Lab the WP3 core team taking care of the Lab's content and method in May and June 2022, decided to include, test and refine a series of changes, adaptations and improvements through a series of facilitated internal meetings based on word-rounds and iterative steps. These focused on the preparatory activity as well as the method of running and facilitating the second and third Gender STI co-design Labs, including the adoption of an intersectional approach in the development of prototypes, alongside diversity, gender equality and inclusiveness principles. Additionally, different online brainstorming tools, process steps and synchronous and asynchronous activities were planned. These included.

- The creation of a guide for participants as information package on the project the process of the Labs and challenge
- Sociocratic rounds for the preparatory meetings of the Core team.
- Updating the participant's Self-Biographies (the participatory biography tool).
- Adapting the Lab's process, canvases and storyboard.
- Using online digital videoconferencing and brainstorming tools: Berst and Groupmap.
- Development of new role descriptions among the core team members (adding the function of the prototype holder).
- Development of the new prototyping diary
- Creating the collaborative space for the Community of Practice (CoP) based on the Basecamp tool.
- The video clip guidelines
- Designing new prototyping slides
- Adapting the invitation of participants and their registration.

The preparation and running of the Lab integrated all these elements as we can see in the next sections, chapters and in the annexes.

2.2 The preparation of the second Lab

Between June and September 2022, a series of tasks were performed to prepare and organise the online co-design Lab.

During the preparation phase the core team developed a **Guide for Participants** with background information on the aims and process of the Lab and a description of the challenges and questions to be addressed in America and Europe's Lab 2. The guide for participants was discussed and adapted throughout the preparatory phase and was sent to the registered participants two weeks before the Lab sessions. The Guide for Participants was developed to inform and prepare participants on the contents and process of the Lab

sessions and to address specific themes and questions that were not addressed in Lab1 so as to focus on complementary prototypes. (See Annex A – The Guide for Participants for the Gender STI Co-design Lab 2 America and Europe sessions).

All the preparatory meetings of the core team organising the Co-design Lab adopted elements of sociocratic facilitation through word rounds where each topic and aspect that required a decision or joint team action could be better understood, explored and proposals could be decided through assent. This created a better understanding, alignment and collaboration within the core team and helped to take rapid decisions on the changes that were introduced in the method, in the information material, in the roles and ways to facilitate the lab sessions.

To further support the prototyping phase a new role was added by the Lab's core team to the roles envisaged in the Co-design Lab based on the Innovation Camp Method: that of the Prototype Holder. This new function was added to give Challenge holders the possibility to concentrate on the content of the challenge and its adaptation while prototype holders would become responsible for the implementation of emerging prototypes. This role could be taken by other participants that were keen to bring the prototype forward and by other consortium partners. This is the renewed set of roles and responsibilities within the Lab's crew:

- Challenge owner: presents the challenges and comments on the results indicating how well they match expectations. Has the power to implement the prototypes.
- Challenge holder: manages the content of the challenge for the challenge owner. Present the challenge, provide clarification, let the participants talk (and speak as little as possible, and then only when specific questions are asked to her or him). The challenge holder is a deputy of the challenge owner and represents her or him throughout the Lab sessions.
- Prototype holder and rapporteur: she or he collects and writes all the useful information for the final report and slides (on the basis of format) and acts as a prototype holder for one of the prototypes. She or he facilitates one of the sub-groups and acts as an organisational support to carry the prototypes forward.
- Facilitator: is responsible for the process, questions, timing. Facilitates the group main sessions and subgroups by moving between them according to the needs.

The **Self-Presentation Biography** tool was designed by FUTOUR to support the networking among Lab participants. This helps people to briefly present themselves, if they want, on a shared document, by adding their name, surname and organisation, a picture and the Lab session that they are attending, then by describing themselves briefly through the following fields:

- **Who am I, brief bio** and something about me that will make me easy to be remembered.
- **What I am looking for and would like to achieve through the Lab** (expectations, desires)
- **What can I contribute with my experience to address the gender challenges in Science, Technology and innovation?**

Figure 2: The framework of Gender STI Self-Presentation Biography

The majority of the Lab participants completed the Self-Presentation Biography, and due to GDPR rules, only the participants have access to the fiches. This file also serves as the foundation for participants to learn who is who in the Community of Practice described in the fifth section of the deliverable. The **participatory biography tool** was also applied, adapted and validated in the preparatory phase so as to continue to use it for the team building and networking process of the Community of Practice.

The Lab is a discovery process through its design thinking phases. This process includes three and a half days of online sessions for exploring and deepening knowledge, as well as asynchronous individual and group activities where participants can do some preparatory work before, between, and after the Lab sessions. This required the participants to develop trust and a collaborative spirit despite cultural and technical differences (using online digital tools for online workshops requires some practise and confidence).

The preparation and operational planning of the online Lab included the detailed design and adaptation of a series of digital tools, logistic aspects and processes that had to be integrated in the facilitation and coordination of the process.

A detailed operational agenda, the **storyboard**, that could cater for contingency plans, have all the links to the videoconference platform and digital brainstorming tools always available and accessible for the Lab core team to manage the articulated online processes. The storyboard includes the beginning and end time for every task, the role to be played by a facilitator, the challenge owner and the prototyping team, as well as asynchronous activities as shown in the figure below.

Figure 3: The Storyboard dashboard to facilitate the online Lab

The core team meetings allowed the project partners to understand and streamline the facilitated Lab process and phases, **to test and combine online tools** in novel ways so as to create an even better experience for the participants. These participatory tools included the Berst online meeting space, to apply and practice the joint brainstorming and visualisation tool GroupMap.

To foster the interaction and create a fruitful participatory atmosphere in the online environment, we adopted the Berst video conferencing platform. **Berst**[2] is one of the most versatile video conferencing systems for online facilitation with structured breakout groups. With Berst the facilitation team could pre-organise working spaces so as to have, like with theatre sets, the breakout rooms that would appear on demand including the specific links needed to perform some tasks as groups through digital brainstorming tools that would be used by each challenge group and prototyping breakout group.

The Berst platform gives a total freedom for participants to move between breakout rooms and to create more rooms on the go without interrupting the flow of work for the existing working groups. This functional, efficient and effective logistic virtual environment allows the Lab participants to concentrate on the content of the discussion within the lab rather than on the technical aspects of the tool.

[2] Berst is an online platform that allows participants to self-select the breakout rooms they want to work in (for more information see www.berst.io).

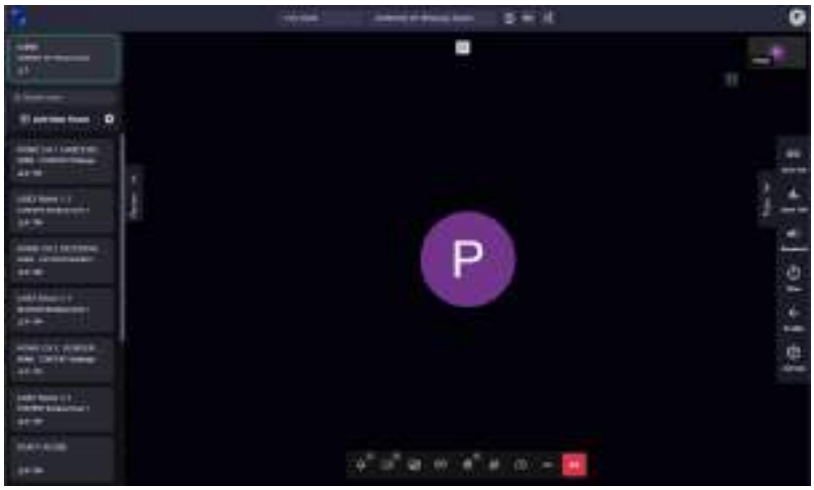


Figure 4: The new Berst platform and breakout rooms

Through the Berst platform, every Lab session had a dedicated plenary room, breakout rooms and sub-breakout rooms for each challenge and prototyping groups.

In parallel to the discussion in the breakout groups the participants used shared **canvases** with the design thinking process of the Lab moving from the initial exploration and reframing of the challenges into looking for alternative opportunities, questions, initial ideas and prototypes that could be further developed according to a roadmap of short, medium and long-term activities.

In the Lab GroupMap substituted MIRO as the main digital brainstorming tool as it is simpler to use as well as more structured and extremely effective.
GroupMap[3] is an extremely powerful decision support tool that allows participants to brainstorm, cluster, vote, make group decisions and action plans with digital canvases that follow specifically designed frames and processes.

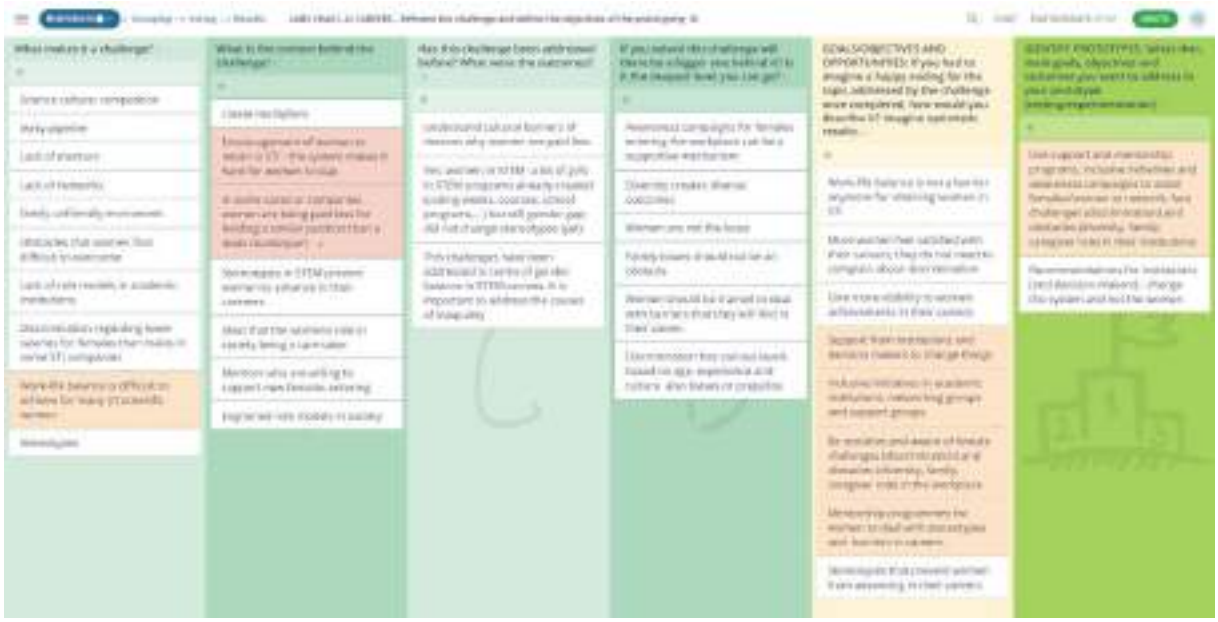


Figure 5: The reframing and goal setting phase in the Lab Canvas

[3] For more information on GroupMap see www.groupmap.com.

For this purpose, every challenge had a series of canvases for reframing the challenge, defining goals, identifying actors and creating an action plan. The canvases were used as places where ideas could be shared, clustered and prioritised through sticky notes, images, links, notes and diagrams that could foster creative and constructive dialogue.

To train participants in the use of GroupMap the FUTOUR team performed an ice breaker exercise in the beginning of the first session called the "Wall of Wonder of Gender in STI". The ice breaker asked participants to make a journey from the past to the present, and future and indicate with key words the main experiences, achievements and milestones in strengthening the gender balance in Science, Technology and Innovation accordingly.

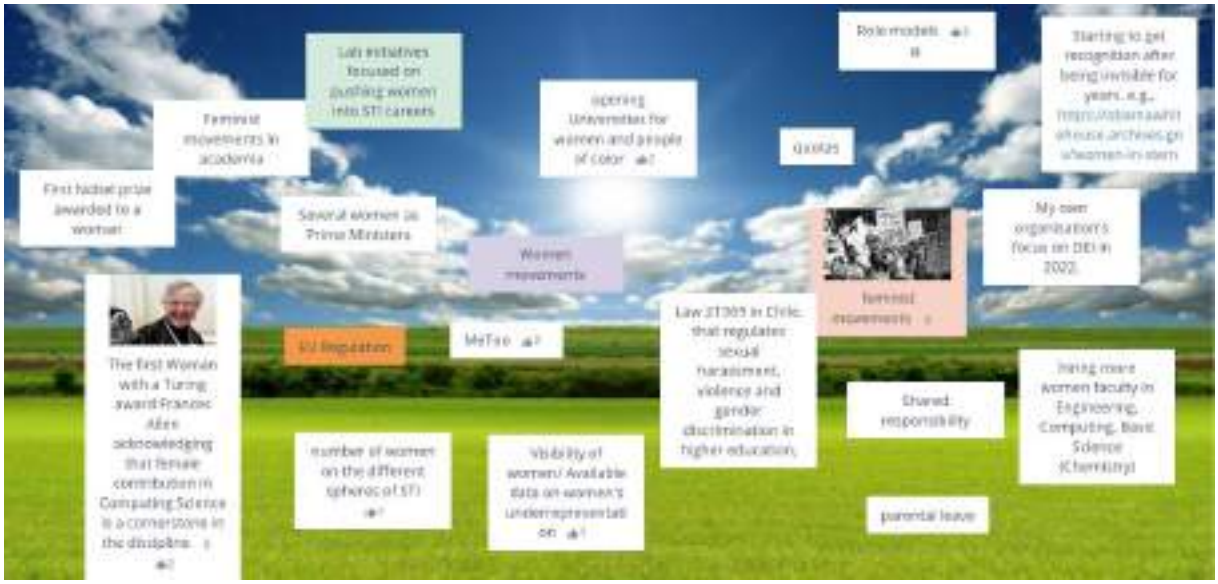


Figure 6: The "Wall of Wonder of Gender in STI" of the Second Lab

A **Prototyping Diary** was created for each challenge group to collect and organise all the results of the digital brainstorming sessions. This was a new tool added by the facilitation team and became the main template and working document for the internal discussion around the prototypes and the follow-up prototyping phase.

The Prototyping Diary collected all the results of the interactive sessions that were performed online and on the GroupMap digital brainstorming tool. It was basically like a ship captain's diary, allowing participants to collaborate directly on the prototypes. All the diaries were and are available on the Community of Practice collaborative space. It was a fundamental new tool that was used by the organising team to keep all participants informed and engaged while working in the synchronous and asynchronous activities of the Lab. The output of the diary served to create the reports, slides and the recommendations of this deliverable. (See Annex E for an example of a full Prototyping Diary).

The process was also adapted in the **storyboard** by focusing on fewer crucial steps leading to prototyping. The new co-design Lab process has some elements of the Hero's Journey and of the Theory of Change. Moving from the current context by reframing the challenge and diving into the future by setting the desired goals and expectations and then back in the present by understanding the possible barriers and problems, identifying possible elements and other actors that can support us and then setting prototyping actions and activities that can lead to outcomes in the short and medium term and impacts in the longer term.

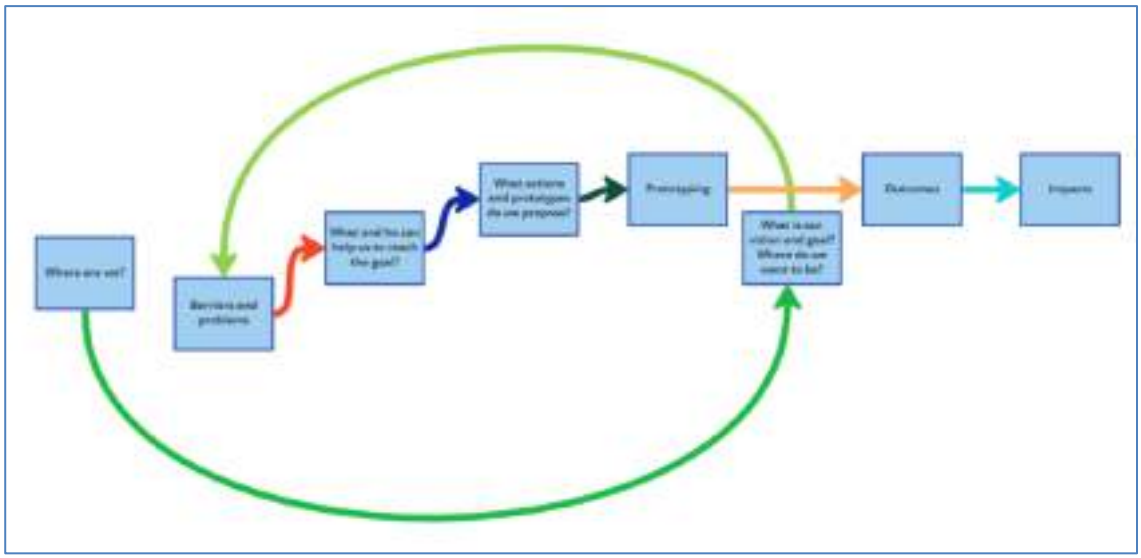


Figure 7: The workflow of the Gender STI Co-design Lab

Within the three sessions of the online co-design Lab, after the initial ice breaker exercise based on the wall of wonder, participants started working in challenge groups in breakout rooms to address their three challenge groups, with the support of a facilitator, through the following steps:

1. First session

- Meeting the group members and introducing each other.
- Reframing the challenges as challenge groups through specific questions that were brainstormed through the GroupMap canvas and discussed:
    - What makes it a challenge?
    - What is the context behind the challenge?
    - Has this challenge been dealt with before? What were the outcomes?
    - If you solved this challenge, will there be a bigger one behind it? Is it the deepest level you can go?
- Defining the goals and objectives as challenge groups so as to identify prototyping areas:
    - Brainstorming on the "vision of the future. Why and what we want to achieve and see. What is our goal? If you had to imagine a happy ending for the topic addressed by the challenge once completed, how would you describe it? Imagine optimistic results."
    - Attribution of participants to the specific prototypes. Creation of prototyping groups.
- Update the prototype diaries with the reframed challenges and goals.

2. Second session

- Creating the action plans of the prototypes. Every challenge group created from one to three prototyping groups that worked in sub breakout rooms. For each prototyping group the participants brainstormed through a new canvas and made proposals on the following steps:
    - What are the objectives of the prototypes?
    - Who are the actors we want to involve as partners? Who are the beneficiaries of our results?
    - Expected impact in society if the prototype has been implemented (in 4-6 years).
    - Follow-through steps; earliest outcomes (in 6 months to a year).

    - Next steps in the prototyping (in 6 weeks to 3 months). Prepare the field work deep dive, sensing/user journey.
- Preparing the prototype presentation on slides through asynchronous work. The results of these prototyping phases were used to create an initial presentation that was used for the inter-challenge consultation and as a basis for the reports to be used in the prototyping go-no go phase.
- Updating the prototype diaries with the prototype information and action plan.

3. Third session

- Performing the inter-challenge consultations and fine tuning the prototypes with the slides. With reciprocal feedback from participants of other challenge groups with another GroupMap Canvas.
    - What are you impressed by?
    - What would you make stronger?
    - What would you change?
- Plenary presentation of the prototypes to receive further feedback.
- Start of the prototyping phase by updating the slides, report and preparing where possible a video clip as a call to action.

Figure 8: The three main ways to present and work with Gender STI prototypes

The ideas, clusters and concepts that were generated in the digital brainstorming on the Co-design Lab Canvases were crystallised as initial prototypes by following the structure and templates that were provided to each prototyping team to support the follow-up prototyping and Go-No Go phases.

The ways to present and manage the prototypes were prepared in three formats so as to cater for all possible needs:

a) The prototype report template: a document that contains the substance and a detailed description of the prototype with contents, links and references. Using the metaphor of the iceberg the report is the body of the iceberg that remains under the sea water. See examples of prototype reports in annex C.

b) A slide template: the presentation contains the essence of the prototype in two slides so as to present rapidly the challenge, the possible solutions and roadmap. Continuing the iceberg metaphor, the slides represent the visible part of the iceberg that emerges from the water. The example of the prototype slides can be seen in the figure below and in greater detail in annex D. The slides have the following information:

- The description of the challenge and problem behind it.
- Why it is important?
- Space for photos, images and graphs.
- What to do (the objective of the prototype)
- How to do it (actions).
- Who will do it. Actors and beneficiaries.
- When: 6 weeks, within the first 6 months and within the next 6 years.

Figure 9: Outline of the digital prototype template reports in slide format

c) Instructions on how to make a one-minute video clip. These instructions on how to prepare, record, and edit a Do-It-Yourself videoclip were provided as an optional support to improve the prototypes' call to action and engage more people in the prototype. Continuing the metaphor of the iceberg the videoclip represents the tip of the iceberg.

Figure 10: Cover of the instructions to create prototype video-clips

While the reports and slides were required to proceed with the prototyping phase, participants were given the option to create the clips later if they so desired.

To facilitate the internal communication and interaction between the participants, before, during and after the Lab we adopted the online **Collaborative Basecamp platform**. This was used to share all links, have open asynchronous discussion threads, define tasks and commitments and have access to resources and files that are needed for the co-design process. The platform was opened in the first Lab and further organised so as to add participants incrementally in all the Gender STI Labs.

The **Gender STI Basecamp spaces** have a message board section that allows participants to open a discussion thread, propose questions, share ideas and take decisions, a to-do space to set tasks and deadlines, a document sharing space to have all the documents and links available, a chat function for quick and rapid sharing of ideas or resources and a schedule where to keep track of the events and meetings. This virtual collaborative space was extremely useful to keep everyone on the same page and find all the information relating to the challenge and prototypes for all the participants.

The Basecamp platform has also become the main hub for the Gender STI Community of Practice (see the description of the Community of Practice in section 5).

2.3 Communication Actions to Promote the Co-design Lab

Gender STI carried out a series of online communication actions to promote the Co-design Labs, which was invitation-only. Because of this, the actions were highly targeted to increase the RSVPs and attendance to the event, and included initiatives on the project's website, email, and the third-party event management platform Eventbrite.

Finally, the project's communication activities were a success, attracting a diverse group of participants from various sectors and four continents.

Invitation
Project partners sent out personalised invitations via email to key stakeholders working on gender equality across a variety of sectors, including government, science, technology, funding agencies, the private sector and NGOs, among others. The Gender STI design team created a special graphic for this purpose, included below, which aimed to convey a message of problem-solving gender equality issues worldwide.

Figure 11: Invitation for the Gender STI Co-design Lab

Each partner sent out invitations on an individual basis according to GDPR privacy requirements.

Eventbrite
When considering the promotion of the Co-design Labs, the project communication team decided to use Eventbrite as the main event landing page to reduce the number of steps participants had to take in order to register.

Eventbrite served as the main landing page for the Co-design Lab and was included in all the personal invitations sent by the project consortium. It provided a short and compelling event description, which you can see below, and allowed interested participants to register for the Co-design Labs in less than five minutes. In total, 63 participants registered for the Lab 2 America and Europe sessions**.** Participants received their tickets to the event via email and different reminders scheduled on an email campaign launched through MailChimp about the event one day and one hour before it started, which included a guide for participants, the link to connect, and the agenda. (see also Annex A).

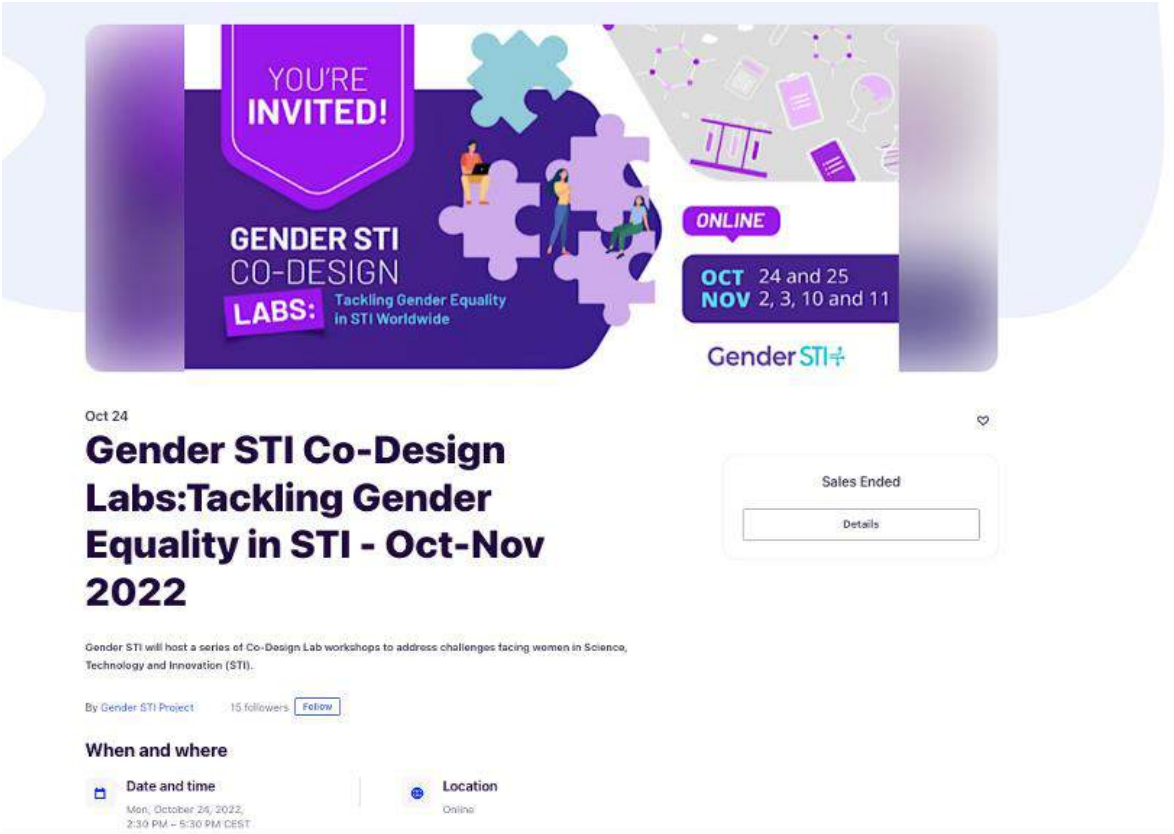


Figure 12: Lab registration landing page on Eventbrite

Full Eventbrite Description
The Gender STI project will host a series of co-design lab workshops to address three of the forefront challenges facing women in science, technology and innovation (STI): gender equality in scientific careers, gender balance in decision-making bodies and positions and the integration of the gender dimension in research and innovation content.

Adopting an intersectional approach to gender, we will address inclusiveness and diversity as guiding principles to integrate the gender perspective in STI dialogues.
Gender STI is an international project, and as such will host two series of Labs to accommodate participants from Europe, America, Africa, and Asia.

The series of three facilitated interactive Labs, aims to identify the key issues in these areas and develop potential solutions using design thinking and online facilitated processes. The Co-design Labs will take place online over a period of three separate days in October and November 2022. Each workshop will last approximately three hours and will include about 30 participants. As spaces are limited, we ask that you please make sure you will be available to attend all three Lab days.

Prior to the Labs, participants will each be assigned a specific challenge and receive a guide with background information as a reference for the discussion. They will then work with members of the Gender STI consortium during the event and share their knowledge and experiences related to specific challenges; discuss opportunities in their country or institution to tackle them; and co-design potential solutions that can be implemented to foment greater equality in these areas in the weeks, months and years ahead.

Input from participants in each challenge will contribute to a roadmap with recommendations that will be presented to the European Commission and shared with other decision-makers from countries interested in gender equality. All participants will be included as contributors to this roadmap, which will also be featured in the project's European Observatory on Gender in STI. In addition, participants will be invited to form part of Gender STI's Community of Practice, a group of leaders that work to foster gender equality in STI in their home countries and institutions.

We hope you can join us on this important endeavour and help us make a true difference for women in STI from all over the world.

Blog actions

We used the Gender STI website to post the America & Europe Lab agenda for the Co-Design Labs, informing interested participants of the key elements of the online Lab sessions. It should be noted that to announce the Labs, we did not use our social media channels to promote the Co-Design Labs because the online event was invitation-only and designed for an intensive online interactive activity for a limited number of participants.

After the labs, we also published a blog post providing the audience with the session's insights and methodology.

Social media

As part of the promotion, we also used the project's Twitter, and LinkedIn accounts to communicate the latest updates on the different lab sessions. For each, we published a post with the activities undertaken, general remarks, and the next steps to follow.

2.4 The running of the second Co-design Lab

The Co-design Lab was held between October and November 2022 and involved participants from America and Europe. To address the themes and questions for the selected challenges, explore opportunities and develop initial prototypes, the Lab was organised in three half-day facilitated online sessions, including synchronous online workshops and asynchronous activities.

- **America and Europe GENDER STI Lab sessions'** dates and times
    - Session 1: Monday 24th of October from 14:30 to 17:30 CET
    - Session 2: Wednesday 2nd of November from 14:30 to 17:30 CET
    - Session 3: Thursday 10th of November from 14:30 to 17:30 CET

In every Lab session there was an opening plenary where the programme, challenges and Innovation Camp method were presented. There were then some technical explanations, followed by icebreakers to get people to know each other. The participants would then break out in three facilitated workshops, one for every challenge group. Within those challenge groups the challenges were initially reframed to identify new opportunities. Once some ideas for prototypes were identified the participants would again create more breakout sessions, one for every prototype group.

The core team members performed a keystone role by attending the Lab session as facilitators, challenge holders and rapporteurs. This required a strong coordination among the core team and several briefing and debriefing sessions were performed also to fine tune the process of the Lab and adapt to the current circumstances and opportunities.

The online nature of the Lab allowed the experimentation of different approaches and styles. For instance, in some cases the teams decided to start with broader challenge groups to create a common ground before splitting into breakout groups while in other cases, it was chosen to start with smaller sub-challenge groups that could generate ideas more rapidly and then share the results with the bigger challenge team of participants.

The sessions of the Lab applied and adapted all the tools that were designed in the preparation phase.

The Berst videoconferencing space, was organised for each session with one plenary room, three sub-plenary rooms for each challenge group and the possibility to have three or more prototyping breakout groups for every challenge.

All challenge and prototyping groups were provided with links to their dedicated video conferencing rooms that could be accessed 24/24 in for other meetings between the Lab sessions. These were used in the phase after the second Lab sessions between October and November, when there were two weeks to prepare the initial draft prototypes, and after the third Lab session, to organise specific meetings to continue adapting and improving the prototypes.

The challenge holders and facilitators made extensive use of the Canvas to share, visualise, and organise their ideas using sticky notes, images, arrows, and other visual tools.

Figure 13: Prototyping Canvas of the Gender STI Co-design Lab

The facilitator and challenge holders set aside time to assist participants who lacked the necessary digital skills to learn how to add, comment on, and move ideas and concepts. And in some cases, also participants were providing their support to the less experienced. In some cases, participants were also assisting those who were less experienced. When compared to the first Lab, the participants found GroupMap to be much easier to use, which allowed them to focus more on the ideas and content, increasing the efficiency and efficacy of the work.

The second Lab was attended by **42 participants from America and Europe.** This included people from Canada, USA, Mexico, Panama, Brazil, Chile, Argentina, Finland, The Netherlands, France, Austria, Italy, Spain, Portugal, Greece and Turkey that followed the synchronous and asynchronous activities.

The Gender STI Co-design Lab is **an agile, experimental and iterative process** that fosters the dialogue and supports the identification of solutions to complex societal challenges through the co-creation of prototypes among the participants. This is often an exploration into the unknown where every participant learns from each other and takes the initiative to make new discoveries, accept the possibility of making mistakes and getting to the solution by trial and error, as in research and innovation. The diverse competencies, levels of power, domains and cultures can contribute to finding and addressing solutions. This is why people from diverse walks of life and the quadruple helix are involved: research, industry, policy, civil society. The Lab process requires strong and complex challenges (such as the ones addressed by Gender STI), time for participants to get to know each other and an inquisitive, open mindset to get out of one's comfort zone, acceptance of the unknown, of risk taking, faith and trust in each other.

