

Gender STI

Mapping on gender equality in STI bilateral and multilateral agreements

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LIST OF ABBREVIATIONS

| | |
|------|---|
| AC | Associated Countries |
| COST | European Cooperation in Science and Technology |
| EC | European Commission |
| ERA | European Research Area |
| EU | European Union |
| GEP | Gender Equality Plan |
| JRC | Joint Research Centre |
| LAC | Latin America and the Caribbean |
| MoU | Memorandum of Understanding |
| MS | Member States |
| NGO | Non-Governmental Organisation |
| RFO | Research Funding Organisation |
| RTO | Research and Technology Organisation |
| R&I | Research and Innovation |
| STEM | Science, Technology, Engineering, and Mathematics |
| STI | Science, Technology and Innovation |

EXECUTIVE SUMMARY

The final version of Mapping on gender equality in Science, Technology and Innovation (STI) bilateral and multilateral agreements adds a new dimension to the interim version of mapping study which explored how gender equality was addressed in STI related bilateral and multilateral agreements, Memorandum of Understandings (MoUs) and STI implementation activities. The mapping study of 528 STI agreements from 50 countries revealed that only 15 percent of the identified agreements included gender-related content.

For the final version of mapping study, a new source of global STI policy documents was explored to see how gender mainstreaming has materialised in national STI policy making in Europe and outside. This data complements the study of STI agreements as policy documents are important in shaping the regulation and implementation of gender equality, inclusion and diversity dimensions within research and innovation policies.

What kind of gender content is found in the STI policies?

Inclusion of the gender equality in research and innovation policies was analysed from STI policy documents retrieved from STIP Compass database. The result is staggering as only 4 percent of STI policies had content related to gender mainstreaming priorities.

Promising result is however that gender content in STI policies show upward trend since the early 2010s. Initiatives to promote gender equality in the scientific careers (priority 1) and gender balance in the decision-making bodies (priority 2) have increased in parallel, while integration of the gender dimension in R&I contents (priority 3) has gained remarkably less attention.

As good practices to international and national STI policy dialogues we recommend to (1) add stronger focus to context specific gender and inclusiveness; (2) improve STI policy incentives and agreements related to integration of gender in research, development and innovation activities, and (3) adjust gender language in STI to better integrate different STI stakeholder groups.

The mapping study addressed STI policy dialogue with two different data sets, and results indicate gender inequalities in STI seem to persist, although progress has also been seen with a rising trend of gender in STI policy documents.

GENDER EQUALITY AND STI AGREEMENTS

This study focused on Science, Technology and Innovation (STI) related bilateral and multilateral agreements and Memorandum of Understandings (MoUs) because these two, along with STI implementation-related documents, serve as indicators of formal international STI dialogue, which is focus of the Gender STI project.

According to industrial sectors (OECD, <https://stats.oecd.org>), areas of STI include, e.g. biotechnology, nanotechnology, ICT, pharmaceuticals, medical technology, technologies related to artificial intelligence, climate change mitigation technologies (waste management, transportation, energy, building), water related technologies, environmental management. In addition to industry sectors, STI can be defined based on academic disciplines, namely STEM (Science, Technology, Engineering, and Mathematics). Science in turn is commonly understood as natural sciences, incl. biology, physics, and chemistry. Today, focus has moved from STEM disciplines to a concept of STEM literacy, which emphasises an ability to leverage on STEM knowledge and STEM also encompasses environment, economics, and medicine (Zollman, 2012).

Further, the study followed the definition of gender introduced in Deliverable 1.1 of Gender STI project. According to March et al. (1999), term gender describes the appearance, activities and responsibilities connected being male, female or diverse in a given society. The gender is the social construction of women and men. In this study, the gender refers to female and male. Given that the STI agreements do not necessarily refer to females and males, we as Gender STI project team also reviewed equality and diversity content of the agreements. The gender content will be further elaborated in work package 2 based on the findings of the mapping study.

Data collection in the main mapping study covered all 10 Gender STI partner countries (Argentina, Brazil, Canada, Chile, China, India, Mexico, South Africa, South Korea, the United States of America) and EU Member States (MS) and Associated Countries (AC) (Figure 1) whereas pilot study was implemented with less country coverage as it aimed at testing scope of data collection.

The focus of STI cooperation was from third countries towards Europe. This approach meant that the agreement mapping was performed in 10 consortium partner countries outside Europe, and EU MS and AC were covered as far they had formed STI agreements with these 10 partner third countries. Nevertheless, six European countries (Austria, Finland, France, Italy, Portugal, Spain) were investigated in detail because these countries belong to Gender STI consortium. So, European consortium partners explored STI agreements with third country partners too. Because of the explorative nature of the study and uncertainties related to identifying and accessing of the STI agreements, additional third countries beyond the consortium partner countries ended in the sample.

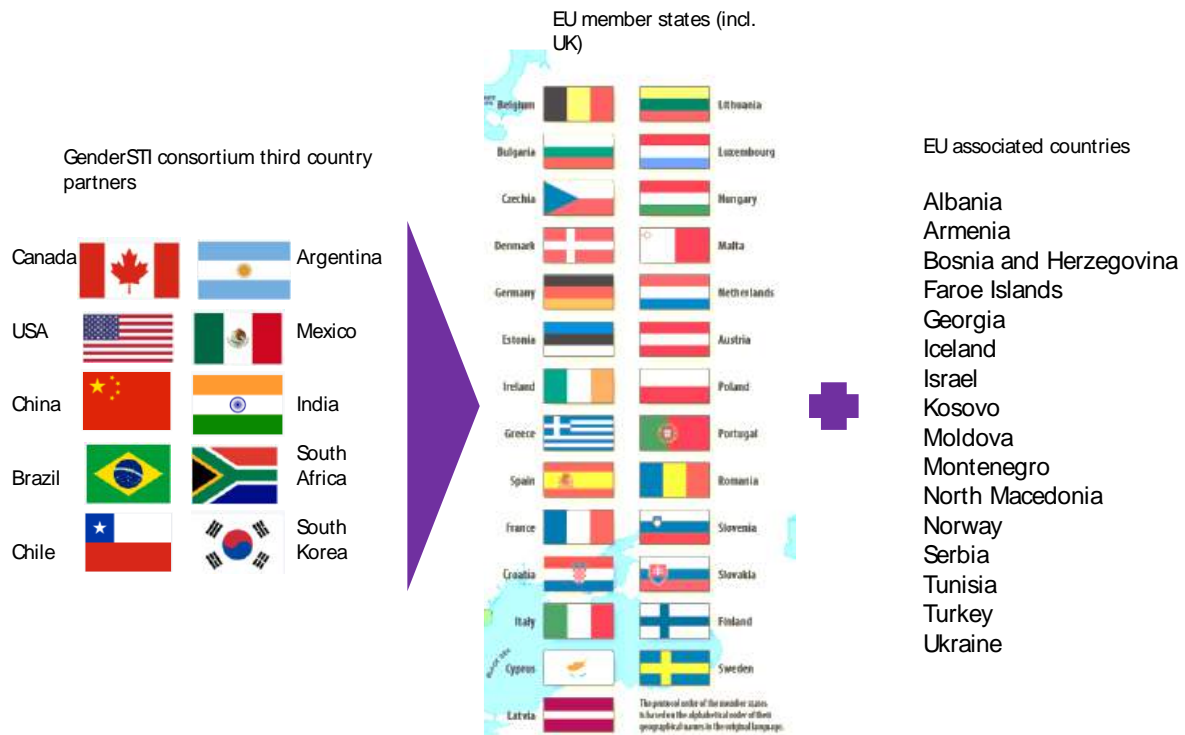


Figure 1. Scope of the study

This report covers two studies, a pilot study implemented in February- April 2021 and the main mapping study implemented in May – October 2021. One of the objectives of the pilot study was to find out what kind of research criteria and limitations are needed for the main mapping study to be successfully completed. A driving concern was an observation made in the project proposal phase that STI bi- and multilateral agreements are old, difficult to obtain and most of all seemed to have very little content related to gender aspects. Therefore, a small pilot study was implemented to learn more about preconditions the main mapping study may face.

The pilot study and consecutive main mapping study served also other Gender STI project activities by building understanding of the extent and quality of gender content in the formal STI dialogues. The findings helped to elaborate the survey implemented in work package 1 and also to define the scope of the interview questions in work package 2. This understanding was ensured because partners were equally involved in the identification and collection of the STI agreements, and country specific insights were shared between consortium partners during the demanding mapping study.

PILOT STUDY ON GENDER EQUALITY IN STI AGREEMENTS

1.1 Setting of the pilot study

The main objective of pilot study was to explore what kind of gender content science, technology, innovation (STI) agreements include, and how can we as Gender STI research team most efficiently access this data in different countries and organisations. Research criteria and limitations for the main mapping study were formulated based on the pilot study results.

The pilot study covered four European and five third countries, and five different actor groups (Table 1). The search included STI bilateral and multilateral agreements and Memorandum of Understandings (MoUs). In addition, STI implementation activities (incl. calls for proposals, rules for participation and evaluation criteria) were screened if applicable in particular actor group.

Albeit non-governmental organisations were not included in the project plan, they were explored to find out to what extent for example associations related to STI and gender form formal agreements. In addition to formal bi- and multilateral agreements, we included MoUs in the study because of their relevance in research and innovation (R&I) organisations, like in universities and research funding organisations (RFO). Second, MoUs are often considered as updated versions of the formal bilateral or multilateral agreement tacking into consideration more specific clauses. The bilateral or multilateral agreements are old, for example several of them in Latin American countries are from 1980s or 1990s. Some countries, like Finland, even rely more on MoUs in international STI cooperation than bi- or multilateral agreements paving way to sectoral cooperation.

Table 1. Pilot study setting

| Pilot team | Countries covered | Actor | Type of agreement |
|-----------------|------------------------|---|--|
| VTT & EIRC | Finland India | Ministries and other government level organizations | STI agreements MoUs |
| CNRS & CSIR | France South Africa | RTOs | STI agreements MoUs |
| REUNA & TU GRAZ | Chile Austria | Universities | STI agreements MoUs |
| RAGCyT & SPI | Argentina European | Non-Governmental Organisations (NGOs) | STI agreements (to be explored if available) MoUs (to be explored if available) |

| | | | |
|--------------|-----------------|--|------------------------|
| USP & INMARK | Brazil Spain | Science and innovation funding organizations | STI agreements MoUs |
|--------------|-----------------|--|------------------------|

The pilot study concentrated on learning of the following issues about the STI agreements:

- 1) the main contacts (organisations and persons) to access the agreements;
- 2) feasible investigation period;
- 3) types of the agreements available;
- 4) volume of the agreements; and
- 5) gender and equality content in the agreements.

It was evident that availability of the STI agreements is actor and country specific, therefore it was essential to test which contacts are helpful in accessing agreements. Some countries have public databases, which contain easily accessible information of STI agreements (like Brazil and India), whereas in some countries the access is a matter of finding a right contact person or correct website. Many countries have accessible information, but not often collected in one platform which makes the identification process laborious.

Second issue to explore was the feasible period of agreements to cover in the mapping study. Many bilateral and multilateral STI agreements are old, and amendments made rarely, while MoUs are more topical and recent, therefore we were likely to find more MoUs than agreements. No specific period was set in the pilot study not to restrict data collection. However, voluntary limitations were framed based on the introduction of gender equality in the European Research Area (ERA)¹ that could have been applied if seen necessary. For example, the participation of women in leading positions was emphasised in 2005, and gender equality and gender mainstreaming in research was set as one of the key priorities for ERA in 2012. The Gender Action Plan 2016-2020 in ERA was implemented in 2015. Naturally, any other significant occurrence in national regulation or conclusions advancing gender in STI could have been used as limitation in the search.

Third, the study was interested in strategic (organisational) level STI agreements and MoUs since project level MoUs can often be too specific, too many and include information not to be disclosed. Overall, MoUs were challenging to get as these were not available on website but had to be accessed via personal contacts, for instance. The pilot study was restricted to cover only one to two organisations in a country, i.e. STI agreements were inquired from one national research organisation not from all research organisations. These limits were set in order to keep the pilot study efficient.

Fourth, the pilot study did not set any restriction to quantity of STI agreements and MoUs to collect as the focus was to explore how much data we are able to gather. Information of the STI agreements without a gender content was as relevant at the pilot stage as was to find STI agreements with gender and equality content.

The data was systematically reported in an excel template which included information of parties (names and countries), STI area that the agreement covers, date of signature, and gender content (if applicable). In addition, the contact information of contract signees was collected if it was available. The STI agreements were stored in a project folder (in Teams) or links to the agreements were placed in the template.

¹ <https://data.consilium.europa.eu/doc/document/ST-14846-2015-INIT/en/pdf> (accessed 25.5.2021)

1.2 Findings of the pilot study

In the pilot study phase, in total 217 STI agreements (incl. MoUs and STI implementation activities) were identified and screened for gender and equality content (Table 2). Most of the agreements were bilateral agreements. Very little multilateral agreements were identified, which could be because many European Commission related agreements were classified as STI implementation activities. It is challenging to differentiate the agreements if type is not clearly stated in the agreement, and since an agreement can fall into two categories the data in main mapping study was harmonised to overcome this challenge.

In addition, agreements can be formed across different actor groups, for example a European university does not necessarily form an STI agreement with third country university but with funding institution. The actor groups were formed based on the perspective of the partner country, namely Finnish, Spanish and Indian pilot teams searched STI agreements from their respective ministries, whereas Brazilian and French teams searched STI agreements from Brazilian and French RTOs, and so on.

Agreements with gender content were minimal, only 9% of the total amount of agreements referred to gender aspects, and as Table 2 reveals the government level STI bi- and multilateral agreements were practically the only category that contained this information. See Section 1.3 for the gender content disclosed in the STI agreements.