During the Lab process **9 prototypes** were initially designed and developed. Due to the bridging role of the core team, challenge holders and facilitators several themes that were proposed in the prototypes were merged so as to create more robust concepts. As a result of this process by the end of the third session of the Lab there are now **7 prototypes** and related slide reports were presented in the closing plenaries of the Lab.

2.5 The prototyping and first Go-No Go phase

As envisaged by the Lab method, the first six weeks after the Lab, between *mid-November 2022 and the end of December 2022*, were dedicated to the first Go - No Go prototyping phase.

These weeks served to support and to validate the seven initial prototypes, and to stimulate a reflection on how prototypes could be further improved. The first Go - No Go phase has the aim of both developing the prototypes that are most promising and to go back to the drawing table where prototypes need further refinement of the concepts, more evidence, further research and documentation, interviews and so forth. It is not a process of exclusion but a continuous improvement process.

As part of the experimental discovery process of the Lab, the prototypes generated by participants are considered as initial workable concepts that can be used and applied so as to identify further improvements until they reach a point of maturity and can be widely applied. Thus, the first weeks after the Lab are a testing period where the prototypes can be discussed initially with a closer circle of colleagues to get feedback and further ideas. This is an open process that leads to finding more questions and to adapt and improve the initial concepts embedded in the prototype so as to continually fine tune and improve them.

The Lab was an intense learning experience for both the participants and the consortium. Because the prototypes would also contribute to the project's next phase, relating to recommendations for implementing gender equality in STI dialogues (WP4), a general framework was developed and improved further after the Lab to define in a deductive way how to use and increase the impact and scope of the emerging prototypes to address the current Gender STI challenges in international bilateral and multilateral agreements and policy dialogues.

To frame the international agreements and policy dialogues and then match the prototypes, the team created the Gender STI Matrix. This ongoing process and mechanism are described below, in section 4.1. relating to the prototype actions and recommendations.

The **seven** prototypes generated in the second Lab sessions are described in the next chapter as brief summaries and in much greater detail in the annexes (See annex C).

2.6 Action research – 2023 and beyond

The second Lab produced very useful results in terms of both process and method as well as content. The Lab's holistic and pioneering approach has stimulated a strong learning process among the partners and participants. This is generating very rich prototypes and results, as described in the next sections, and fostering an agile, continuous improvement mindset, also within the method, by integrating processes, facilitation techniques, digital tools and content in terms of the Gender STI challenges to be addressed by international bilateral and multilateral agreements and policy dialogues.

The next steps relating to the method and organisation of the Lab, from 2023 onwards, will continue with a **combination of process and content**, as in the first phase. We outline both dimensions here while we describe in greater depth the content aspect in the next sections.

From the **methodological and process perspective** the organisation of the virtual lab was extremely effective, inclusive and sustainable. People from as many as 8 time zones could participate at the same time. The organisation of the online Lab required a significant amount of effort and commitment of the Gender STI core team, as well as numerous rehearsals and technical fine tunings to ensure that all logistical aspects and tools worked in the online setting.

Unlike webinars and other online traditional events that can be extremely tedious and boring, the interactive and engaging nature of the Lab, with the support of professional facilitators demonstrated immediately that no matter what is the distance or experience everyone can share their thoughts, learn, support the co-design and generate interesting ideas. In terms of **process** the most important achievement has been that of testing and finding the right mix of time, methods, task, tools and a good balance between synchronous and asynchronous activities that could compensate for the reduced number of sessions.

The **next phase** of the Co-design Lab activities will still be based on the action research principles of GENDER STI and will include the process and methodological support with the core team and challenge holders to:

- improve the existing prototypes from Labs (see the next sections).
- identify new core issues and focus questions within the three gender equality challenges;
- contribute to the strengthening and animation of the international Community of Practice of Gender in STI (CoP).

A Lab based on the Innovation Camp process, as stated in the Methodological Handbook, creates conditions in which participants can frame and reframe challenges, issues, and problems in light of other points of view and different perspectives.

Once the reframing process has begun and promising ideas have emerged, the rapid prototyping process can convert these into prototypes ready for action. These prototypes can then be tested, improved, retested, and improved again - all while interacting directly with their intended users.

As a result, a Lab based on the Innovation Camp method does not necessarily provide solutions to difficult or complex problems. It does however contribute to a better understanding of how these issues function in their societal context - and how they can be addressed more effectively. Reframing problems, deepening understanding, rapid prototyping, thinking in terms of outcomes, and planning for action are all key Lab processes that define what participants can expect from the Lab. The results in terms of **content** from the Lab process are described in the next sections, in particular the prototypes emerged from the three main challenges.

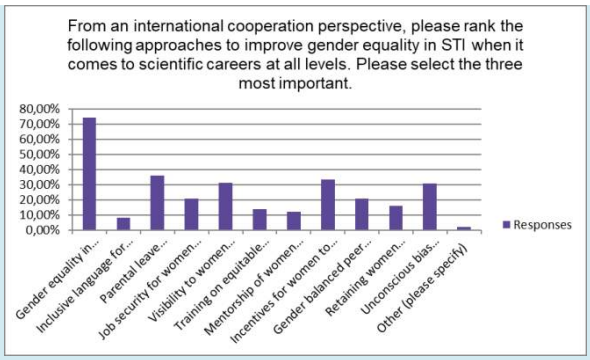
3 CHALLENGES AND PROTOTYPES

The challenges of the Gender STI Co-design Labs were originally identified and described between the spring and summer of 2021 and were the basis for the prototypes that emerged in the first Lab sessions of 2021. For this Lab they were adapted between May and August 2022 so as to cover areas that had not been dealt with in the previous prototypes and to guide the discussions through new questions.

In this section, for each of the three challenges, we include the new formulation and questions that were defined for this Lab in 2022, as indicated in the Guide for Participants (See Annex A for the full guide for participants).

3.1 Challenge 1: Gender equality in scientific careers

The gender gap in STI careers persists, and only 30% of the world's researchers are women. Our findings, based in the Gender STI Survey Report[4], that three most popular approaches to improve gender equality in STI when it comes to scientific careers at all levels were: gender equality in recruitment and career progression (74.51%); parental leave policies/flexible work schedule arrangements (35.78%); and enhancing incentives for women to lead projects (33.33%).



Approaches
Gender equality in recruitment and career progression
Inclusive language for job vacancies
Parental leave policies/flexible work schedule arrangements
Job security for women in the long-term
Visibility to women references in science
Training on equitable hiring practices
Mentorship of women by other women
Incentives for women to lead projects
Gender balanced peer reviews
Retaining women scientists
Unconscious bias training for the scientific community
Other
Total

Figure 14: Approaches to improve gender equality in STI when it comes to scientific careers at all levels

To find new solutions to this, the previous Gender Labs focused on developing prototypes to promote STEM as career choice for women and encourage women to the STI field.

In fact, previous prototypes developed in the first set of gender labs in 2021 regarding this challenge focused on (1) Science culture, aiming for a cultural change to enhance atmosphere at university and research organisations in ways that would enable a balanced distribution of students, and (2) Multilateral agreements to increase the representation and progression of women in STI careers.

For the 2022 Labs the challenge 1 "Gender equality in scientific careers at all levels" aimed to give women, in particular, the opportunity to work in the field of STI. This means that more women have to be encouraged to enter these fields, and on the other hand, the drop-out rate has to be significantly reduced.

[4] Gender STI: Survey Report on Gender quality Implementation in STI Bilateral and Multilateral Agreements. https://www.gender-sti.org/wp-content/uploads/2021/12/Gender-Survey-Report-for-Web-Final-Version-03-12-2021.pdf

The main theme addressed in the first challenge has been: Gaining women in STI.

Gaining women in STI is critical to the "Scientific careers at all levels" challenge. If a woman is just as qualified as her male colleague, she is usually at a professional disadvantage compared to the male competitor. Women must, therefore, not only perform better professionally in order to succeed in the STI field. The additional burdens, such as caregiving responsibilities, also affect women in most cases. We want to try to counteract this inequality. The work environment should be inclusive and diverse in order to empower women. Possible ways could be 1) support and encourage young women in academia, 2) reduce the dropout rate 3) create a diverse and inclusive working environment in STI.

Main questions addressed:

- *What needs to be done to ensure that young women choose STI as a **career path** by creating a diverse and inclusive work environment?*
- *What **funding mechanisms** support a diverse and inclusive research field to attract more women in the field of STI?*
- *What **policy actions** can be established to attract young women in STI?*

The previous prototypes developed in the first set of Gender Labs in 2021 regarding this challenge focused on 1) Science culture - University and research organizations (with an atmosphere that addresses a balanced distribution of students), and 2) Multilateral agreement to increase the representation and progression of women in STI careers[5].

3.1.1 Prototypes on gender equality in scientific careers

The Participants and the Community of Practice of the Lab2 team in Challenge 1, relating to gender equality in scientific careers, have been working on two prototypes:

1.1 - Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming

1.2 - Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI

The section bellow summarises the prototypes of Challenge 1. A more detailed description of the prototypes can be found in the annex B.

Prototype 1.1: Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming

Gender Stereotypes and implicit bias towards gender are still persisting to this day. STEM is viewed as a predominantly male field and these stereotypes often lead to underestimating girls' ability in maths and science. Even if a non-male decides to enter the STEM field, they will find that also STEM itself isn't free of unbiased behaviour. Progressing and retaining women in science, technology and innovation becomes increasingly harder, because we are not only facing low numbers to begin with, but STEM in general still fails to provide a safe and warm environment where women naturally feel that they belong. Gender Stereotypes and implicit bias are contributing to the gender pay gap. Especially

[5] Gender STI: Gender STI Co-design Lab 1 report.

looking at computer science and engineering, which are placed among the highest-paying fields in STEM, women remain underrepresented.

Needless to say, gender stereotypes still have a huge impact on today's society and more important people don't hold themselves accountable and are unaware of their implicit bias towards women in regards career and science. This prototype aims to improve these issues by identifying implicit bias and gender stereotypes tied to STEM culture and diagnosing the root causes of gender stereotypes by creating a simulation-based game. This game not only provides a tangible solution to test personal bias but also implements strategies to reward unbiased behaviour and promotes real role models with features and skills in real life. Existing stereotypes and implicit biased aren't exclusively problems that concern gender, but other stigmatized groups as well, this prototype tries to also promote the intersectionality within the science culture by specifically promoting diverse role models.

Keywords: bias, stereotypes, inclusiveness, sense of belonging, role models

Prototype 1.2: Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI

The prototype includes three actions to achieve this life-long objective: 1) study of existing digital content about female careers empowerment, 2) exhibiting the limitations of content and strategies that have prevented further empowering female careers in STI in a broader dimension, 3) proposing new digital content to create awareness about the need to bridge the gap between GirlsLead@STI to WomenLead@STI.

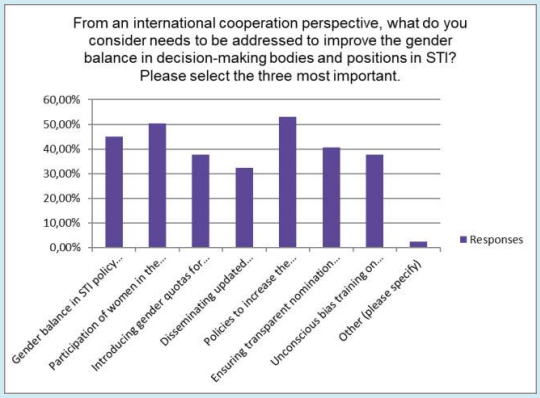
We will also take an intersectional perspective in our prototype by taking into consideration the systemic barriers preventing women and other minoritized populations from gaining entry to science and exposing the consequences of these inequalities on scientific knowledge.

Keywords: gender equality awareness, empower, intersectionality, diversity

3.2 Challenge 2: Gender balance in decision-making bodies and positions

Women are underrepresented in decision-making processes and positions in areas such as politics, STI advisory groups and business. Root causes include traditional gender roles and stereotypes as well as unequal sharing of household and care responsibilities. Political and working cultures favouring long working hours that clash with care responsibilities traditionally assigned to women are also a factor. Furthermore, women are subject to gender-based harassment and bullying in the workplace, with the emergence of online violence as an increasing concern.

In our study three most important issues to increase the number of women in decision making processes and positions were "Policies to increase the proportion of women in STI (52.94%)", "Participation of women in the negotiation of STI agreements" (50.49%) and "Gender balance in STI policy dialogues" (45.10%). The range across all responses doesn't seem very large. That tells us that there are a lot of issues to be addressed across all of the areas of improvement of gender balance in decision-making bodies and positions in STI.



Approaches
Gender balance in STI policy dialogues
Participation of women in the negotiation of STI agreements
Introducing gender quotas for evaluation panels to ensure a gender-balanced composition
Disseminating updated information, trends and good practices on gender equality in decision-making
Policies to increase the proportion of women in STI
Ensuring transparent nomination and promotion schemes in political and corporate cultures
Unconscious bias training on gender balance in leadership positions
Other
Total

Figure 15: Most important issues to increase the number of women in decision making processes and positions

<u>The main theme addressed in the second challenge has been: Inspiring women in STI.</u>

Few women are in leadership positions or involved in decision-making in the science and technology system. This is a waste of talent and capacity that countries' economies cannot afford. Where decision-making occurs and where further steps are taken, women still do not have enough opportunities to contribute. Women in leadership positions also become role models and support the visibility of women in the STI fields. This challenge tries to get more women inspired to reach decision-making positions, focusing on what can be done in the area of STI events. In academic forums and conferences, for example, women are significantly underrepresented compared to men as organisers or committee members, keynote or plenary speakers or as panellists. The source of this phenomenon is widespread and often unintentionally gender bias. In this regard, success stories from women can help to raise awareness and to amplify women's voices and role in the STI field.

Main questions addressed:

- *How can the gender perspective be incorporated in the definition of **STI conference programs**?*
- *What can be done to **promote inclusive leadership skills and women success stories** in STI events?*
- *What can institutions do to guarantee a **space for young women to be mentored** and learn collaboratively?*

The previous prototypes developed in the first set of Gender Labs in 2021 regarding this challenge focused on 1) Worldwide Spread of Female Networks which aims to achieve a wide variety of leadership profiles and lower the prominence of the implicitly masculine leadership norm, and 2) Guideline supporting more gender sensitivity and mainstreaming in the process of developing STI agreements for decision-making positions[6].

[6] Gender STI: Gender STI Co-design Lab 1 report.

3.2.1 Prototypes on gender balance in decision-making bodies and positions

The Lab2 team working on Challenge 2, relating to gender balance in decision-making bodies and positions, has been working on 2 prototypes:

2.1 - How to attract and represent more diverse candidates in high visibility STI opportunities.

2.2 - Recommendations for decision-making in international scientific cooperation.

The section below summarises the key points of the two emerging prototypes from Challenge 2. A more detailed description of the prototypes can be found in the annex B.

2.1 - How to attract and represent more diverse candidates in high visibility STI opportunities.

There are many barriers that prevent women from reaching decision-making positions. We belong to a society in which there is a lack of will to find and include not only women but diverse candidates in these visible positions. Decision-making habits don't usually consider gender issues. Only discursive measures in this matter. It is a challenge to move to actions. This prototype aims to create guidelines for organisers of high level (international) conferences, journal editors and international committees in science collaboration, to consider conditions for enhancing the participation of women to have high visibility within STI fields.

International committees working on SCT agreements between countries consider fields of common interests. The inclusion and visibility of women participating in STI conferences will influence the specific research fields. Possibly, improve chances of women having relevant funding programs both as researchers on and beneficiaries of the research project.

Key words: decision-making candidates, international science committees, women inclusion

2.2 - Recommendations for decision-making in international scientific cooperation.

As women are often underrepresented in the negotiation and implementation of international scientific agreements and policy dialogues this prototype aims at fostering gender balance in decision-making. To achieve more transparency in the way people are nominated/designated in the governance bodies (steering committees, executive committees...) of these agreements /dialogues strong recommendations are needed. The way decisions are made during the whole process requires more inclusiveness. Major stakeholders (research funding organisations, research performing organisations, ministries and international organisations) should endorse these recommendations. An international network of women in science diplomacy should be set up to carry out these recommendations in a sustainable way.

The prototype will 1) elaborate recommendations to foster gender balance and transparency in decision-making in international scientific cooperation 2) define a joint

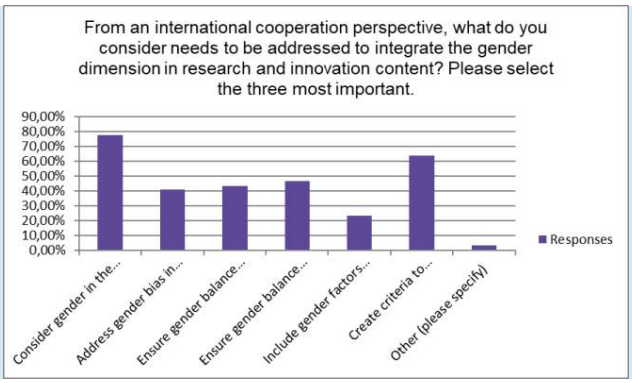
declaration by major stakeholders and 3) set up a network on science diplomacy and gender.

Key words: international scientific cooperation, policy dialogues, governance bodies, inclusiveness

3.3 Challenge 3: Integration of the gender dimension research and innovation content

Intersectional gender dimension in R&D&I content is largely missing. Reasons for this include, among other things, cultural and structural features of the STI fields and lack of gender expertise. Our previous research indicates that stakeholders highlight three most important approaches to enhance gender dimension in research content: "Consider gender in the entire research and innovation process" (77.45%); "Create criteria to monitor the gender dimension in research content, processes and outcomes" (63.73%); and "Ensure gender balance in research teams" (46.57%)[7].

This indicates that gender dimension should be approached through the innovation process perspective, which would allow focusing on different areas of research and innovation, starting from academic research to commercialization and grassroots entrepreneurship funding agreements.



Approaches
Consider gender in the entire research and innovation process
Address gender bias in research design
Ensure gender balance in evaluation panels
Ensure gender balance in research teams
Include gender factors in application forms
Create criteria to monitor the gender dimension in research content, processes and outcomes
Other

Figure 16: Most important approaches to be addressed to integrate the gender dimension in research and innovation content.

Most important approaches to be addressed to integrate the gender dimension in research and innovation content.

The main theme addressed in the third challenge has been: Enhancing capabilities for inclusive knowledge production.

One of key challenges of integrating the gender dimension in research and innovation (R&I) content is the lack of capabilities for taking on gender analysis and assessment. Moreover, gender understood from the intersectional perspective encourages researchers to think beyond binary gender positions and integrate inclusiveness as the guiding principle for enhancing gender dimension in R&I content. The ways in which R&I content is created also influences whether R&I is reflective of the gender dimension.

[7] Gender STI: Survey Report on Gender quality Implementation in STI Bilateral and Multilateral Agreements. https://www.gender-sti.org/wp-content/uploads/2021/12/Gender-Survey-Report-for-Web-Final-Version-03-12-2021.pdf

Main questions addressed:

- *What can be done to enhance **gender sensitization** in research and innovation funding organisations in implementation and reviewing of research calls and funding programmes?*
- *How can research institutions and researchers be assisted to take on **inclusive research design and inclusive knowledge production**?*
- *What **indicators** need to be developed to reflect inclusive knowledge production?*

The previous prototypes developed in the first set of gender labs in 2021 regarding this challenge focused on (1) promotion of inclusive design process perspective to enable integration of intersectional gender dimension into research content via research and innovation funding; (2) inclusiveness education/training programme and guide to develop a training programme for educators and researchers to raise awareness on inclusiveness in RTOs; and (3) standardised framework tool for organisations to facilitate the creation of constant monitoring and supporting gender equality and integration of gender into research content in joint research projects between different organisations.

3.3.1 Prototypes on the integration of the gender dimension research and innovation content

The Lab team working on challenge 3, relating to *the integration of the gender dimension in research and innovation content* has been **working on 3 prototypes:**

3.1. Gender Experts –network: building a network of gender experts to provide expertise and practical support for (national) research community.

3.2. DEI in R&D&I leadership: researching what kind of capabilities of the R&D&I leaders would facilitate integrating intersectional gender dimension into R&I content. Trainings/capacity-building for R&I leaders on the integration of intersectional gender dimension in R&I content.

3.3. Argument bank: establishing an argument bank that helps to explain why international STI dialogues should enforce taking the gender dimension into R&I content and how to do it.

The section below summarises the key points of the three emerging prototypes from challenge 3. A more detailed description of the prototypes can be found in the annex B.

3.1. Gender Experts -network

Gender experts -network aims at building a network of experts first to interact as institutional interlocutors to bridge understandings of different entities and institutions, and second to provide expertise and practical support for (national) research community. There is significant evidence to demonstrate that biological and social differences between women, men, girls, boys, and gender-diverse people contribute to differences in their health, and should therefore be considered in not only health research but other fields, like social and technical sciences as well. Accounting for sex and gender in research has the potential to make research more rigorous, more reproducible and more applicable to everyone. However, even if the facts of sex and gender relevance in research are known to research community, the reality is that many researchers lack capabilities in conducting

gender responsive R&D&I. Also, professionals in the STI fields might face challenges in accessing gender and inclusivity information and knowledge.

STI professionals might be ignorant for various reasons, for example the ones who do not know about the importance of sex-gender or inclusiveness; those professionals who know but need help; but we need to acknowledge that some professionals do not even want to engage in sex-gender issues. The gender experts network offers support for especially those research institutions, groups or individuals who are interested in integrating a gender dimension into their research agenda but do not know how to do it.

In summary, the prototype will establish a network of sex and gender and inclusivity experts that will provide knowledge and assistance to 1) research teams and researchers who would like to integrate gender dimension into their research design and 2) research funding organisations to help integrating and assessing the gender dimension in research proposals.

Key words: gender experts' network, sex and gender champions

3.2. DEI in R&D&I leadership

Despite decades of gender equality interventions and steadily increasing number of women in the STI fields, R&I content is still largely not reflecting intersectional gender dimensions. One of the reasons for this is the lack of awareness and competences of research and innovation leaders to include intersectional gender dimension into research and innovation content. With research and innovation leaders we refer to research and innovation managers, team leaders, principal scientists and other key persons in charge of research scope, design and ethical assessment.

This prototype aims to enhance understanding of what kind of capabilities of the RDI leaders would facilitate integrating intersectional gender dimension into R&I content. Such capabilities could be, for example, assessment of the research design, research expertise or other type of support for research teams, so that they would be better equipped in both understanding why and when gender dimension should be considered in research design, and how to do this. The prototype will explore these capabilities through identifying the barriers and drivers for enhancing capabilities, and then build recommendations for practical action towards it.

As a method we will use research-based methods to identify i) what capabilities RDI managers need, ii) how to enhance those, and iii) what barriers there are for enhancing these capabilities. In order to explore these issues, a series of workshops and expert interviews. Findings could be published in the form of a research paper, and disseminated as blog posts, awareness raising campaigns. Based on the findings, a checklist and other institutional tools and guidance could be developed that help address the gender bias in RDI content.

In summary, the prototype will 1) research what kind of capabilities research and innovation leaders or managers have and should have for enhancing the integration of gender in to R&D&I content, and 2) explore drivers and barriers for enhancing research and innovation leaders or managers capabilities for integrating gender dimension into the R&D&I content.

Key words: gender in R&I content, capabilities, research managers and leaders.

3.3. Argument bank

Integrating intersectional gender analysis into research content, to better address societal challenges, has not yet become a priority in scientific multilateral and bilateral agreements, scientific policy dialogues. This is partly explained by a lack of capabilities and resistances from institutions. By elaborating an "argument bank", a fact sheet with key resources (concrete examples and set of best practices) and common questions and objections on the topic answered, this prototype seeks to counter those problems. It is important to show R&I institutions how they efficiently tackle gender bias in research in a concrete and practical manner.

The overarching objective of this prototype is to foster research that benefits everyone equally. This can be achieved through international scientific cooperation activities which have the potential to advance gender-aware science. This argument bank is an important tool to foster the integration of the gender dimension in international scientific cooperation. The argument bank will provide concrete evidence and a set of good examples to show how STI institutions can invest in more gender-sensitive and gender-specific (object of study is gender) research. Research funding organisations, research producing organisations, governmental institutions, and ministries of science/research are main stakeholders and beneficiaries of this prototype. In the first step, the argument bank provides evidence (state-of-the-art of case studies, best practices) that explain WHY investing in gender-sensitive and gender-specific research is important, and HOW to do it will be collected. In the medium term, producing factsheets targeting each category of stakeholders by including them into the process is aimed. Creating mechanisms and resources for the new research on gender perspective in STI/STEM is among the long-term actions, along with the evaluation and monitoring activities regarding the implementation of this prototype.

In summary the prototype will establishes an argument bank for targeted sectors that helps to explain why international STI dialogues should enforce taking the gender dimension into R&I content and how to do it.

Key words: gender, research and innovation, international cooperation, argument bank

3.4 Go – No Go prototyping phase

As part of the continuous improvement and self-reflection process of the Lab every prototype undergoes a Go – No Go check and retrospective that is also based on peer review comments and contributions from its creators, from external stakeholders and potential beneficiaries. This phase is performed in three steps:

1. The first step is for rapid prototyping checks that are performed in the first month and a half after the Lab. If the prototype requires more fine tuning it is either discarded or adapted.
2. If the prototype is mature enough it goes into a longer period of tests and adaptations based on feedback from beneficiaries and other stakeholders. This phase of consolidation of the initial prototype is normally lasts about 6 months. If the prototype demonstrates that it is not realisable or incoherent it is either transformed or discarded by its proponents.
3. If the prototype is consistent and coherent with the requirements of the challenge stakeholders and decision makers and can be robust enough to be proposed as a possible action, recommendation, form of agreement, solution to the challenges, then it will be proposed to the stakeholders for its adoption. This phase enters into

the time frame and processes of the policy making activities which can be within medium and long term.

This fine-tuning process helps to develop the Proof of Concept needed for the prototype proposals to be more robust, practical, concrete and operational as they go through iterations, refinements, polishing and improvements.

In the Lab, as a result of this process some prototypes were merged while others were totally transformed and adapted.

All prototypes originating from the Labs and follow-up work undergo an iterative phase of feedback for further improvement with support from SPI partner. The iterative phase of feedback runs for six weeks, counting from the last session of the labs. After this phase, a decision is taken regarding the pertinence and quality of the prototype to move forward and be transformed into a policy recommendation, under WP4.

As of the date of this deliverable, the 6-week prototyping phase is still in progress. For the Go / No-Go decision, the iterative phase of feedback allows for a summary of the key improvements identified in the prototypes that overall had to be addressed:

- The prototypes benefit from the definition of a clear goal, especially those that will end up becoming policy recommendations. The importance to see a recommendation as addressing a question/challenge was emphasised. Challenges to implement the prototypes were identified.
- Some of the prototypes were very ambitious in the proposed goals, which need to be well-planned in terms of the expected action plan and in particular in terms of the level of commitment and funding needed to ensure the fulfilment of the plan.
- The identification of the target audience of the prototypes has to be clear to make the prototype reliable. For instance, high-level actors are harder to reach out to and fully involved in the actions to implement the prototypes.
- If there was overlapping with other prototypes it was suggested to merge those prototypes or be designed in a way that they could become complementary.

If prototypes overlapped, it was suggested to either merge them or to adapt and design them so as to focus on complementary aspects.

All prototypes were reviewed and the responsible teams received detailed comments on all the sections of the prototypes. The teams who advanced quickly in revising their prototypes undertook more than a round of feedback, thus already developing the prototype into a format of a draft policy recommendation. The go / no-go decision to be implemented during the coming weeks shall identify the best prototypes that can be revised to be shared widely as policy recommendations. Considering the work developed, the team expects that at least three prototypes become highly relevant policy recommendations, to be further improved, discussed and disseminated, under WP4.

As we shall see in the next session all the emerging suggestions and retrospective analyses from the agile phase of the Go – No Go have been taken in consideration in the Gender STI Prototyping Matrix and in the recommendations from the challenges based on the first Lab’s co-design activities.

4 PROTOTYPE ACTIONS AND RECOMMENDATIONS

In this chapter we describe how the potential impact and outcomes of the prototypes have been matched according to the Gender STI Prototyping Matrix and the resulting recommendations from each challenge of the Gender STI Co-design Lab.

4.1 The Gender STI Prototyping Matrix

To assess the potential benefits, outcomes and impacts of the co-designed prototypes on international STI agreements and dialogues, we have developed the **Gender STI Prototyping Matrix.**

The Matrix has emerged as a way to identify ideas, proofs of concepts, recommendations and priorities. The Matrix's background information is based on a clear understanding of international agreements and policy dialogues and all the aspects that determine them. It examines the possible benefits and impact the prototypes can generate according to four dimensions.

- Agreements: level of agreement that could benefit from the prototype.
- Areas: focus areas where gender aspects could be addressed in the prototype.
- International Policy Dialogue on STI: Policy Dialogue Level (Interactions among stakeholders) and policy dialogue instruments and tools in which the prototype could contribute.
- Target audiences.

Below we examine and describe more in detail these four dimensions and how they integrate with each other. We then cross reference the information with the seven prototypes that were generated in the Gender STI Lab sessions.

4.1.1 STI Agreements

The Gender STI Prototyping Matrix considers especially the following levels of **agreement** that could benefit from the prototypes:

- Bilateral Agreement
- Multilateral Agreement
- Memorandum of Understanding (Incl. an updated version of an agreement/ revision)
- STI implementation activities/ Joint actions / Joint program (e.g., call for proposals, rules for participation, evaluation criteria, etc.).

These bilateral, Multilateral agreements, MoU, and specific STI cooperation agreements are often legally binding documents standardised provisions. They contain provisions regarding the framework (term, purpose, duration…), rights and obligations, organization, and often resources, liability, intellectual property rights…).

If not based on mutual interest in such policies and expected added value of the cooperation, the possibilities for incorporating gender aspects in international cooperation agreements are rather limited.

4.1.2 Policy dialogues on STI

Policy dialogues are related to science diplomacy and are not legally binding, nor necessarily based on standardised provisions. They are negotiated at State/Ministry level.

The Gender STI Prototyping Matrix assesses especially the following **International Policy Dialogue Levels on STI** (interactions among stakeholders), that could benefit from the Labs prototypes:

- Preparatory meetings/ Support Processes (technical representatives).
- Regional Policy Dialogue (e.g. EU-CELAC) (high level representatives).
- National Policy Dialogue (between countries) (high level representatives).
- Background documentation (study reports).
- Concept note (include background, rationale, objectives, methodology, expected participants).
- Agenda.
- Set of recommendations.
- Roadmap/ Action Plan.
- Policy briefs (prepared to capture and communicate key messages).
- Declaration.
- Evaluation reports from policy dialogue.

To assess the potential contribution of the GENDER STI prototypes to policy dialogues it is important to be aware that:

a) A Policy Dialogue is a long process, which usually involves bilateral summits, senior officials' meetings and working groups. For example, this is the case of bi-regional dialogues such as the EU-CELAC Policy Dialogue between the European Union and the Community of Latin American and Caribbean States[8]

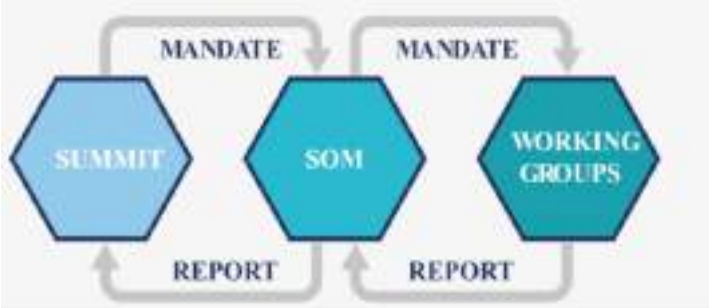


Figure 17: EU-CELAC Policy Dialogue process

b) The scope of the Dialogues is very broad, STI being just one topic. So even if gender issues are included in the action plan it is not necessarily related to STI.

c) STI Roadmaps and concept notes are usually addressing global challenges (related to SDGs) without addressing gender aspects, not even as a cross-cutting issues.