Table 2. Summary of the pilot study findings

| | No of STI agreements or MoUs reviewed | % agreements having some gender content | Notes |
|--|---------------------------------------|---|--|
| Government level | Finland: 15 | 29% | Gender content was found in Indian and Spanish materials |
| | Spain: 14 | | |
| | India: 24 | | |
| RTOs | Brazil: 11 | 0% | |
| | France: 1 | | |
| Universities | Chile: 40 | 1% | Gender content was found in Austrian material |
| | Brazil: 33 | | |
| | Austria: 3 | | |
| Gender STI-related NGOs and associations | Argentina: 3 Europe: 37 | | No formal agreements in this group. Some gender content found. |
| | Finland: 2 | 5% | |

| | | | |
|--|-------------------------------|----|---|
| Science and innovation funding organizations | Brazil: 33 | | Gender content was found in Spanish and Brazilian materials |
| | Spain: 21 | | |
| Multinational organisations | Brazil: 21 South Africa: 1 | 5% | E.g. CERN, EUREKA, Joint Research Centre (JRC) |

1.2.1 The STI agreements in the government level

According to findings (Table 3), bilateral agreements and MoUs are the preferred forms in STI cooperation between third countries and European countries. In our pilot sample, the bilateral STI agreements are less frequent after 2015. This may be due to the fact that many bilateral agreements are renewed automatically.

Table 3. Number of different STI agreements in the government level

| GOVERNMENT LEVEL | BEFORE 2014 | AFTER 2015 |
|--|-------------|------------|
| BILATERAL AGREEMENTS | 16 | 8 |
| MULTILATERAL AGREEMENTS | 1 | 1 |
| MOUS | 13 | 10 |
| STI IMPLEMENTATION ACTIVITIES | | 3 |
| DISSEMINATION AND PROMOTION OF THE RESULTS | | |
| OTHER | 1 | |

The government level agreements contained the most gender content; material is mostly (83% of agreements having gender content) from the period after 2015. Given the small quantity of agreements, no particular European country emerge from the material. However, the gender topic seems relevant in Spanish-Argentinian and Indian-Swedish STI cooperation.

1.1.1.1 Summary of the EU delegates

All EU delegations in the scope of the study were contacted by email in March 2021. we received information from six delegations. Overall conclusion is that the EU Delegations do not systematically keep a record of, or follow, the administrations of specific agreements set up at the level of EU and local research institutes, universities or enterprises.

All multilateral agreements between European Union and a third country were identified from web pages, and a few additional agreements were provided by the Delegations. STI

agreements are hence a standard form without gender related information. Table 4 offers an overview of the material and information obtained of STI cooperation from the EU Delegations. Especially in Latin American countries, the STI agreements have been successfully renewed several times.

Table 4. STI cooperation and EU Delegations

| | |
|-------------------------|--|
| <p>Argentina</p> | <ul style="list-style-type: none"> International STI cooperation between EU and Argentina: https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/europe-world/international-cooperation/argentina_en <p>Coordination of STI cooperative activities in Argentina: Ministry of Science, Technology and Innovation.</p> <ul style="list-style-type: none"> Cooperation Agreement on S&T between EU and Argentina signed in 1999: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22000A0111(01)&from=EN |
| <p>Brazil</p> | <ul style="list-style-type: none"> International STI cooperation between EU and Brazil: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/brazil_en <p>Coordination of STI cooperative activities in Brazil: The Ministry of Foreign Affairs, Brazil</p> <ul style="list-style-type: none"> Cooperation Agreement on S&T between EU and BR in 1995: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22005A1111(01)&from=EN |
| <p>Chile</p> | <ul style="list-style-type: none"> EU Chile Science & Technology Cooperation Agreement signed in 2002: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1599466931318&uri=CELEX:22003A0807(01) <p>Coordination of cooperative activities: the National Research and Development Agency (ANID) (previously CONICYT)</p> <ul style="list-style-type: none"> International STI cooperation between EU and Chile: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/chile_en EU research centres of Fraunhofer (Germany) and INRIA (France) are present in Chile |
| <p>Mexico</p> | <ul style="list-style-type: none"> International STI cooperation between EU and Mexico: https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/europe-world/international-cooperation/mexico_en <p>Coordination of STI cooperative activities in Mexico: National Science and Technology Council (CONACYT)</p> |

| | |
|---------------------|---|
| | <ul style="list-style-type: none"> • EU-Mexico S&T cooperation agreement signed in 2005: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22005A1104(01)&from=EN |
| China | <ul style="list-style-type: none"> • EU China Science & Technology Cooperation Agreement signed in 2000: https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1599481146542&uri=CELEX:22000A0111(02) Coordination of cooperative activities: the Ministry of Science and Technology • International STI cooperation between EU and China: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/china_en |
| South Korea | <ul style="list-style-type: none"> • EU South Korea Science & Technology Cooperation Agreement signed in 2007: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:22007A0424(01)&from=EN • International STI cooperation between EU and Korea: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/korea_en |
| India | <ul style="list-style-type: none"> • EU-India S&T cooperation agreement signed in 2002: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22002A0809(01)&from=EN The S&T Agreement was renewed in May 2020 until 2025. This is a so-called umbrella agreement of which most important element is the Steering Committee, which is supposed to steer cooperation in STI. Coordination of STI cooperative activities in India: the Ministry of Science and Technology (Department of Science and Technology) • A brochure on EU-India cooperation: https://eeas.europa.eu/delegations/india/84464/eu-india-partnership-research-innovation_en • International STI cooperation between EU and India: https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/europe-world/international-cooperation/india_en |
| South Africa | <ul style="list-style-type: none"> • EU- South Africa Science and Technology Cooperation Agreement signed in 1996 (reviewed in 2014): https://eur-lex.europa.eu/resource.html?uri=cellar:3b132f49-756e-4018-9abb-8f0e4b4fdede.0008.02/DOC_1&format=PDF • The JRC and the South African Department of Science and Technology (DST) committed in 2015 to sign an overarching agreement. This agreement was signed in December 2018 and provides an umbrella for existing dynamic cooperation with various SA institutions. • An associated member of the EUREKA Network since June 2014; a partner of EUROSTARS since 2016; and part of European |

| | |
|---------------|---|
| | <p>Cooperation in Science and Technology (COST) organisation since 2019.</p> <ul style="list-style-type: none"> • 19 bilateral agreements and 1 MoU were identified ranging from 1996 until 2017. Majority of agreements are renewable. Content of these agreements was not disclosed. • International STI cooperation between EU and South Africa: https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/europe-world/international-cooperation/south-africa_en |
| Canada | <ul style="list-style-type: none"> • EU Canada Science & Technology Cooperation Agreement signed in 1996: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:21996A0322(01)&from=EN <p>Coordination of STI cooperative activities in Canada: Government of Canada</p> <ul style="list-style-type: none"> • International STI cooperation between EU and Canada: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/canada_en |
| US | <ul style="list-style-type: none"> • EU Chile Science & Technology Cooperation Agreement signed in 2002: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:1998:162:FULL&from=en • International cooperation on STI between EU and USA: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/united-states_en |

Some of the STI cooperation agreements specify areas of cooperation that show a wide variety of areas included in STI, not all strictly STEM areas. According to STI cooperation agreements, the following fields are included in research and technological development (RTD) activities in the corresponding scientific and technological fields:

- aeronautics
- agriculture
- biotechnology
- bioinformatics
- biomedicine and health (including research on AIDS, infectious diseases and drug abuse)
- biosafety
- clean technologies
- earth observation
- economic and social development
- electronics
- engineering research
- environment (including climate research)
- fisheries science
- forestry
- health and medicine
- human sciences
- industrial and manufacturing technologies

- information and communication technologies
- information society technologies
- micro- and nanotechnologies
- materials research
- management and sustainable use of environmental resources
- marine sciences and technology
- metrology
- mineral processing
- non-nuclear energy
- natural resources
- space
- standardisation and conformity assessment
- science and technology policy
- social sciences research
- telematics
- transportation
- training and mobility of scientists

1.2.2 The STI agreements in the research and technology organisations

The mapping of STI cooperation agreements in RTOs seems demanding, as they operate via MoUs which are not publicly available. Exception in the pilot study was Brazil in where also RTO related agreements are available in a public database of São Paulo Research Foundation (FAPESP) (Figure 2).

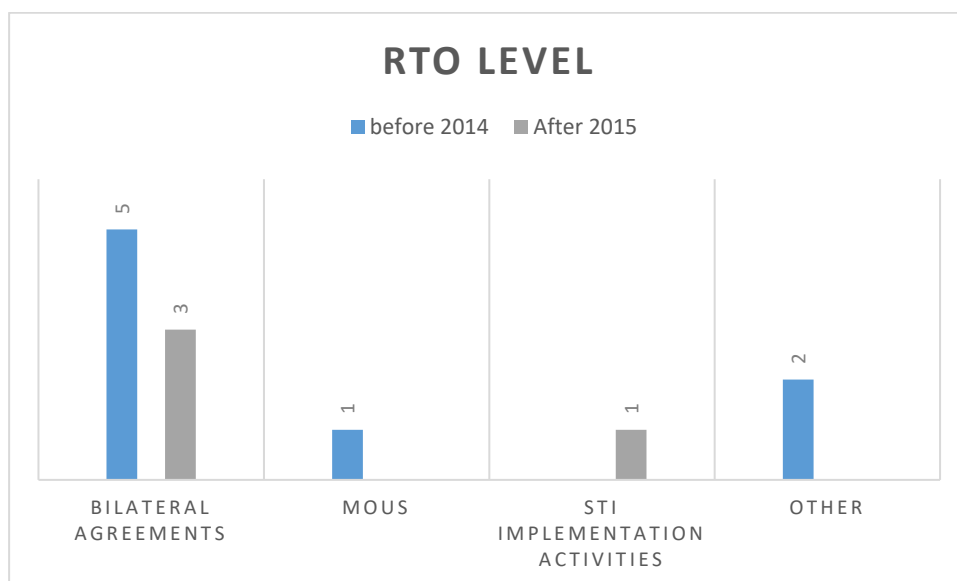


Figure 2. Number of different STI agreements in RTOs

The pilot study further revealed that although gender equality is almost absent in the agreements, sometimes it is embedded in a general non-discrimination clause. A major challenge in RTOs is that, like in universities, the STI agreements are not often public.

1.2.3 The STI agreements in the universities

In the university category (Figure 3), most of the agreements were found in Latin America, namely Chile and Brazil. Regardless of good number of agreements, the agreements did not include any gender content. Only one agreement of higher education student and staff mobility from Austria contained, indirectly, aspects related to gender equality.

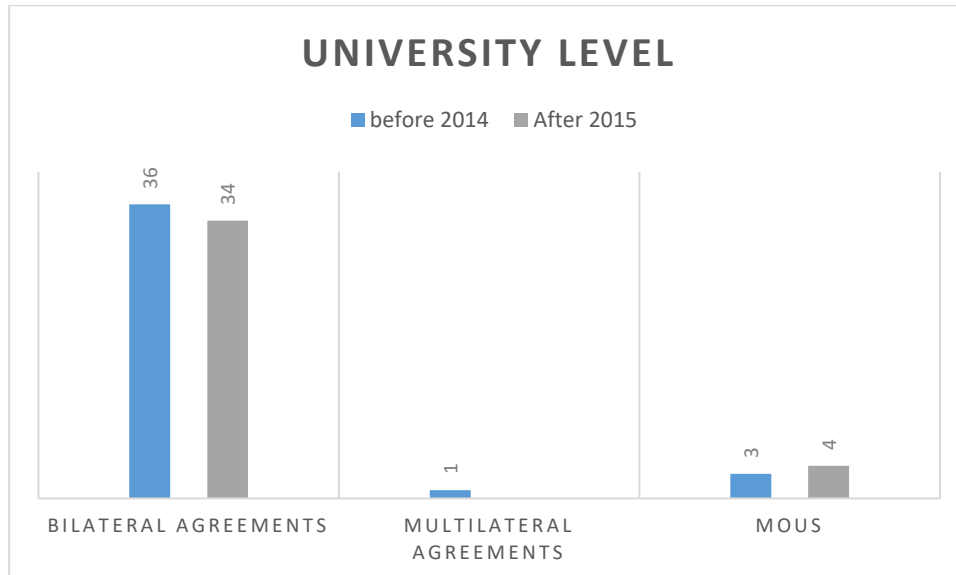


Figure 3. Number of STI agreements in universities

Identification of STI cooperation agreements in universities replicates experience of RTOs, especially in Europe. It turned out difficult to find an appropriate contact person, even though the university has an office of Gender Equality and Equal Opportunity, or International Office agreements, but the agreements are not systematically collected or even more frequently, these are not public.

1.2.4 The STI agreements in the funding agencies

The STI agreements found in the research funding organisations (RFOs) were mostly signed before 2014 (Figure 4) but had some reference to gender.

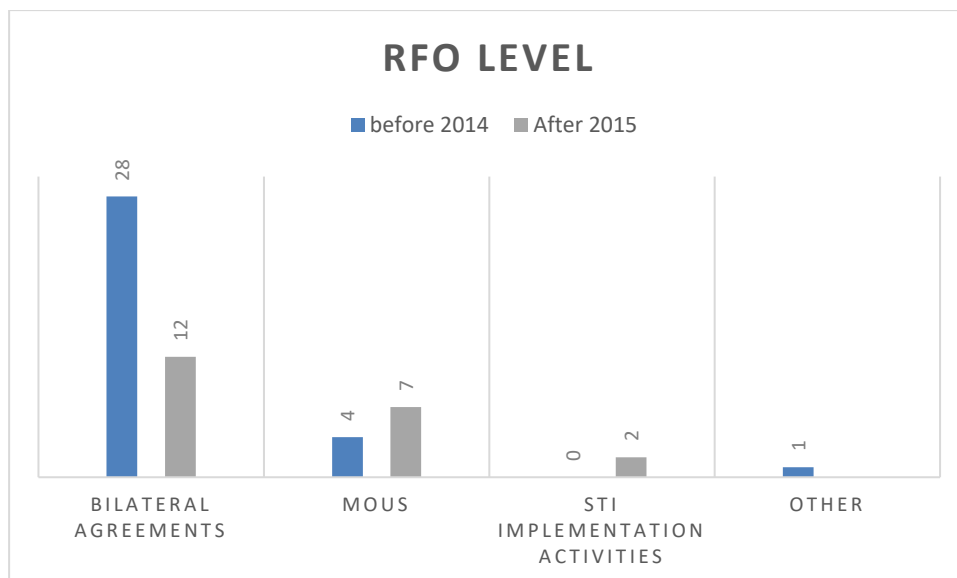


Figure 4. Number of STI agreements in RFOs

A potential reason for older material is that most of RFO-related agreements were identified from the Latin America where research funding is often organised via the ministries while, for example in Europe, research funding is channelled via dedicated funding agencies. As mentioned earlier, the original STI bilateral agreements tend to be old, and although these are updated regularly the original signing year appears in our data.

Surprisingly little MoUs were found in this category, even though it was learned in case of Finland that MoUs are preferred over bilateral agreements, and these agreements are more sector/agency specific.

1.2.5 The STI agreements in the NGOs and multinational organisations

The Non-Governmental Organizations (NGOs) were piloted to find out if they should be included in the main study even though they seldom form formal agreements. Multinational organisations in turn formed a new category in the pilot study based on material identified in Brazil.

The NGOs and associations have an important role in promoting international networking of women in STI-related areas and activities, but they do not operate via formal institutional agreements. In addition, NGOs activities relate to development cooperation in which STI focus is rare, but women empowerment is frequently present.

In Argentina, and also countries, the NGOs are not obliged to expose the agreements or projects they maintain with their financiers and information is difficult to obtain from web. Therefore, judging suitability of specific institutional cooperation in the study scope is demanding.

In the European context, NGOs working in area of women in STI, were explored in Portugal, France, Denmark, Belgium, the Netherlands and Greece. In addition, five international associations were screened for gender STI content. To sum up the findings, the NGOs are a group very much related to development cooperation, and often work under bilateral/multilateral agreements, but they do not seem to have a particular focus on STI activities. For NGOs gender equality is a specific focus of action (whatever sector they

operate) and they are actively engaged in disseminating results of international dialogues. Although NGOs do not often reflect a focus on STI as one of their working areas per se, many of them operate in fields related to STI, namely energy security, WASH, agriculture. Despite many NGOs working in technology and innovation related fields, with a great degree of attention to gender issues, public institutions and the private sector do not seem to consider them as relevant actors in STI for establishing formal agreements.

1.3 Gender content in the STI agreements

According to a content analysis of Brazilian and Spanish data, the main words associated with gender were social inclusion, sustainability improvement, poverty, social inequality, Sustainable Development Goals (SDGs), education, culture, environment, inclusive economic growth, human rights, to mention few examples. The STI areas that contained gender content were

- Environment and Climate Change
- Rural Development
- Renewable Energies
- Genomics/ Aquaculture genomics

In addition to STI areas, gender content was found in the agreements that related to social sciences and humanities, for example areas of equality and social inclusion policies; social, economic, environmental for sustainable development; global and regional public goods; and reduction of poverty and social inequality were mentioned in the agreements.

In Spain, development cooperation agreements (signed by the Spanish Agency for International Cooperation for Development, AECID) place most emphasis on gender aspects as one of the cooperation priorities. For example, a MoU between AECID and the Brazilian Cooperation Agency (ABC) in 2015², list the following focus areas:

"Governance and institutional strengthening; education; gender; culture; environment and inclusive economic growth".

Besides to formal agreements, it was learned that other material of STI cooperation with firmer integration of gender equality could be found in calls for applications (in call texts), evaluation and budget forms, for instance. This suggests that gender aspects are included in the STI cooperation as one key performance indicators (KPIs), or as terms and conditions, but not included in the agreements as priority.

For example, in evaluation criteria for international R&D projects by Centre for the Development of Industrial Technology (CDTI) include:

"Socio-economic and environmental impact. Job creation, private investment mobilized, company measures aimed at gender equality, social inclusion and sustainability improvement will be assessed".

India is another country that had direct gender content included in the STI cooperation activities. India has been active in integrating gender content in all types of STI agreements with several countries. All gender content was found in the agreements signed after 2015, and it shows for example in India's and EU's commitment to human rights which includes

² Source: <https://www.aecid.es/Centro-Documentacion/Documentos/documentos%20adjuntos/ANG%20Espa%C3%B1a-Brasil%202015.pdf> (accessed 22.10.2022)

gender equality and women empowerment in all spheres of life. A "Gender-Aware Parliaments" is one of the topics promoted in women empowerment. Specific technologies and microfinancing opportunities to women were also mentioned in the agreements.

For example, an India-Italy Joint Statement and Plan of Action 2020-2024 signed on November 06, 2020³ states the following,

"India and Italy will also continue to cooperate in all relevant multilateral fora in order to strengthen gender equality, promote women empowerment and combat violence and discrimination against women."

Often the gender is indirectly integrated in the agreements, mainly in wording such as non-discrimination like an Austrian example of Erasmus Inter-institutional agreement 2019-2022 for Higher Education Student and Staff Mobility draft agreement illustrates:

"Respect in full the principles of non-discrimination and to promote and ensure equal access and opportunities to mobile participants from all backgrounds, in particular disadvantaged or vulnerable groups."

In Argentinian NGOs, role of gender was positively observed in access to rights, social vulnerability, care for the environment, health, education, and agroecology. In these topics, women were mostly recognized as an affected group due to inequality or violation of rights. More detailed analysis of gender content in the STI agreements is addressed in section 1.8 that introduces the findings of the main mapping study.

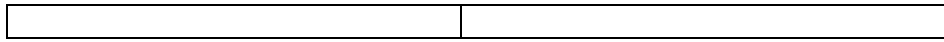
1.4 Suggestions to the main mapping of STI agreements

To summarize, the mapping of STI agreements is highly context dependent therefore general guidelines are challenging to compile in detail. Each group of actors and countries have special characteristics that mean identification of STI agreements might encounter challenges at least in some of the studied actor groups. Obstacles and opportunities in STI agreement mapping study are summarised in Table 5.

Table 5. Obstacles and opportunities in the STI agreement mapping study

| OBSTACLES | OPPORTUNITIES |
|--|---|
| MoU are not found on public websites | Centralized information (e.g. database) is better available in the third countries than EU. |
| Many "generic" agreements found without distinction on STI areas | Focus on material from 2000 onwards, older material does not include gender content. |
| Fragmented information on different websites make mapping laborious. | The best places to start in Unis and RTOs are the International Office or the Office of (Gender and/or) Equal Opportunity |
| Information of STI-related cooperation in NGOs and associations is scarce. | Focus on STI implementation activities (e.g. joint calls, joint action plans) |

³Source: [https://mea.gov.in/bilateral-documents.htm?dtl/33171/IndiaItaly Joint Statement and Plan of Action 20202024](https://mea.gov.in/bilateral-documents.htm?dtl/33171/IndiaItaly%20Joint%20Statement%20and%20Plan%20of%20Action%2020202024) (accessed 22.10.2022)



It was suggested by the NGO sector pilot team that in case non-profit sector is included in the Gender STI study, we could consider social responsibility programmes from large companies, which often operate in development cooperation through associated foundations (e.g., Siemens Foundation, MasterCard Foundation and Google.org). Many of these, given their area of expertise, have a focus on STI related activities. Even if not traditionally included in formal bi- and multilateral STI dialogues, these actors can form cooperation agreement between companies, local (third country) universities and a local NGO. Further, some NGOs were identified important in STI activities with particular focus on gender, for example UNESCO, Gender in science, innovation, technology and engineering (SITE), The Organization for Women in Science for the Developing World (OWSD), International Development Research Centre (IDRC) that should be included in the Gender STI study when applicable.

Based on the pilot study findings, the following additions to criteria and focus were set:

1. Actor groups covered are 1) Government level organizations, e.g. Ministries, Embassies; 2) Research and technology organisations (RTOs); 3) Universities (& polytechnics); 4) Science and innovation funding organizations.
 - NGOs are excluded from the study
 - Polytechnics are included into the same class with universities. They might have specific MoUs.
 - Focus on one to two national organisations/category only.
2. Countries might also have agreements with multinational organisations operating in the STI fields, like CERN, EUREKA that are considered eligible to main mapping study.
3. Concentrate on STI agreements 2000 onwards only if possible.
4. Collect STI bilateral and multilateral agreements, strategic organisational level MoUs and information of STI implementation activities (Joint action plans; grant agreements, etc).

THE MAPPING OF BI- AND MULTILATERAL STI AGREEMENTS

1.5 Foreword for the mapping study

The mapping study, which concentrated 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 is found in the STI agreements.

The research design for mapping study was built on lessons of the pilot study, hence following the same thematic and geographical focus. The mapping study is based on convenience sample meaning that the STI agreements included in our sample are not systematically but hand-picked based on the learnings of the pilot study. For this reason, one should avoid far-reaching generalisations or conclusions based on the data. We have performed a qualitative assessment of the data only, due to limited number of observations of agreements that include gender content for example. Regardless of the data limitations, the mapping study of STI agreements provides insights of the status of gender equality in formal international STI dialogues. At the same time, it points gaps and needs that should be addressed in Gender STI project activities and beyond in other gender in STI related projects worldwide.

1.6 Research design and process

All learnings from the pilot study were taken into use when designing the mapping study research process. The data collection started in May 2021 and ended in October 2021. It followed the research design developed by the Technical Research Centre of Finland (VTT) (see Figure 5). Furthermore, the study followed the same geographical focus introduced in section 0 than the pilot study.

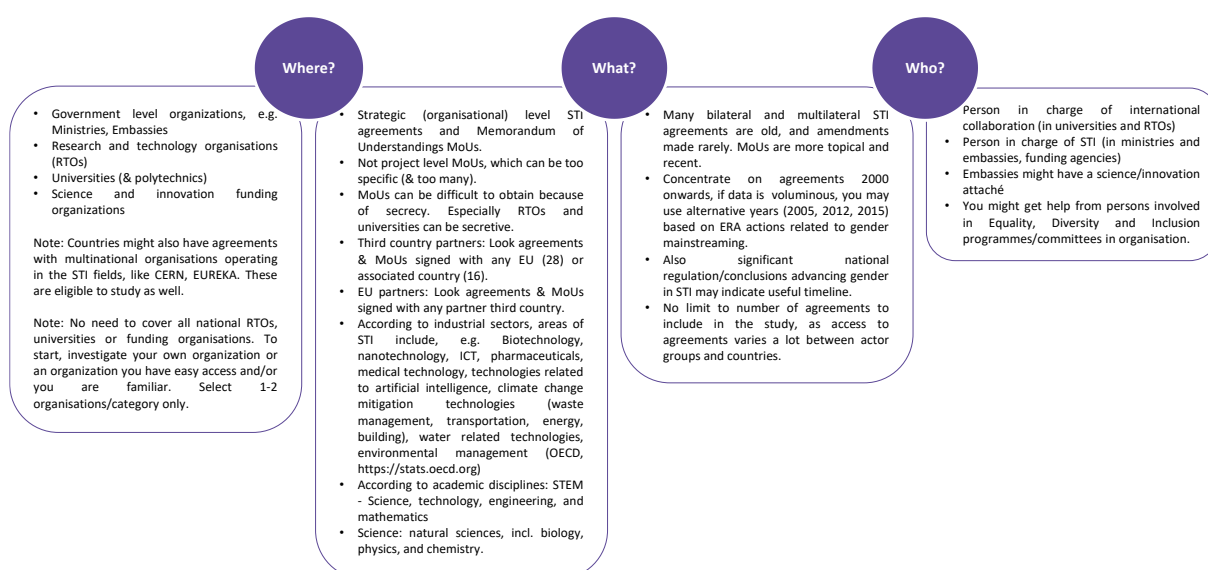


Figure 5. Research design for mapping the STI agreements

The central tool for mapping agreements was an excel template that partners filled in (Figure 6). The template helped to collect comparative information from all countries and aided later to analyse the data.

| | A | B | C | D | E | F | G | H | I | J |
|----|----------------|---|---------------------|--------------------|---------------|------------------|--|---------------------------|--|-------------|
| 1 | Gender STI | | Agreements Database | | | | | | | |
| 2 | Agreement Name | Agreement Level <i>(select from scrollbar)</i> | Agreement STI Area | Countries involved | | EU Institution | | Third Country Institution | | Signed Date |
| 3 | | | | EU | Third Country | Institution Name | Type of institution <i>(select from scrollbar)</i> | Institution Name | Type of institution <i>(select from scrollbar)</i> | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |

Figure 6. An example of STI agreement template.

The mapping resulted into 544 STI agreements. After data cleaning the sample decreased into 528 agreements which was a final sample used in this study. At this phase, duplicates and unclear observations were deleted, and each agreement was given an individual identifier that helped to ensure agreement was only once in the dataset.

The data harmonisation took several rounds with core partners. Variables that demanded discussion were for example, agreement types and STI institutions as it was noticed these had a lot of variation in the original data. For instance, the role of some STI institutions was different due to differences in organisation of national innovation systems.

Once the data was cleaned and harmonised, we performed a content analysis of the STI agreements, although due to a limited number of actual agreements we did not apply text mining analysis. Text mining was foreseen as one potential method in case the data will grow massive. As this scenario did not materialise, the content analysis relied on qualitative thematic grouping of the data.

1.7 Findings of the mapping study

A total 528 STI agreements was included in the study, 81 agreements (15%) had gender-related content (Figure 7) which will be further discussed in section 1.8. This means that gender content in the STI agreements is not yet mainstream.

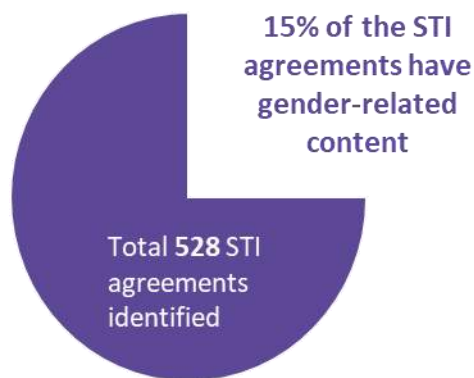


Figure 7. Share of the STI agreements with gender content.

Majority of the identified STI agreements (43%) were formal bilateral agreements (Figure 8). The data had also a sizable amount of MoUs (23%) and agreements, like joint action plans and grant agreements that relate to STI implementation activities (19%). In addition to formal agreements, the data included joint declarations, declarations of intent and joint statement which are grouped in 'Other' (9%). See Appendix 1 for categorisation of STI agreements in this study.