4.1.3 Focus Areas of the Gender STI prototypes

The Gender STI Prototyping Matrix has identified, the following **focus areas** where gender aspects could be addressed in the prototypes to determine their possible impact and outcomes:

- Advice/recommendations on implementing gender equality.
- Advice/recommendations on implementing gender diversity/ intersectionality
- Gender balance in governance bodies.
- STI objectives/priorities (e.g., strengthen research excellence, increase the number of women researchers in STI activities, etc.).

[8] For the EUCELAC Policy Dialogue see: https://www.eucelac-platform.eu/policy

- Evaluation criteria for STI programs/ projects.
- Monitoring of STI programs/projects.
- Calls for proposals/applications.
- Rules for participation.
- Impact of project results.
- Science communication/ raise awareness.
- Contribution to Sustainable Development Goals.
- Gender dimension in research content.

4.1.4 Target Audience of the Gender STI prototypes

The **target audience and beneficiaries** of the Gender STI Lab prototypes include all the quadruple helix stakeholder that can influence policies and strategies to balance the gender dimension in STI. More specifically:

- Government organization.
- Funding organization.
- Research and Technology Organization.
- University.
- Foundation.
- Private company.
- Public company.
- STI agency/association.
- Non-governmental organization.

The four dimensions – Agreements, Focus areas, International policy dialogues on STI and Target audiences – were matched with the prototypes from the second Lab to identify what benefits and impact the prototypes could generate to address and contribute to improve the Gender STI Challenges.

In the Gender STI Prototyping Matrix below, through the fields marked with an X, we show how the four dimensions described above and the prototypes have been matched to identify possible outcomes, benefits and impact.

Here is the outline of the Co-design Labs prototypes (*) per challenge:

- **Challenge 1 (Careers):**
    - Prototype Nº 1.1: Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming.
    - Prototype Nº 1.2: Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI.

- **Challenge 2 (Decision making):**
    - Prototype Nº 2.1: How to attract and represent more diverse candidates in high visibility STI opportunities.
    - Prototype Nº 2.2: Recommendations for decision-making in international scientific cooperation.

- **Challenge 3 (Gendered R&I content):**
    - Prototype Nº 3.1: Gender experts -network Institutional interlocutors to bridge understandings of different entities and institutions.
    - Prototype Nº 3.2: DEI in R&I Leadership. Trainings/capacity-building for R&I leaders on the integration of intersectional gender dimension in R&I content.
    - Prototype Nº 3.3: Gender argument bank for R&I.

Table 1: The Gender STI Prototyping Matrix

	Co-design Labs Prototypes						
	Prot. Nº 1.1	Prot. Nº 1.2	Prot. Nº 2.1	Prot. Nº 2.2	Prot. Nº 3.1	Prot. Nº 3.2	Prot. Nº 3.3
AGREEMENTS							
Level of agreement that could benefit from the prototype							
Bilateral Agreement			X	X			X
Multilateral Agreement			X	X			X
Memorandum of Understanding (Incl. an updated version of an agreement/ revision)			X	X			X
STI implementation activities/ Joint actions / Joint program (e.g., call for proposals, rules for participation, evaluation criteria, etc.)	X	X		X	X	X	X
AREAS							
Focus areas where gender aspects could be addressed in the prototype							
Advice/recommendations on implementing gender equality		X		X			x
Advice/recommendations on implementing gender diversity/ intersectionality	X	X	X		X	X	X
Gender balance in governance bodies			X	X			
STI objectives/priorities (e.g., strengthen research excellence, increase the number of women researchers in STI activities, etc.)	X	X			X	X	X
Evaluation criteria for STI programs/ projects					x	x	
Monitoring of STI programs/projects							X
Calls for proposals/applications	X				x	X	
Rules for participation							X
Impact of project results	X	X			X	X	X
Science communication/ raise awareness	X	X			x	X	x
Contribution to Sustainable Development Goals	X	X					X
Gender dimension in research content					X	X	X

	Co-Design Labs Prototypes						
	Prot. Nº 1.1	Prot. Nº 1.2	Prot. Nº 2.1	Prot. Nº 2.2	Prot. Nº 3.1	Prot. Nº 3.2	Prot. Nº 3.3
INTERNATIONAL POLICY DIALOGUE ON STI							
Policy Dialogue Level (Interactions among stakeholders)							
Preparatory meetings/ Support Processes (technical representatives)	X	X		X			
Regional Policy Dialogue (e.g. EU-CELAC) (high level representatives)				X			
National Policy Dialogue (between countries) (high level representatives)				X			
Policy dialogue instruments and tools in which the prototype could contribute							
Background documentation (study reports)		X				X	X
Concept note (include background, rationale, objectives, methodology, expected participants)							X
Agenda				X			
Set of recommendations	X	X					X
Roadmap/ Action Plan							X
Policy briefs (prepared to capture and communicate key messages)	X	X					X
Declaration				X			X
Evaluation reports from policy dialogue							
TARGET AUDIENCE							
Government organization	X	X	X	X	X		X
Funding organization	X		X	X	X		X
Research and Technology Organization	X	X		X	X	X	X
University	X	X	X		X	X	X
Foundation			X				
Private company						X	
Public company						X	
STI agency/association			X		x	X	X
Non-governmental organization			X				X
Other (specify)							

The Gender STI Prototyping Matrix shows that the Lab has created concrete and strong proposals in the form of prototypes that can continue to be improved and refined to demonstrate the proof of concept for future international policy agreements and dialogues on gender in STI.

Three prototypes could help to further integrate the gender perspective in STI agreements at all levels and in international policy dialogue. These are:

- Prototype Nº: 2.1 How to attract and represent more diverse candidates in high visibility STI opportunities.
- Prototype Nº: 2.2 Recommendations for decision-making in international scientific cooperation.
- Prototype Nº: 3.3 Gender argument bank for R&I.

Moreover, the gender aspects that could be addressed in the prototypes are associated to different focus areas, in particular to:

- Advice/recommendations on implementing gender diversity/ intersectionality.
- STI objectives/priorities (e.g., strengthen research excellence, increase the number of women researchers in STI activities, etc.).
- Science communication/ raise awareness
- Impact of project results.

As for the primary target audiences that could benefit from the prototypes to adopt gender equality policies in STI, they are the following:

- Government organization
- Research and Technology Organization.
- Universities.
- Funding organization.

4.2 Actions and recommendations of Challenge 1 - Careers

The first prototype **"Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming"** focusses on the impact that gender stereotypes have in today's science culture and assessing the implicit bias of a person by playing a game. The game should make testing the implicit bias accessible and also provide a platform to promote real life role models.
The following actions will be important to successfully implement this prototype:

- Research on how gender bias is formed to develop a first questionnaire draft and later on a game it is vital to create a strong foundation on how gender stereotypes evolved and what their root causes are.
- Explore existing games/platforms that teach and test bias to help create a first questionnaire and later an algorithm that is based on psychological methodologies, but enhanced through technology to provide even clearer scores.
- Test the perception of the user vs. gender bias; First tests to develop and improve the prototype.
- Asses and cross test prototype to ensure a valid and robust testability of the implicit bias with the prototype, it can be cross tested with existing platforms.
- Develop a simulation-based game that includes:
    - testing your personal bias regarding gender stereotypes;
    - design a strategy that rewards unbiased behaviour;
    - real role models with features and skills of real life;
- Create an additional Survey to conclude about bias based on social background.
- Introduce an assessment SCORE for making Tangible, Testable, Implementable.
- Organize Workshops with game to test implicit bias and afterwards improve the game.

The second prototype **"Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI"** will contribute to empower women lifelong careers with an international perspective. The premise of the prototype is that women careers must be empowered from a lifelong perspective (i.e., STI girls leaders become women STI leaders): making bold and disruptive careers' models visible and accessible for women all along their lives. To achieve this the following actions, need to be taken:

- Study of existing digital content about female careers empowerment: gathering and integrating digital content that creates awareness about existing opportunities, actions, best practices and results at the international level.
- Exhibiting the limitations of content and strategies (from an international perspective) that have prevented going a step further in the empowerment of female careers in STI in a broader dimension.
- Proposing new digital contents to create awareness about the need to bridge the gap between GirlsLead@STI to WomenLead@STI as a sine qua non condition to empower careers in STI as a lifelong project.
- Exhibition "Broken bridge between GirlsLead@STI to WomenLead@STI" at the Gender STI final conference (artistic action).

4.3 Actions and recommendations of Challenge 2 – Decision making

The first prototype of Challenge 2 will contribute to **attract and represent more diverse candidates in high visibility STI opportunities** by taking the following steps in the upcoming months:

- Identify types of contribution activities that have high visibility within STI fields with a goal to then identify specific actors/activities to target. For example:
    a. At conferences (major conferences in science and innovation).
    b. In international committees in science diplomacy.
- Review existing Gender STI Project research for findings that are relevant to the guidelines (e.g., content, participation, editing roles) either for documenting inequity or determining approaches to include in the guidelines. Also, research best practices in representing and attracting women to conferences (e.g., funding measures), and identify conferences that are exemplary.
- Test and refine the guidelines.
- Share the barriers we have identified and our early proposed approaches, with decision-makers to help reduce or eliminate obstacles.
- Propose the design of positive discrimination measures funding that support or promote the participation of women, diversity, ethnicity.

It is expected that these actions improve the visibility and power of women in STI academic departments (more women teaching upper-level courses) and increase mentorship programs for women related to leadership positions in event development (especially the leadership and direction of conference themes, panels and publications).

Regarding the second prototype on recommendations for decision-making in international scientific cooperation, the following actions are proposed:

- Define working groups (together with the material and dynamics for the co-design meetings) that will:
    - Draft recommendations on gender balance in decision-making in international scientific cooperation and share them (Gender STI Consortium, other organisations) to have feedback.
    - Define what should be transparency in international scientific cooperation decision-making bodies.
- Launch a network on science diplomacy and gender.
- Joint declaration (in 1 year endorsed by major stakeholders (RPOs RFOs, international organisations).
- Survey and symposium to follow up on the implementation of the recommendations.
- Workshop to share the experience of decision makers and update recommendations.

Thanks to the above actions, the prototype will achieve greater transparency and inclusiveness in decision-making to better take into account the diversity of the scientific community and the challenges of society. This prototype will also achieve a better integration and consideration of the gender dimension in the programs of policy dialogue and scientific cooperation. And in the end, the number of women in decision-making positions will increase.

4.4 Actions and recommendations of Challenge 3 – Gendered R&I Content

Despite decades of gender equality interventions and steadily increasing number of female workers in the STI fields, R&I content is still largely not reflecting intersectional gender dimensions. The reasons include lack of awareness and competences of researchers, innovators and leaders to include intersectional gender dimension into research and innovation content, and resistance towards integrating gender dimension.

The set of recommended actions below focus on addressing these by focusing and providing support for institutions and teams seeking to integrate gender dimension (gender experts network), understanding what kind of capabilities research and innovation managers need to include gender dimension into Research, Development and Innovation (R&D&I) content (DEI in RDI management), and also addressing resistance towards this by highlighting the importance of integrating gender dimension into R&D&I content (argument bank).

Actions:

- Establish a network of multidisciplinary gender experts within e.g., national institutes of science, ERA or a national research funding organisations to provide assistance and help for research teams and proposal reviews to enhance including gender dimension into their research.
- Research what kind of capabilities research and innovation leaders or managers have and should have for enhancing gender sensitive R&I content.
- Explore drivers and barriers for enhancing research and innovation leaders or managers capabilities for integrating gender dimension into the RDI content.
- Establishes an argument bank for targeted sectors that helps to explain why international STI dialogues should enforce taking the gender dimension into R&D&I content and how to do it.

5 THE GENDER STI COMMUNITY OF PRACTICE

The Co-design Lab is a powerful team building process, gathering people from diverse backgrounds, ages, nationalities, and roles, which contributed to insightful discussions and the creation of prototypes integrating an inclusive gender perspective.

Stakeholders participating in the Labs were invited to join the **Gender STI Community of Practice (CoP)**. As a result, the first batch of the CoP with 110 participants emerged through the direct collaboration, co creation and co-design process that was experienced by the participants in the Lab. This community building process was enhanced by firstly, the networking and team building activities that occurred during the Lab, secondly, by the collaboration of participants on the design and improvement of prototypes (during and after the synchronous Lab sessions), and, thirdly, by providing asynchronous tools such as the networking biographies and the collaborative spaces for each challenge group on the Basecamp platform, bridging the communication also across the different time zones.

After the Lab, we initiated the first communication activity with the CoP in order to welcome new members, foster a sense of community, and disseminate the initial project research and activities. Ultimately, the Gender STI CoP will contribute to foster gender STI dialogues across European and third countries involved in the project.

As the second Co-design Lab sessions involved 42 participants, suggestions, recommendations and word of mouth have also been an asset explaining the importance of participation. Participants were informed two to three months beforehand about the Lab purpose and process, aiming to get as close as possible to the ideal mix of minds and hearts, thus enabling an optimal preparation. For the genuine involvement of participants in the Gender STI Community of Practice, the first step has been to inform them about the purpose, challenges, process, agenda, commitments, benefits and advantages of participating actively in the process (see for instance the Guide for Participants in Annex A).

In the invitation to the Labs, it has been essential to highlight that the Gender STI Co-design Lab is an adventure, a leap beyond the status quo, and a collaborative journey that takes the time and effort needed to achieve worthwhile results. Participants are invited to join a collective process to discover ways, methods, and tools to overcome the inertia, fear, and cynicism often experienced in ordinary working contexts and projects.

Niccolò Machiavelli advised in his 16th-century political treatise The Prince, *"There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success than to take the lead in the introduction of a new order of things"*. While we know how hard it may be to establish a greater gender balance in STI internationally, we have the tools, mindset, methods, and people to induce this in a positive way and overcome the resistance to change.

Mahatma Gandhi said *"Be the change you want to see in the world",* and Margaret Mead tells us: *"Never doubt that a small group of thoughtful, committed individuals can change the world; in fact it's the only thing that ever has"*. The spirit of these quotes guide the participants that join the Gender STI project and Community of Practice.

The Lab's method, team, and participants can mobilise enough critical mass together to transform the emerging promising ideas into viable prototypes of policies, actions and recommendations. There is an empowering awareness of this that emerges among all participants as the process flows. In addition, the good track record of previous Labs based on the Innovation Camp method demonstrates that the Labs are not a meeting or stand-alone event, but a long-term process and exceptional initiative to connect visions and transform them into actions.

The invitation letter includes:

- PURPOSE. The purpose of the Gender STI Co-design Labs addresses the benefits of belonging to an international community of change agents that are eager to keep learning, improving, and mobilising people.

- OUTCOME. A description of the challenges, possible outcomes, and the stakeholders involved.

- PROCESS. How the Labs are organised, and the steps of their process, including preparations, what is expected of participants, scheduling issues, commitment to blended activities, the digital tools, and the continuous learning process.

One way to see the whole process is to be part of a **Community of Practice**, enabling participants to learn how to make change happen and acquire a strong sense of purpose. The Gender STI Labs nurture a community of practice as a transversal challenge crossing all three other challenges.

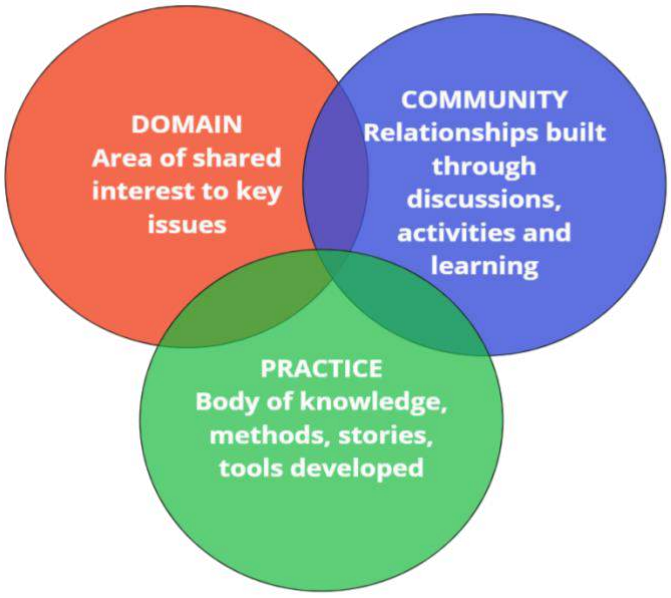


Figure 18: The key elements of the Gender STI Community of Practice

Communities of Practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they regularly interact (Wenger et al 1998, 2000, 2002). In all cases, the key elements are:

- **The domain**: members are brought together by a common learning need (regardless of whether this shared learning need is explicit or not, or whether learning is the motivation for coming together or a by-product of it). The domain in the case of GENDER STI is the analysis and search of socio-technical solutions that can define outputs, medium-term outcomes, and long-term impact to enhance gender equality in STI.
- **The community**: the collective learning becomes a bond among participants over time (experienced in various ways and thus not a source of homogeneity). The community includes all stakeholders that are keen to face the challenge and want to make a change in how affairs related to gender equality in STI are approached. Some of these community members include all the GENDER STI actors and stakeholders indicated above: e.g., policy makers, researchers, the business world, academia, civil society.

- **The practice**: the interactions within the community produce resources that affect their practice, regardless of whether the participants engage in actual practice together or individually. The practice occurs both at work and in society, as well as through the strong participatory design principles of the Labs with the support of each partner of the Gender STI consortium.

As with any change process, the commitment required to attend the Labs may be a barrier to some and a way to select the ones that are really passionate and interested in making change makers. Hence with the collaboration of these partisans the Gender STI Community of Practice will have a solid chance to accomplish a great impact.

The **Gender STI Co-design Labs Community of Practice** uses the Basecamp online platform as it allows everyone to contribute and communicate asynchronously and provides a series of useful collaborative tools.

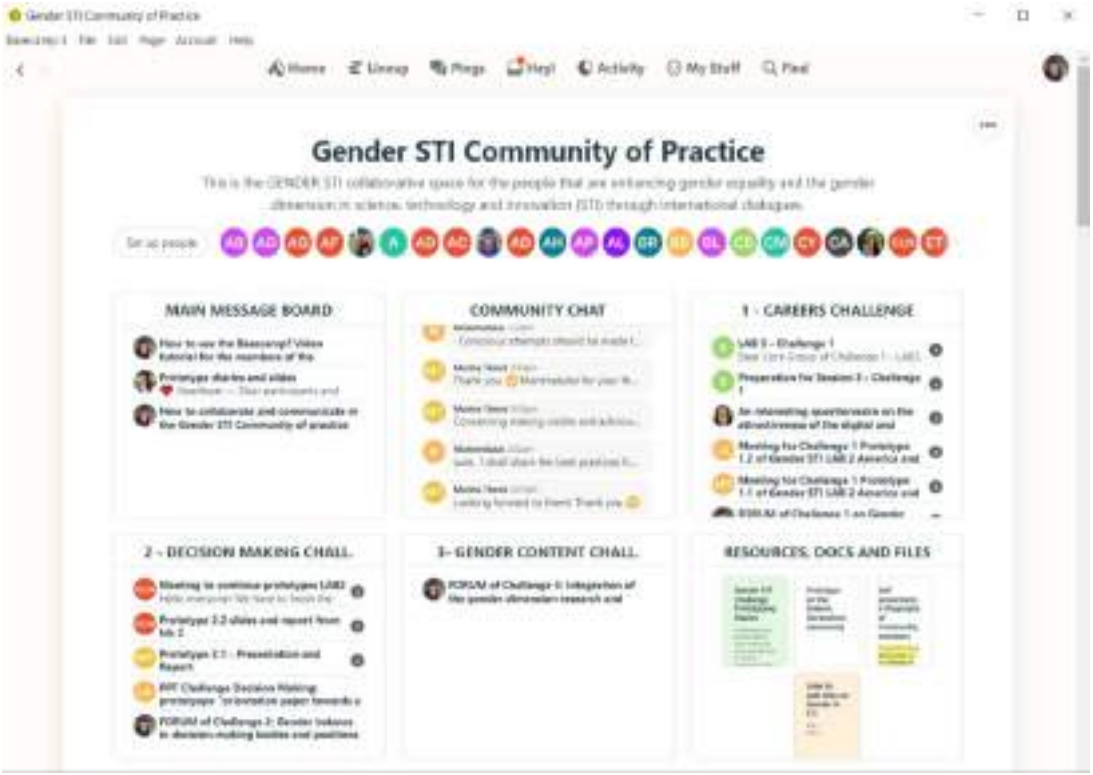


Figure 19: The Basecamp space of the Co-design Lab's Community of Practice

The Community of Practice has the following tools to collaborate and communicate among participants:

- A **COMMUNITY CHAT** for short messages to chat casually with the group, ask random questions, and share stuff without ceremony.

- A **MAIN MESSAGE BOARD** for all the community members to post and broadcast announcements, pitch ideas, progress updates, etc and keep feedback on-topic. The **MAIN MESSAGE BOARD** and **CHALLENGE FORUMS** are the most effective way to share information, post announcements, pitch ideas, progress updates, etc and keep feedback on-topic.

- **Three** dedicated **Challenge forums**, one for each Challenge and for participants from all the Gender STI Labs (and beyond). These allow participants to read each other's

challenge discussions and share other reflections whenever they want. All three challenge forums can be used to post announcements, pitch ideas, progress updates, etc and keep feedback on-topic for the specific Challenge. This is where prototypes are discussed, developed, tested and implemented.

- **1 - CAREERS.** Forum of **Challenge 1: Gender equality in scientific careers at all levels.**
- **2 - DECISION MAKING.** Forum of **Challenge 2: Gender balance in decision making bodies and positions.**
- **3 - GENDER CONTENT.** Forum of **Challenge 3: Integration of the gender dimension in research and innovation content.**

- **RESOURCES, DOCS AND FILES.** This is the place where community members can store or organise assets and reference material with links to the shared folder in the cloud, keeping all the community docs (google or otherwise) in one place. For instance, here we keep the Information Guides for participants, the Challenge Prototype Diaries, Links to the Berst platform for meetings, and so on.

- **COMMUNITY EMAIL FORWARDS**: provides access to any relevant information and contents that participants want to share via email with the community. The working space has a unique email address that allows every participant to forward a copy of the messages sent by email directly to the internal mailbox of the Community of Practice.

- **PING**: if participants want to send a direct message to a person, they can search their name or click on their icon and select the "ping" command, then write the direct message. To write to one (and more people) they can open the "Ping" command above the Basecamp bar to search for the name of the person(s) and add them as recipients.

    - Participants can add a message and comment on other messages by writing their comments just below a message in the forum.
    - They may also add your reactions and emoticons to messages by clicking on the little rocket that is below the message on the right.
    - To send a direct message to someone they can just click on the (@) sign and start typing their name, then select it. The person will receive notification that they are mentioned in the message.
    - When writing a message in the Forum participants can decide who they want to send the messages by selecting the subscribers at the bottom. They are advised to select only the ones that they want to address the message to, unless it is a message that needs to be broadcasted to everyone in the community. If they are in doubt, it is better to send any forum message without adding subscribers. People will read the message anyhow from the Forum.

All partners have participated in the Labs as passionate change-makers to align and strengthen the Community's principles and purpose. More external actors and stakeholders have been gradually involved from the first Lab onwards, broadening the engagement and increasing the number of *change-agents* in the Community of Practice.

Each challenge forum is animated by the respective challenge holders, for instance TU Graz were in charge of Challenge 1 on Careers; UPM of Challenge 2 on Decision Making; and VTT of Challenge 3 on Gender R&I content.

As a result of the Labs and the follow-up phase, the Gender STI Community of Practice will be strengthened to foster gender equality dialogues and solutions across the countries involved, and beyond. This community of practice helps to share information, know-how, solutions, agreements, processes, and best practices to move forward together. Gender STI intends to scale up the experience at the international level, thereby generating further long-term outcomes and impact on gender equality in STI.

6 CONCLUSIONS AND LESSONS LEARN

The Gender STI project hosted the second Co-design Lab workshop to address three of the forefront challenges facing women in Science, Technology and Innovation (STI): **gender equality in scientific careers, gender balance in decision-making bodies and positions and the integration of the gender dimension in research and innovation content.**

- The Co-design Lab sessions continued the pioneering experimental experience of online interactive prototyping started with the first Lab in 2021 due to Covid-19 restrictions. The 2022 Lab sessions were also a testbed where new methods, tools and processes were introduced and adapted to organise an even more efficient and effective facilitated prototyping process. Activities were performed so as to cater for the needs and time zones of people from America and Europe.

- The Lab sessions were an effective learning process for everyone. The **virtual Lab process** required all participants to both learn how to apply the design thinking principles and to learn how to co-create and collaborate in a facilitated participatory way in a **remote online setting**. The Lab sessions included both **synchronous** meetings where participants would meet together virtually, and **asynchronous** activities where they would collaborate, make proposals and take decisions on specific platforms (such as Basecamp, GroupMap or shared google files as for the Prototyping Diaries and Prototyping slides). While the design and core team kept introducing simpler tools that had a less steep learning curve the digital brainstorming sessions were a very stimulating way to walk the talk in terms of empowering participants to use virtual tools, listen actively, be inclusive and bridge gaps in language differences. In these digital sessions all the participants had to stretch their comfort zone and learnt how to apply in a creative way several **methods and techniques** that were combined in a new way to address three societal challenges related to gender equality in STI.

- Working online in the Lab sessions proved to be **extremely efficient** and **inclusive** with participants being "only one click" away, even if they were thousands of kilometres separating them. This was the result of **careful planning among partners** and the **support of facilitators** with a lot of **experience in creating a collaborative and warm social online atmosphere**, in spite of time, logistic and technological constraints. More adaptations to the process have been considered to find a trade-off between the complexity of the topics being dealt with and the time needed to address them so as to generate and agree on ideas for prototypes and the optimal use of digital techniques. The experience and practice gained with the first Lab in 2021 made the work of the core team and partners much more fluid and stimulating. There was a stronger feeling of belonging, trust, respect and much better team work with continuous feedback and improvements.

- The Lab sessions were effective. Through the Lab sessions the challenges were addressed by challenge holders and participants to **generate more and different prototypes of solutions** that could address the gender perspective in STI relating to careers, leadership and decision making and gendered R&I content. The development of a Guide for Participants helped the core team to frame and narrow-down with great clarity which themes to tackle that would be complementary with respect to those tackled previously. This allowed a much stronger coordination of the topics and reduced overlaps and redundancies in the prototypes. The Lab initially generated **nine prototypes** that were then merged and consolidated into **seven prototypes** involving participants from America and Europe. These prototypes are the main basis for identifying ways to **have an impact and benefit** on current and future **policy dialogues and agreements** on gender in STI.

- The Lab prototypes undergo an iterative testing and continuous improvement process. After the first Lab sessions the emerging **prototypes** continued to be adapted, improved and developed by the prototype proponents. This iterative process led to the definition of a **Proof of Concept** for the emerging prototypes and their further improvement in the next phases of the Lab.

- The Lab challenges and their solutions are the main drivers of the Lab's pioneering discovery process. The **three gender challenges** that have been addressed will keep guiding the whole Lab process. New specific dimensions of these have been addressed in this Lab, on the basis of new requests and priorities and also to fill gaps that were not covered by other prototypes with reference to the **Gender STI prototyping matrix**. As a result of these new challenges, themes and questions the Lab has generated more prototypes that can contribute to strengthen the connection with the current policy challenges.

- The focus of the challenge in the Labs is key to guide the questions and subsequent prototypes. As a lesson learnt while the first exploratory Lab addressed the challenges very broadly, with prototypes that range from very strategic to tactical actions, the following Labs have **selected more focused aspects of the challenges**, **topics** and **guiding questions**, with a direct link to ones that could have **a strong support from decision makers**. This selection of targeted aspects of the challenges has been enriched through the new "Guide for Participants". Through the Gender STI Community of Practice and by liaising directly with people involved in institutions and organisations that are directly active in bilateral and multilateral STI agreements and policy dialogues, the impact of the prototypes may be further enhanced through a stronger ownership of the issues. This also increases the engagement and commitment of all parties involved in the Labs and broadens their scope and systemic impact.

- The Lab sessions are a catalyst for the creation of the first international **Community of Practice (CoP)** to address the gender perspective in STI through improved policy agreements and dialogues. The **CoP** has grown further from the interactive, challenge-driven Lab session activities. By meeting in a facilitated environment, through ice-breakers and team building activities, participants have had the possibility to learn more about their different backgrounds, expectations, dreams and hopes relating to gender equality in STI and have realised that together they can achieve much more than they could even imagine. Participants were extremely enthusiastic about the Lab sessions and methods, especially as the process helped them to achieve, in a relatively short span of time, quality outcomes that would have required much more time if there was not a strong and clear method. The Community of Practice, being a many-to-many and demand and supply self-driven mechanism where all members are resources for each other counts also on a strong passion and commitment on the gender in STI challenges addressed by the Lab. In the next phase, the Community of Practice will be broadened through communication and dissemination activities and through an intensive approach where every new participant is onboarded and coached word of mouth from the existing members.

Summing up the main findings and lessons learnt, the second Gender STI Co-design Lab (Oct-Nov 2022) has been a test bed to continue to define the three challenges and this led to **seven** detailed work-in-progress prototypes. This prototyping, action research and continuous improvement process is in the experimental design thinking nature of the Lab's methodology.

Considering the complexity of the challenges and issues addressed, the second Lab was a considerable achievement and as consortium we are aware of the positive results as well as of what can be improved:

- It was the second time such an online Lab based on the Innovation Camp method was organised on a global scale on such daring societal goals and policy issues. Participants of the Lab attended the workshop from America and Europe working together across 8 different time zones.
- The experience of the core team members and partners acquired in the first Lab helped to support new participants that had little or no experience with digital brainstorming tools and online co-design processes. This support, combined with a reengineering of tools and processes by the facilitators, helped to make the learning curve much simpler and to focus more on the contents and outcomes of the Lab than in the first one.
- The Lab has broadened the diversity of perspectives by involving new external stakeholders from other regions and organisations and by having a greater gender balance.
- The challenge of organising all the Lab activities online rather than through face-to-face meetings became an opportunity for innovations in the methods, tools and facilitation approaches and for greater inclusion of participants, as well as a good combination of synchronous and asynchronous activities through digital tools. As participants did not need to travel to attend the Lab sessions this allowed to dedicate more time on the content, process and overall support of the consortium to the prototypes. The role of the consortium partners has been key to keep the continuity and depth of the discussion in the Lab, their prototyping and implementation phase in spite of time constraints. The asynchronous work through collaborative platforms provided also the time for deeper reflection, analyses and syntheses of results among prototyping groups.

The next phase of the Co-Design Lab is based on the continuation of the prototyping activities and their implementation both among the participants that were involved in their design and with other stakeholders and societal actor that can be involved through the Community of Practice. The prototypes and results of the Gender STI Co-Design Lab will feed into the recommendations for implementing gender equality in STI dialogues and policy actions to enhance the integration of gender equality in bilateral and multilateral activities between EU MS, AC and third countries in the area of STI. Insights from the design thinking process, and in particular the outcomes from the Co-Design Labs, will create the groundwork for the formulation of recommendations on gender equality in STI, while the implementation phase of the design thinking process will develop an action plan to effectively implement the selected recommendations.

7 ANNEXES

The annex section includes the following:

- 7.1 Annex A – The Guide for Participants for the Gender STI Co-design Lab 2 America and Europe sessions.
- 7.2. Annex B – The registration page and agenda of the Gender STI Co-design Lab 2 America and Europe sessions.
- 7.3 Annex C – The prototypes of the first Gender STI Co-design Lab 2 America and Europe sessions.
- 7.4 Annex D – Prototyping slides.
- 7.5 Annex E – Prototyping diary.