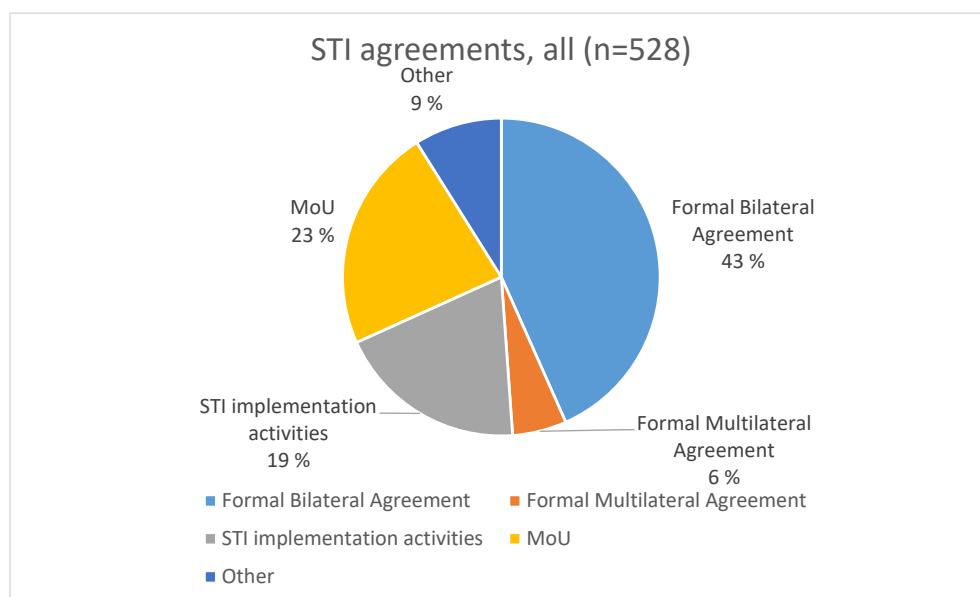


Figure 8. Types of STI agreements in the sample (n=528)

Universities are the main actor group in the data, both in EU countries and third countries (Figure 9). Although a majority of STI agreements are university-level agreements, it does not however mean that both parties of the agreement are universities.

It can be further observed that more agreements are identified from third country ministries of science and technology and STI funding organisations than in the EU countries. The latter is explained by Brazilian data, which was collected only from one funding institution, namely FAPESP due to research economic reasons given the size of nation and its federal governance structure. Another reason for this predominance is that Latin America and the Caribbean (LAC) region connects national science and technology organisms, science and technology secretariats and ministries and other institutions that design the STI policies and many of them also operate as funding institutions through

government agencies that depend on them. Examples of this can be found in institutions such as CONACYT in Mexico (and other 'ONCYTs in the region) which is the highest authority on STI in charge of formulating and implementing STI public policies. At the same time, it promotes R&I and technological modernization, and acts as other STI Ministries in LAC at policy planning, promotion and financial level of STI. See Appendix 2 for the categorisation of different STI institutions in the study.

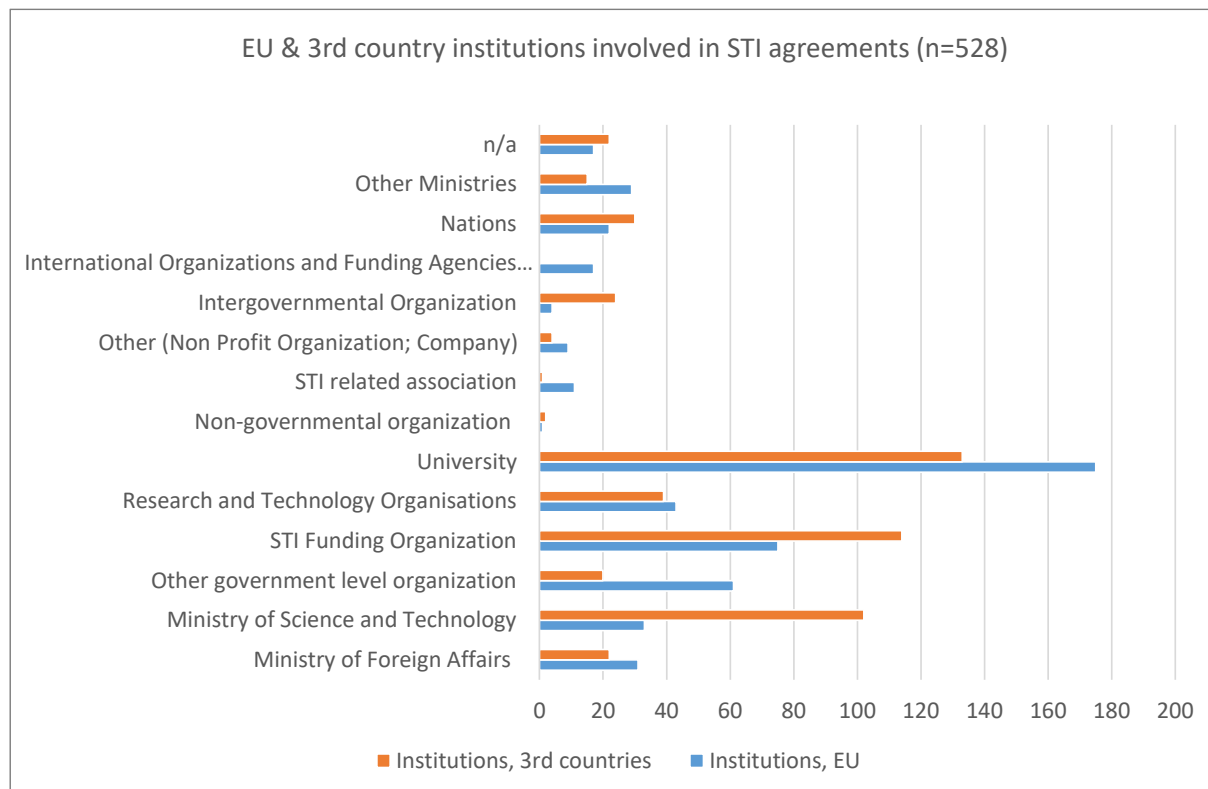


Figure 9. EU and third country institutions involved in the STI agreements

Initially, we collected STI agreements from the countries involved in Gender STI consortium⁴, however we did not restrict our focus only to agreements between the consortium countries but also included agreements beyond consortium member countries. The sample included STI agreements from 51 countries. In addition, we had multilateral agreements in the data which were not country specific agreements.

Figure 10 depicts countries involved in STI dialogues counted in number of country parties of STI agreements. The largest amount of STI agreements comes from Europe, followed by Middle and South America (see Appendix 3 for counts of agreements per country), while Brazil, Argentina and Spain provide most agreements in this study.

⁴ Some of the consortium partners (from China, South Korea and USA) faced challenges in identifying and accessing STI agreements therefore data on these countries is limited.

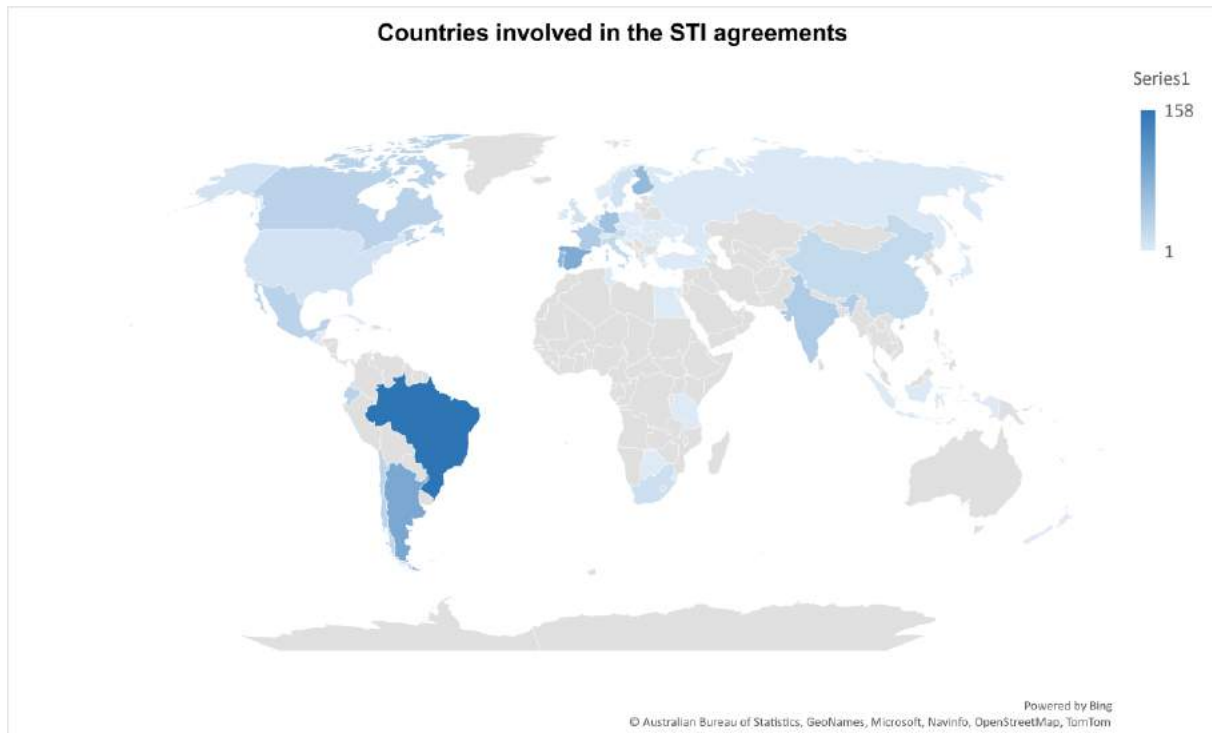


Figure 10. Countries involved in the STI agreements in the data

In addition to countries shown in Figure 10, our data consists of multiple transnational agreements from Africa for example which are formed by transnational associations. In addition, many STI agreements are formed with European Commission which is another example of transnational actor in our data. The data includes also some purely national STI agreements.

1.7.1 Gender equality in STI agreements over time

It was observed that gender-related content is present in the STI dialogues in the 2000s (Figure 11). One should hence note that the timeline graph is very indicative given that the data collection concentrated on identifying STI agreements from 2000 onwards based on the findings of the pilot study. For these reasons and keeping in mind that our sample is convenience sample, our analysis cannot confirm whether European Commission policies and actions to promote women and gender equality in science and technology have a desired impact. It can however be said, also confirmed in stakeholder interviews performed in work package 2 that gender policies in Europe have benefitted the implementation of STI activities in which third countries participated together with European institutions. For instance, it is possible to observe increased gender content in the calls for proposals, selection criteria, etc, even if gender content has not yet translated strongly into bi- and multilateral STI agreements. However, inclusion of gender content in the STI agreements is not mainstream as we have also learned in stakeholder interviews.

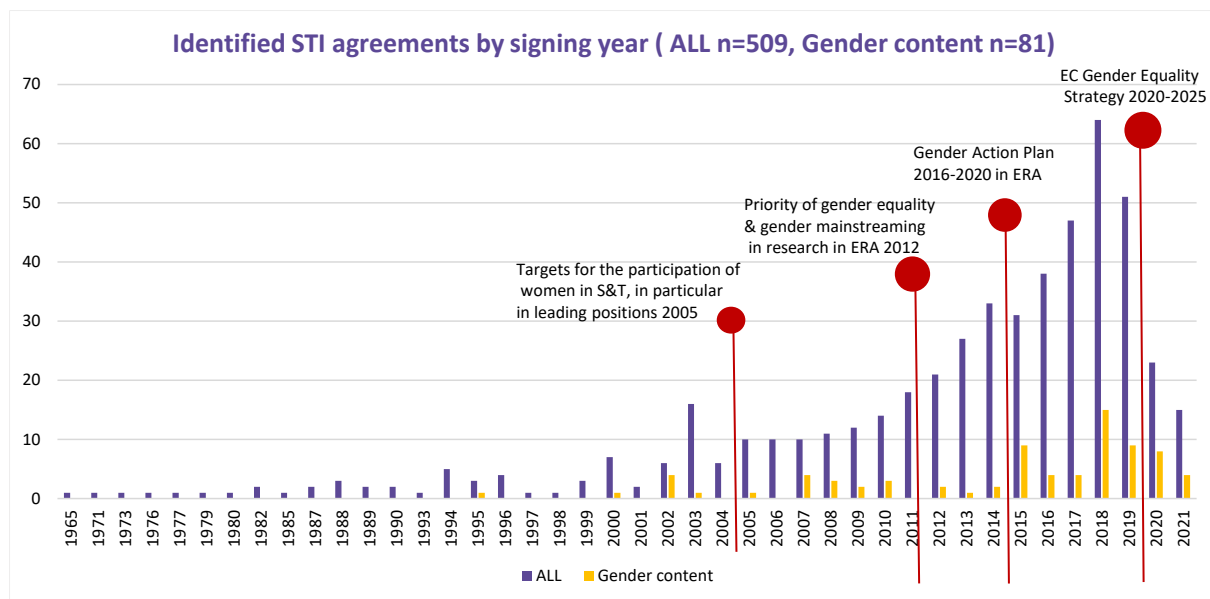


Figure 11. Identified STI agreements by signing year

Although we acknowledge based on the pilot study and this mapping study findings that gender content in the STI agreements is not mainstream, the following section offers a closer look on the gender-related content in the STI agreements in the magnitude it was present in the sample.

1.8 Results of mapping study of STI agreements with gender content

This section bases on data of 81 STI agreements that were assessed to have gender-related content. The gender content is however in this study defined broadly to include also themes of social inclusion which do not strictly focus on gender, females, women and girls. This decision was made based on the pilot study findings introduced in section 0.

Figure 12 illustrates the countries involved in STI dialogues that promote gender content in their STI agreements. It can be observed that Canada, India and South Africa have included gender content in their STI agreements, while also Spain and Finland have relatively large amount of gender-related content (see Appendix 4 for counts of agreements per country). If we compare this to the overall data of STI agreements (Figure 10), we see that Brazil, Argentina, Portugal and Germany have limited amount of gender content in their STI agreements considering their representation in the sample.

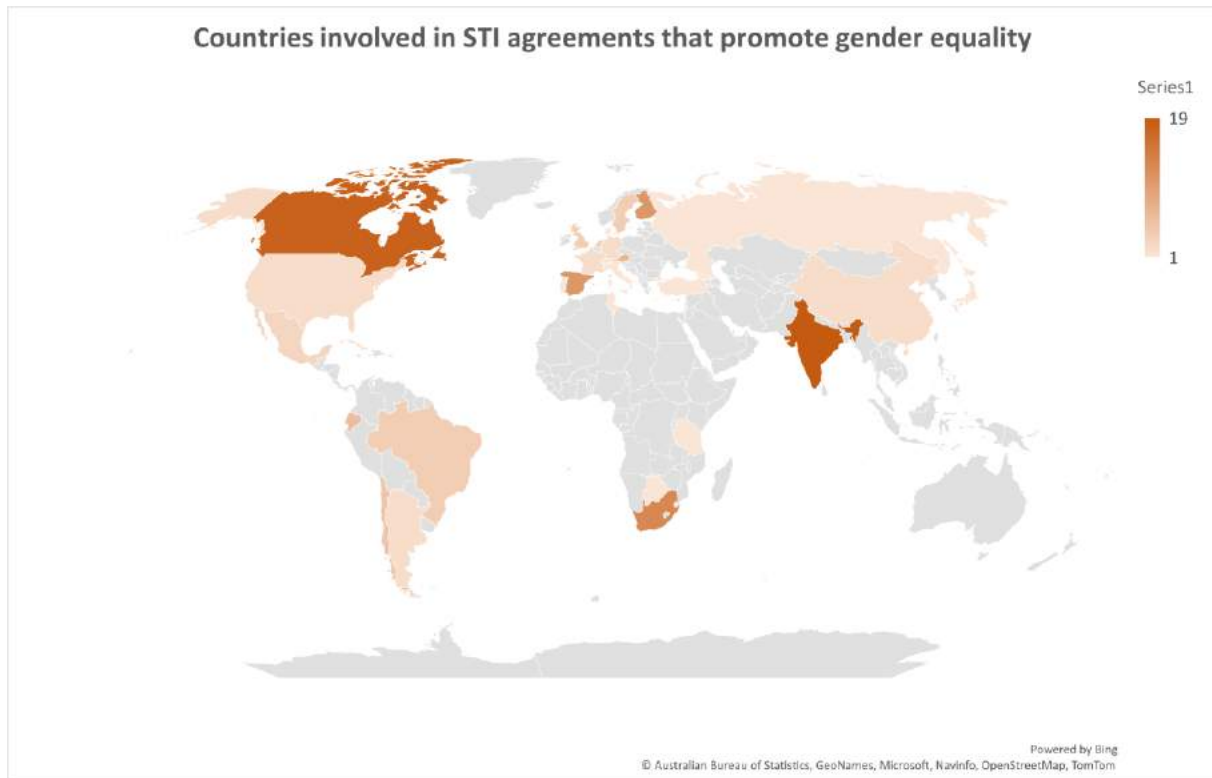


Figure 12. Countries involved in STI agreements that promote gender equality

Nevertheless, as it has been pointed out, one of the main findings of the Gender STI study is that country cultures in gender equality in STI dialogue are not an explanatory factor, but, rather, the institutional cultures and norms. Therefore, we should instead of countries look at the institutions involved in the STI dialogues. Figure 13 depicts institutions who are involved in promoting gender content in their STI agreements. A major actor group in this respect is government organisations, like different governmental agencies and European Commission. In addition, research and technology organisations (RTOs) seem to include gender content in their STI agreements, in third country context particularly. It should however be noted that Canada and South Africa dominate the RTO category in the data.

While we find some gender content in the university STI agreements, especially in European universities, it is evident that university-level STI dialogues do not excel in gender content given their predominance in the total sample (see Figure 9). Another actor group who has relatively little gender content is STI funding organisations given their strong presence in our data. This group is dominated by a Brazilian actor which can partly explain thin gender content as observations rely strongly on one context only.

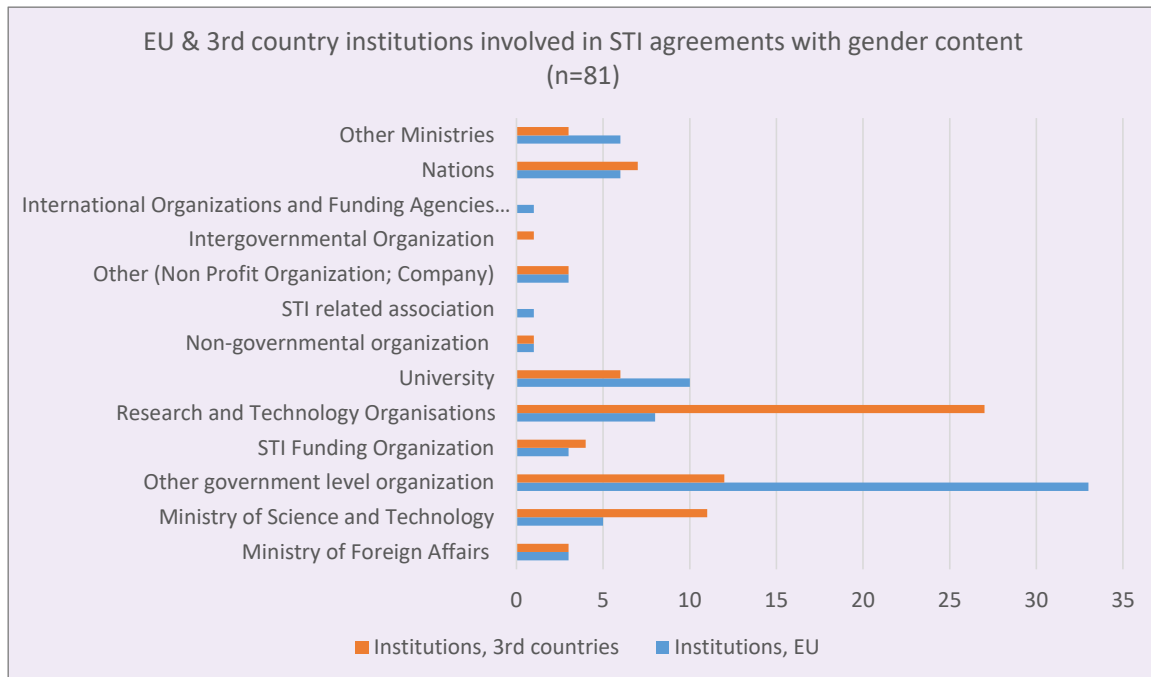


Figure 13. Institutions involved in the STI agreements with gender content

Figure 14 confirms our pilot study findings that gender content is not strongly present in the formal agreements but in MoUs and STI implementation related agreements.

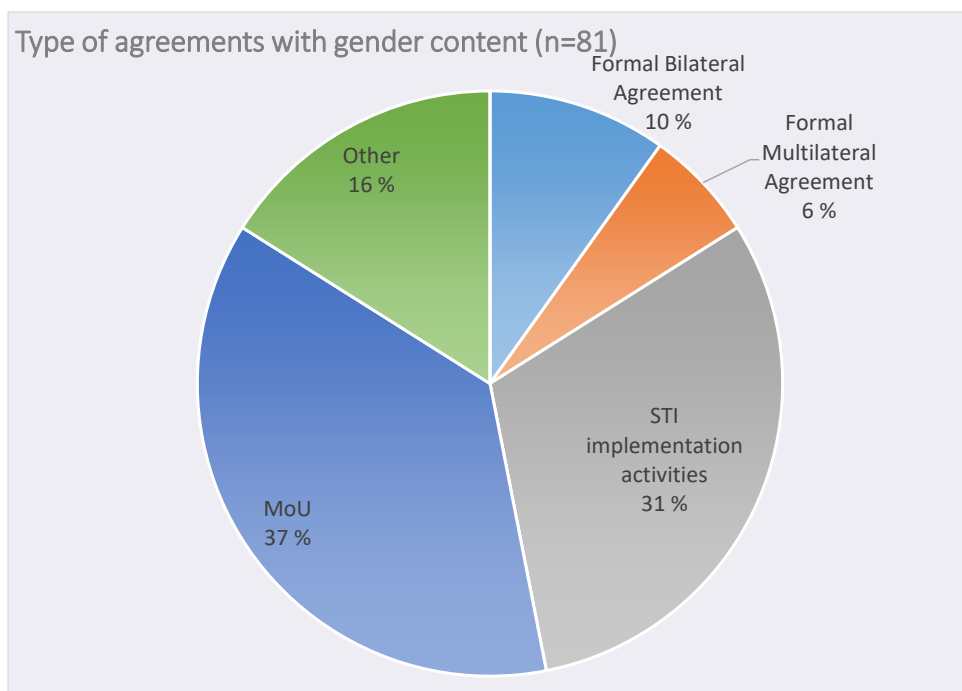


Figure 14. Types of STI agreements with gender content

One of the potential reasons is that bi- and multilateral STI agreements offer less room for modifications because they often follow standardised text with less details of the context. Besides, changes in formal bilateral and multilateral agreements demand bureaucracy because process of amending might require an approval of different bodies. Such

bureaucracy as a hinder factor to include gender content has been highlighted for example in interviews in LAC context. Whereas the MoUs and different types of declarations of intents and joint statements of STI relate to collaboration on specific fields of science in which reference to gender balance is easier to include in the agreements.

1.8.1 Gender content in the STI agreements

Gender content in the STI agreements varies a lot, partly because of the selected exploratory research strategy. See Table 6 for the gender equality contents that were identified and further clustered into themes related to gender and women. The classification is based on interpretation of the gender content provided by each partner in the mapping template, it includes the original texts, quotes of the STI agreements, or just key words that hinders to make definitive conclusions of the gender themes and contents.

Table 6. Classification of gender content applied in the STI agreements

| PERCENTAGE (n=81) | CLASSIFICATION OF THE GENDER CONTENTS IN THE STI AGREEMENTS |
|-------------------|---|
| 1% | Diversity in cultural expression |
| 5 % | Equality |
| | Equal opportunities |
| 4 % | Female talent promotion |
| | Promoting female talent; intersectionality |
| 6 % | Gender |
| | Gender; research |
| | Gender; social inclusion |
| | Gender; decision making |
| 21 % | Gender equality |
| | Gender equality (in digitalisation) |
| | Gender equality; promoting gender balance |
| | Gender equality; research; involving women |
| | Gender equality; social inclusion |
| 5 % | Gender equality; women empowerment |
| 5 % | Gender sensitiveness |
| 1 % | Human rights; womens' rights |
| 11 % | Inclusion |
| | Inclusion in education |
| | Inclusion, all genders |
| | Inclusion, gender |
| | Inclusion; equality in education |
| 1 % | Inclusion; women & girls' participation |
| 1 % | Inequality |
| 10 % | Intersectionality |
| | Intersectional; gender balance |
| | Intersectionality; research |
| 1 % | Intersectionality; women |
| 1 % | Non-discrimination |
| 9 % | Social cohesion /inclusion |
| | Social cohesion /inclusion; SDGs |

| | |
|------|--|
| | <i>Social cohesion /inclusion; women & girls empowerment; gender equality; cooperation development; SDGs</i> |
| | <i>Social diversity</i> |
| | <i>Social empowerment</i> |
| 20 % | Women |
| | <i>Women as target of intervention</i> |
| | <i>Women empowerment</i> |
| | <i>Women participation</i> |
| | <i>Women supporting</i> |
| 6 % | n/a |

Regardless of the limitations in the data collection, two gender themes stand up, namely gender equality and women empowerment (Table 6). Gender equality shows in promoting gender balance and equal opportunities and referring to gender equality law and Articles. In this category we observe a direct reference to Article 33 in European Commission H2020 Programme grant agreement (2017)⁵ which promote gender equality. Article 33 states the following:

"ARTICLE 33 – GENDER EQUALITY

33.1 Obligation to aim for gender equality

The beneficiary must take all measures to promote equal opportunities between men and women in the implementation of the action. It must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level." (EC, 2017, p.76)

The new Horizon Europe programme (2021)⁶, in turn, has revised gender equality to gender mainstreaming in Article 14:

"VALUES (– ARTICLE 14)

Gender mainstreaming

The beneficiaries must take all measures to promote equal opportunities between men and women in the implementation of the action and, where applicable, in line with the gender equality plan. They must aim, to the extent possible, for a gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level." (EC, 2021, p. 88)

Charter of Fundamental Rights of the European Union (2016/C 202/02)⁷ refers to Article 23 Equality between women and men and Article 21 Non-discrimination with the following:

"Article 23 - Equality between women and men. Equality between women and men must be ensured in all areas, including employment, work and pay." (2016/C 202/02)

"Article 21 - Non-discrimination. Any discrimination based on any ground such as sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation shall be prohibited." (2016/C 202/02)

⁵ Source: https://ec.europa.eu/research/participants/data/ref/h2020/mga/gga/h2020-mga-gga-mono_en.pdf (accessed 25.10.2022)

⁶ Source: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/agr-contr/unit-mga_he_en.pdf (accessed 25.10.2022)

⁷ Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12016P/TXT&rid=3> (accessed 25.10.2022)

The following example shows how the above Articles of Fundamental Rights (2016/C 202/02) are specified in health science related grant agreement between Canadian RTO and European Commission signed in 2019,

"[Organisation x] is committed to include a gender perspective in all applicable activities and try to involve both women and men. Moreover, in compliance with Articles 21 & 23 of the Charter of the Fundamental Rights of the European Union, women will be encouraged to participate in the project activities. Equal opportunities will be ensured throughout the whole project activity, namely the Expert Groups and RTI stakeholder workshops, especially new therapy methods or new applications or robots underlie gender specific considerations and these need to be voiced in the expert group discussions and future policy design efforts." [CA13]

An example from cooperation agreement between Brazilian and Swedish STI funding agencies in 2018 shows how gender equality can be included as a recommendation in the funding process,

"The Signatories will promote gender equality throughout the collaboration. In particular, they will ensure that gender equality will be maintained / actively considered throughout the peer review process, on the success rate, on the level of external funding and communication. [BR35]

The second largest group of gender content was found in *women promotion* which emphasises their participation in activities, or places women as target of the intervention. If majority of gender equality references are included in the STI implementation agreements, like grant agreements, not in the formal agreements, women empowerment shows in turn in the MoUs.