7.1 Annex A – The Guide for Participants for the Gender STI Co-design Lab 2 America and Europe sessions

This annex has the full description of the Guide for Participants that was sent to inform participants of the Gender STI Co-design Lab 2 Americas and Europe sessions.

Table of contents

This participant's guide aims to inform you and provide background information on the challenges that are addressed by the GENDER STI Co-design labs. This information helps you to identify previous policies, and new opportunities, ideas for prototypes that will be used to enhance gender equality and gender dimension in science, technology and innovation (STI) through international dialogues. The Gender STI project

The Gender STI project aims to enhance gender equality in science, technology and innovation (STI) workforce and decision-making positions, as well as to support the integration of the gender perspective in STI dialogues between Europe and third countries. The project is part of the European Research Area (ERA) strategy to advance gender equality in Research and Innovation (R&I).

Gender STI innovatively contributes to solving complex problems associated with the integration of the gender perspective in STI dialogues, by adopting a design thinking human-centric problem-solving approach. Gender STI investigates how gender equality is

taken into consideration at different levels of international cooperation dialogues in the area of STI, between the EU Member States and Associated Countries, and a selected set of 10 third countries, including Canada, the United States, Mexico, Brazil, Chile, Argentina, South Africa, India, South Korea and China.

The Co-design Labs prototyping method

Co-design Labs (Labs) addresses three of the forefront challenges facing women in STI: i) gender equality in scientific careers; ii) gender balance in decision-making; and iii) the integration of the gender dimension in research and innovation content. By prototyping and testing solutions according to design thinking principles, the participants in the Labs work with facilitators and interactive brainstorming methods to reframe the challenges, look for opportunities, define goals, identify key actors, build initial ideas, develop prototypes and a roadmap to test the prototypes in real contexts.

The Co-design Labs use the Innovation Camp Method adopted by the European Commission Joint Research Centre (JRC) and the Committee of the Regions.

The Co-design Las sessions

The Co-design Labs are organized in three sessions of half a day each as well as asynchronous prototyping collaboration. The Labs will address the three main challenges of **gender equality in careers, decision making and R&I content**, with focus on different **thematic areas for each challenge** to identify diverse prototypes. You will find the descriptions of the challenges, themes and open questions in the tables below across the specific sections of the document.

Here are the dates and times of the Labs you are attending. Please consider that attending the three sessions in a Lab is important as it is an integrated process where each session builds on the previous one so as to build prototypes that can have a concrete impact.

GENDER STI Co-design Lab sessions - America and Europe Labs
Session 1: Monday 24th of October. 14:30 to 17:30 CET **Session 2:** Wednesday 2nd of November. 14:30 to 17:30 CET **Session 3:** Thursday 10th of November. 14:30 to 17:30 CET

Overview of gender related challenges in STI

The information and figures presented in this section are based on data collection and analysis of the Gender STI project, including:

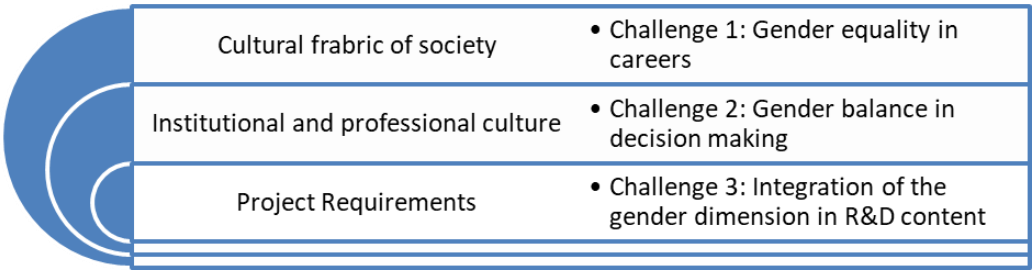
- **Interviews**: Europe and third countries. Semi-structured, 81 interviews across different institutions, countries and cultures (EU 33; North America 7; Latin America 24; Africa 4; Asia 12; Oceania 1).
- **Survey**: 204 respondents from key actors (Europe and third countries participating in the project, including members of government organisations, funding organisations, Research and Technology Organisations (RTOs), universities, foundations, private companies, public companies, STI agencies and associations and NGOs)
- **Mapping of STI agreements**: Europe and third countries, 528 STI agreements identified, 15% of these agreements include gender-related content.

Reports on key findings of the Gender STI project can be downloaded from the website Publications section.

Gender inequality and exclusion in STI remain a persistent problem. Although the culture of each country seems to appear as a defining factor of equality and inclusivity, the main findings of the Gender STI investigation indicate that the institutional profile, and the vision of meritocratic culture embedded in different societies influence gender questions the most. The implementation of international dialogues and cooperation activities are not able, per se, to change a whole cultural perspective. However, they seem an important instrument of change if cultural differences are considered.

The institutional profile stands by the type of actions deployed by each institution and its professional culture. The former is important to define the range each gender balance action can have in that environment, and the latter is more related with the mismatch between inclusion and diversity goals, including gender balance and the idea of meritocracy in STI fields. Finally, data gathering and production on gender and inclusion seems to be one of the main tools to enable assessing gender balance policies. However, the lack of dedicated personnel to this end is indicated in the data (Gender STI, Overview of gender inequalities, 2022).

Where each Challenge stems from, according to Gender STI in-depth interviews



Also, the Gender STI survey supports the finding that the culture of each country is not a defining factor in gender equality, gender equality drivers and barriers are actually quite similar in EU and third countries. See more survey results: Gender STI Survey Report.

The survey respondents see that the main areas to address gender equality in new agreements are "Advice/recommendations on implementing gender equality" (32.4%), and in setting "STI objectives/priorities" (29.0%) and placing gender criteria already in the "Calls for proposals/applications" (28.8%). There is clearly a need for awareness raising

activities, as well as expert advice such as guidelines, training, workshops, webinars, just to mention a few examples.

Barriers that prevent inclusion of gender equality in STI agreements in turn emphasise concrete challenges such as underrepresentation of women in STI decision-making, but also intangible challenges as prevailing stereotypes and unconscious biases, and cultural and social barriers that demand major changes in the currently prevailing masculine STI culture(s).

Side by Side Comparison of the Main Barriers Preventing the Inclusion of Gender Equality in STI Bilateral and Multilateral Agreements: Europe and Third Countries

Reasons	Total	Europe	Third Countries
Underrepresentation of women in decision-making positions	**61,76%**	**57.14%**	**66.04%**
Stereotypes and unconscious bias	**57,84%**	**63.27%**	**52.83%**
Continued widening of the economic gender gap	14,22%	11.22%	16.98%
Lack of a supportive environment for women in STI	35,29%	35.71%	35.85%
Cultural and societal barriers	**57,35%**	**60.2%**	**55.66%**
Legal barriers	3,43%	2.04%	4.72%
Negotiation power	16,18%	17.35%	15.09%
Lack of belief that gender inequality exists in the research/teams	48,04%	47.96%	48.11%
Other	4,90%	5.1%	4.72%
Total	100% (204)	100% (98)	100% (106)

Who is involved in STI dialogues that promote gender equality?

Our mapping study, which concentrates on the international STI dialogues from the perspective of STI agreements, answers questions like which actors are involved in the STI dialogues that promote gender equality and what kind of gender-related content we find in the STI agreements. Like our other activities, this mapping study focuses on dialogues between EU and third countries. Interestingly, we can observe that universities do not excel in having gender content in the STI agreements, although they dominate in our sample. Actually, a majority of gender content is found in government level dialogues, like those in which the European Commission participates, but also in dialogues with Research and Technology Organizations especially in the third country context. In turn, the role of STI funding organizations is rather limited. Another observation is that the majority of gender content is included in Memorandum of Understandings (MoUs) or STI implementation activities like joint action plans between countries. Bi- and multilateral STI agreements offer less room for modifications because these are often standardized texts with less details on the context, whereas MoUs often relate to collaboration on specific fields of science. One should however keep in mind that due to the limited number of observations of agreements that include gender content generalizations are to be made with caution.

What kind of gender content do we find in the STI agreements?

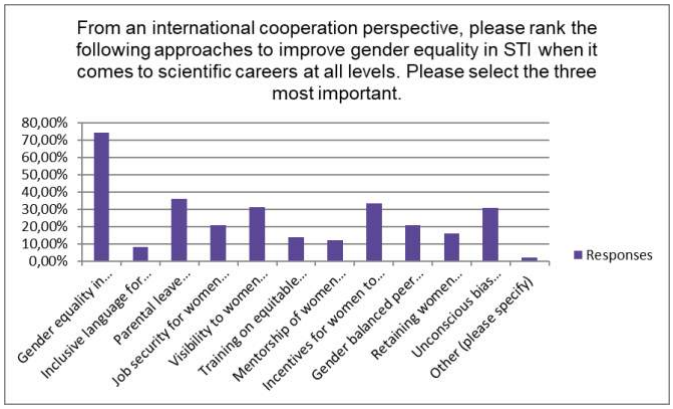
Finally, in terms of gender content in STI agreements, we can state unequivocally that the two most prominent themes in the data are gender equality and female empowerment. The former focuses on gender equality based on national gender equality articles, for example, whereas the latter frequently promotes female participation or places women as intervention targets. Inclusion, which does not always specify gender but refers to equality in education, and intersectionality, which can be seen in phrases like non-discrimination based on race, ethnicity, colour, religion, and sex, are also emerging themes in our data.

What kind of solutions to gender equality and inclusion have we proposed?

Challenge 1: Gender equality in scientific careers

The gender gap in STI careers persists, and only 30% of the world's researchers are women. Our findings indicate that three most popular approaches to improve gender equality in STI when it comes to scientific careers at all levels were: gender equality in recruitment and career progression (74.51%); parental leave policies/flexible work schedule arrangements (35.78%); and enhancing incentives for women to lead projects (33.33%).

Approaches
Gender equality in recruitment and career progression
Inclusive language for job vacancies
Parental leave policies/flexible work schedule arrangements
Job security for women in the long-term
Visibility to women references in science
Training on equitable hiring practices
Mentorship of women by other women
Incentives for women to lead projects
Gender balanced peer reviews
Retaining women scientists
Unconscious bias training for the scientific community
Other
Total



To find new solutions to this, the previous Gender Labs focused on developing prototypes to promote STEM as career choice for women and encourage women to the STI field.

In fact, previous prototypes developed in the first set of gender labs in 2021 regarding this challenge focused on (1) Science culture, aiming for a cultural change to enhance atmosphere at university and research organizations in ways that would enable a balanced distribution of students, and (2) Multilateral agreements to increase the representation and progression of women in STI careers.

For the 2022 Labs the challenge 1 "Gender equality in scientific careers at all levels" aims to give women, in particular, the opportunity to work in the field of STI. This means that more women have to be encouraged to enter these fields, and on the other hand, the drop-out rate has to be significantly reduced.

America and Europe Labs
Theme: Gaining women in STI.

Gaining women in STI is critical to the "Scientific careers at all levels" challenge. If a woman is just as qualified as her male colleague, she is usually at a professional disadvantage compared to the male competitor. Women must, therefore, not only

perform better professionally in order to succeed in the STI field. The additional burdens, such as caregiving responsibilities, also affect women in most cases. We want to try to counteract this inequality. The work environment should be inclusive and diverse in order to empower women. Possible ways could be 1) support and encourage young women in academia, 2) reduce the dropout rate 3) create a diverse and inclusive working environment in STI.

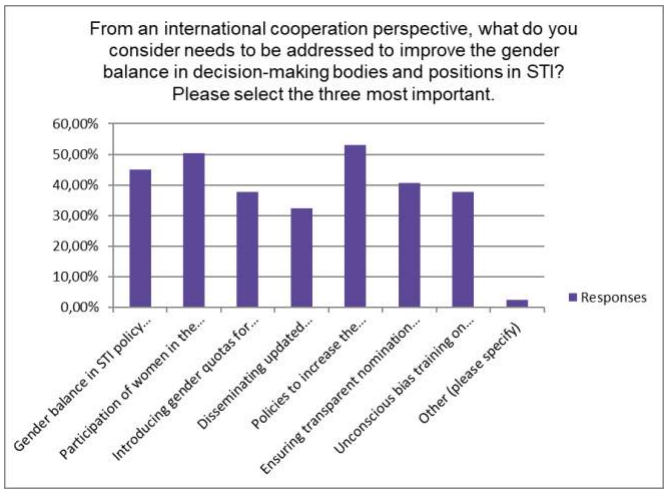
Main questions:

- *What needs to be done to ensure that young women choose STI as a **career path** by creating a diverse and inclusive work environment?*
- *What **funding mechanisms** support a diverse and inclusive research field to attract more women in the field of STI?*
- *What **policy actions** can be established to attract young women in STI?*

Find additional tools and resources on measures for addressing gender inequalities in recruitment and career progression, and for advancing gender equality in work-life balance and organizational culture in the **Gender Equality in Academia and Research (GEAR) Tool**.

Challenge 2: Gender balance in decision making bodies and positions

Women are underrepresented in decision-making processes and positions in areas such as politics, STI advisory groups and business. Root causes include traditional gender roles and stereotypes as well as unequal sharing of household and care responsibilities. Political and working cultures favouring long working hours that clash with care responsibilities traditionally assigned to women are also a factor. Furthermore, women are subject to gender-based harassment and bullying in the workplace, with the emergence of online violence as an increasing concern.



Approaches
Gender balance in STI policy dialogues
Participation of women in the negotiation of STI agreements
Introducing gender quotas for evaluation panels to ensure a gender-balanced composition
Disseminating updated information, trends and good practices on gender equality in decision-making
Policies to increase the proportion of women in STI
Ensuring transparent nomination and promotion schemes in political and corporate cultures
Unconscious bias training on gender balance in leadership positions
Other
Total

In our study three most important issues to increase the number of women in decision making processes and positions were "Policies to increase the proportion of women in STI (52.94%)", "Participation of women in the negotiation of STI agreements" (50.49%) and "Gender balance in STI policy dialogues" (45.10%). The range across all responses doesn't seem very large. That tells us that there are a lot of issues to be addressed across all of the areas of improvement of gender balance in decision-making bodies and positions in STI.

The previous prototypes developed in the first set of Gender Labs in 2021 regarding this challenge focused on (1) Worldwide Spread of Female Networks which aims to achieve a wide variety of leadership profiles and lower the prominence of the implicitly masculine leadership norm, and (2) Guideline supporting more gender sensitivity and mainstreaming in the process of developing STI agreements for decision-making positions.

For the 2022 Labs in order to approach this problem from new points of view that address inclusiveness in this matter, we have defined two topics that help support women and inspire them to achieve decision-making positions in the STI field.

America and Europe Labs
Theme: Inspiring women in STI.

Few women are in leadership positions or involved in decision-making in the science and technology system. This is a waste of talent and capacity that countries' economies cannot afford. Where decision-making occurs and where further steps are taken, women still do not have enough opportunities to contribute. Women in leadership positions also become role models and support the visibility of women in the STI fields. This challenge tries to get more women inspired to reach decision-making positions, focusing on what can be done in the area of STI events. In academic forums and conferences, for example, women are significantly underrepresented compared to men as organisers or committee members, keynote or plenary speakers or as panelists. The source of this phenomenon is widespread and often unintentionally gender bias. In this regard, success stories from women can help to raise awareness and to amplify women's voices and role in the STI field.

Main questions:

- *How can the gender perspective be incorporated in the definition of **STI conference programs**?*
- *What can be done to **promote inclusive leadership skills and women success stories** in STI events?*
- *What can institutions do to guarantee a **space for young women to be mentored** and learn collaboratively?*

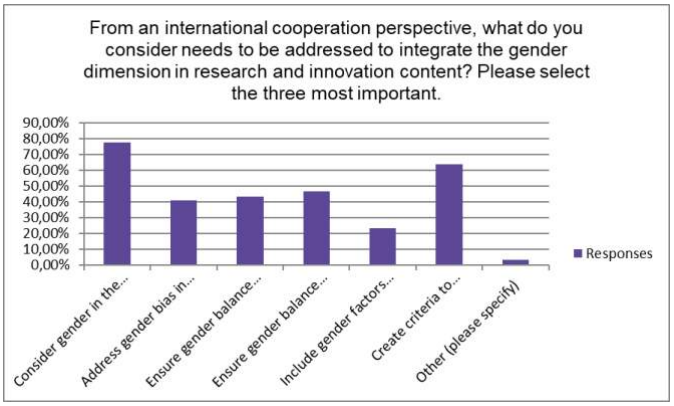
Find additional tools and resources on efforts to promote gender balance in leadership and decision-making in the **Gender Equality in Academia and Research (GEAR) Tool**.

Challenge 3: Integration of the gender dimension in research and innovation content

Intersectional gender dimension in R&D&I content is largely missing. Reasons for this include, among other things, cultural and structural features of the STI fields and lack of gender expertise. Our previous research indicates that stakeholders highlight three most important approaches to enhance gender dimension in research content: "Consider gender

in the entire research and innovation process" (77.45%); "Create criteria to monitor the gender dimension in research content, processes and outcomes" (63.73%); and "Ensure gender balance in research teams" (46.57%).

Approaches
Consider gender in the entire research and innovation process
Address gender bias in research design
Ensure gender balance in evaluation panels
Ensure gender balance in research teams
Include gender factors in application forms
Create criteria to monitor the gender dimension in research content, processes and outcomes
Other
Total



This indicates that gender dimension should be approached through the innovation process perspective, which would allow focusing on different areas of research and innovation, starting from academic research to commercialization and grassroots entrepreneurship funding agreements.

The previous prototypes developed in the first set of gender labs in 2021 regarding this challenge focused on (1) promotion of inclusive design process perspective to enable integration of intersectional gender dimension into research content via research and innovation funding; (2) inclusiveness education/training programme and guide to develop a training programme for educators and researchers to raise awareness on inclusiveness in RTOs; and (3) standardised framework tool for organisations to facilitate the creation of constant monitoring and supporting gender equality and integration of gender into research content in joint research projects between different organisations.

For the 2022 Labs, we have recognised two main categories to be enhanced in order to integrate the gender dimension into R&D&I processes. First concerns capabilities for inclusive knowledge, addressing the issue from the researcher's capability perspective. Second concerns creating STI cultures that enhance and cherish diversity and inclusion of different knowledge.

America and Europe Labs
Theme: Enhancing capabilities for inclusive knowledge production.

One of key challenges of integrating the gender dimension in research and innovation (R&I) content is the lack of capabilities for taking on gender analysis and assessment. Moreover, gender understood from the intersectional perspective encourages researchers to think beyond binary gender positions and integrate inclusiveness as the guiding principle for enhancing gender dimension in R&I content. The ways in which R&I content is created also influences whether R&I is reflective of the gender dimension.

Main questions:

- *What can be done to enhance **gender sensitization** in research and innovation funding organisations in implementation and reviewing of research calls and funding programmes?*
- *How can research institutions and researchers be assisted to take on **inclusive research design and inclusive knowledge production**?*
- *What **indicators** need to be developed to reflect inclusive knowledge production?*

Find additional tools and resources on measures to integrate the sex/gender dimension into research and teaching content in the **Gender Equality in Academia and Research (GEAR) Tool**.

GENDER-NET project published the following report: *Manuals with guidelines on the integration of sex and gender analysis into research contents, recommendations for curricula development and indicators*.

GENDER-NET Plus project has produced a *Comparative analytical report on existing national and regional initiatives on the integration of the gender dimension in research content*.

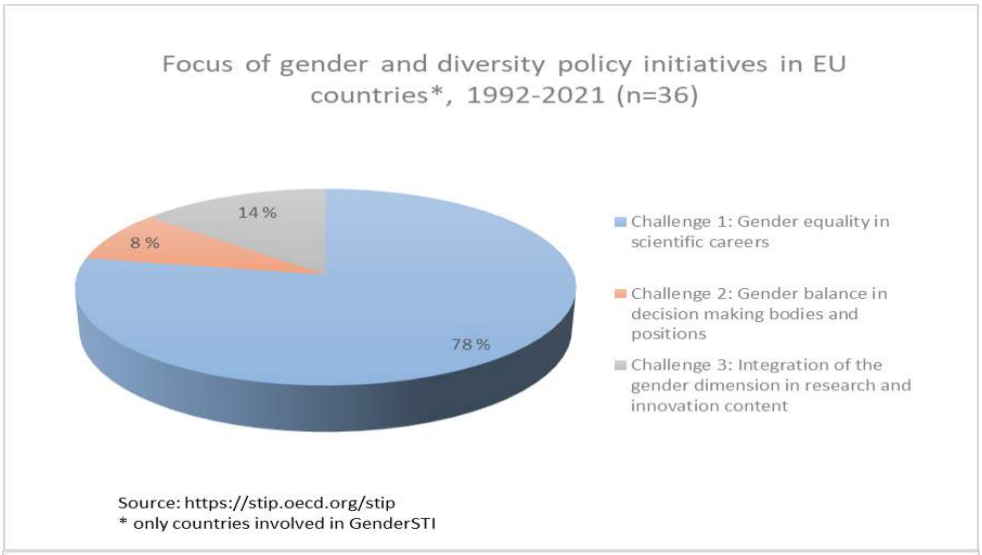
Previous / existing policy initiatives

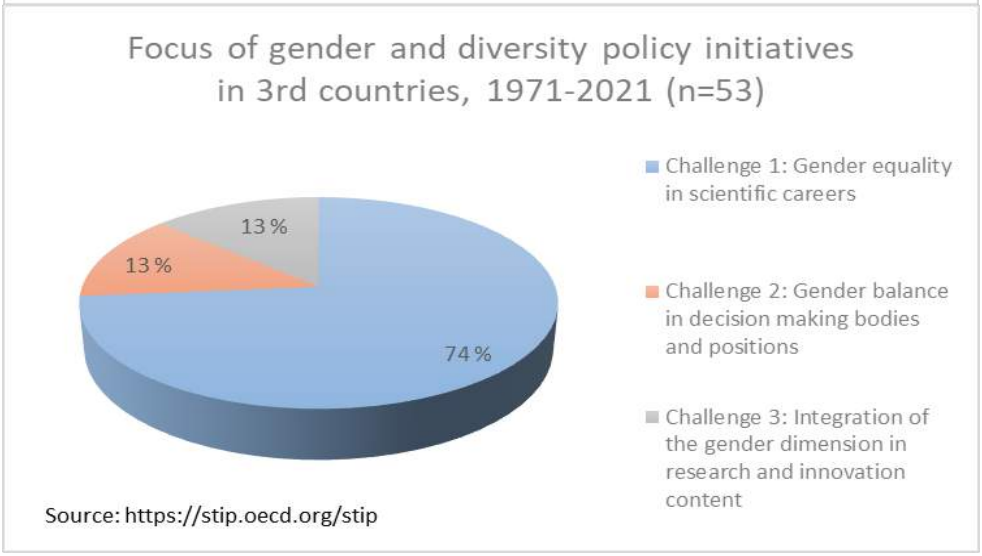
The gender policy analysis is based on OECD STIP Compass available online (EC-OECD STIP Compass) which collects together in one place qualitative and quantitative data on national trends in STI policy. The sample used in the Gender STI study includes all policy initiatives of 'Gender balance and inclusiveness'. No time or budget restrictions were applied when forming the sample.

GENDERACTION project elaborated a report *Comparative analysis and recommendations on gender in international cooperation in STI* (2020). According to this report, six issues need to be considered when concluding an international STI cooperation agreement, launching a call, or collaborating on a specific project:

1) Create equal opportunities for women to participate
2) Articulate gender in research and innovation content
3) Negotiate research objects
4) International division of teamwork and intellectual property rights
5) Engage local communities and grassroots organisations
6) Reduce negative impacts and hidden disadvantages implicated in academic mobility

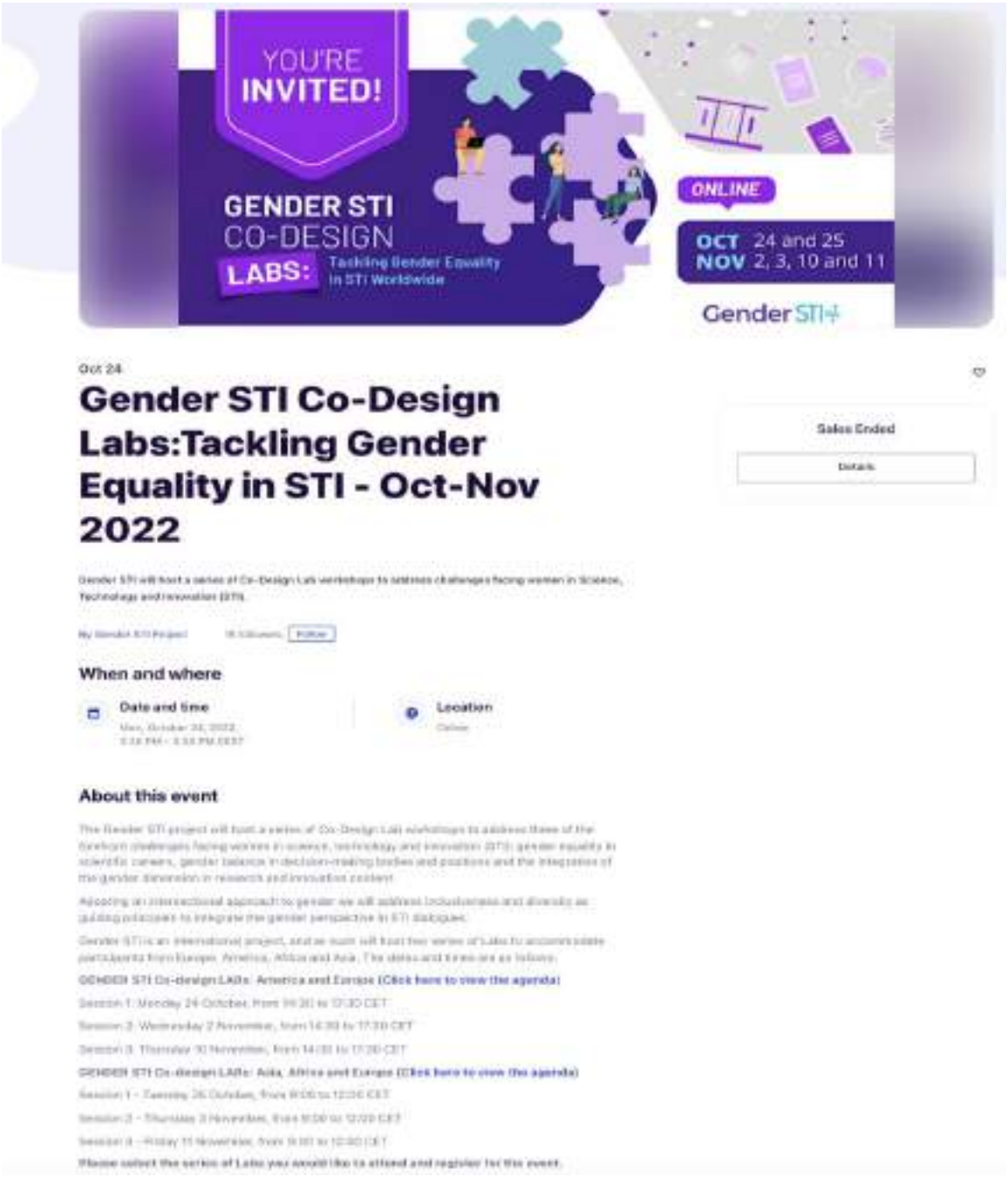
GENDERACTION has also issued a Policy Brief (2020) on *Gender Perspectives in International Cooperation in STI* with a set of recommendations to national authorities, the EC, and research funders.


Focus of gender and diversity policy initiatives in EU countries*, 1992-2021 (n=36)
14 %
8 %
78 %
Challenge 1: Gender equality in scientific careers
Challenge 2: Gender balance in decision making bodies and positions
Challenge 3: Integration of the gender dimension in research and innovation content
Source: https://stip.oecd.org/stip
* only countries involved in GenderSTI


Focus of gender and diversity policy initiatives in 3rd countries, 1971-2021 (n=53)
13 %
13 %
74 %
Challenge 1: Gender equality in scientific careers
Challenge 2: Gender balance in decision making bodies and positions
Challenge 3: Integration of the gender dimension in research and innovation content
Source: https://stip.oecd.org/stip

7.2 Annex B – Eventbrite registration page for the Gender STI Co-design Lab sessions, Blog post & Social media posts in Twitter and LinkedIn

Eventbrite registration page for Lab 2 - America & Europe



Blog post

"The Gender STI Projects hosts the second edition of the Co-design Lab" published on November 28th 2022 at the Gender STI project website https://www.gender-sti.org/the-gender-sti-project-hosts-the-second-edition-of-the-Co-design-labs/

Social media posts in Twitter and LinkedIn

Twitter

- First lab session post
- Second lab session post
- Third lab session post
- Lab session insights blog post

LinkedIn

- First lab session post
- Second lab session post
- Third lab session recap post
- Lab session insights blog post

7.3 Annex C - Prototypes of the Gender STI Co-design Lab 2 America and Europe Sessions

In this section we collect the prototypes that have been developed during the Lab sessions involving participants from America and Europe. These are still under development and the main results and key emerging recommendations have been collected in the main body of the report, in the sections above.

7.3.1 Annex C.1 - Prototypes from challenge 1 on gender equality in scientific careers

This section describes the outline of the prototypes (based on the prototype report format that was provided to all participants.

Note for the prototype coordinator: The prototype solutions should also include images. We provide an empty report form as an example. Please copy and paste it to add more as appropriate.]

The first challenge produced **2 prototypes**.

Here are the titles of the prototypes:

- **1.1. Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming**
- **1.2. Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI**

Prototype 1.1. Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming

Challenge 1. CAREERS: Gender equality in scientific careers

- **Lab number: Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 2.12.2022

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Exploring Origins of Gender Stereotypes and creating awareness through simulation-based gaming

Gender Stereotypes and implicit bias towards gender are still persisting to this day. STEM is viewed as a predominantly male field and these stereotypes often lead to underestimating girls' ability in maths and science. Even if a non-male decides to enter the STEM field, they will find that also STEM itself isn't free of unbiased behaviour. Progressing and retaining women in science, technology and innovation becomes increasingly harder,

because we are not only facing low numbers to begin with, but STEM in general still fails to provide a safe and warm environment where women naturally feel that they belong.

Gender Stereotypes and implicit bias are contributing to the gender pay gap. Especially looking at computer science and engineering, which are placed among the highest-paying fields in STEM, women remain underrepresented. Needless to say, gender stereotypes still have a huge impact on today's society and more important people don't hold themselves accountable and are unaware of their implicit bias towards women in regards career and science.

This prototype aims to improve these issues by identifying implicit bias and gender stereotypes tied to STEM culture and diagnosing the root causes of gender stereotypes by creating a simulation-based game. This game not only provides a tangible solution to test personal bias but also implements strategies to reward unbiased behaviour and promotes real role models with features and skills in real life.

Existing stereotypes and implicit biased aren't exclusively problems that concern gender, but other stigmatized groups as well, this prototype tries to also promote the intersectionality within the science culture by specifically promoting diverse role models.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- STEM lacks Gender diverse role models, but having role models and also feeling connected to them is a huge motivator for women to enter STI, role models help young women better to identify themselves with STEM and help create a sense of belonging for them
- A gender diverse STEM culture will enhance innovation and reduce risk, and therefore improve science altogether, It promotes the concept of diversity of thought and studies have shown that diversity enhances innovation and reduces risks
- In the process of developing this prototype it will be possible to specifically identify the existing implicit biases and gender stereotypes tied to STEM and help diagnose the cause of gender stereotypes.
- With this prototype it will be possible to have a concrete view on the progress of biased thinking towards less biased thinking. With it we can assess how far we have come along in ending gender-based discrimination.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Develop a simulation-based game that includes:
    a) testing your personal bias regarding gender stereotypes
    b) design a strategy that rewards unbiased behaviour
    c) real role models with features and skills of real life
- Additional Survey to conclude about bias based on social background
- Assessment SCORE for making Tangible, Testable, Implementable

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Sensibilize the STEM community on the topics of gender stereotypes and implicit bias
- Show diversity within STEM and promote real divers role models

5. WHO IS RESPONSIBLE?

- Gender STI partners involved in Challenge 1 to develop the prototype.