The MoU between Indian and British Science and Technology Ministries signed in 2021 illustrates a common example of how women are addressed in the agreements.

"Enhance cooperation between India and the UK on strengthening the role of women in STEMM at schools, universities, and research institutions and creating an enabling environment for equal participation of women in STEM disciplines through collaboration on new initiatives like Gender Advancement for Transforming Institutions (GATI) project." [IN35]

Overall, given the focus of MoUs on certain field of science, the agreements tend to support women scientists by encouraging their involvement.

In addition to the two main categories of gender equality and women empowerment, it is worth noting increasing themes in the data, namely *inclusion* which does not always specify gender but relates to equality and inclusiveness in education, and *intersectionality* showing phrases of non-discrimination on the basis of race, ethnicity, colour, religion, sex, for instance. Although current data does not have many observations in these themes yet, we believe inclusivity and intersectionality aspects related to gender themes are increasing themes in future STI dialogues because general gender discussion is changing from binary gender to inclusive gender (Bhatia et al., 2022). For example, the inclusion theme acknowledges 'all genders' which reflects better contemporary understanding of gender.

For example, a formal bilateral agreement between South African and Tanzanian research organisations in 2007 promotes inclusivity in biomedical with the following reference,

"Inclusivity of all gender is essential" [ZA11]

An inclusive education example between Ministries of Education in Finland and Tunisia, a MoU signed in 2018, shows how special groups can be included in the agreements,

"Children with special needs: children with disabilities, children with learning difficulties, gifted children etc." [FI41]

An example of intersectionality is found in a field of engineering. A MoU between universities in Chile and United Kingdom signed in 2019 includes the following,

"Each party agrees that it shall not discriminate against any applicant, student or other person connected to this agreement on the basis of race, ethnicity, colour, religion, sex, sexual orientation, marital or parental status, national origin, age or disability" [CL55]

An Austrian example from a draft of university-level agreement⁸, in turn, addresses explicit groups:

"Respect in full the principles of non-discrimination and to promote and ensure equal access and opportunities to mobile participants from all backgrounds, in particular disadvantaged or vulnerable groups." [AT16]

1.8.2 Gender content in STI fields

To take a closer look on the STI fields with gender contents, we have categorised the STI agreements by the field of science. It is worth noting that quite a few agreements did not however specify scientific field but were general science and technology related agreements, or did list several fields from natural to social sciences which prevented to categorise the agreement to one specific field. Regardless of the limitations in data, Table 7 illustrates which fields of science promote gender content in the sample.

Table 7. Science fields that promote gender content in the STI agreements

| (n=74) | Science Fields | Count | % |
|------------------|--|-------|------|
| Applied Sciences | Life science, biomedical | 4 | 18 % |
| | Technology & business | 3 | |
| | Life science, Food science, agriculture | 2 | |
| | Security and defence | 2 | |
| | Engineering | 2 | |
| Formal sciences | Information sciences, Natural sciences; life sciences, Marine sciences | 1 | 1 % |
| Medicine | Medical sciences | 10 | 20 % |
| | Health | 3 | |
| | Nutrition science | 2 | |

⁸ Details of the signatories or contents were not available as the agreement draft was anonymised.

| | | | |
|------------------|--------------------------------|----|------|
| Natural Sciences | Environmental sciences | 4 | 14 % |
| | Physics | 2 | |
| | Natural sciences, biology | 4 | |
| Social Sciences | Social sciences | 7 | 24 % |
| | Culture, education, science | 5 | |
| | Education | 5 | |
| | Humanities and social sciences | 1 | |
| General | Science and technology | 17 | 23 % |

If we leave general science and technology group (23% of STI agreements fall into this group in the data) aside, a majority of agreements that include gender content are found in social sciences. Medicine is another field which has included gender content. In this group reference to gender is found for example in promoting actions towards including more women scientists in specific research field, but also in addressing gender in research and innovation contents.

An example from a MoU in medical sciences (in personalized medicine) between Canadian and Dutch RTOs, signed in 2016, reflects gender equality in the following way:

"the parties will ensure that the composition of the international peer review committee appropriately reflects the nature of the funding opportunity and requirements for a balanced panel of representatives (e.g. regional, gender, linguistic and expertise representation)." [CA18]

The same MoU further addresses inclusion of gender and sex-based research by stating,

"Applicants are encouraged to demonstrate the use of Gender and Sex-Based Analysis in applications" [CA18]

Another example from medical science, a grant agreement between Canadian RTO and EC-ERA in 2018 promotes gender in R&I the following way,

"to promote actions towards involving more women in neurodegenerative disease research. This also includes the encouragement of addressing gender-specific aspects within research proposals." [CA14]

Yet another example from Canada, a grant agreement with EC-ERA (in 2019) in nutrition sciences also takes account sex and gender aspects in research,

"Sex and gender aspects in research activities to be performed." [CA16]

The medical field was the only field that promotes not only equal opportunities for women scientists, but also addresses inclusion of gender and sex-based research that is natural due to the discipline. Nevertheless, the most common way to make reference to gender is illustrated in a bio- and circular economy field MoU between Finnish and Chilean ministries in 2016,

"Encouraged by the 2030 Agenda for Sustainable Development and the respective long term strategic planning processes in both countries. The two Participants acknowledge that there exists a favourable opportunity to further consolidate and enhance their cooperation in the field of bioeconomy and circular economy, especially bioenergy and

waste-to-energy on the basis of equality, reciprocity and mutual benefit. Areas of cooperation: To promote gender equality in the bioeconomy sector and exchange of experience in this regard". [FI24]

1.8.3 Gender content in institutional dialogues

Moreover, according to the data, different institutional dialogues seem to favour certain gender themes. See Table 8 and Table 9 for the breakdown of different STI dialogues which follow (triple and quadruple) helix approach widely used in the field of research and innovation studies to illustrate knowledge production in a complex and continuously evolving system of relationships between university, industry, government, and civil society (e.g. Leydesdorff & Etzkowitz, 1996; Carayannis & Campbell, 2014). Civil society and private sector were not included in the mapping study because of their less visible role in formal, agreement based, STI dialogues, and difficulties encountered in accessing agreements in these sectors (see the pilot study).

Table 8. Gender content in European STI dialogues

| EU | Government | Academia | Funding & STI promotion | Private sector | Civil society |
|----------------------------------|------------|-----------|-------------------------|----------------|---------------|
| Diversity in cultural expression | 2 % | 0 % | 0 % | | 0 % |
| Equality | 4 % | 6 % | 0 % | | 0 % |
| Female talent promotion | 2 % | 6 % | 0 % | | 0 % |
| Gender | 8 % | 6 % | 0 % | | 0 % |
| Gender equality | 31 % | 0 % | 40 % | | 0 % |
| Gender sensitiveness | 8 % | 0 % | 0 % | | 0 % |
| Human rights; womens' rights | 2 % | 0 % | 0 % | | 0 % |
| Inclusion | 10 % | 12 % | 40 % | | 0 % |
| Inequality | 0 % | 6 % | 0 % | | 0 % |
| Intersectionality | 6 % | 29 % | 0 % | | 0 % |
| Non-discrimination | 0 % | 6 % | 0 % | | 0 % |
| Social cohesion /inclusion | 15 % | 0 % | 0 % | | 0 % |
| Women | 10 % | 29 % | 20 % | | 100 % |
| <i>Number of agreements</i> | <i>48</i> | <i>17</i> | <i>5</i> | <i>0</i> | <i>3</i> |

Table 9. Gender content in third country STI dialogues

| 3RD COUNTRIES | Government | Academia | Funding & STI promotion | Private sector | Civil society |
|----------------------------------|------------|----------|-------------------------|----------------|---------------|
| Diversity in cultural expression | 3 % | 0 % | 0 % | 0 % | 0 % |
| Equality | 3 % | 6 % | 0 % | 0 % | 0 % |
| Female talent promotion | 3 % | 0 % | 0 % | 0 % | 0 % |
| Gender | 3 % | 13 % | 0 % | 0 % | 0 % |
| Gender equality | 18 % | 32 % | 17 % | 0 % | 0 % |
| Gender sensitiveness | 12 % | 0 % | 0 % | 0 % | 0 % |
| Human rights; womens' rights | 3 % | 0 % | 0 % | 0 % | 0 % |
| Inclusion | 12 % | 10 % | 33 % | 0 % | 0 % |
| Inequality | 3 % | 0 % | 0 % | 0 % | 0 % |
| Intersectionality | 0 % | 19 % | 17 % | 0 % | 0 % |
| Non-discrimination | 3 % | 0 % | 0 % | 0 % | 0 % |
| Social cohesion /inclusion | 15 % | 0 % | 33 % | 0 % | 0 % |
| Women | 21 % | 19 % | 0 % | 0 % | 0 % |
| Number of agreements | 33 | 31 | 6 | 0 | 0 |

For example, references to *intersectional* aspects are found mostly in the academy STI dialogues, namely in universities and RTOs, while *inclusivity* is more scattered in different types of agreements and STI institutions. An interesting observation is that gender equality lacks in European academic STI dialogues but is present in third country academic discussions. Overall, gender equality is a theme included in governmental STI dialogues.

1.9 Concluding comments for the mapping study

The mapping study of STI agreements has revealed a sample of the countries and institutions who participate in the international STI dialogues, as well as how gender equality is addressed in these dialogues. Although we have gained interesting and useful insights, the mapping study reveals only one angle of the multifaceted and multi-level international STI dialogues.

One of the unrevealed angles clearly is exclusion of private sector and civil society. This is a weak point of the STI mapping exercise and should be addressed in other activities of Gender STI project, and gender equality studies, to create more complete picture of gender content in the STI dialogues. Inclusion of these actors was anticipated challenging because they might lack formal STI agreements which were the focus of this mapping study. For this reason, other research approaches may be more inclusive for unrevealed groups and their insights.

Another limitation of the study relates to convenience sample which restricts generalisations based on the data, and did leave certain geographical areas, like Asia and Africa less represented in this study.

Third, it was discussed in the pilot study phase to include development cooperation agreements in the sample, but this approach was rejected because of uncertainties related to accessing agreements. However, STI related development cooperation is worth

exploring in particular as it is believed to contain wider gender content and can potentially guide in developing gender content into STI agreements.

However, these limitations are noted and will be addressed as far as possible in forthcoming tasks, like the benchmark analysis (Task 2.3).

Regardless of the limitations, one tentative conclusion can be made that is also supported by the preliminary review of STI policies related to gender balance and inclusiveness, namely, most of the gender equality content and promotion in formal STI agreements and national STI policies relate to improving gender equality in scientific careers, but less focus is put on gender balance in STI decision making bodies and positions, or integration of the gender dimension in research and innovation content.

GENDER EQUALITY IN STI POLICIES

1.10 Introduction

Policy documents play an important role in shaping the regulation and implementation of gender equality dimensions within research and innovation policies, particularly in the field of science, technology, and innovation (STI). Furthermore, these documents provide a framework for addressing gender inequalities and promoting inclusivity in research and innovation. They frame strategies, guidelines, and initiatives to overcome gender disparities and ensure that underrepresented groups are equally empowered to contribute to and benefit from advancements in the areas of science, technology, and innovation.

The policy analysis provides an interesting lens to, first, see how the European Research Area's (ERA) gender equality work, started in 2005, has materialised in national STI policy making in European countries. Given that promoting gender equality in research and innovation has become a priority of ERA, the European Commission has set three objectives to foster institutional change. Therefore, it is interesting to study how these priorities are addressed in national STI policymaking in Europe, and outside Europe. Although European initiated, the priorities are universal themes to address gender inequalities in STI fields:

- Gender equality in scientific careers (Priority 1),
- Gender balance in decision-making bodies and positions (Priority 2), and
- Integration of the gender dimension in research and innovation content (Priority 3).

In addition, gender equality in STI has become a strategic issue in the European Union policy dialogue with third countries, especially since the Council of the European Union, in its conclusions adopted on 1 December 2015, invited the Commission and the Member States to consider including the gender perspective within these dialogues in STI.

1.11 Data and methodology

Our sample was compiled from the EC-OECD STIP Compass data⁹ which contain qualitative and quantitative data on national trends in science, technology and innovation (STI) policy. It is an interactive dashboard and data source for policy practitioners and research. The data consists of different kinds of policy documents, e.g. initiatives, strategies, agendas, statements and action plans. The documents relate from policy intelligence to public awareness campaigns and other outreach activities.

We retrieved 11 215 documents in late 2022 of which 456 (4%) documents addressed gender dimensions either in their background, description or objectives. The key words used were 'gender', 'woman', 'women', 'inclusion', 'inclusiveness', 'LGBT', 'female'. Since our objective was to study how the three priorities of EC were addressed in the documents, we grouped the documents accordingly. This exercise resulted in 354 documents that were used as a final sample.

⁹ EC-OECD (2022), STIP Compass: International Database on Science, Technology and Innovation Policy (STIP), edition December 24, 2022, <https://stip.oecd.org>

Figure 15 illustrates that the majority of the documents (29%) are strategies, agendas and plans, whereas grants for business research, development and innovation, or procurement programmes approach significantly less gender and inclusiveness.

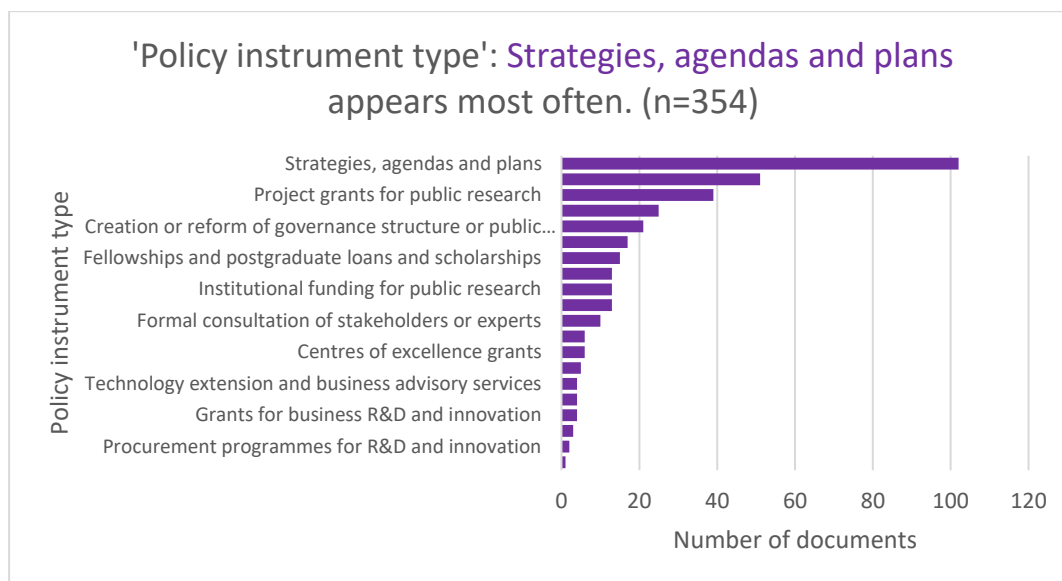


Figure 15. Types of analysed policy instruments.

The policies are geographically distributed around the world (Figure 16), although African continent and Asia are less represented in the data. It is also notable that several countries have only few policies, namely 1 to 3 documents that include gender aspects, and these STI policies are discontinuously launched. However, STIP Compass data does not systematically cover all STI policies, therefore data varies between countries tremendously.

Nonetheless, data shows few countries with better continuity and volume of STI policies with gender content, for example Austria, Australia, Spain and Canada have all 15 or more policies in the sample. Country breakdown is available in Appendix 5. The geographical division of sample shows that 58% of STI policies are from European MS, 9% from AC and 33% from other countries which in this study are called third countries.

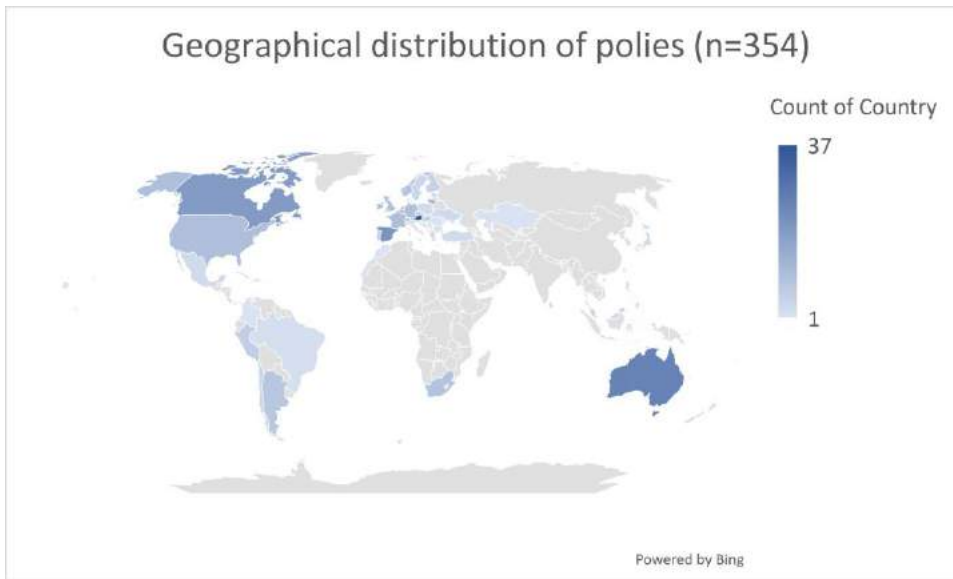


Figure 16. Geographical distribution of STI policies

The launch of policies globally shows an increasing trend with an outlier year of 2016 when 45 gender-related STI policies were launched. The early adopters in 1960s according to STI policy data were Austria and Turkey, while in 1970’s Mexico joined and next decade Greece and Canada introduced their gender-related policies.

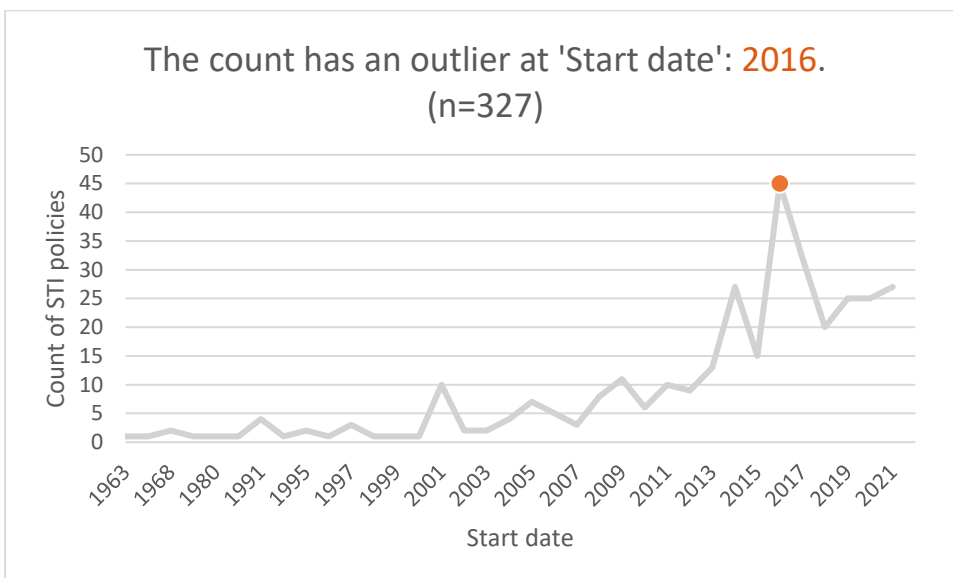


Figure 17. STI Policies divided by the launch year.

The closer investigation of STI policies for the jump in 2016 reveals that many European countries prepared their National Roadmaps, which included gender equality and gender mainstreaming in research. An additional trigger can be the broader global sustainability discussion, as the SDGs (Sustainable Development Goals) were introduced in 2015. A strong focus on SDG5 on Gender Equality could play a key role in this discussion. Overall, the STI policies with gender equality content are increasing steadily.

1.12 Results

1.12.1 Benchmarking of gender equality policies

As explained, the STI policies were divided according to gender-equality objectives defined by the European Commission of which two relate to improving the quantity and involvement of women in STI (priority 1 & 2). One of the objectives in turn relates to more qualitative actions to integrate the gender dimension in R&I contents (priority 3), which has gained clearly less attention in STI policies compared to the other two objectives (see Table 10Table 1). Only 45% of STI policies with the gender content address integration of the gender dimension in R&I content, while the other two priority areas are included in most of these policies (90% for priority 1 and 93% for priority 2). Note that one policy document can address more than one priority area.

Table 10. Number of STI policies by priority area.

| | Gender equality in scientific careers (priority 1) | Gender balance in decision making bodies and positions (priority 2) | Integration of the gender dimension in R&I content (priority 3) |
|--|---|--|---|
| Number of STI policies | 318 | 328 | 159 |
| Top 10 countries (in number of policies) | <ul style="list-style-type: none"> ○ Austria (33) ○ Australia (25) ○ Spain (20) ○ EU (16) ○ Canada (16) ○ Belgium (11) ○ Lithuania (11) ○ Ireland (10) ○ France (10) ○ Switzerland (10) | <ul style="list-style-type: none"> ○ Austria (35) ○ Spain (21) ○ Australia (21) ○ Canada (17) ○ EU (17) ○ Belgium (13) ○ Lithuania (12) ○ Ireland (11) ○ United States (10) ○ Switzerland (10) | <ul style="list-style-type: none"> ○ Spain (17) ○ Austria (14) ○ EU (12) ○ Australia (9) ○ Norway (7) ○ France (7) ○ UK (6) ○ Belgium (6) ○ Hungary (6) ○ Malta (5) |

Figure 18 in turn illustrates the evolution of the three objectives in STI policy, and it shows that initiatives to promote gender equality in scientific careers (priority 1) and gender balance in the decision making bodies (priority 2) have evolved in parallel, while integration of gender dimension in R&I contents (priority 3), which demand perhaps more structural qualitative changes, has gained less attention. However, it can be observed that the latter objective has attracted almost equal attention for instance in 2001 and 2005 but it has been left behind since 2007 when more quantitative attention was devoted to initiatives that focus on participation of women in STI.

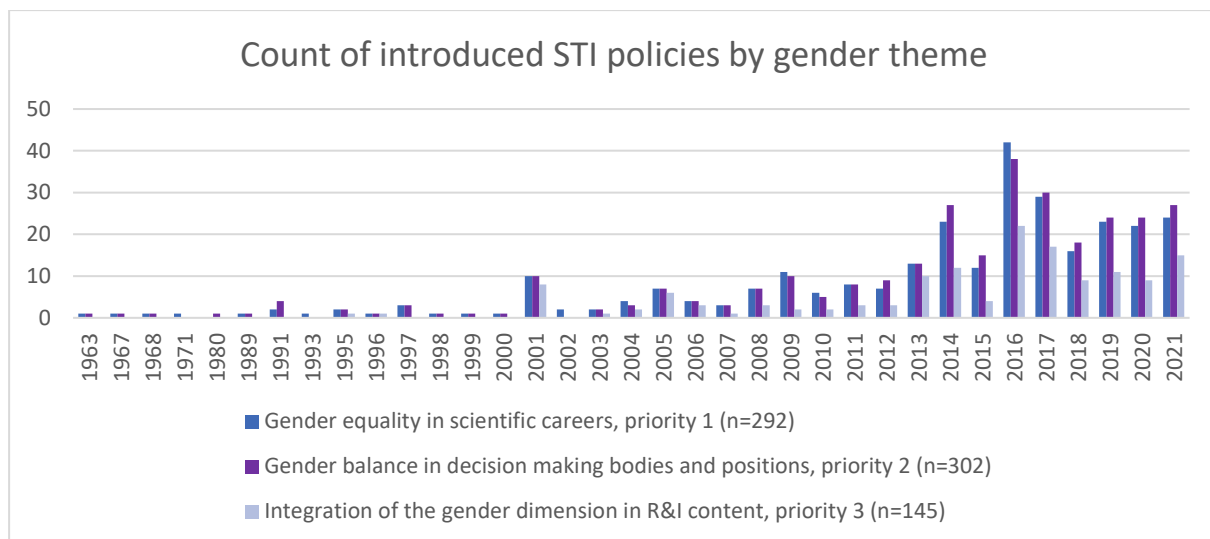


Figure 18. Count of introduced STI policies by gender priority theme.

Austria and Spain are prominent in promoting gender equality in Europe among European Commission initiatives, while Canada and Australia are leading countries outside Europe (Table 10). See full the list of counts by country per gender equality objective in Appendix 6.

1.12.2 Gender equality in scientific careers (priority 1)

As can be observed in Figure 19, the majority of the policy documents in priority area 1, namely promoting gender equality in scientific careers policies relate to governing STI (66%), while 22% offer direct financial support.

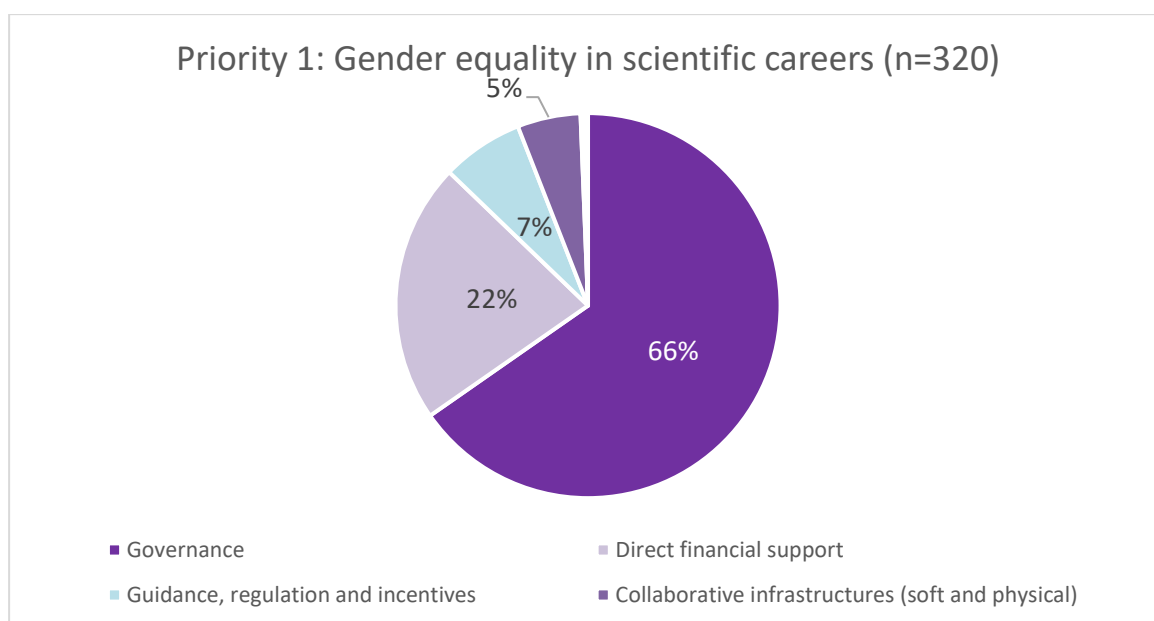


Figure 19. Type of policy instruments to address gender equality in scientific careers.