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Epistemic community with background in gender studies, social bias and stereotypes
- Technical Experts with background in Game Development, Experience with simulation-based gaming
- Social Actors in communities with focus on gender equality

7. Description of the best ideas

- **Make implicit bias measurable and testable**
  Implicit bias is hard to detect in normal studies but psychological assessment tests can find evidence of it with the help of Implicit association tests. Stereotypes in regards to gender and science are still present in today's working culture are oftentimes contributing to a hostile environment where women and gender diverse people don't feel welcomed and appreciated.
- **Create a game**
  To test implicit bias in people, games provide the perfect opportunity to get better results, because it's easier to make a person unaware of the real test by emerging them in interesting playful scenarios.
  The motivation to test their implicit bias by playing a game might also sound more appealing to more people, than just taking a psychological test.
- **Iterate development through workshops**
  Through organizing workshops about implicit bias, the game prototype can be iteratively improved and tested by people. Results will become more robust after some workshops passed, because the model can be improved and readjusted.

7. First steps: what must happen in the next 6 weeks? *Who should do what?*

- **Researching how gender bias is formed**
  To develop a first questionnaire draft and later on a game it is vital to create a strong foundation on how gender stereotypes evolved and what their root causes are.
- **Explore existing games/platforms that teach and test bias**
  To help create a first questionnaire and later an algorithm that is based on psychological methodologies, but enhanced through technology to provide even clearer scores
- **Test the perception of the user vs. gender bias**
  First tests to develop and improve the prototype.
- **Asses and cross test prototype**
  To ensure a valid and robust testability of the implicit bias with the prototype, it can be cross tested with existing platforms

8. Prototyping: What must happen in the next 6 months? *Who should do what?*

- **Organising a first workshop for testing biased behaviour:**
  The first workshop is going to be held within the Gender STI community of practice and will be carried out with a questionnaire prototype
- **Create the simulation-based game with the Design Thinking process:**
  To create this game the practice of design thinking will help in the design process. We plan to use this iterative approach to repeatedly improve the prototype and generate better assessments
- **Workshops with different target groups**
  To calibrate our models for the prototype we want to test different target groups.

9. Impact in 6 Years

In 6 years, the goal is to conclude findings from different societal levels and backgrounds at a global range.
Additionally, this prototype can be helpful for organisations to assess their level of bias and furthermore develop a seal for being a biased conscious organisation.

10. Other relevant information on the prototype (links, references, contacts)

- https://www.aauw.org/app/uploads/2020/03/Solving-the-Equation-report-nsa.pdf
  This book provides a lot of information about the gender stereotypes existing in STI and results from previous studies that confirm the implicit bias between gender and science.
- https://implicit.harvard.edu/implicit/takeatest.html
  Project Implicit provides a platform for people to test their implicit bias towards various topics online. It is presented in a simple manner and based on a psychological test called Implicit Association Test (IAT). The project is a good example for the testability of personal bias.
- https://www.gapminder.org/
  Gapminder was also a source of inspiration for this prototype. It provides an online questionnaire for people to test their personal bias towards the SDGs. A questionnaire for people that will make them question their beliefs in a subtle but still provoking manner can contribute to making a change.
- https://www.nature.com/articles/s41599-020-00654-0
  This article provides insights about the current situation of women in STEM who publicly communicate their work and the stereotypes they face.

12. Suggestions for improving the effectiveness of the Co-design Lab

- Provide more time for prototyping.
- Rapporteurs need to take part in the Labs.

Prototype 1.2 - Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI

Challenge 1. CAREERS: Gender equality in scientific careers

- **Lab number: Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 2.12.2022

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Awakening and flourishing women's careers and vocations in STI through international gender equality awareness: building bridges between GirlsLead@STI to WomenLead@STI

This prototype aims at making flourish women STI careers by awakening and maintaining alive vocations in women along their lives through international gender equality awareness.

We believe that currently, the content and strategies designed to encourage female careers in STI have been oriented independently to specific programmes for childhood, mentorship at universities and collective support actions for women careers in STI (W-IEEE, ACM-W, W-HPC, Latinas in Computing, etc.). The strategies and actions are often not global and too specific. The statistics show that there is a gap between girls and adolescents joining STI and the number of women deciding to build lifelong careers in STI across the world. The suspicion is that there is a gap not covered by actions that should be studied, exhibited and understood to act upon it through actions at an international level.

The prototype will address two challenges: 1) empower women long life careers in STI and 2) awaken women interest in STI from their early childhood along their education towards their professional careers (undergraduate, graduate, career)

Thus, **the general objective of the prototype is to contribute to closing the gap between GirlsLead@STI to WomenLead@STI.**

Current problem: Two main problems have been identified.

1. There are few women developing life-long careers in STI. Only 35% of the students enrolled in STEM courses are women (Unesco, 2017). I*n the US, funding for female-led or mixed founding teams has dropped from 16.9% to 14.4%. Women got only 2.3% of venture* capital funding in 2020 (Janneke Niessen, co-founder of CapitalT[9]). Beyond statistics, there is missing awareness of the obstacles introduced by gender biased systems hindering STI vocation in women at the different stages of their career (undergrad, grad & work in academia & industry). Existing funding programmes to empower women STI careers from their early career through seniority positions have a weak impact (missing D&I perspective).

[9] https://www.bilan.ch/story/peu-representees-dans-la-tech-les-femmes-proposent-des-solutions-785371998537

2. **There is a broken bridge between GirlsLead@STI to WomenLead@STI**. The pool of young vocations in STI is too small, causing brain drain and gender differences and inequalities in STI still prevalent in childhood, particularly in the first years of schooling. Also, there is a lack of gender and D&I friendly educators & mentors at school as well as a lack of strong funding programmes for projects aimed at awakening STI vocations in women from their early childhood.

We will also take an intersectional perspective in our prototype by taking into consideration the systemic barriers preventing women and other minoritized populations from gaining entry to science and exposing the consequences of these inequalities on scientific knowledge. There is a relationship between intersectional identities, topics, and scientific impact. In this regards, unequal representation in science leads to under investigation of particular topics and may serve to stymie innovation[10]. Moreover, STEM disciplines exhibit less demographic diversity than non-STEM fields. Studies from an intersectional perspective provide rich evidence of the impact of structural biases on career trajectories.

Action plan: This prototype will contribute to empower women lifelong careers with an international perspective. The premise of the prototype is that women careers must be empowered from a lifelong perspective (i.e., STI girls leaders become women STI leaders): making bold and disruptive careers' models visible and accessible for women all along their lives.

To achieve this life-long objective, the prototype includes four actions:

1. Study of existing digital content about female careers empowerment: gathering and integrating digital content that creates awareness about existing opportunities, actions, best practices and results at the international level.
2. Exhibiting the limitations of content and strategies (from an international perspective) that have prevented going a step further in the empowerment of female careers in STI in a broader dimension.
3. Proposing new digital contents to create awareness about the need to bridge the gap between **GirlsLead@STI to WomenLead@STI as a sine qua non condition to empower careers in STI as a lifelong project.**
4. Exhibition "Broken bridge between GirlsLead@STI to WomenLead@STI" at the Gender STI final conference (artistic action)

Methodology: Intuitively, the principle is to conduct a study to identify the intersection of existing content produced to empower lifelong women careers at the international level and then exhibit its impact and limitations to provide a "black and white" understanding of the problem: **Why do so few women decide to build and pursue their career in STI?**

The study will be guided by the following research questions:

- Are limitations in women's careers empowerment strategies associated with gender vision and understanding?
- To which extent are limitations related to the production model of STI independently of the culture and economic development of countries?
- Are diversity and inclusion elements missing in women careers empowerment

[10] https://www.pnas.org/doi/full/10.1073/pnas.2113067119

strategies?

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- The scientific education of women from their early childhood is an economic & social imperative
    - There is a need to avoid talent drain by influencing the career-choice decisions of women from early childhood and along their lives.
    - There is a need to design and create the necessary conditions that are required to nurture scientific literacy from the very beginning.
- Need for more women scientists and equal opportunities along their careers:
    - Although the worldwide population is overall distributed 50/50 between men and women, the study of careers related to STI and participation in decision making in STI is lower in women than men. Less than 30 % of researchers worldwide are female, and only 30 % of female students choose to enter a field related to STEM (UN 2021). 34 % of males as compared to 12 % of females graduated with a degree in a STEM field (2020). According to She Figures, only 26% of STEM women are in top academic positions and under are 11% among patent application (She Figures 2021)
    - Tech employs few women and has trouble retaining them: one in two women leaves tech after eight years. With less than 30% female employees, corporate cultures are often hostile to women.
    - According to the 50inTech study, women's salaries in the tech sector are on average 20% lower than men.
    - Education, mentoring & funding can challenge bias on who can develop STI careers
- Empowering the economic and technological development through STI literacy is needed to address development gaps in different countries and to contribute to the achievement of the fifth SDG on Gender Equality.
- Challenge the biases on who can develop STI careers, change the STI production model into an inclusive professional and social space.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- A1: Create a repository on existing (digital) content associated with actions and strategies devoted to
    - *promote and empower women careers on STI*
    - *nourish pools of young talent to reduce* ***female brain drain***.

    - ***Deliverable 1a***: An online repository (Gender STI website/Observatory) gathering and classifying per country/region references to content and actions analysed and compared through an analysis grid.

- A2: Develop a study (state of the art) on the existing content and identify limitations of existing strategies to understand where are the gaps:
    - Propose intersectional variables that can be used to analyse the limitations of the content gathered in deliverable 1a (e.g., topics of interest, perspectives of studies duration, academia and industry, age, ethnicity, rural vs urban, etc);
    - Identify limitations that:
        - Have not contributed to bridge GirlsLead@STI with WomenLead@STI and
        - Have caused female brain drain at different moments of women's life.

Deliverable 1b: Report on state of the art and analysis of the limitation and existing strategies to understand the gaps.

Deliverable 1c: infographics or animation (digital content) "The female brain drain along life across the world and prevention tentives" with an intersectional perspective (origin, location, socio-economic level, exposure to science)

Deliverable 2: Scientific paper describing the whole prototype method, findings and experience

Deliverable 3: Exhibition "Broken bridge between GirlsLead@STI to WomenLead@STI" at the Gender STI final conference

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Contribute to the scientific education of women from their early childhood and to avoid talent drain.
- Challenge the biases on who can develop STI careers.
- Contribute to empower the economic and technological development through STI literacy to address development gaps in different countries and to contribute to the achievement of the fifth SDG on Gender Equality.
- Empower women careers strategies associated through international vision and understanding based on diversity and inclusion values.
- Implement a new digital content strategy for international cooperation on scientific careers to better concert the EU and third countries approaches.

5. WHO IS RESPONSIBLE?

- Gender STI partners involved in Challenge 1 to develop the prototype
- Gender STI partners in general giving access to digital content and strategies about women careers empowerment in their countries and institutions.
- D&I, gender equality offices of STI ministries, Universities and research centres
- Funding organisations

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

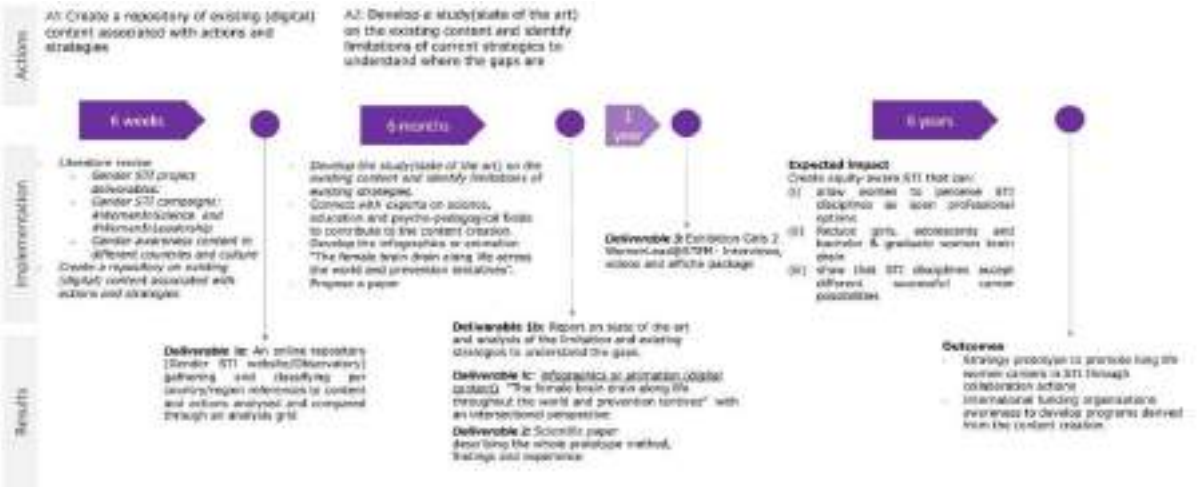
The beneficiaries are:

- Women at different stages of their STI careers (graduate, initial and senior professionals)
- University female STI students willing to design their careers in the field either in academia or industry
- Girls who will get acquainted with STI knowledge and women STI professionals and who will be motivated to build their future in these disciplines (developing female STI twins)

7. Description of the best ideas

- International Awareness of Bold Women STI careers with different success perspectives and patterns → attract and retain female talent in STI.
- Exhibiting and measuring where the female STI brain drain persists along the different milestones of careers.
- Propose alternative actions to prevent brain drain beyond quotes.

8. First steps: what must happen in the next 6 weeks? *Who should do what?*



- Literature and content review: actions and strategies, collection of best practices at the international level: i.e.
    - Gender STI project deliverables:
        - Overview of gender inequalities in STI agreements between EU and third countries
        - Gender STI Survey
    - Gender STI campaigns: #WomenInScience and #WomenInLeadership
    - Gender awareness content in different countries and culture: Infographics, videos, games, etc (see section 11)
- Create a repository on existing (digital) content associated with actions and strategies devoted to 1) *promote and empower women careers on STI* 2) *nourish pools of young talent to reduce* ***female brain drain***. **Deliverables 1a** (see Section 6 of this prototype report)
- Google drive project space for the prototype: https://drive.google.com/drive/folders/1rpF3w0O-9-Dw1QHOQXE5QwO7hsxH3plB?usp=share_link

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Develop the study (state of the art) on the existing content and identify limitations of existing strategies. **Deliverables 1b** (see Section 6 of this prototype report)
    - Propose intersectional variables that can be used to analyse the limitations of the content gathered in deliverable 1a
- Connect with experts on science, education and psycho-pedagogical fields to contribute to the content creation.
- Develop the infographics or animation: "The female brain drain along life across the world and prevention tentives". **Deliverables 1c** (see Section 6 of this prototype report)
    - 1st draft content: Podcasts, 1' videos, Infographics, Comics, Role play games
    - Revision by the involved experts and Gender STI CoP.
    - Revision by graphic designers.
    - 2nd draft, Final Draft
    - Collect feedback from selected women at different moments of STI careers who will see the content a bold careers pattern.
- Scientific paper. **Deliverables 2** (see Section 6 of this prototype report)

In 1 year:

- Exhibition "Broken bridge between GirlsLead@STI to WomenLead@STI" at the Gender STI final conference. **Deliverables 3:** (see Section 6 of this prototype report)
    - Collect feedback from the audience
- Exhibition "Broken bridge between GirlsLead@STI to WomenLead@STI" at museums, science centres, zoos, theatres, aquariums and centres of Gender.
    - Collect feedback from the audience

10. Impact in 6 Years

Outcome

- Strategy prototype to promote long life women careers in STI through collaboration actions
- International funding organisations awareness to develop programs derived from the content creation.

Expected impact

Create equity-aware STI that can:

- (i) allow women to perceive scientific, technology and innovation disciplines as open professional options with promotion and recognition of diverse and inclusive ways of developing excellent, fruitful and accomplished careers;
- (ii) attract girls and adolescent women to embrace STI knowledge as a perspective to grow up and to develop a career as an adult where their role and contribution are recognised without being determined by their gender, race, social class, origin and beliefs;
- (iii) show that STI disciplines accept different career possibilities, with different time-lines, milestones including sui generis and disruptive careers thanks to fair opportunities and intersectional productivity metrics.

11. Other relevant information on the prototype (links, references, contacts)

- Google drive project space for the prototype: https://drive.google.com/drive/folders/1rpF3w0O-9-Dw1QHOQXE5QwO7hsxH3plB?usp=share_link
- Gender STI project campaigns:
    - https://www.gender-sti.org/22-lessons-from-women-leaders-in-science-technology-and-innovation-for-international-womens-day-2021/
    - https://www.gender-sti.org/gender-sti-interviews-women-in-science-campaign/
- The gender gap-app Women at the table: https://www.womenatthetable.net/project/gapp-the-gender-gap-app/
- Tabla periódica de las científicas, Academia de Ciencias, México: https://mujeresenlaciencia.amc.mx/
- EIGE Achieving equality between women and men makes everyone better off: https://eige.europa.eu/topics/economic-and-financial-affairs/3-steps-forward-campaign
- What the rise of female founders tells us about the state of labour market: https://economicgraph.linkedin.com/blog/gender-equity-insights-wef
- Gender parity and equality CNRS: https://www.ins2i.cnrs.fr/sites/institut_ins2i/files/download-file/actions_parite_ins2i_web_0.pdf

- Best practices developed within the community at CNRS: https://www.ins2i.cnrs.fr/sites/institut_ins2i/files/download-file/ins2i_tableau_bonnes_pratiques_2021%281%29.pdf
- The CNRS Mission for Women's Integration: http://www.cnrs.fr/mpdf/
- Summary document and recommendations by the CSI following the "The Place of Women at the INS2I" thematic conference on December 2nd 2019: https://www.csi-ins2i.cnrs.fr/sites/default/files/general/pdf/CS%20INS2I_Recommandation_La%20Place%20des%20Femmes%20à%20l%27INS2I.pdf
- General recommendations made by the INS2I Scientific Board (CSI) in 2015: https://csins2i.irisa.fr/files/2015/09/CS-INS2I_recommandation_egalite-hommes-femmes.pdf
- Working towards parity in scientific events (recommendations made by the CNRS Scientific Board): http://www.cnrs.fr/comitenational/cs/recommandations/15-16_avril_2019/Rcommandation-CS-CNRS_Parite.pdf
- What to do in the event of sexual harassment (a document published by the CNRS Mission for Women's Integration): http://www.cnrs.fr/mpdf/spip.php?article889
- Psycho-social risks (a document published by the CNRS Human Resources Department): http://www.dgdr.cnrs.fr/drh/protect-soc/documents/fiches_rps/Fiche_7.pdf
- Women Mentors in Science - Mexico https://mx.live.solas.britishcouncil.digital/convocatoria-mentoras-ciencia-mentees

12. Suggestions for improving the effectiveness of the Co-design Lab

- Get more participants with various backgrounds in STI and at various stages of experience

7.3.2 Annex B.2 - Prototypes from Challenge 2 on gender balance in decision making bodies and positions.

This section describes the outline of the prototypes (based on the prototype report format that was provided to all participants.

This challenge produced **2 prototypes**.

Here are the titles of the prototypes from Challenge 2.

- **2.1 - How to attract and represent more diverse candidates in high visibility STI opportunities**
- **2.2 - Recommendations for decision-making in international scientific cooperation**

Prototype 2.1 - How to attract and represent more diverse candidates in high visibility STI opportunities.

- **Challenge 2. DECISION: Gender balance in decision making bodies and positions.**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** November 2022.

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

There are many barriers that prevent women from reaching decision-making positions. We belong to a society in which there is a lack of will to find and include not only women but diverse candidates in these visible positions. Decision-making habits don't usually consider gender issues. Only discursive measures in this matter. It is a challenge to move to actions.

This prototype aims to create guidelines for organisers of high level (international) conferences, journal editors and international committees in science collaboration, to consider conditions for enhancing the participation of women to have high visibility within STI fields.

International committees working on SCT agreements between countries consider fields of common interests. The inclusion and visibility of women participating in STI conferences will influence the specific research fields. Possibly, improve chances of women having relevant funding programs both as researchers on and beneficiaries of the research project.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

1. Identify the contributions opportunities in STI especially those that have high visibility and determine approaches to improve representation of women.
2. More diverse decision-making levels - How to attract more diverse candidates.

International committees working on SCT agreements between countries consider fields of common interests. The inclusion and visibility of women participating in STI conferences will influence the specific research fields. Possibly, improve chances of women having relevant funding programs both as researchers on and beneficiaries of the research project.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

Example on how to draft the proposed actions:

1. Research associations
2. University associations (national and international)
3. Industrial association innovation committees
4. Ministry of Women.
5. Ministry of Science and Technology or Education.
6. National funding agencies for science and technology
7. International science and technology funding agencies

Action	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Action 1	x						
Action 2		x					
Action 3		x	x				
Action 4						x	x
Action 5			x	x	x		

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Inclusion of women's interest in research
- Perspective of women in research development
- Considering the female users or beneficiaries of research and technology development
- Improve STI leadership opportunities for Women

5. WHO IS RESPONSIBLE? - Target audience

- Research associations
- University associations (national and international)
- Industrial association innovation committees
- Ministry of Women.
- Ministry of Science and Technology or Education.
- National funding agencies for science and technology
- International science and technology funding agencies

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- International Corporations.
- Technical committees.
- Universities.
- S&T Organizations.
- Editorial boards.
- Ministry of Women.

- NGOs.
- STI Organizations that host conferences/publish.
- Ministry of Science and Technology or Education.

7. Description of the best ideas

- Create guidelines for organisers of high level (international) conferences, journal editors and international committees in science collaboration, to consider conditions for enhancing the participation of women to have high visibility within STI fields.

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

1. Identify types of contribution activities that have high visibility within STI fields with a goal to then identify specific actors/activities to target. For example:
   1.1. At conferences (major conferences in science and innovation).
   1.2. In international committees in science diplomacy.
2. Review existing Gender STI Project research for findings that are relevant to the guidelines (e.g., Content, participation, editing roles) either for documenting inequity or determining approaches to include in the guidelines.
3. Research best practices in representing and attracting women to conferences - (e.g. funding measures).
4. Identify conferences that are exemplary.

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

1. Test and refine the guidelines.
2. Share the barriers we have identified and our early proposed approaches, with decision-makers to help reduce or eliminate obstacles.
3. Propose the design of positive discrimination measures funding that support or promote the participation of women, diversity, ethnicity.

10. Impact in 6 Years

- Improve visibility and power of women in STI academic departments. More women teaching upper-level courses.
- Increase mentorship programs for women related to leadership positions in development of events (especially the leadership and direction of the conference topics, panels and publications).
- Acquire 50% quota of women representation in STI organisations conferences.
- Similar numbers of women and diversities than men at all levels from the beginning to the spaces of power of the different S&T areas.

Prototype 2.2 - Recommendations for decision-making in international scientific cooperation.

- **Challenge 2. DECISION: Gender balance in decision making bodies and positions.**
- **Lab 2 Americas and Europe.**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** November 2022.

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

As women are often underrepresented in the negotiation and implementation of international scientific agreements and policy dialogues this prototype aims at fostering gender balance in decision-making. To achieve more transparency in the way people are nominated/designated in the governance bodies (steering committees, executive committees...) of these agreements /dialogues strong recommendations are needed. The way decisions are made during the whole process requires more inclusiveness. Major stakeholders (research funding organisations, research performing organisations, ministries and international organisations) should endorse these recommendations. An international network of women in science diplomacy should be set up to carry out these recommendations in a sustainable way.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- Foster gender balance in decision-making in international scientific cooperations.
- Achieve more transparency and inclusiveness in decision-making processes in connection with international scientific cooperation.
- There is a need for recommendations on decision-making in international scientific cooperation.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Elaborate recommendations to foster gender balance and transparency in decision-making in international scientific cooperation.
- Define a joint declaration by major stakeholders.
- Set up a network on science diplomacy and gender.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Increase the number of women in decision-making positions.
- More transparency and inclusiveness in decision-making to better take into account the diversity of the scientific community and the societal challenges.
- Better integration and consideration of the gender dimension in the policy dialogue and scientific cooperation programs.

5. WHO IS RESPONSIBLE? (Who will implement the proposed actions)

- European Commission - DG Research.
- Governments (ministries for science and foreign affairs).
- RPOs + RFOs.
- International bodies and organisations: Unesco, STS Forum (Science & Technology for Society), ICSU (International Council of Scientific Unions), Global Research Council, and others.

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Gender STI partners involved in Challenge 2.

7. Description of the best ideas

- Recommendations:

    - Co-design in decision-making processes (methodologies used for stakeholder involvement in the process)
    - Gender-balance in decision-making bodies (guidelines for processes/procedures, gender policies in the decision-making bodies)
    - Transparency (guidelines for the access to information and dissemination)

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Define working groups that will (in the next 6 months):
    - Draft recommendations on gender balance in decision-making in international scientific cooperation and share them (Gender STI Consortium, other organisations) to have feedback.
    - Define what should be transparency in international scientific cooperation decision-making bodies.
- Prepare the material and dynamics for the working group sessions.

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- The working group sessions take place using co-design processes:
    - Draft recommendations on gender balance in decision-making in international scientific cooperation and share them (Gender STI Consortium, other organisations) to have feedback.
    - Define what should be transparency in international scientific cooperation decision-making bodies.
- Refine the draft recommendations, draft final versions and present them for approval to working groups.
- Launch a network on science diplomacy and gender.
- Joint declaration (in 1 year endorsed by major stakeholders (RPOs RFOs, international organisations).

10. Impact in 6 Years

- Survey and symposium to follow up on the implementation of the recommendations.
- Workshop to share the experience of decision makers and update recommendations.
- Fully operational network on science diplomacy and gender.
- Agreements for international scientific cooperation fully include gender dimensions.
- Recommendations on gender balance in decision-making, transparency and inclusiveness through co-design are successfully implemented.

7.3.3 Annex B.3 - Prototypes from Challenge 3 On the integration of the gender dimension in research and innovation content

This section describes the outline of the prototypes (based on the prototype report format that was provided to all participants.

This challenge produced **3 prototypes**.

Here are the titles of the prototypes from Challenge 3.

- **3.1** Gender experts' network
- **3.2: DEI in R&D&I leadership**
- **3.3 c Gender argument bank for R&I**

Prototype 3.1 - Gender expert's network

- **Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 1.12.2022.

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Gender experts' - network aims at building a network of sex and gender and inclusivity experts first to interact as institutional interlocutors to bridge understandings of different entities and institutions, and second to provide expertise and practical support for (national) research community.

There is significant evidence to demonstrate that biological and social differences between women, men, girls, boys, and gender-diverse people contribute to differences in their health, and should therefore be considered in not only health research but other fields, like social and technical sciences as well. Accounting for sex and gender in research has the potential to make research more rigorous, more reproducible and more applicable to everyone. However, even if the facts of sex and gender relevance in research are known to research community, the reality is that many researchers lack capabilities in conducting gender responsive R&D&I. Also, professionals in the STI fields might face challenges in accessing gender and inclusivity information and knowledge.

STI professionals might be ignorant for various reasons, for example the ones who do not know about the importance of sex-gender or inclusiveness; those professionals who know but need help; but we need to acknowledge that some professionals do not even want to engage in sex-gender issues. The gender experts network offers support for especially those research institutions, groups or individuals who are interested in integrating a gender dimension into their research agenda.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- Researchers in the STI field lack capabilities for including gender dimension in their research.
- The prototype addresses this challenge by developing a network of gender experts to address gender questions in STI fields.
- Easy access for STI professional to sex-gender and inclusivity knowledge
- Easy access for STI professionals to hands-on support in strengthening sex-gender, inclusivity and intersectionality in research contents.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- The objective is to develop guidelines//model/framework on how to set up an institutional interlocutor network for gender and inclusivity champions (in national research context).
- The gender and inclusivity champions is a network that can provide interdisciplinary guidance for research organisations / groups to integrate qualitative gender & inclusivity dimension into their projects

- Learn from the CIHR- Canadian model which took 10 years to set up in Canada, so it demands streamlining to be replicated in other contexts.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- The gender experts network will help to improve gender responsiveness of science, technology and innovation
- Help researchers to take on gender sensitive research design

5. WHO IS RESPONSIBLE?

- VTT
- CIHR (consultative role)
- N.n Gender STI partner(s)
- National research council's/institutes

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- VTT
- CIHRN.
- N.n Gender STI partner(s)
- National research council's/institutes
- Gender studies experts
- National Funding agencies
- National STI-related) ministries
- National Universities

7. Description of the best ideas

- CIHR Gender Champions model:
    - Sex and Gender Champions - CIHR (cihr-irsc.gc.ca)

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Prioritise groups who to target (research teams, grant offices etc.)
- Identify network partners who could work together with VTT
- Learn from best practices (Canadian + others)
- Study the CIHR/Canadian model
- Identify other similar models (in Gender STI countries & beyond)
- Identify prototyping organisations.

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Develop step-by-step guideline based on the Canadian experiences
- Learn best practices of other models (in Gender STI countries & beyond)
- Make a list of actors to target
- Identify champions who would take on the task / join network
- Convince other partners to pilot this module outside of Europe/North America.

10. Impact in 6 Years

- Sex-gender Champions network is launched in five countries.
- The model is a mainstream practice in two countries.

11. Other relevant information on the prototype (links, references, contacts)

- A 10-year longitudinal evaluation of science policy interventions to promote sex and gender in health research | Health Research Policy and Systems | Full Text (biomedcentral.com)
- (PDF) Gendered Innovations: integrating sex, gender, and intersectional analysis into science, health & medicine, engineering, and environment (researchgate.net)
- The Integration of Sex and Gender Considerations Into Biomedical Research: Lessons From International Funding Agencies - PubMed (nih.gov)
- A framework for sex, gender, and diversity analysis in research | Science

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Prototype 3.2 - DEI in R&D&I leadership

- **Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 1.12.2022

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Despite decades of gender equality interventions and steadily increasing number of female workers in the STI fields, R&I content is still largely not reflecting intersectional gender dimensions. One of the reasons for this is the lack of awareness and competences of research and innovation leaders to include intersectional gender dimension into research and innovation content. With research and innovation leaders we refer to research and innovation managers, team leaders, principal scientists and other key persons in charge of research scope, design and ethical assessment.

This prototype aims to enhance understanding what kind of capabilities of the RDI leaders would facilitate integrating intersectional gender dimension into R&I content. Such capabilities could be, for example, assessment of the research design, research expertise or other type of support for researcher teams, so that they would be better equipped in both understanding why and when gender dimension should be considered in research design, and how to do this. The prototype will explore these capabilities through identifying the barriers and drivers for enhancing capabilities, and then build recommendations for practical action towards it.

As a method we will use research-based methods to identify i) what capabilities RDI managers need, ii) how to enhance those, and iii) what barriers there are for enhancing these capabilities. In order to explore these issues, a series of workshops and expert interviews will be carried out. Findings could be published in the form of a research paper, and disseminated as blog posts and awareness raising campaigns. Based on the findings, a checklist and other tools and guidance could be developed that help address the gender bias in RDI content.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- The lack of the gender dimension in R&I content makes science to be not socially responsible or responsive. There is a need for systemic integration of the gender

dimension in RDI content. This could be done through enhancing the capabilities of leadership in STI fields to understand their importance, and take on measures for gender sensitive R&I.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- The actions in this prototype include:
    - Take on a research task for understanding what kind of capabilities R&I managers / leaders need to be enable to integrate the gender dimension into R&I content
    - Based on the research, we aim to enhance understanding of the barriers and drivers for enhancing leaderships' capabilities
- **Short-term objective:** common understanding of the needed competencies (capabilities, knowledge, education) of leaders in STI, in order to include DEI dimensions in research and innovation content.
    - Research on needed capabilities and drivers and barriers for implementing them by using focus group workshops and interviews
- **Mid-term objective**: raise awareness of the benefits and relevance of integrating the gender dimension into R&I content in the ERA.
    - Results of research can be disseminated in the form of publishing an article on the research, disseminating findings on popular science basis
    - Developing tools (such as checklists, guidance etc.) that help enhancing leaders' capabilities
- **Long-term objective**: spill over of understanding and taking on gender sensitive R&D&I through international research collaboration

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- More gender sensitive research and innovation
- Researchers with capabilities for sex and gender analysis
- More R&I leadership understanding on the benefits and relevance of DEI in R&I content

5. WHO IS RESPONSIBLE?

- Gender STI community (led by VTT) to conduct research & focus groups. Gender STI community to disseminate results and findings.
- External gender experts to assess and help in research design and developing recommendations and tools
- R&I leaders / managers to be involved in focus group workshops / interviews.

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Gender STI community
- External gender experts
- R&I leaders / managers
- Universities
- Industry

7. Description of the best ideas

- Gendered Innovation course for RDI managers - "Gendered Innovations": Gender Diversity in the Research Process - nexus (nexusinstitut.de)
- Gendered Innovation readings at Gendered Innovations | Stanford University

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Fix/gather main actors who take lead in this prototype (Inklusiiv&VTT + others?)
- Draft a detailed action plan and time table
- More detailed actor mapping
- Start planning collaborative activities (research and workshops) with stakeholders

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Literature review on inclusive leadership and STI
- Data collection
    - Workshop/interview structure
    - Focus groups / foresight workshops with leaders to exchange views
- Analysis
    - Identifying challenges and blind spots
- Promotional activities to spark first interest (memes, Twitter campaigns, blog)

10. Impact in 6 Years

- Development and dissemination of tools to improve DEI competences within STI leadership
- Understanding on the benefits and relevance of DEI in R&I content
- Researchers who integrate gender into their work have leadership backing

11. Other relevant information on the prototype (links, references, contacts)

- Gendered Innovations course for research and development managers: "Gendered Innovations": Gender Diversity in the Research Process - nexus (nexusinstitut.de)
- Gendered innovation concept and framework: Gendered Innovations | Stanford University
- Report on venture capital managers' perspective on diversity, equality and inclusion: Inklusiiv & VALIDEI - DEI in the Nordic VC industry 2022 Report;

12. Suggestions for improving the effectiveness of the Co-design Lab

- The process could be easier to understand if it was simpler with less platforms and tools to use. Now there was at least 4 different platforms to use for in total of 9h of work
- Clearer definition of the scope, goals and aims for prototype could help to direct the work -> what is the idea behind prototype

Prototype 3.3 - Gender argument bank for R&I

- **Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content.**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 25.11.2022

1. ABSTRACT OF THE PROTOTYPE

This prototype is an "argument bank" which aims to enhance capabilities for inclusive knowledge production in STI institutions. This "argument bank" will help argue the necessity of integrating gender and sex-based analysis, as well as intersectional analysis (to look at other social and biological factors in addition to gender and sex, such as socioeconomics, age, religion, etc.) into scientific research at STI/STEM institutions. The incorporation of the gender dimension in research and innovation is crucial to ensure that knowledge produced is free of bias and has a positive societal impact for all genders.

Moreover, paying attention to gender is relevant to address the societal challenges defined by the European Commission, which are based on the UN Sustainable Development Goals (SDGs). While research in social sciences and humanities has widely integrated the gender dimension, it may seem less obvious for other disciplines (engineering, biology, agricultural science, finance, etc.). Nevertheless, literature shows that a lack of gender analysis leads to less rigorous, less reproducible and less creative research outputs, and may even reproduce harmful and discriminatory norms and practices in STEM basic and applied research[11].

For example, recent studies demonstrate that facial recognition systems (FRSs), widely employed in recruitment, authorizing payments, security, surveillance, discriminate based on characteristics such as race and gender, and their intersections[12]. Other similar examples demonstrating the necessity of gender analysis are found in multiple topics addressing current global challenges (health & medicine, agriculture, food, transport, climate change)[13].

However, while R&I institutions have started to address gendered inequalities in careers and work-life balance issues over the last decades, few have implemented policies seeking to foster the integration of gender and sex analysis in research content. The latter is different from gender balance in research groups, and has not been sufficiently addressed, even less so in scientific multilateral and bilateral agreements. Therefore, this argument bank is an important tool to foster the integration of the gender dimension in international scientific cooperation.

The argument bank will provide concrete evidence and a set of good examples to show how STI institutions can invest in more gender-sensitive and gender-specific (object of study is gender) research. Research funding organisations (RFOs), research performing

[11] European Commission, Directorate-General for Research and Innovation, (2020). *Gendered innovations 2 : how inclusive analysis contributes to research and innovation : policy review*, Publications Office

[12] Buolamwini, J. ; Gebru, T. (2018). Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification. Proceedings of the 1st Conference on Fairness, Accountability and Transparency in Proceedings of Machine Learning Research :77-91).

[13] See for instance the case studies compiled by the Research Council of Norway

organisations (RPOs), governmental institutions, and ministries of science/research are main stakeholders and beneficiaries of this prototype. In the first step, the evidence (state-of-the-art of case studies, best practices) that explain WHY investing in gender-sensitive and gender-specific research is important and HOW to do it will be collected. In the medium term, a factsheet targeting key stakeholders will be produced. Creating mechanisms and resources for advancing the research on gender and from a gender and intersectional perspective in STI/STEM is among the long term actions, along with the evaluation and monitoring activities regarding the implementation of this prototype.

2. WHY IS THIS PROTOTYPE IMPORTANT?

- The overarching objective of this prototype is to foster research that benefits everyone equally, independently of gender. This can be achieved through international scientific cooperation activities which have the potential to advance gender-aware science. However, integrating gender analysis into research content, to better address societal challenges, has not yet become a priority in scientific multilateral and bilateral agreements, and in scientific policy dialogues. This is partly explained by the lack of capabilities and resistances from institutions. By elaborating an "argument bank" and disseminating it through a factsheet with key resources (concrete examples and set of best practices) and common questions and objections on the topic, this prototype seeks to counter those problems. It is important to show R&I institutions how they can efficiently tackle gender bias in research in a concrete and practical manner.

3. DESCRIPTION OF PROPOSED ACTIONS

- Establish a list of common objections/resistances faced when seeking to incorporate gender-based analysis into research as a requirement in scientific international cooperation. Few examples below:
    - *Nobody does that (include gender sensitive or sex-based research)*
    - *What is the link with international dialogue/cooperation?*
    - *I don't know how to do it / how to phrase it in the frame of an agreement*
    - *It is relevant in some disciplines but NOT in our field*
    - *IGAR (Integrating Gender Analysis in Research) is too political, it is a leftist approach*
    - *This issue is not political or general enough, it is a scientific technical point*
    - *We don't have specialists of this issue in the negotiation team*
    - *This issue is implicitly already taken into account in the standard agreements*
    - *Gender is out of the point, it deals with sexual orientation and thus has nothing to do with scientific cooperation*
    - *The issue is already taken into account, as the negotiating delegations are gender balanced*
    - *This issue is not relevant for some countries involved*
    - *What is the point, what would the concrete impact be?*
    - *It is beyond boundaries: we cannot tell to the researchers how to do their work or what to research about*
- In order to provide answers to the above-mentioned common questions, we will then be collecting evidence (state-of-the-art of case studies, best practices - such as Gendered Innovations case studies, Kilden, CIHR, GENDER-NET Plus, EIGE[14]). This concrete evidence will demonstrate WHY investing in gender-sensitive and gender-specific research is important and HOW to do it.
- Produce an argument bank factsheet which will vary in content according to the stakeholder targeted (e.g. RFOs, RPOs, policy makers)

[14] https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/how-react-resistance-statements-and-reactions

- Establish a list of key institutions/actors to involve in the implementation of the argument bank.
- Contact key actors to get insights about the argument bank factsheet, get their opinions on the relevancy of the content, as a means to refine the tool. Feedback will be collected through virtual meetings with groups of stakeholders or through an online survey to leading stakeholders. Those exchanges with stakeholders will be the opportunity to ask them about the critical steps for implementation of the argument bank.
- Monitoring the process of the implementation of the prototype and evaluating the results and impact of the gender argument bank in R&I (e.g., proportion of studies incorporating gender analysis, example of scientific international agreements addressing the Integration of Gender Analysis into Research (IGAR) - in R&I institutions).

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Better consideration and incorporation of the gender and sex-based, and intersectional analysis into research content across all disciplines, in scientific international cooperation activities.
- More research with a positive impact on all genders, taking into account various life experiences and situations. Research outputs are relevant for more individuals, new knowledge and innovations are produced. Overall, research excellence is enhanced.

5. WHO IS RESPONSIBLE?

- Members of Gender STI consortium will coordinate the collection of evidence and elaboration of the argument bank factsheet (CNRS, Inmark) supported by external participants of the Labs.

6. WHO WILL BE INVOLVED?

- The first steps of the process include listing stakeholders to involve. To identify the beneficiaries more precisely; below is a general categorization of actors deemed relevant to work with and to benefit from the argument bank:
- Research funding organisations (e.g., potential participants from GENDER-NET Plus consortium members composed of funding agencies)
- Research performing organisations (universities, research institutions - e.g., members of Gender STI consortium)
- Governmental institutions
- Ministries of Science/Research
- NGOs

7. Description of the best ideas

- Identify common questions and objections to structure the argument bank on the topic of integration gender analysis in research content, in scientific international cooperation
    - Using Gender STI interview report to feed arguments
    - Collaborative approach to involve relevant stakeholders
- Spread the argument bank through factsheets with concrete evidence on WHY invest and/or foster gender-aware science, and HOW to do it - tailored to the specificities of targeted stakeholders

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Define precisely the form of the argument bank - the factsheet

- Find and select a list of common questions/objections that could be relevant to add in the argument bank
- Collect evidence from the state-of-the-art (case studies, best practices)
- List the key actors & institutions we wish to involve in the project to test the argument bank, get feedback and implement the tool
- Identify the specificities of each category of stakeholders targeted to adapt the argument bank

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Design the argument bank factsheet for stakeholders
- Involve key actors identified and organise group meetings to get feedback on the argument bank and determine critical steps for implementation
- Disseminate the argument bank and give visibility to the tool with a communication campaign to stakeholder's institutions.
- Give access to the argument bank from the Gender STI website and resources of the European Observatory of Gender in STI

10. Impact in 6 Years

- Assess the implementation of the argument bank and how arguments have been used, with what impact
- Argument bank factsheets have been widely promoted and circulated by R&I institutions, as a helpful tool to increase capabilities for doing better gender-aware science
- Expected impact is to have increased agreements for scientific international cooperation that make the integration of the gender dimension in research and innovation content a priority, as well as more institutions fostering gender-specific research, namely studies addressing explicitly gender-related topics.

11. Other relevant information on the prototype (links, references, contacts)

- GENDER STI Overview of gender inequalities in STI agreements between EU and third countries https://www.gender-sti.org/publications/
- GENDERACTION Gender dimension in STI international cooperation: https://h2020.genderaction.eu/policy-advice/gender-dimension-in-sti-international-cooperation/
- EIGE list of resistances when doing gender mainstreaming: https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/how-react-resistance-statements-and-reactions
- IGAR Tool - Recommendations for Integrating Gender Analysis into Research: http://igar-tool.gender-net.eu/en
- GENDER-NET Plus https://gender-net-plus.eu/

12. Suggestions for improving the effectiveness of the Co-design Lab

- None for the moment

7.4 Annex D – Prototyping Slides

This section presents the prototyping slides of every challenge group.

Challenge 1 CAREERS - Prototype 1

LAB 2 American/ Europe

GenderSTI+

Description of the challenge. What is the problem?
Male stereotypes are much more linked with science, as rationality and objectivity are co-constitutive concepts of both (Cockburn, 1993; Harding, 1991).
Therefore, girls and women are embedded in a frame where they frequently are not perceived as suited for science, and when they enter the scientific endeavor, they are directed to careers linked to the warmth presented by those stereotypes.
Which gender stereotypes are dominant in the current STEM culture and how were they formed?
How to identify the root cause of biased behavior?

Why is it important?

Over the years the numbers for women entering, progressing and retaining in STEM are not only low, but also declining.

Gender stereotypes are still present and linked with gendered representations and perceptions in science, technology and innovation

Diversity creates better science, science needs to be diverse in order to be as objective as possible.

FUTOUR

Challenge 1 CAREERS - Prototype 1

LAB 2 American/ Europe

GenderSTI+

WHAT TO DO? (objective)

Objective 1:
Identify Implicit Biases and gender stereotypes within the STEM culture

Objective 2:
Diagnose causes of gender stereotypes in STEM

HOW TO DO IT? (actions)

- Create a simulation based game for:
- a) testing your personal bias regarding gender stereotypes
- b) design a strategy that rewards unbiased behavior
- c) real role models with features and skills of real life
  - Additional Survey to conclude about bias based on social background
  - Assessment SCORE for making Tangible, Testable, Implementable

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:
- Epistemic community with a Background in gender studies and social bias and stereotypes
- Technical Experts, Game Developers
- Social actors
- Science, technology and innovation community

The beneficiaries are:
- The whole community gains with gender equality

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:
Research on how gender bias is formed.
Examples on games/platforms that teach about bias
Design guiding questionnaire and bias triggers.
Test perception of the user vs gender bias
Within the first 6 months
First Workshop inside the observatory (with Questionnaire Prototype)
Apply Design Thinking to create The Game Within the Development Team
Implement a game for a workshop based on the questionnaire
More workshops with focus on different target groups to calibrate models for biasses
Within the first 6 years
Conclude findings from societal levels and backgrounds on a global range

FUTOUR

Challenge 1 CAREERS - Prototype 2

LAB 2 American/ Europe

GenderSTI+

Description of the challenge. What is the problem?

- **Gender differences and inequalities in S&T** in **childhood**, particularly in the first years of schooling.
- **Conditions and factors that limit the opportunities and possibilities of girls to be interested**, develop capacities and build a satisfactory relationship in the learning of STEM.
- The scientific education of young constitutes an **economic and social imperative**.
- Evidence about the obstacles that represent gender systems to promote the scientific vocations in girls and young women, as well as the **importance of the school for reproduce or transform these patterns.**
- **Lack of strong funding programmes for projects aimed at helping educators to awaken STEM vocations in girls.**

Why is it important?

- Need for more women scientists: scientific vocations among women are 35-37% and in **STEM areas are 24%** worldwide.
- **Scientific vocations and gender stereotypes about STEM ability emerge in early childhood.** Early childhood as a key developmental window in which to challenge ideas about who can and should be proficient in STEM.
- **Scientific and technological literacy** is a fundamental attribute that can effectively contribute to the economic and technological development of any country. There is a need to design and create the necessary conditions that are required to nurture scientific literacy from the very beginning.
- **School-related factors,** such as the instructional design of classes, teachers' support and encouragement as well as family-related factors, and also peers can considerably influence the career-choice decisions of young people.
- Need to **provide recommendations to educators** to promote the interest, motivation and participation of children in the STEM areas.

FUTOUR

Challenge 1 CAREERS - Prototype 2

LAB 2 American/ Europe

GenderSTI+

WHAT TO DO? (objective)	HOW TO DO IT? (actions)	WHO WILL DO IT? ACTORS/BENEFICIARIES	WHEN? (6 weeks-6 months-6 years)
Awakening STEM vocations in girls through international programs with gender equality awareness for educators 1. Awaken female vocations for STEM through international education projects specification with D&I and gender perspective 2. Promote international funding organizations awareness to develop education programs derived from objective 1 2.2. Implement a new strategy for international cooperation in the educational field related to STEM to better connect the EU and third countries approaches in the context of mutually beneficial and balanced partnerships	Developing orientations to implement international programs for educators to awake STEM vocations in women early careers and girls (along women life and particularly during their careers) •**Ideas for sections:** objectives, topics, eligibility, target groups, evaluation criteria, etc. •**Ideas for topics** 1) **Develop different "knowledges"** (art, podcasts, education material) that include different female communities (minorities, indigenous, rural, etc.) and that promote the reduction of systemic violence. 2) **Design school materials** involving Gender and Science through different platforms, Social media, guides for science fairs, media programs showing the possibilities for girls in STEM, etc. 3) **Revision of science and technology programs** (curriculum) in primary schools to include the active participation of girls i.e. an effort needs to be made to overcome stereotypical gender representations in textbook, instructional design of science classes, etc. 4) **Informal STEM learning sites:** outreach programs to museums, science centers, zoos, lego-like and other centers to provide an opportunity for girls to engage with STEM outside of the classroom, but also to interact with counter-stereotypical educators (i.e. women, people from ethnic minority backgrounds) 5) Contribute to design and create the necessary conditions that are required to nurture **scientific and technological literacy** from childhood. →Involve experts on science, education and psycho-pedagogical fields to contribute to the program. →Involve different Scientific and Educational institutions in the program.	This involved actors will be: •Gender STI partners involved in Ch 1 to develop the prototype •Funding organizations that implement programs •Research, science and technology governmental institutions (national, regional, etc) •Universities •STI Ministries, Ministries of education The beneficiaries are: •Girls in the first years of schooling •Educators and schools interested in awakening vocations in STEM through projects	**First 6 weeks:** •Draft a detailed action plan and time table. •Literature review to define topics of proposals to be submitted. •Draft the topics •Define the type of projects to be submitted •Define sections of the international program: objectives, topics, eligibility, target groups, evaluation criteria, etc. **Within the first 6 months** •1st draft of the design of the international program •Identify and involve experts on science, education and psycho-pedagogical fields to contribute to the program. •2nd draft •Present the 2nd draft to 2/4 Gender STI partners institutions for revision and involve them in the decision making of the final proposal (EU & Third countries balance) •Identify target institutions and have an initial group that can potentially participate in the funding •List of funding agencies interested in implementing the program (1 ½ year) **Within the first 6 years** •Implemental program in different countries with project prototypes and with duration in time. •Information on how many projects have been presented, approved and how much budget has been allocated + how many girls have grown interested in the STEM disciplines and how has their gender bias changed within those 6 years, could be by interest surveys or by playing prototypes 1 game + observe the female communities considered in the projects, the involvement of female students in scientific courses, scientific content, production of non conventional knowledge (postcards, street art, performance, choreography), dissemination strategies charts and feedback.

FUTOUR

Challenge 2 DECISION MAKING - Prototype 1

LAB 2 Americas/ Europe

GenderSTI+

Description of the challenge. What is the problem?

- There is a lack of social will to find and include women in visible positions.
- There is an unequal sharing of household and care responsibilities due to traditional gender roles and stereotypes. This is a barrier for women to reach decision-making positions.
- Decision-making habits don't usually consider gender issues.
- Only discursive measures in this matter. It is a challenge to move to actions.

This challenge tries to encourage more women to reach decision-making positions by first, identifying types of contribution activities that have high visibility to then identify specific actors/activities to target. And later develop actions such as social media/marketing campaigns to support gender inclusion in the targeted areas.

Why is it important?

- Achieve equity in those disciplines within STI where women are a minority
- Acquire equity in leadership positions within the area of STI where women are a minority
- It is essential to make inequalities visible.
- The way decision-making is envisaged needs to be changed.
- Equality is something you have to work on all the time. It is not taken for granted.

FUTOUR

Challenge 2 DECISION MAKING - Prototype 1

LAB 2 Americas/ Europe

GenderSTI+

WHAT TO DO? (objectives)

1) To achieve more diverse decision-making levels
2) To attract more diverse candidates

HOW TO DO IT? (actions)

Identifying opportunities for contributions to STI, especially those with high visibility, and then **determining approaches to improve women's representation.**

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:
(needed to develop our prototype)

- International Corporations
- Technical committees
- Universities
- I&T Organizations
- Editorial boards
- Ministry of Women
- NGOs
- STI Organizations that hold conferences/publish
- Ministry of Science and Technology or Education
- Gender STI partners

The beneficiaries are:
(who could implement our prototype)

- STI women already in the sector and those that want to enter from different backgrounds and disciplines

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:
1) Identify barriers to women's representation that are specific to region/language
2) Identify types of contribution activities that have high visibility with a goal to then identify specific actors/activities to target.

Within the first 6 months
1) Profile women who are "real world" (e.g. have many demands)
2) Prepare social media/marketing campaigns to support gender inclusion in our target areas (maybe a campaign to refuse to participate in events that don't have good gender representation)
3) Stimulate the creation of positive discrimination measures to promote the participation of women, diversity, ethnicity

Within the first 6 years
1) A mechanism to negotiate representation of women
2) Guidance for policies to support participation of women who are caregivers
3) Improve visibility and power of women in STI academic departments. More women teaching upper level courses
4) Mentorship programs for women related to leadership positions in universities
5) Acquire a quota of women representation in STI organizations conferences, in proportion of the % women in that discipline
6) STI journals to publish a special edition highlighting women researchers
7) Similar numbers of women and diversities than men at all levels from the beginning to the spaces of power of the different S&T areas

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Challenge 2 DECISION MAKING - Prototype 2

LAB 2 Americas/ Europe

Gender STI

Description of the challenge. What is the problem?

- As women are often underrepresented in the negotiation and implementation of international scientific agreements and policy dialogues this prototype aims at fostering gender balance in decision-making. To achieve more transparency in the way people are nominated/designated in the governance bodies (steering committees, executive committees..) of these agreements /dialogues strong recommendations are needed.
- The way decisions are made during the whole process requires more inclusiveness. Major stakeholders (research funding organisations, research performing organisations, ministries and international organisations) should endorse these recommendations. An international network of women in science diplomacy should be set up to carry promote these recommendations in a sustainable way.

Why is it important?

- Foster gender balance in decision-making in international scientific cooperations.
- Achieve more transparency and inclusiveness in decision-making processes in connection with international scientific cooperation.

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Challenge 2 DECISION MAKING - Prototype 2

LAB 2 Americas/ Europe

Gender STI

WHAT TO DO? (objectives)

1) Foster gender balance in decision-making in international scientific cooperations.

2) Achieve more transparency and inclusiveness in decision-making processes in connection with international scientific cooperation.

HOW TO DO IT? (actions)

1) Providing a set of **recommendations to foster gender balance and transparency in decision-making in international scientific cooperation**

2) Joint declaration by major stakeholders

3) Setting up of a network on science diplomacy and gender

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:
(needed to develop our prototype)

- European Commission - DG Research
- Governments
- RPOs + RFOs
- International bodies and organizations: Unesco STS Forum (Science & Technology for Society), ICSU (International Council of Scientific Unions)
- Global Research Council

The beneficiaries are:
(who could implement our prototype)

- International scientific cooperation decision making bodies
- Women scientists

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:

1) Draft recommendations on gender balance in decision-making in international scientific cooperation and share them (Gender STI Consortium, other organizations) to have feedback.

2) Define what should be transparency in international scientific cooperation decision making bodies.

Within the first 6 months

1) Workshop to share the experience of decision makers and improve draft recommendations.

2) Set up a working group on science diplomacy and gender

3) Joint declaration (in 1 year) endorsed by major stakeholders (RPOs RFOs, international organisations)

Within the first 6 years

1) Survey and symposium to follow up on the implementation of the recommendations.

2) Launching of an international network of women in science diplomacy

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Challenge 3 GENDER CONTENT - 2 Gender declaration

LAB 3 Asia, Africa, Europe

Gender STI+

Description of the challenge. What is the problem?

Despite decades of gender equality interventions and steadily increasing number of female workers in the STI fields, R&I content is still largely not reflecting the gender dimension. One of the reasons for this is that despite increasing diversity, the research and science cultures within STI fields are not inclusive. This means that the diversity of viewpoints employees within the STI fields may have, are not reflected in the R&I content. This challenge aims to address this deficiency.

Why is it important?

The lack of gender dimension in R&I content makes science to be not socially responsible or responsive. There is a need for systemic integration of sex and gender analysis into R&I so that they can better address grand challenges.

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Challenge 3 GENDER CONTENT - Gender Declaration

LAB 3 Asia Africa Europe

Gender STI+

WHAT TO DO? (objective)

To have declaration where the undertaking institutions take on a systemic approach to have a Gender Policy to include gender dimensions in research and innovation content

HOW TO DO IT? (actions)

- Formulate the declaration (content, structure, scope and focus)
- Benchmark best practices
- Identify stakeholders / target institutions to comment, disseminate information, and sign the declaration
- Involve stakeholders for formulation
- Contact EU Council presidency countries

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:

- CNRS
- VTT
- GenderSTI community
- External gender experts
- Council presidency country/ministry
- Universities
- RTOs
- Ministries
- National Academies of Science

The beneficiaries are:

- Science
- Research community, innovators
- Citizens, end users

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:

Lead coordinator: CNRS

Organize (1st) meeting: Mathieu

Structure of the declaration

Identify best practices

Start drafting the declaration

Within the first 6 months

Within the first 6 years

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Challenge 3 GENDER CONTENT - prototype 1 "Institutional interlocutors to bridge understandings of different entities and institutions"

LAB 2 Americas/ Europe

GenderSTI+

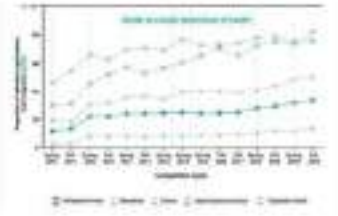
Description of the challenge. What is the problem?

The challenge in enhancing gender dimension in research and innovation is that many researchers lack capabilities in conducting gender responsive R&I.

-Different stakeholders do not understand each other's needs for gender, diversity and inclusion.

-Professionals working in STI do not have (easy) access to sex-gender information and knowledge

-https://cihr-irsc.gc.ca/e/50852.html



Why is it important?

One of the root causes for the lack of gender dimension in R&I content is that STEM / STI professionals lack capabilities. We aim to enhance these capabilities through developing guidelines /framework to set up a sex gender champion network.

We have identified different groups of people working in STI: 1) the ones who do not know about the importance of sex-gender, 2) those persons who know but need help), 3) people who do not want to engage in sex-gender issues.

We focus on first Funding agencies (both private and public funding); second Decision makers (science policy e.g. ministry of education / ministry of health); and third Universities.

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Challenge 3 GENDER CONTENT - "Institutional interlocutors to bridge understandings of different entities and institutions"

LAB 2 Americas/ Europe

GenderSTI+

WHAT TO DO? (objective)

- The objective is to develop guidelines/model/framework: how to set up institutional interlocutor network for gender and inclusivity champions (in national research context).
- The gender and inclusivity champions is a network that can provide interdisciplinary guidance for research organisations / groups to integrate qualitative gender & inclusivity dimension into their projects
- CIHR- Canadian model took 10 years to set up in Canada, so it demands streamlining to be replicated in other contexts.

HOW TO DO IT? (actions)

- → Learn from best practices (e.g. CIHR sex and gender champions)
- → learning from the CIHR/Canadian model. (+*other models*= identify most promising the steps, actors, methods
- → Replicate best practices into the guidelines
- → Identify network partners who could work together with(in) VTT
- → Test in real life

The impact: each funding proposal has to include a sex and gender expert in the research group to ensure mainstreaming sex & gender analysis in all research projects.

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:

- → VTT
- → CIHR
- → N.N GenderSTI partner
- → National research councils/institutes

The beneficiaries are:

- → National Funding agencies
- → National STI-related) ministries
- → National Universities
- → Xxx

The indirect beneficiaries are: STI community

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:

Prioritise groups who to target
Identify network partners who could work together with VTT
Learn from best practices (Canadian + others)
Study the CIHR/Canadian model
Identify other similar models (in GenderSTI countries & beyond)
Identify prototyping organisations

Within the first 6 months

Develop step-by-step guideline based on the Canadian experiences
Learn best practices of other models (in GenderSTI countries & beyond)
Make a list of actors to target
Identify champions who would take on the task / join network
Convince other partners to pilot this model outside of Europe/North America

Within the first 6 years

Sex-gender Champions network is launched in five countries.
The model is a mainstream practice in two countries.

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Challenge 3 GENDER CONTENT - 3"DEI in R&I leadership"

LAB 2 Americas/ Europe

Gender STI

Description of the challenge. What is the problem?
Despite decades of gender equality interventions and steadily increasing number of female workers in the STI fields, R&I content is still largely not reflecting the diversity, equality and Inclusion (DEI) dimensions. One of the reasons for this is the lack of awareness and competences of leaders to include DEI dimensions in research and innovation content.

Why is it important?
The lack of gender dimension in R&I content makes science to be not socially responsible or responsive. There is a need for systemic integration of inclusive leadership in STEM / STI in order to better address grand challenges.

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Challenge 3 GENDER CONTENT - "DEI in R&I leadership"

LAB 2 Americas/ Europe

Gender STI

WHAT TO DO? (objective)

i) **Short-term objective**: understand lack of competencies (capabilities, knowledge, education) of leaders in STI in a collaborative manner, to include DEI dimensions in research and innovation content.

ii) **Mid-term objective**: raise awareness (benefits, relevance)

HOW TO DO IT? (actions)

- Literature review
- Benchmark best practices
- Collect data
  - Identify stakeholders / target institutions
  - Identifying challenges for inclusive leadership in STI (through workshops, focus groups, interviews w/leaders)
- Analysis
  - Policy brief, blog etc. or ask comments, disseminate information on results
  - Involve stakeholders for formulation (present and future leaders)
- Develop tools and practices based on results to enable leaders and management to include DEI in R&I content (such as checklists, high-level symposiums, online courses, interdisciplinary expert groups, challenge competitions)
- Write a paper

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:
- GenderSTI community
- External gender experts
- Universities
- RTOs
- National Academies of Science
- Industry

The beneficiaries are:
- Science
- Research community, innovators
- Citizens, end users

WHEN? (6 weeks-6 months-6 years)

__First 6 weeks:__
- [illegible] main actors who take lead in the prototype [illegible]
- Draft a detailed action plan and time table
- More detailed actor mapping
- Start planning collaborative activities with stakeholders

__Within the first 6 months__
- Literature review on inclusive leadership and STI
- Data collection
  - Workshop/interview structure
  - Focus groups / foresight workshops with leaders to exchange views
- Analysis
  - Identifying challenges and blind spots
- Promotional activities to spark first interest (memes, Twitter campaigns, blog)

__Within the first 6 years__
- Development and dissemination of tools to improve DEI competences within STI leadership
- Understanding on the benefits and relevance of DEI in R&I content
- Researchers who integrate gender into their work have leadership [illegible]

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Challenge 3 GENDER CONTENT - Prototype 3 "Gender argument bank for R&I"

LAB 2 Americas/ Europe

GenderSTI+

Description of the challenge. What is the problem?

- Studies show that integrating a gender and sex analysis – and beyond gender, an intersectional analysis – enhances the quality of research and innovation, and in turn produces knowledge with a societal impact that benefit everyone equally (see Gendered Innovations project, Klüden's booklet).
- The gender dimension is particularly crucial to tackle current global challenges (UN SDGs), often addressed in international policy dialogues in STI.
- However, while R&I institutions have started to address gendered inequalities in careers and work-life balance issues over the last decades, few have implemented policies seeking to foster the integration of gender or sex analysis in research content. The latter is different than gender balance in research groups, and has not been considered a priority yet, even less so in scientific multilateral and bilateral agreements.

Why is it important?

- While research in social sciences and humanities has widely integrated the gender dimension, it may seem less obvious for other disciplines.
- Nevertheless, literature shows that a lack of gender analysis lead to less rigorous, less reproducible and less creative research outputs, and may even reproduce harmful and discriminatory norms and practices in STEM basic and applied research.
- Ex: In computer vision, studies demonstrate that Facial recognition systems (FRSs), widely employed in recruitment, authorizing payments, security, surveillance, discriminate based on characteristics such as race and gender, and their intersections.

Sex, Gender, and Intersectional Analysis
Enhances all phases of research

From the Gendered Innovations Project website

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Challenge 3 GENDER CONTENT - Prototype 3"Gender argument bank for R&I"

LAB 2 Americas/ Europe

GenderSTI+

WHAT TO DO? (objective)

By creating an **"argument bank"**, this prototype will help **argue the necessity of integrating gender and/or sex-based analysis, as well as intersectional analysis** (going beyond gender to look at other social and biological factors, such as socioeconomics, age, religion, etc.) **into scientific research to STI/STEM institutions**

HOW TO DO IT? (actions)

- Collect evidence (state of the art of case studies, best practices):
  - WHY investing in gender-sensitive and gender-specific research is important
  - HOW to do it?
- Produce argument targeted bank factsheets
- Involve key actors identified and ask them questions about the argument banks - opinions from the stakeholders / identify resistances - refine the tool.
  - Q to stakeholders : what are the critical steps for implementation?

WHO WILL DO IT? ACTORS/BENEFICIARIES

The involved actors will be:

- Research funding organisations (RFOs)
- Research performing organisations (RPOs)
- Governmental institutions
- Ministries of Science/Research

The beneficiaries are:

- R&I institutions
- Researchers
- Society as a whole
- Business

WHEN? (6 weeks-6 months-6 years)

First 6 weeks:

- Collect evidence (state of the art of case studies, best practices)

Within the first 6 months:

- Produce argument bank factsheets
- Concretize/define the argument banks targeting each category of stakeholders
- Involve key actors identified and ask them questions about the argument banks - opinions from the stakeholders - refine the tool

Within the first 6 years:

- Check if the prototype has been implemented and what have been the results & impact of implementing the prototype (e.g. proportion of studies incorporating gender analysis).
- Support new research on gender and from a gender perspective in STI/STEM.

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7.5 Annex E - Prototyping diary

We hereby provide a sample of the full **Lab 2 Prototype Diary that was used to develop for Challenge 3 on GENDER CONTENT.**

GENDER STI CODESIGN LAB

"Enhancing gender equality and gender dimension in STI through international dialogues"

CHALLENGE PROTOTYPING DIARY

CHALLENGE 3 - GENDER CONTENT: Integration of the gender dimension in research and innovation content

THEME: Enhancing capabilities for inclusive knowledge production

Lab 2 - Americas and Europe (West)

Session 1: Monday 24th of October from 14:30 to 17:30 CET

Session 2: Wednesday 2nd of November from 14:30 to 17:30 CET

Session 3: Thursday 10th of November from 14:30 to 17:30 CET

CHALLENGE PROTOTYPING DIARY

TABLE OF CONTENTS

Lab 2 Prototype Diary for Challenge 3: GENDER CONTENT

Lab 2 Americas and Europe (West)

CHALLENGE 3 - GENDER CONTENT: Integration of the gender dimension in research and innovation content

THEME: Enhancing capabilities for inclusive knowledge production

One of key challenges of integrating the gender dimension in research and innovation (R&I) content is the lack of capabilities for taking on gender analysis and assessment. Moreover, gender understood from the intersectional perspective, encourages researchers to think

beyond binary gender positions and integrate inclusiveness as the guiding principle for enhancing gender dimension in R&I content. The ways in which R&I content is created also influences whether R&I is reflective of the gender dimension.

Main questions:

- *What can be done to enhance **gender sensitization** in research and innovation funding organisations in implementation and reviewing of research calls and funding programmes?*
- *How can research institutions and researchers be assisted to take on **inclusive research design and inclusive knowledge production**?*
- *What **indicators** need to be developed to reflect inclusive knowledge production?*

Challenge Group Participants

- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules

The GENDER STI Co-design Lab method

The Gender STI project addresses the challenge of **how to enhance gender equality in STI workforce and decision making, as well as how to integrate the gender perspective in science, technology and innovation (STI) in dialogues between Europe and third countries.** The project is part of the European Research Area (ERA) strategy to advance gender equality in Research and Innovation (R&I).

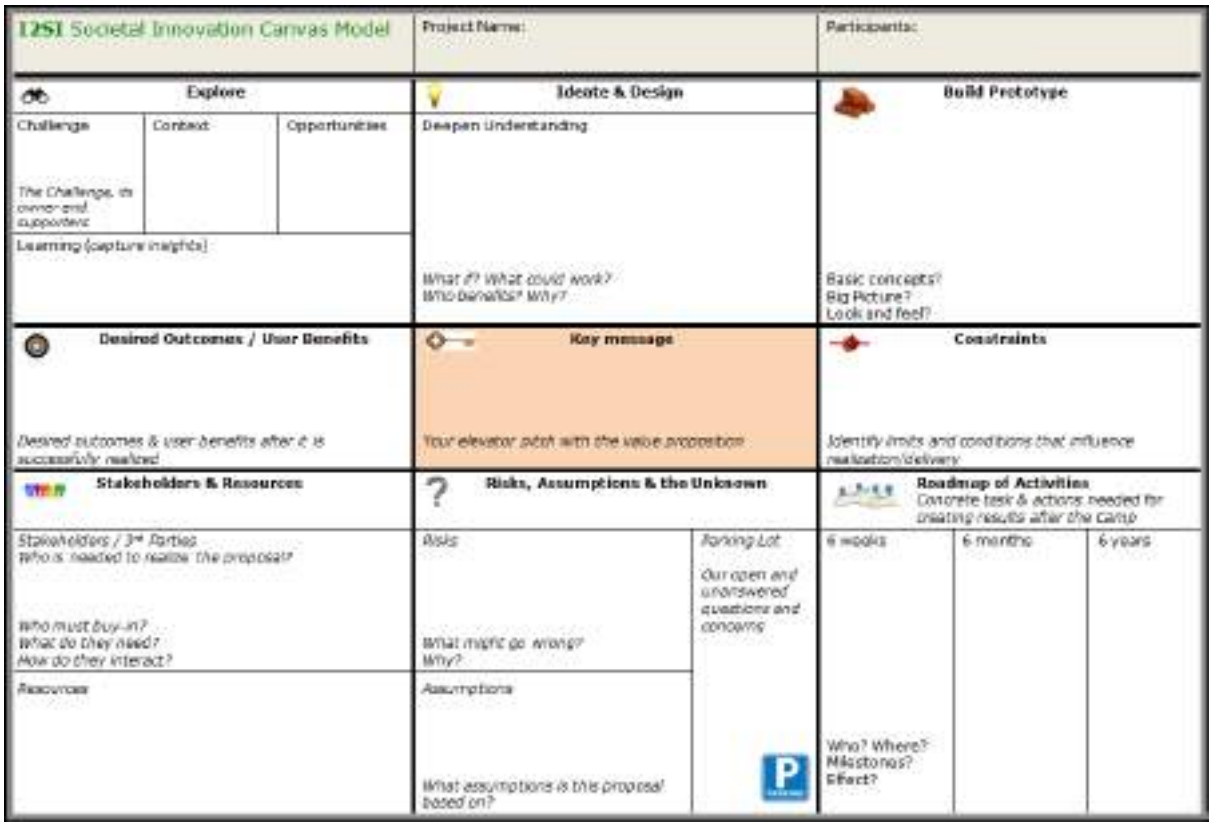
This document is your **Challenge Prototyping Diary** that supports your work as challenge teams within the Gender STI Co-design Lab. Your prototypes will be used to **enhance gender equality and gender dimension in STI through international dialogues**.

Why? The purpose of the GENDER STI Co-design Lab challenge group is to develop prototypes that can be tested and improved so as to identify solutions that increase the gender balance in science technology and innovation.

How? It is a co-design process that applies interactive participatory methods and through synchronous and asynchronous digital collaboration and communication.

What? Your group can design and test prototypes that can address and solve some of the key challenges of gender balance in science, technology and innovation (STI). Your work can bring a fundamental contribution.

The working approach of the Gender STI Co-design Lab is based on the Innovation Camp. We address a challenge, reframe it, identify possible goals and objectives that can be addressed with a prototype, identify actors and partners that can support the prototype and define the activities in the long, medium and short term that can help us to address the challenge. Within the Lab we use a **canvas** with guiding questions and steps that can help you in the discovery process from exploring and reframing the challenge to defining a roadmap of activities.



The activities that are performed in the interactive Gender STI Labs concentrate on the following main steps in the canvas:

- Exploring the challenge, through its reformulation and deepening its understanding.
- Defining desirable and possible objectives to address the challenges through prototypes that can help to reach the desired outcomes and benefits for the target groups.
- Prototyping solutions by identifying actors, partners, beneficiaries, resources and setting up a roadmap of activities.

The diary of this challenge group contains the results of the brainstorming sessions that can contribute to preparing the report, presentation and video clip of the Prototypes that were generated by the participants.

EXPLORING THE CHALLENGE, IDENTIFYING OPPORTUNITIES AND OBJECTIVES FOR THE PROTOTYPING

This part of the Challenge Prototyping Diary collects the instant report of the first online interactive brainstorming sessions to "Enhance gender equality and gender dimension in STI through international dialogues" within our Challenge and Topic. They include:

a) The **reframing of our GENDER STI challenge and theme**.
b) The definition of **GENDER STI goals, objectives, opportunities to develop prototypes** that address our challenge and theme.
c) The **identification of prototypes** and creation of **prototyping groups**.

REFRAMING THE GENDER STI CHALLENGE to develop prototypes that "Enhance gender equality and gender dimension in STI through international dialogues".

This section of the challenge prototyping Diary contains the results of the reframing session that were written through the digital brainstorming. You may use it as an inspiration and reflection for the prototyping process.

- **What makes it a challenge?**
    - Integrating gender into research requires doing something more and better. More, in that conducting gendered analysis, selecting diverse participants, inclusive design etc. in many cases requires more time, expertise, networks, a bigger budget. Better, in that the analysis and design need to be more nuanced and consider more factors + integrate social scientific knowhow.
    - Across all disciplinary fields, scientific research has been produced from a male perspective and perceived as "objective", reproducing systems of oppressions and discriminations in academia and in the production of knowledge.
    - Studying the gender as a variable in research on research.
    - Women are still under-represented in research studies.
    - Entrenched interests among those who are threatened or are not willing/informed by including others, especially those not traditionally "part of the group".
    - Not consider the gender perspective in the whole chain of R&I.
    - Women's underrepresentation in research groups and existing stereotypes embedded in our society and performed by people of all genders.
    - Resistance towards gender issues in masculine contexts.
    - The belief that science and innovation are not related to social aspects of life.
    - Gender studies, inclusion, or social sciences in general are not seen as relevant, or as "real science". In addition, the field has been built by and for men, and there is much structural work to be done.
    - Existing mindsets in research, and in science in general.
    - Recognize that there is something specific to define in each case with respect to gender.

- **What is the context behind the challenge?**
    - Context of male dominated, patriarchal environment + lack of knowledge about and integration of gender/intersectionality knowledge and perspective.
    - Knowledge is about power, and knowledge production reproduces certain historical, economic, cultural, political, social power relations and structures. What is worth knowing? What is a useful or an exciting innovation? Broadening the answers to those questions entails shifting power relations, and can thus generate resistance.
    - Gender balance is not enough to close the gender gaps.
    - Gender gaps persist in STI, e.g less visibility of knowledge produced by women.
    - The idea that gender and other social characteristics might not be relevant in this field.
    - Women represent only around one-third of researchers (33%). Women remain under-represented at the highest level of academia, holding about one-quarter of full professorship positions (26%). Women are also less likely to be employed as scientists and engineers (41%) and are under-represented among self-employed professionals in science, engineering, and ICT occupations (25%).
    - Inadequate metadata about scientific output (publications etc.) and few available data regarding research projects.
    - Personal observation and experience as to how R&I organisations operate and the very traditional hierarchy they gravitate towards.
    - The training of people working in science is, in general, limited to their disciplines.
    - Science in general has been created on oppressive structures that are difficult to tackle. In addition, there exists a hierarchic division within science, where STEM/STI are seen as more objective and factual, and social sciences as soft and subjective.
    - Idea of objective science.
    - It is not possible to make visible the gender dimension in scientific issues.

- **Has this challenge been addressed before? What were the outcomes?**
    - The challenge has been addressed by several institutions and projects, such as Gendered Innovations, GenderNET Plus, which offer sets of best practices, guidelines on how to produce gender-aware science, directed towards both the scientific community (giving them the concrete steps to integrate gender dimension into their research) and the research funding and producing organisations to encourage those efforts.
    - There have been a lot of initiatives to enhance gender dimension, but they have been voluntary. Not affecting funding decisions etc..
    - There have been efforts to integrate gender into knowledge production in peace and security (following UNSCR 1325, etc). One solution has been to add gender advisors to teams to build capacity for analysing gendered impact of policies, programmes etc., but it has its limitations. The learning has been that one person can do very little if there is no buy-in otherwise.
    - This challenge is addressed for instance by the EC strategy on gender equality. In practice, we need more concrete and realistic solutions to advance the integration of the gender dimension in R&I content.

  - There are many studies on the role of gender in research and science but I don't know any initiatives that address the issues regarding bibliometric metadata.
  - Currently there are many initiatives.
  - There seems to be overall token acknowledgment that inclusivity and diversity are worthwhile (or for the moment "woke" and popular goals) but whether there is true commitment and championing of solutions is not certain.
  - I have seen several initiatives with respect to this (training, etc.), but in general, they are not taken into account.
  - There are policies, laws and social norms in place in many countries that have emerged as a consequence of *#metoo* and BLM movements. Blatant forms of discrimination have decreased, but discrimination still takes place in an invisible and structural form.
  - It is a persisting challenge. Interventions have been made to improve the quantitative equality but inclusiveness is more difficult to solve.
  - It was thought that by putting women in some places it was already done.

- **If you solved this challenge will there be a bigger one behind it? Is it the deepest level you can go?**
  - The remaining challenge would be to go beyond gender --> intersectional perspective.
  - This challenge eventually ties with normative and value-laden questions about what is the purpose of STI, and what kind of critical thinking skills researchers have and are able to employ in their research.
  - I do not think we can solve this challenge immediately; we need to involve decision makers in STI, and of course women should be more active to change things at work.
  - It will touch upon other power structures in knowledge production, to do with other historical forms of oppression (colonialism, racism, Euro-patriarchal forms of knowledge).
  - Changing our mindsets and way of thinking.
  - There are still other problems to be solved about inequalities in other areas.
  - To solve gender issues is just the tip of the iceberg, STI culture being more inclusive demands stronger interventions. Our societies are not equal yet, and we have tried to solve these issues for quite a long time.
  - A change in the culture of research communities and institutions is necessary.
  - Resolving the challenge will be an on-going challenge :) in and of itself; consistent messaging, funding and actual achievement will serve to continue the momentum until it's embedded as part of the particular operational culture.
  - In addition to the goal of reaching inclusive and diverse STI/STEM (both quantitatively and qualitatively), the issue of the colonial structures of science must be addressed.
  - I would like to think beyond the number of women, I would like to think about changes that are intrinsic to the theme, but I don't know how to do it.

DEFINITION OF GENDER STI GOALS AND OPPORTUNITIES to develop prototypes that "Enhance gender equality and gender dimension in STI through international dialogues".

This section of the challenge prototyping Diary contains the results of the brainstorming session on the goals, opportunities and positive vision of the outcomes and impact that can guide you into identifying possible prototypes that address your challenge. Use it as an inspiration and reflection for the prototyping process.

- **GOALS/OBJECTIVES AND OPPORTUNITIES**: If you had to imagine a happy ending for the topic addressed by the challenge once completed, how would you describe it? Imagine optimistic results. This brainstorming has the purpose to identify 2-3 prototyping groups.
    - Gender analysis is nuanced and intersectional, taking into consideration other aspects e.g. ethnicity, age, class, disability, etc.
    - Gender dimension would be systematically integrated across all disciplines and throughout the research cycle from the research design to its evaluation / enhanced knowledge about sex and gender science within scientific community.
    - The results of R&I produced by women are equally recognised and awarded. This needs to change the composition of decision makers so women are well represented.
    - Researchers of all backgrounds would understand the difference between sex and gender and know how gender influences their fields.
    - More reliable and generalizable studies that shed light on policy making.
    - The points at which gender should be integrated into R&I content are identified (e.g., when purely theoretical research becomes applied?). Ideally, this would happen earlier and earlier throughout research projects, so that gendered analysis is not an afterthought or an add-on.
    - We'd not need to talk about gender, diversity or inclusiveness in R&I but these are taken into account without thinking.
    - Optimal goal could be that rather than one-off, piecemeal, minimal funding solutions there are organisational changes of heart and mind putting into practice inclusivity and diversity that serve to meet the organisation where it is found, i.e., can it use these concepts to further its own innovative practices, profitability, market reach, or other needs?
    - More inclusive research communities. Different paths of careers accepted.
    - Inclusive STEM/STI in all levels, from funding to grassroot level work.
    - We would have science and technology outcomes that are more inclusive and adaptable to a diverse audience.

- **IDENTIFY PROTOTYPES**. Select the main goals, objectives and outcomes you want to address in your prototype (testing/experimentation). The two, three most relevant goals, objectives and outcomes you want to address and resolve with your prototypes are selected from the previous list. Through an analysis and synthesis of the goals and objectives the team has identified the following two or three prototyping areas.

- Guidelines to implement the integration of gender dimension in R&I content in different contexts and actors. For instance, in scientific and innovation/business contexts.
- Benchmarking examples / arguments of why taking on gender assessment in R&I is making the research/product better.
- Exploring how building more interdisciplinary teams, approaches, symposia could challenge thinking and help solve the issue with capabilities.
- The more we can bring the philosophy of "all parties are winners" to the outcome, the more valuable our work; by identifying what is the "hook" to gain entrance to an organisation's operational wish list the more we can sync our inclusivity objectives with their needs.
- How can both funding & producing research organisations can encourage integration of gender dimension through international scientific cooperation agreements.
- A universal reflectivity exercise for researchers to do that could enhance their understanding of what a gendered analysis could mean in their field?
- Ways of redefining our approach towards RQs.
- Identifying points of influence or windows of opportunity to integrate gender, at different points of the research cycle. What kinds of questions to ask at different points / in different positions?
- Different mechanisms of intervention a) in the research community (scientists) b) funding (they have a lot of power) c) policy makers by addressing their needs - why inclusiveness is important. Can we think of reference groups, like start-ups/innovators?
- Promoting best practices from the intersectional perspective.
- Concept of focus groups comprised of "end-users" of gender inclusivity representing all sectors (academia, research, business, non-profits' and NGOS for example) could be a new potentially unique twist to these types of projects whereby we are striving to be practical and logical in creating tangible outcomes that benefits all parties.
- The prototype could demonstrate that gender receptivity and inclusion does indeed further the organisation's own self-described goals and outcomes - by furthering future goals they themselves benefit internally through operational creativity and external successes however needed.
- How to make science, in particular mathematics and technology, more inclusive? I would like that people in these communities understand that this is not just a problem related to indicators.
- Power over funding, culture, and ways of doing science is held by a narrow, homogeneous group of people. Thus, we should address the issue of how to share power in science?
- I would like to address how to include the gender dimension in the search for biomarkers of dementia or in the imaging that is carried out to diagnose neurodegenerative diseases.

PROTOTYPES AND DISTRIBUTION OF PARTICIPANTS. The table below indicates the initial prototype titles, ideas on them and how the challenge participants have distributed themselves. The titles and distribution of participants may change throughout the process and the challenge team will update it accordingly.
The prototype definition and allocation went through two steps. In the first step the Challenge Holder and facilitator collected some possible topics.

In the second stage these were voted by participants leading to the selection of three new prototype topics.
The second row from the topics represents the most voted topics to be addressed by the prototypes of this challenge group.

Prototype 1	**Prototype 2**	**Prototype 3**	**Prototype 4**
Institutional interlocutors to bridge understandings of different entities and institutions	Guidance and consultancy for institutions interested in enhancing gender capabilities	An "argument bank", to help argue the necessity of gender and diversity to STI/STEM institutions	
Personal and provocative approach Targeting researchers/innovators who are reluctant / who do not seek to integrate gender into their R&I projects Podcast series to raise awareness on the importance of gender dimension in R&D&I content. Mandatory gender education course. (Video/tiktok) campaign to raise awareness for better and more inclusive science.	Personal cooperative e.g., prototype to support those who want to enhance their gender knowledge & understanding? Pool of gender experts for possible consultancy, sparring, cross-coaching.	Institutional provocative Gender language in different STI actors: sort of guidelines to start the discussion. An "argument bank", to help argue the necessity of gender and diversity to STI/STEM institutions. How to leverage gender capabilities through MoU's, leveraging - best practices from diverse fields.	Institutional cooperative Guidance to integrate gender capabilities into STI agreements. Institutional interlocutors to bridge understandings of different entities and institutions. Guidance and consultancy for institutions interested in enhancing gender capabilities. One identified target group, to understand their mindset, e.g. research institutes, business organizations.

Participants of the challenge before the distribution into prototyping groups:

- Names hidden to respect GDPR rules

PROTOTYPING, TESTING AND EXPLORING WAYS TO "ENHANCE GENDER EQUALITY AND GENDER DIMENSION IN STI THROUGH INTERNATIONAL DIALOGUES"

This part of the Challenge Prototyping Diary collects the instant reports of the second online interactive brainstorming sessions to identify and plan Prototypes that can "Enhance gender equality and gender dimension in STI through international dialogues" within our Challenge and Topic.

For each prototype we have created a chapter that includes the prototype title, the participants and other information from the digital brainstorming sessions that can contribute to developing the slide presentation with keywords, the prototype report and a video clip.

All prototypes build on the reframing of the GENDER STI Challenge and theme and on the specific objective of the prototype.

Each **prototype chapter in the diary** includes the following:

- Detailed Prototype report format to be written by the prototype team including the abstract and more in-depth description of the Prototype (this serves as future deliverable so it is important to complete it).
- Link to the slides used in the presentation of the prototype.
- Videoclip: space to add ideas and develop the script of the videoclip.

After all the prototype descriptions there is also a small section at the end of the Diary, after the prototype descriptions and report including the feedback received by the prototypes of this challenge during the **Inter challenge consultation**.

In the annexes of the Challenge Prototype Diary there is a **REFERENCE ONLY instant report of the digital brainstorming on the prototypes** (from the GroupMap canvas). This can be used to copy, adapt and edit the information and idea exclusively in the main report, abstract, slides and video described in the previous paragraph. The instant, reference-only annexes contain the following information.

- Participants contributing to the prototype.
- Prototype objective and description.
- Main actors and partners to be involved in the prototype.
- Activities in the long, medium and short term.

PROTOTYPE 1 - Gender experts -network

Report with a detailed description of prototype 3.1 and the abstract

Please describe the prototype by using the report template below. You may use and improve all the contents emerging from the digital brainstorming (s*ee Annex 1 for reference only*). The **report** describes more in detail what you will be explaining with keywords in your presentation of the prototype roadmap in the last session and can help you in the follow-up activities to test the prototype. The prototype report needs to be completed **by the third session of the Lab** and can be further polished in the prototyping phase.

Title of the Prototype: Gender experts -network

Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content

- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 1.12.2022.

Note to the Rapporteur:
Please use as many visuals as possible in this report. These may include drawings, illustrations and PowerPoint presentations made by the group, and photographs of the wall-space where the group worked (including post-its and papers hung on the walls, or flip-over pages prepared by the group).

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Gender experts -network aims at building a network of sex and gender and inclusivity experts first to interact as institutional interlocutors to bridge understandings of different entities and institutions, and second to provide expertise and practical support for (national) research community.

There is significant evidence to demonstrate that biological and social differences between women, men, girls, boys, and gender-diverse people contribute to differences in their health, and should therefore be considered in not only health research but other fields, like social and technical sciences as well. Accounting for sex and gender in research has the potential to make research more rigorous, more reproducible and more applicable to everyone. However, even if the facts of sex and gender relevance in research are known to research community, the reality is that many researchers lack capabilities in conducting gender responsive R&D&I. Also, professionals in the STI fields might face challenges in accessing gender and inclusivity information and knowledge.

STI professionals might be ignorant for various reasons, for example the ones who do not know about the importance of sex-gender or inclusiveness; those professionals who know but need help; but we need to acknowledge that some professionals do not even want to engage in sex-gender issues. The gender experts network offers support for especially those research institutions, groups or individuals who are interested in integrating a gender dimension into their research agenda.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- Researchers in the STI field lack capabilities for including gender dimension in their research.
- The prototype addresses this challenge by developing a network of gender experts to address gender questions in STI fields.
- It offers an easy access for STI professional to sex-gender and inclusivity knowledge
- It offers an easy access for STI professionals to hands-on support in strengthening sex-gender, inclusivity and intersectionality in research contents.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- The objective is to develop guidelines/model/framework on how to set up an institutional network for gender and inclusivity champions (in national research context).
- The gender and inclusivity champions is a network that can provide interdisciplinary guidance for research organisations / groups to integrate qualitative gender, inclusivity and intersectionality dimensions into their projects.
- Learn from the CIHR to make more streamlined framework. Canadian model took 10 years to set up.

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- The gender experts' network will help to improve gender responsiveness of science, technology and innovation
- Help researchers in different fields of STI to take on gender sensitive research design

5. WHO IS RESPONSIBLE?

- VTT
- CIHR (consultative role)
- N.n Gender STI partner(s)
- National research council's/institutes

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- VTT
- CIHR
- N.n Gender STI partner(s)
- National research council's/institutes
- Gender studies experts
- National Funding agencies
- National STI-related) ministries
- National Universities

7. Description of the best ideas

- CIHR Gender Champions model:
  - Sex and Gender Champions - CIHR (cihr-irsc.gc.ca)

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Prioritise groups who to target (research teams, grant offices etc.)
- Identify network partners who could work together with VTT
- Learn from best practices (Canadian + others)
- Study the CIHR/Canadian model
- Identify other similar models (in Gender STI countries & beyond)
- Identify prototyping organisations

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Develop step-by-step guideline based on the Canadian experiences
- Learn best practices of other models (in Gender STI countries & beyond)
- Make a list of actors to target
- Identify champions who would take on the task / join network
- Convince other partners to pilot this module outside of Europe/North America

10. Impact in 6 Years

- Sex-gender Champions network is launched in five countries.
- The model is a mainstream practice in two countries

11. Other relevant information on the prototype (links, references, contacts)

- A 10-year longitudinal evaluation of science policy interventions to promote sex and gender in health research | Health Research Policy and Systems | Full Text (biomedcentral.com)
- (PDF) Gendered Innovations: integrating sex, gender, and intersectional analysis into science, health & medicine, engineering, and environment (researchgate.net)
- The Integration of Sex and Gender Considerations Into Biomedical Research: Lessons From International Funding Agencies - PubMed (nih.gov)
- A framework for sex, gender, and diversity analysis in research | Science

12. Suggestions for improving the effectiveness of the Co-design Lab

- None

Slides for the presentation of the prototype

In the third session of the Lab each challenge group presents briefly the purpose and roadmap of the prototype through some slides. While every report of the Prototype is detailed and can keep more extensive descriptions (see above) the presentation of the prototype will be described with only two slides by using keywords and images. The slides are structured as follows:

- First Slide
  - Description of the challenge. What is the problem?
  - Why is it important?
  - Space for images, graphs, figures
- Second slide

- WHAT TO DO? (objective)
- HOW TO DO IT? (actions)
- WHO WILL DO IT? ACTORS/BENEFICIARIES
  - The involved actors will be:
  - The beneficiaries are:
- WHEN? (6 weeks-6 months-6 years)
  - First 6 weeks:
  - Within the first 6 months
  - Within the first 6 years

The slides need to be ready **two days before the third lab** session.

Every Lab session has only one shared file where all presentations are added by the respective prototype teams. It is important to work on your slides collaboratively in the same file as we are working from virtual settings and other prototype teams can also be inspired by your prototype. So please work directly just in your Lab presentation file.

Below you can see the link to the presentations from each Lab. Work and improve only yours.

- LAB3 GENDER STI PROTOTYPE PRESENTATIONS
- LAB2 GENDER STI PROTOTYPE PRESENTATIONS

Script for the videoclip
After the third Lab session your team can create a video clip of one minute describing the prototype aims as a call to action. The core team organising the Gender STI Lab will provide more information on this task.
You then can use this collaborative space in the Challenge Diary to write and comment on the script and storyboard of the narrative of your videoclip.

FEEDBACK TO THE CHALLENGE PROTOTYPES FROM THE INTER CHALLENGE CONSULTATION

All prototypes from a specific challenge in the Lab perform an **Inter challenge consultation** where they receive feedback, impressions, suggestions by visiting challenge groups. We include below the overall feedback received by the prototypes in this specific challenge.

- **WHAT ARE YOU IMPRESSED BY?**
  - I like the difference they created from actors involved in different groups that perceive gender issues.
- **WHAT WOULD YOU MAKE STRONGER?**

- **WHAT WOULD YOU CHANGE?**
  - I did not understand why they take Canada as a reference so many times. Maybe research on some models from Latin America.

PROTOTYPE 2: DEI in R&I Leadership

Report with a detailed description of the prototype 3.2 and the abstract

Please describe the prototype by using the report template below. You may use and improve all the contents emerging from the digital brainstorming (s*ee Annex 2 for reference only*). The **report** describes more in detail what you will be explaining with keywords in your presentation of the prototype roadmap in the last session and can help you in the follow-up activities to test the prototype. The prototype report needs to be completed **by the third session of the Lab** and can be further polished in the prototyping phase.

Title of the Prototype: DEI in R&I Leadership

- **Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Names hidden to respect GDPR rules
- **Facilitator:** Names hidden to respect GDPR rules
- **Prototype Holder:** Names hidden to respect GDPR rules
- **Participants:** Names hidden to respect GDPR rules
- **Date** 1.12.2022

Note to the Rapporteur:
Please use as many visuals as possible in this report. These may include drawings, illustrations and PowerPoint presentations made by the group, and photographs of the wall-space where the group worked (including post-its and papers hung on the walls, or flip-over pages prepared by the group).

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Despite decades of gender equality interventions and steadily increasing number of female workers in the STI fields, R&I content is still largely not reflecting intersectional gender dimensions. One of the reasons for this is the lack of awareness and competences of research and innovation leaders to include intersectional gender dimension into research and innovation content. With research and innovation leaders we refer to research and innovation managers, team leaders, principal scientists and other key persons in charge of research scope, design and ethical assessment.

This prototype aims to enhance understanding what kind of capabilities of the RDI leaders would facilitate integrating intersectional gender dimension into R&I content. Such capabilities could be, for example, assessment of the research design, research expertise or other type of support for researcher teams, so that they would be better equipped in both understanding why and when gender dimension should be considered in research design, and how to do this. The prototype will explore these capabilities through identifying the barriers and drivers for enhancing capabilities, and then build recommendations for practical action towards it.

As a method we will use research-based methods to identify i) what capabilities RDI managers need, ii) how to enhance those, and iii) what barriers there are for enhancing these capabilities. In order to explore these issues, a series of workshops and expert interviews will be carried out. Findings could be published in the form of a research paper,

and disseminated as blog posts and awareness raising campaigns. Based on the findings, a checklist and other tools and guidance could be developed that help address the gender bias in RDI content.

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- The lack of the gender dimension in R&I content makes science to be not socially responsible or responsive. There is a need for systemic integration of the gender dimension in RDI content. This could be done through enhancing the capabilities of leadership in STI fields to understand their importance, and take on measures for gender sensitive R&I.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- The actions in this prototype include:
    - Take on a research task for understanding what kind of capabilities R&I managers / leaders need to be enable to integrate the gender dimension into R&I content
    - Based on the research, we aim to enhance understanding of the barriers and drivers for enhancing leaderships' capabilities
- **Short-term objective:** common understanding of the needed competencies (capabilities, knowledge, education) of leaders in STI, in order to include DEI dimensions in research and innovation content.
    - Research on needed capabilities and drivers and barriers for implementing them by using focus group workshops and interviews
- **Mid-term objective**: raise awareness of the benefits and relevance of integrating the gender dimension into R&I content in the ERA.
    - Results of research can be disseminated in the form of publishing an article on the research, disseminating findings on popular science basis
    - Developing tools (such as checklists, guidance etc.) that help enhancing leaders' capabilities
- **Long-term objective**: spill over of understanding and taking on gender sensitive R&D&I through international research collaboration

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- More gender sensitive research and innovation
- Researchers with capabilities for sex and gender analysis
- More R&I leadership understanding on the benefits and relevance of DEI in R&I content

5. WHO IS RESPONSIBLE?

- Gender STI community (led by VTT) to conduct research & focus groups. Gender STI community to disseminate results and findings.
- External gender experts to assess and help in research design and developing recommendations and tools
- R&I leaders / managers to be involved in focus group workshops / interviews.

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- Gender STI community
- External gender experts
- R&I leaders / managers
- Universities
- Industry

7. Description of the best ideas

- Gendered Innovation course for RDI managers - "Gendered Innovations": Gender Diversity in the Research Process - nexus (nexusinstitut.de)
- Gendered Innovation readings at Gendered Innovations | Stanford University

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Fix/gather main actors who take lead in this prototype (Inklusiiv&VTT + others?)
- Draft a detailed action plan and time table
- More detailed actor mapping
- Start planning collaborative activities (research and workshops) with stakeholders

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Literature review on inclusive leadership and STI
- Data collection
    - Workshop/interview structure
    - Focus groups / foresight workshops with leaders to exchange views
- Analysis
    - Identifying challenges and blind spots
- Promotional activities to spark first interest (memes, Twitter campaigns, blog)

10. Impact in 6 Years

- Development and dissemination of tools to improve DEI competences within STI leadership
- Understanding on the benefits and relevance of DEI in R&I content
- Researchers who integrate gender into their work have leadership backing

11. Other relevant information on the prototype (links, references, contacts)

- Gendered Innovations course for research and development managers: "Gendered Innovations": Gender Diversity in the Research Process - nexus (nexusinstitut.de)
- Gendered innovation concept and framework: Gendered Innovations | Stanford University
- Report on venture capital managers' perspective on diversity, equality and inclusion: Inklusiiv & VALIDEI - DEI in the Nordic VC industry 2022 Report;

12. Suggestions for improving the effectiveness of the Co-design Lab

- The process could be easier to understand if it was simpler with less platforms and tools to use. Now there was at least 4 different platforms to use for in total of 9h of work
- Clearer definition of the scope, goals and aims for prototype could help to direct the work -> what is the idea behind prototype

Slides for the presentation of the prototype
In the third session of the Lab each challenge group presents briefly the purpose and roadmap of the prototype through some slides. While every report of the Prototype is detailed and can keep more extensive descriptions (see above) the presentation of the prototype will be described with only two slides by using keywords and images. The slides are structured as follows:

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    - HOW TO DO IT? (actions)
    - WHO WILL DO IT? ACTORS/BENEFICIARIES
        - The involved actors will be:
        - The beneficiaries are:
    - WHEN? (6 weeks-6 months-6 years)
        - First 6 weeks:
        - Within the first 6 months
        - Within the first 6 years

The slides need to be ready **two days before the third lab** session.

Every Lab session has only one shared file where all presentations are added by the respective prototype teams. It is important to work on your slides collaboratively in the same file as we are working from virtual settings and other prototype teams can also be inspired by your prototype. So please work directly just in your Lab presentation file.

Below you can see the link to the presentations from each Lab. Work and improve only yours.

- LAB3 GENDER STI PROTOTYPE PRESENTATIONS
- LAB2 GENDER STI PROTOTYPE PRESENTATIONS

Script for the videoclip
After the third Lab session your team can create a video clip of one minute describing the prototype aims as a call to action. The core team organising the Gender STI Lab will provide more information on this task.
You then can use this collaborative space in the Challenge Diary to write and comment on the script and storyboard of the narrative of your videoclip.

FEEDBACK TO THE CHALLENGE PROTOTYPES FROM THE INTER CHALLENGE CONSULTATION

All prototypes from a specific challenge in the Lab perform an **Inter challenge consultation** where they receive feedback, impressions, suggestions by visiting challenge groups. We include below the overall feedback received by the prototypes in this specific challenge.

- **WHAT ARE YOU IMPRESSED BY?**

    - I liked that there is already a robust experience (Canada) to replicate, adapt and adopt for implementing in other countries.
- **WHAT WOULD YOU MAKE STRONGER?**
    - Please visit The Center for Recognition of Hyman Dignity, website: https://tec.mx/es/dignidad-humana, we have an inclusive language guide, equity principle document, and several other inclusive guidelines: https://tec.mx/es/dignidad-humana/diversidad-e-inclusion
    - In the when box for first 6 weeks, I'm conducting a study on the articles on gender issues produced by our faculty and students in the last 10 years. I found that the keywords used to find such papers in Scopus or WoS was critical to retrieve a fair count of what is produced.
- **WHAT WOULD YOU CHANGE?**
    - I think that a combination of top-down and bottom-up strategies are needed to increase the impact. That is, the community pushes changes and the leaders provide a roadmap.

PROTOTYPE 3 - Gender argument bank for R&I

Report with a detailed description of the prototype 3.3 and the abstract

Please describe the prototype by using the report template below. You may use and improve all the contents emerging from the digital brainstorming (see Annex 3 for reference only). The report describes more in detail what you will be explaining with keywords in your presentation of the prototype roadmap in the last session and can help you in the follow-up activities to test the prototype. The prototype report needs to be completed by the third session of the Lab and can be further polished in the prototyping phase.

Title of the Prototype: Gender argument bank for R&I

- **Challenge 3. CONTENT: Integration of the gender dimension in research and innovation content.**
- **Lab 2 Americas and Europe**
- **Challenge Holder(s):** Riina Bhatia
- **Facilitator:** Hank Kune
- **Prototype Holder**: Chloé Mour
- **Participants:** Chloé Mour, Özgür Kadir Özer, Yolanda Ursa, Camille Sailer
- **Date** 25.11.2022

Note to the Rapporteur:
Please use as many visuals as possible in this report. These may include drawings, illustrations and PowerPoint presentations made by the group, and photographs of the wall-space where the group worked (including post-its and papers hung on the walls, or flip-over pages prepared by the group).

1. ABSTRACT OF THE PROTOTYPE (BASED ON THE SUMMARY PRESENTATION OF THE PROTOTYPE

Note to the Rapporteur:

*Summarise the prototype in **half a page**. The abstract can be based on the main prototype report, see below and from other insights of its promoters. This is the essence of the prototype. It is very important to be clear and specify about the purpose of the prototype, its objectives, activities and anything else that helps a reader to understand it.*

While the rest of the report can be more detailed and structured according to the sections below, the abstract should include the title and briefly describe in a discursive manner, ***not in bullet points****: 1) 1) What we are going to do. 2) Why is it important? 3) What objectives do we meet? 4) Who: what other actors are involved? 5) What could be the next steps?*

This prototype is an "argument bank" which aims to enhance capabilities for inclusive knowledge production in STI institutions. This "argument bank" will help argue the necessity of integrating gender and sex-based analysis, as well as intersectional analysis (to look at other social and biological factors in addition to gender and sex, such as socioeconomics, age, religion, etc.) into scientific research at STI/STEM institutions. The incorporation of the gender dimension in research and innovation is crucial to ensure that knowledge produced is free of bias and has a positive societal impact for all genders.

Moreover, paying attention to gender is relevant to address the societal challenges defined by the European Commission, which are based on the UN Sustainable Development Goals (SDGs). While research in social sciences and humanities has widely integrated the gender dimension, it may seem less obvious for other disciplines (engineering, biology, agricultural science, finance, etc.). Nevertheless, literature shows that a lack of gender analysis leads to less rigorous, less reproducible and less creative research outputs, and may even reproduce harmful and discriminatory norms and practices in STEM basic and applied research[15].

For example, recent studies demonstrate that facial recognition systems (FRSs), widely employed in recruitment, authorizing payments, security, surveillance, discriminate based on characteristics such as race and gender, and their intersections[16]. Other similar examples demonstrating the necessity of gender analysis are found in multiple topics addressing current global challenges (health & medicine, agriculture, food, transport, climate change)[17].

However, while R&I institutions have started to address gendered inequalities in careers and work-life balance issues over the last decades, few have implemented policies seeking to foster the integration of gender and sex analysis in research content. The latter is different from gender balance in research groups, and has not been sufficiently addressed, even less so in scientific multilateral and bilateral agreements. Therefore, this argument bank is an important tool to foster the integration of the gender dimension in international scientific cooperation.

The argument bank will provide concrete evidence and a set of good examples to show how STI institutions can invest in more gender-sensitive and gender-specific (object of study is gender) research. Research funding organisations (RFOs), research performing organisations (RPOs), governmental institutions, and ministries of science/research are main stakeholders and beneficiaries of this prototype. In the first step, the evidence (state-of-the-art of case studies, best practices) that explain WHY investing in gender-sensitive and gender-specific research is important and HOW to do it will be collected. In the medium term, a factsheet targeting key stakeholders will be produced. Creating mechanisms and resources for advancing the research on gender and from a gender and intersectional perspective in STI/STEM is among the long-term actions, along with the evaluation and monitoring activities regarding the implementation of this prototype.

[15] European Commission, Directorate-General for Research and Innovation, (2020). *Gendered innovations 2 : how inclusive analysis contributes to research and innovation : policy review*, Publications Office

[16] Buolamwini, J. ; Gebru, T. (2018). Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification. Proceedings of the 1st Conference on Fairness, Accountability and Transparency in Proceedings of Machine Learning Research :77-91).

[17] See for instance the case studies compiled by the Research Council of Norway

2. WHY IS THIS PROTOTYPE IMPORTANT? [WHAT IS THE PURPOSE AND HOW DOES IT ADDRESS THE CHALLENGE?]

- The overarching objective of this prototype is to foster research that benefits everyone equally, independently of gender. This can be achieved through international scientific cooperation activities which have the potential to advance gender-aware science. However, integrating gender analysis into research content, to better address societal challenges, has not yet become a priority in scientific multilateral and bilateral agreements, and in scientific policy dialogues. This is partly explained by the lack of capabilities and resistances from institutions. By elaborating an "argument bank" and disseminating it through a factsheet with key resources (concrete examples and set of best practices) and common questions and objections on the topic, this prototype seeks to counter those problems. It is important to show R&I institutions how they can efficiently tackle gender bias in research in a concrete and practical manner.

3. DESCRIPTION OF PROPOSED ACTIONS [ACTION ORIENTATION IS EXTREMELY IMPORTANT]

- Establish a list of common objections/resistances faced when seeking to incorporate gender-based analysis into research as a requirement in scientific international cooperation. Few examples below:
    - *Nobody does that (include gender sensitive or sex-based research)*
    - *What is the link with international dialogue/cooperation?*
    - *I don't know how to do it / how to phrase it in the frame of an agreement*
    - *It is relevant in some disciplines but NOT in our field*
    - *IGAR (Integrating Gender Analysis in Research) is too political, it is a leftist approach*
    - *This issue is not political or general enough, it is a scientific technical point*
    - *We don't have specialists of this issue in the negotiation team*
    - *This issue is implicitly already taken into account in the standard agreements*
    - *Gender is out of the point; it deals with sexual orientation and thus has nothing to do with scientific cooperation*
    - *The issue is already taken into account, as the negotiating delegations are gender balanced*
    - *This issue is not relevant for some countries involved*
    - *What is the point, what would the concrete impact be?*
    - *It is beyond boundaries: we cannot tell to the researchers how to do their work or what to research about*
- In order to provide answers to the above-mentioned common questions, we will then be collecting evidence (state-of-the-art of case studies, best practices - such as Gendered Innovations case studies, Kilden, CIHR, GENDER-NET Plus, EIGE[18]). This concrete evidence will demonstrate WHY investing in gender-sensitive and gender-specific research is important and HOW to do it.
- Produce an argument bank factsheet which will vary in content according to the stakeholder targeted (e.g., RFOs, RPOs, policy makers)
- Establish a list of key institutions/actors to involve in the implementation of the argument bank.
- Contact key actors to get insights about the argument bank factsheet, get their opinions on the relevancy of the content, as a means to refine the tool. Feedback will be collected through virtual meetings with groups of stakeholders or through an online survey to leading stakeholders. Those exchanges with stakeholders will be the opportunity to ask them about the critical steps for implementation of the argument bank.

[18] https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/how-react-resistance-statements-and-reactions

- Monitoring the process of the implementation of the prototype and evaluating the results and impact of the gender argument bank in R&I (e.g. proportion of studies incorporating gender analysis, example of scientific international agreements addressing the Integration of Gender Analysis into Research (IGAR) - in R&I institutions).

4. WHAT WILL THIS ACHIEVE? WHAT IS THE SOCIETAL IMPACT?

- Better consideration and incorporation of the gender and sex-based, and intersectional analysis into research content across all disciplines, in scientific international cooperation activities.
- More research with a positive impact on all genders, taking into account various life experiences and situations. Research outputs are relevant for more individuals, new knowledge and innovations are produced. Overall, research excellence is enhanced.

5. WHO IS RESPONSIBLE? (Of elaborating the prototype)

- Members of Gender STI consortium will coordinate the collection of evidence and elaboration of the argument bank factsheet (CNRS, Inmark) supported by external participants of the Labs.

6. WHO WILL BE INVOLVED? (IN SOCIETY? IN THE CHALLENGE TEAM?)

- The first steps of the process include listing stakeholders to involve. To identify the beneficiaries more precisely; below is a general categorization of actors deemed relevant to work with and to benefit from the argument bank:
- Research funding organisations (e.g., potential participants from GENDER-NET Plus consortium members composed of funding agencies)
- Research performing organisations (universities, research institutions - e.g. members of Gender STI consortium)
- Governmental institutions
- Ministries of Science/Research
- NGOs

7. Description of the best ideas

- Identify common questions and objections to structure the argument bank on the topic of integration gender analysis in research content, in scientific international cooperation
    - Using Gender STI interview report to feed arguments
    - Collaborative approach to involve relevant stakeholders
- Spread the argument bank through factsheets with concrete evidence on WHY invest and/or foster gender-aware science, and HOW to do it - tailored to the specificities of targeted stakeholders

8. First steps: what must happen in the next 6 weeks? *Who should do what?*

- Define precisely the form of the argument bank - the factsheet
- Find and select a list of common questions/objections that could be relevant to add in the argument bank
- Collect evidence from the state-of-the-art (case studies, best practices)
- List the key actors & institutions we wish to involve in the project to test the argument bank, get feedback and implement the tool
- Identify the specificities of each category of stakeholders targeted to adapt the argument bank.

9. Prototyping: What must happen in the next 6 months? *Who should do what?*

- Design the argument bank factsheet for stakeholders
- Involve key actors identified and organise group meetings to get feedback on the argument bank and determine critical steps for implementation
- Disseminate the argument bank and give visibility to the tool with a communication campaign to stakeholder institutions.
- Give access to the argument bank from the Gender STI website and resources of the European Observatory of Gender in STI

10. Impact in 6 Years

- Assess the implementation of the argument bank and how arguments have been used, with what impact
- Argument bank factsheets have been widely promoted and circulated by R&I institutions, as a helpful tool to increase capabilities for doing better gender-aware science
- Expected impact is to have increased agreements for scientific international cooperation that make the integration of the gender dimension in research and innovation content a priority, as well as more institutions fostering gender-specific research, namely studies addressing explicitly gender-related topics.

11. Other relevant information on the prototype (links, references, contacts)

- GENDER STI Overview of gender inequalities in STI agreements between EU and third countries https://www.gender-sti.org/publications/
- GENDERACTION Gender dimension in STI international cooperation: https://h2020.genderaction.eu/policy-advice/gender-dimension-in-sti-international-cooperation/
- EIGE list of resistances when doing gender mainstreaming: https://eige.europa.eu/gender-mainstreaming/toolkits/gender-institutional-transformation/how-react-resistance-statements-and-reactions
- IGAR Tool - Recommendations for Integrating Gender Analysis into Research : http://igar-tool.gender-net.eu/en
- GENDER-NET Plus https://gender-net-plus.eu/

12. Suggestions for improving the effectiveness of the Co-design Lab

- None for the moment

Slides for the presentation of the prototype

In the third session of the Lab each challenge group presents briefly the purpose and roadmap of the prototype through some slides. While every report of the Prototype is detailed and can keep more extensive descriptions (see above) the presentation of the prototype will be described with only two slides by using keywords and images. The slides are structured as follows:

- First Slide
  - Description of the challenge. What is the problem?
  - Why is it important?
  - Space for images, graphs, figures
- Second slide
  - WHAT TO DO? (objective)
  - HOW TO DO IT? (actions)
  - WHO WILL DO IT? ACTORS/BENEFICIARIES

        - The involved actors will be:
        - The beneficiaries are:
    - WHEN? (6 weeks-6 months-6 years)
        - First 6 weeks:
        - Within the first 6 months
        - Within the first 6 years

The slides need to be ready **two days before the third lab** session.

Every Lab session has only one shared file where all presentations are added by the respective prototype teams. It is important to work on your slides collaboratively in the same file as we are working from virtual settings and other prototype teams can also be inspired by your prototype. So please work directly just in your Lab presentation file.

Below you can see the link to the presentations from each Lab. Work and improve only yours.

- LAB3 GENDER STI PROTOTYPE PRESENTATIONS
- LAB2 GENDER STI PROTOTYPE PRESENTATIONS

Script for the videoclip
After the third Lab session your team can create a video clip of one minute describing the prototype aims as a call to action. The core team organising the Gender STI Lab will provide more information on this task.
You then can use this collaborative space in the Challenge Diary to write and comment on the script and storyboard of the narrative of your videoclip.

FEEDBACK TO THE CHALLENGE PROTOTYPES FROM THE INTER CHALLENGE CONSULTATION

All prototypes from a specific challenge in the Lab perform an **Inter challenge consultation** where they receive feedback, impressions, suggestions by visiting challenge groups. We include below the overall feedback received by the prototypes in this specific challenge.

- **WHAT ARE YOU IMPRESSED BY?**
    - I find it interesting that they use specific examples to determine the importance of the problem to be addressed.
    - I'm impressed that the need of addressing DEI emerged from the discussion in this challenge.
    - The idea of investing time in raising awareness of the problem sounds like a very good first step.
- **WHAT WOULD YOU MAKE STRONGER?**
    - Consider conducting a systematic literature review of the research conducted considering the gender perspective in different regions of the world (Latin America, North America, Asia, Africa, Western Europe….).
    - Find a way to create an argument bank that is democratic and representative without leaving key actors out.
    - Learn from experiences in inclusion in other institutions considering cultural aspects. In my institution there have been several resources that could be shared for Latin American institutions.
    - A real schedule of actions to be taken in 6 weeks and months and years.

- **WHAT WOULD YOU CHANGE?**
    - I suggest including women belonging to feminist groups that carry out struggles and claims with related issues.
    - I think that women NGO must also be actors.
    - I think that the WHEN seems a little bit compact in time. There will be many things to do considering all the challenges.
    - I propose to establish more dialogue with challenge 2 to relate decision making with the idea of leadership.

ANNEXES OF THE PROTOTYPING DIARY (FOR CONSULTATION ONLY)

ANNEX 1: Prototype 1 - Transcript from the brainstorming session on the prototype

Instant report from digital brainstorming on the prototype 3.1
This is the transcript of the ideas and suggestions that were added to the digital brainstorming on the prototype. It may be helpful to cut, paste, and gather information for the other more detailed parts of the prototype description in the sections below the instant report

- **PARTICIPANTS**
    - Names hidden to respect GDPR rules

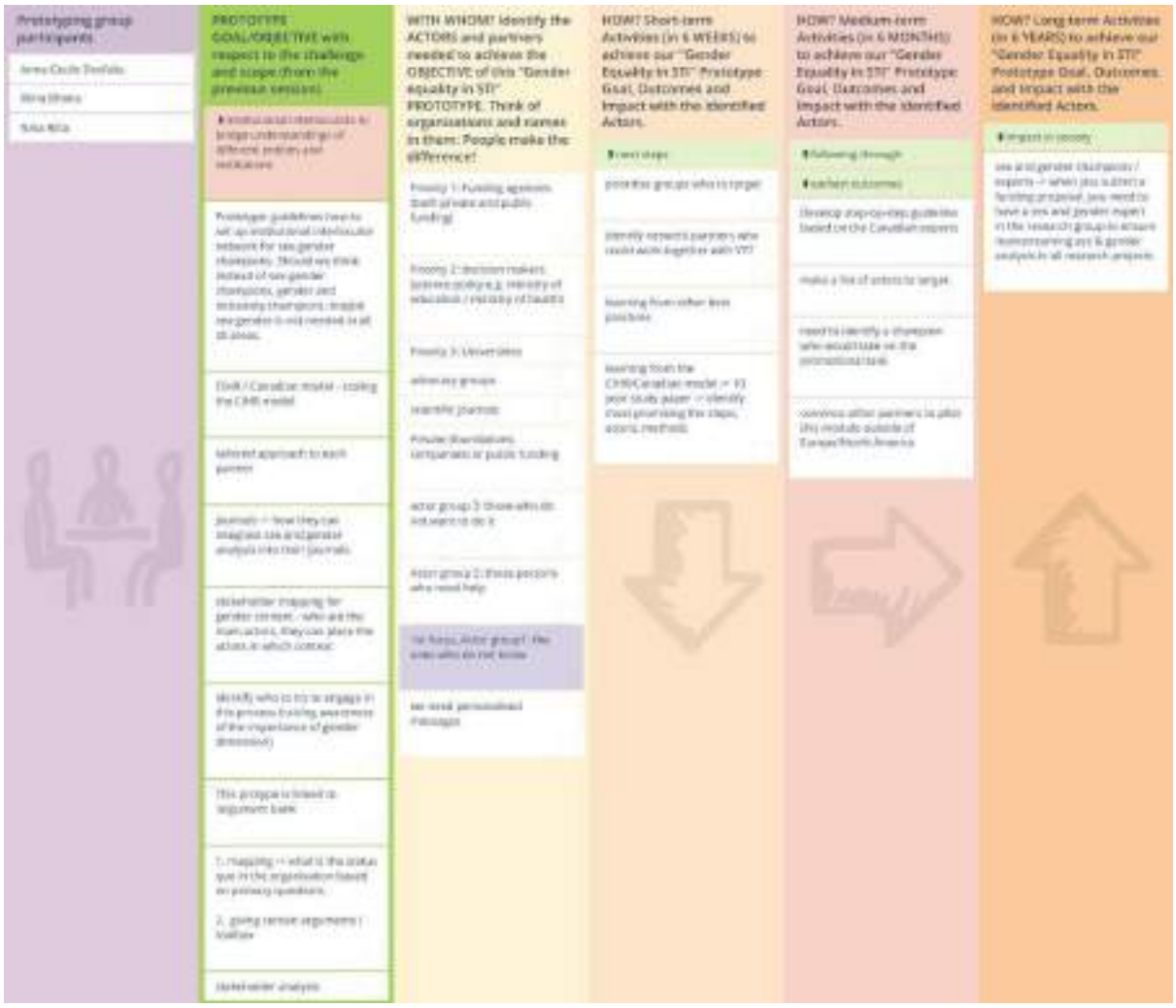
- **PROTOTYPE GOAL/OBJECTIVE with respect to the challenge and scope**
    - *Title: Institutional interlocutors to bridge understandings of different entities and institutions.*
    - CIHR / Canadian model - scaling the CIHR model.
    - Identify who to try to engage in this process (raising awareness of the importance of gender dimension).
    - Journals -> how they can integrate sex and gender analysis into their journals.
    - Prototype: guidelines how to set up institutional interlocutor network for sex-gender champions. Should we think instead of sex-gender champions, gender and inclusivity champions. maybe sex-gender is not needed in all sti areas.
    - Stakeholder analysis.
    - Stakeholder mapping for gender content - who are the main actors, they can place the actors in which context.
    - Tailored approach to each partner.
    - This prototype is linked to 'argument bank'.
    - Possible steps
        - 1. mapping -> what is the status quo in the organisation based on primary questions
        - 2. giving certain arguments / toolbox".

- **WITH WHOM? Identify the ACTORS and partners needed to achieve the OBJECTIVE of this "Gender equality in STI" PROTOTYPE.** Think of organisations and names in them: People make the difference!
    - 1st focus Actor group1: the ones who do not know.
    - Actor group 2: those persons who need help.
    - Actor group 3: those who do not want to do it.
    - Advocacy groups.
    - Priority 1: Funding agencies (both private and public funding).
    - Priority 2: decision makers (science policy e.g. ministry of education / ministry of health).
    - Priority 3: Universities.
    - Private (foundations, companies) or public funding.
    - Scientific journals.
    - We need personalised messages.

- **HOW? Short-term Activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of short-term activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **NEXT STEPS.**
    - Identify network partners who could work together with VTT.
    - Learning from other best practices.
    - Learning from the CIHR/Canadian model -> 10-year study paper -> identify most promising steps, actors, methods.
    - Prioritise groups who to target.

- **HOW? Medium-term Activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of medium-term activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **EARLIEST OUTCOMES AND FOLLOW-THROUGH.**
    - Convince other partners to pilot this module outside of Europe/North America.
    - Develop step-by-step guidelines based on the Canadian experts.
    - Make a list of actors to target.
    - Need to identify a champion who would take on the promotional task.

- **HOW? Long Term Activities (in 6 YEARS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of long-term activities (4-6 years) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED.**
    - Sex and gender champions / experts -> when you submit a funding proposal, you need to have a sex and gender expert in the research group to ensure mainstreaming sex & gender analysis in all research projects.


Prototyping group participants
PROTOTYPE GOAL/OBJECTIVE with respect to the challenge and scope (from the previous session)
WITH WHOM? Identify the ACTORS and partners needed to achieve the OBJECTIVE of this "Gender equality in STI" PROTOTYPE. Think of organizations and names in them: People make the difference!
HOW? Short-term Activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.
HOW? Medium-term Activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.
HOW? Long-term Activities (in 6 YEARS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.

ANNEX 2: Prototype 2 - Transcript from the brainstorming session on the prototype

Instant report from digital brainstorming on the prototype 3.2
This is the transcript of the ideas and suggestions that were added to the digital brainstorming on the prototype. It may be helpful to cut, paste, and gather information for the other more detailed parts of the prototype description in the sections below the instant report

- **PARTICIPANTS**
  - Names hidden to respect GDPR rules

- **PROTOTYPE GOAL/OBJECTIVE with respect to the challenge and scope**
  - Awareness raising (benefits, relevance) and capabilities (capacity, knowledge, education).
  - Capabilities for leaders and management for inclusion.
  - Guidance and consultancy for institutions interested in enhancing gender capabilities.
  - Identifying challenges for leaders when it comes to DEI.
  - More leaders who know what the competences are, and have more skills to enable inclusive research teams and content.
  - What are the competences of future leaders of knowledge producing organisations?

- **WITH WHOM? Identify the ACTORS and partners needed to achieve the OBJECTIVE of this "Gender equality in STI" PROTOTYPE.** Think of organisations and names in them: People make the difference!
  - All levels of managements
  - Convening body of scientific excellence, leadership excellence.
  - European Union.
  - People who lead R&I organisations but do not have education in gender related disciplines.
  - Research team leads.
  - Slush, centres of innovation.
  - The quadruple helix.
  - universities, industry, government, public environment.

- **HOW? Short-term Activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of short-term activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **NEXT STEPS.**
  - Analysis of needs.
  - Analysis of organisations' interests.
  - Identifying challenges to inclusive leadership in R&I.
  - Involve the leaders themselves.
  - More detailed actor mapping.

- **HOW? Medium-term Activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of medium-term activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **EARLIEST OUTCOMES AND FOLLOW-THROUGH.**
    - Awareness-raising: Sparking interest, "first step forward".
    - Focus groups / foresight workshops with leaders to exchange views.
    - Interdisciplinary speed dating.
    - Involvement of industry perspective on inclusive innovations.
    - Production of raising awareness material (pictures, videos etc).
    - "Stories from the future"; what does gender-sensitive and inclusive leadership of R&I look like? List of competences and examples based on labs.

- **HOW? Long Term Activities (in 6 YEARS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of long-term activities (4-6 years) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED.**
    - A challenge competition.
    - Attitudes and understanding that good leadership in R&I requires an understanding of gender; applied in hiring and promotion criteria.
    - Inclusion guidelines for leaders.
    - Inclusive research content.
    - Interdisciplinary DEI advisory groups within organisations.
    - Interdisciplinary education.
    - More interdisciplinary experts (incl. ONG gender) hired for R&I.
    - Regular high-level symposium of R&I leaders to discuss gender & inclusion.
    - Researchers who see value in integrating gender into their work have more leadership backing.
    - Understanding of how a leader can enable inclusive knowledge production in practice.


Prototyping group participants
PROTOTYPE GOAL/OBJECTIVE with respect to the challenge and scope (from the previous session)
WITH WHOM? Identify the ACTORS and partners necessary to achieve this PROTOTYPE
HOW? Short-term actions (6 weeks)
HOW? Medium-term actions (6 months)
HOW? Long-term actions, outcomes and impact (4-6 years)

ANNEX 3: Prototype 3 - Transcript from the brainstorming session on the prototype

Instant report from digital brainstorming on prototype 3.3
This is the transcript of the ideas and suggestions that were added to the digital brainstorming on the prototype. It may be helpful to cut, paste, and gather information for the other more detailed parts of the prototype description in the sections below the instant report

- **PARTICIPANTS**
  - Names hidden to respect GDPR rules

- **PROTOTYPE GOAL/OBJECTIVE with respect to the challenge and scope**
  - An "argument bank", to help argue the necessity of gender and diversity to STI/STEM institutions.
  - Create an argument bank to enhance capabilities for inclusive knowledge production.

- **WITH WHOM? Identify the ACTORS and partners needed to achieve the OBJECTIVE of this "Gender equality in STI" PROTOTYPE.** Think of organisations and names in them: People make the difference!
  - Research funding organisations / Research producing organisations / Governmental institutions _ Ministries of Science/Research.
  - Some corporations have a stronger focus on gender content. They could be good testimonials.

- **HOW? Short-term Activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of short-term activities (in 6 WEEKS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **NEXT STEPS.**
  - Collect evidence (case studies, best practices): answering WHY and HOW questions: why investing in gender-sensitive and gender-specific research? How to do it?
  - Next steps needed.
  - Set up a group of motivated people that REALLY want to bring this idea forward (small is beautiful).
  - Create a @handle or #hashtag to facilitate replicability.
  - Start from a small group of testimonials. May be one person from partner countries of the Consortium.

- **HOW? Medium-term Activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of medium-term activities (in 6 MONTHS) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **EARLIEST OUTCOMES AND FOLLOW-THROUGH.**
  - Involve key actors identified and ask them questions about the argument banks - opinions from the stakeholders - refine the tool.
    - Question to stakeholders: what are the critical steps for implementation?

- Follow-through steps; earliest outcomes.
- Produce argument bank factsheets.
- Concretize/define the argument banks targeting each category of stakeholders.
- Create a "How to" methodology to write positive news from the future and to self-report these into 1 minute video clips.

- **HOW? Long Term Activities (in 6 YEARS) to achieve our "Gender Equality in STI" Prototype Goal, Outcomes and Impact with the identified Actors.** What is the sequence of long-term activities (4-6 years) to achieve our "Gender Equality in STI" Prototype goal/objectives, outcomes and impact with the identified actors? **IMPACT IN SOCIETY IF THE PROTOTYPE HAS BEEN IMPLEMENTED.**
  - Impact in society if the prototype has been implemented.
  - Check if the prototype has been implemented and what have been the results & impact of implementing the prototype (e.g., proportion of studies incorporating gender analysis).
  - Support new research on gender in STI/STEM.

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Citations:

Report title: "Report on Gender STI Co-Design Labs 2"

Report author: GENDER STI Project

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