The majority of governance related policies relate to strategies and plans, but also concrete actions, like an example from Spain in 2006 indicates:

Example 1, Spain: WOMEN AND SCIENCE UNIT, 2006

The women and science unit (UMYC - Unidad de Mujeres y Ciencia) is responsible for putting the principle of gender mainstreaming into practice in the fields of science, technology and innovation. The UMYC is therefore addressing the requirements of the treaty of Amsterdam and organic law 3/2007 of 22 March on effective equality for men and women; two legal texts that establish mainstreaming as the principle underpinning political action in the area of gender equality. In accordance with the principle of mainstreaming, public authorities should consider the differentiating gender impacts and consider measures to actively promote equality between men and women throughout the process of defining, applying and assessing public policies in every stage of their development: legislation, policies, programmes, budgets, plans and projects.

Policies promoting equality in scientific careers can also relate to direct funding, like an example from Mexico shows:

Example 2, Mexico: INMUJERES, 2014

Specialised R&D fund. To promote scientific research, technological development and innovation, by channelling resources to research projects that can generate knowledge, technological developments or innovations for the sector that addresses the problems and needs of women.

Policy focuses in promoting gender equality in scientific careers include:

- Commitment to **promote gender equality** and eliminate biases is pervasive, with specific targets for women's participation being proposed.
- Implementation of **various initiatives**, like mentorship programs and targeted funding, aim to support females in STEM.
- The crucial role of **gender-specific data** and consistent monitoring for evidence-based policy-making is underscored.
- Advocacy for **structural changes** is evident, necessitating the synchronization of policies, regulations, and actions across sectors and borders.

1.12.3 Gender balance in decision making bodies and positions (priority 2)

The division of different policy instruments related to advancing gender balance in decision making bodies and positions follows a similar pattern to priority 1, given that many of the STI policies address both priorities. Governance related policies forms the bulk of the policies (63%).

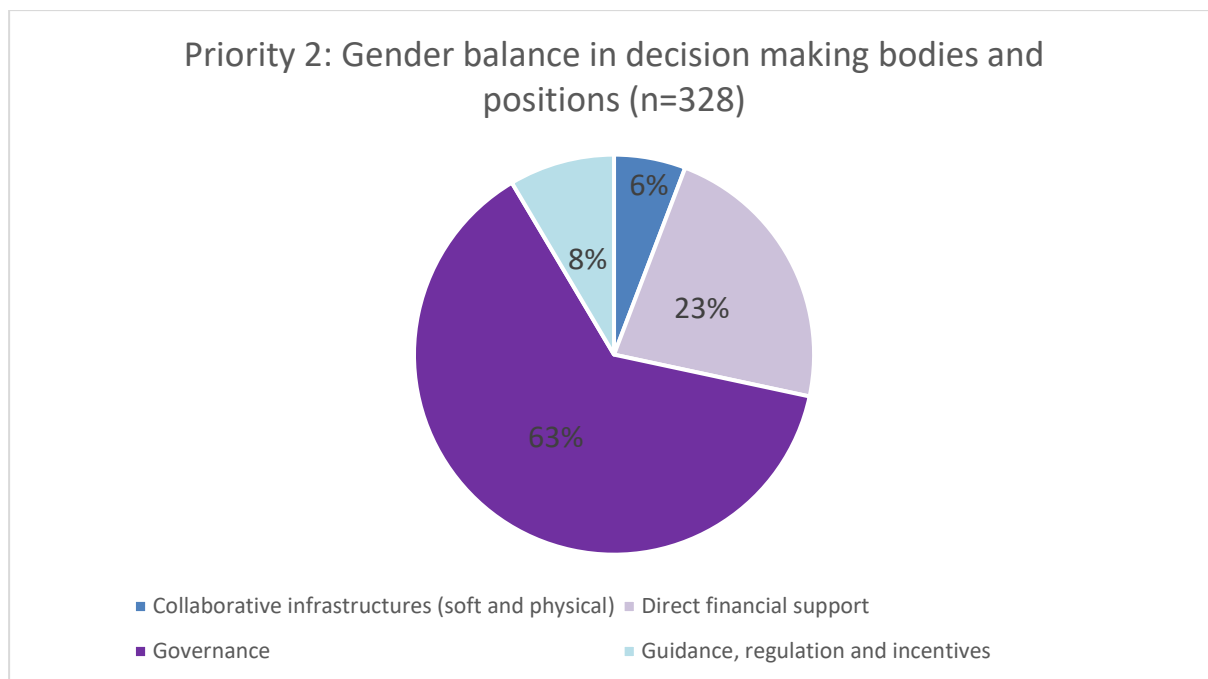


Figure 20. Type of policy instruments to address gender balance in decision making bodies and positions.

An early example from Canada in the 1980s shows how women scientists especially in the field of engineering were encouraged to participate and retain in science via incentivising collaborative infrastructures. This example also nicely shows how Canada has been one of the early adopters of intersectionality in the 1980s and 1990s already when many countries are still struggling with these concepts of gender policies today.

Example 3, Canada: CHAIRS FOR WOMEN IN SCIENCE AND ENGINEERING PROGRAM, 1989.

A program to increase the participation and retention of women in science and engineering and to provide role models for women active in, and considering, careers in these fields. The NSERC (Natural Sciences and Engineering Research Council) women in engineering chair, which was launched in 1989, was expanded and redeveloped in 1996 to its current form, the chairs for women in science and engineering (CWSE) program. The CWSE program is regional with one chair for each of the Atlantic, Quebec, Ontario, prairies and British Columbia/Yukon regions.

It aims to develop, implement and communicate strategies to raise the level of participation and retention of women in science and engineering as students and as professionals, taking into account intersectional dimensions (e.g., age, education, sexual orientation, indigenous status, disability, language, race, ethnicity, culture, etc.). To provide female role models who are accomplished, successful and recognized researchers in science and engineering, and to develop and implement a communication and networking strategy to ensure a regional and national impact on opportunities for women in science and engineering.

Competitions and different types of awards for women make the majority of the instruments that relate to the category of guidance, regulations and incentives. For example, Argentina has been running a prize for women scientists since 2007 to promote and stimulate the participation of Argentinean women in the scientific field.

Example 4, Argentina: "FOR WOMEN IN SCIENCE" AWARD, Premio "Por las Mujeres en la Ciencia", 2007.

The contest awards scientific excellence, promoting and stimulating the participation of women -of Argentine nationality, native or by choice- in the scientific field, granting an economic aid of 300 thousand pesos to an Argentine researcher of up to 49 years old, to continue with the development of her project in the country; and also, 180 thousand pesos to a young researcher up to 34 years old or a postdoctoral fellow.

Policy focuses in promoting gender balance in decision making bodies and positions:

- Acknowledgement of the **underrepresentation** of women, advocating for quotas or targets to enhance their participation.
- Expansion of **gender balance efforts** into entrepreneurship and business leadership spheres.
- Emphasis on **nurturing future female leaders** and decision-makers through substantial investments in their STEM education and careers.
- Integration of **gender equality plans** and **mainstreaming** in institutions, programs, and initiatives.

1.12.4 Integration of the gender dimension in research and innovation content (priority 3)

The priority 3, integration of the gender dimension in R&I content, resembles the other two priorities with a difference that policies related to collaborative infrastructures have so far gained a minimal focus. 76% of the policies address governance (Figure 21). The data also reveals that STI policies that solely address priority 3 do not exist in the data, but typically the STI policy addresses all three priority areas. This reflects the need in future to design STI policies strongly directed to address the integration of the gender dimension in R&I contents.

Interestingly, four new countries, Norway, Hungary, Malta and UK show up among the top 10 countries setting STI policies that include the gender dimension in R&I content.

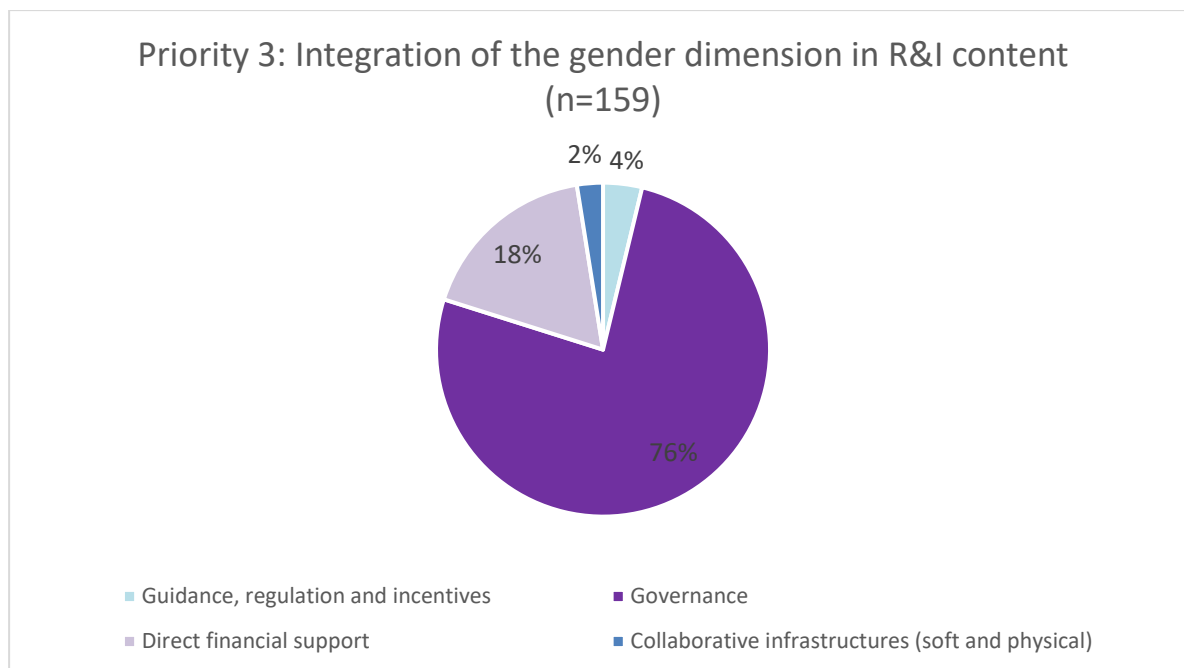


Figure 21. Type of policy instruments to address the integration of the gender dimension in R&I content.

A governance example from Norway illustrates a typical policy in this category that refers to setting up gender committees or units in STI organisations.

Example 5, Norway: COMMITTEE FOR GENDER BALANCE AND DIVERSITY IN RESEARCH, 2004

The government-appointed committee provides support and recommendations on measures contributing to gender balance and diversity in the Norwegian research sector and to gender and diversity perspectives in research. The fourth committee was appointed for 2014-2017. In 2014 the mandate of the committee was broadened to include issues of diversity in research (with a focus on ethnic diversity) in addition to gender balance.

The COVID outbreak directed funding to gender specific post-pandemic research in many countries. One of the important topics in this context is gender-based-violence that shows also in the Portuguese example.

Example 6, Portugal: GENDER RESEARCH 4 COVID-19, 2020

Special funding for research projects on the impact of the health emergency caused by covid-19 on gender-based inequalities and violence against women and domestic violence. No crisis is neutral from the point of view of gender, causing different impacts during and after the time of its occurrence. Women are at the front line of the response to the pandemic, as professionals of health, social support, cleaning, and as scientists and researchers and as mobilizers; also while working mothers, they are particularly affected by the demands of reconciling towards care and support for children whose schools and day care centres have closed. Another level of impact of the pandemic crisis will be on the

economy and on the functioning of the labour market, with differing effects expected on women in terms of employment, unemployment and working conditions, exacerbated by the strong sexual segregation of jobs and sectors of activity. Finally, times of crisis are generally associated with an increase in violence against women and domestic violence, with the increased risk of violence very much associated with the situation of uncertainty and confinement in which families find themselves and the difficulty to access formal and informal networks for support.

Policy focuses in promoting the integration of the gender dimension in research and innovation:

- Strong emphasis on **mainstreaming gender** and ensuring gender considerations permeate research across disciplines.
- **Balancing gender representation** within research teams and leadership through targeted measures.
- **Awareness-raising** and capacity-building endeavours, aimed at sensitizing the STI community towards the gender perspective in research and innovation.
- Strengthening **gender monitoring** through the adoption of gender indicators and sex-disaggregated data.

1.12.5 Gender equality in the context of feminist foreign policy (FFP)

According to UN Women¹⁰ (2022), a handful of countries advocate feminist foreign policy (FFP) approach which can be considered as a methodology adopted for enhancing gender mainstreaming in international affairs institutions. It aims to implement systematic practices to ensure that *"a gender perspective [is integrated] in all policies and programmes so that, before decisions are taken, an analysis is made of the effects on women and men, respectively"* (United Nations, 1995: 116).

After Sweden in 2022 declared not to continue its feminist foreign policy, an approach it has applied since 2014 as a leading country, countries that still label their foreign policy approach as feminist are Canada (2017), France (2019), Mexico (2020), Spain (2021), Luxembourg (2021), Germany (2021) and Chile (2022) (UN Women, 2022).

There are also multiple countries that are on the verge of adopting FFP. A Feminist Foreign Policy Plus Group¹¹ which comprises the governments of 17 countries, include countries like Albania, Argentina, Belgium, Colombia, Costa Rica, Israel, Liberia, Mongolia, Rwanda.

Because STI is increasingly characterized by its international nature, it is interesting to explore how so-called FFP countries compare to those countries who do not advocate feminist principles in their foreign policy. It could be argued that feminist (foreign) policy principles guide the integration of the gender dimension into international STI collaboration given that international STI is partly steered via development cooperation and foreign aid, which in turn are affected by foreign policy. For further reading about feminist principles in STI, see *D.2.2 - Benchmarking report on gender equality in science, technology and innovation (STI) dialogues*.

¹⁰ UNWomen (2022) FEMINIST FOREIGN POLICIES: AN INTRODUCTION.
https://www.unwomen.org/sites/default/files/2022-09/Brief-Feminist-foreign-policies-en_0.pdf

¹¹ <https://www.government.nl/documents/diplomatic-statements/2023/09/20/political-declaration-on-feminist-approaches-to-foreign-policy> (accessed 2.10.2023)

Albeit interesting setting to investigate FFP and non-FFP countries' STI policy development, our data does indicate a notable increase in the number of STI policies with gender dimensions included. One of the reasons for this is that the phenomenon does not yet show in the data since many countries have adopted the FFP approach very recently. Table in Appendix 5: STI Policies by country indicates also countries advocating feminist foreign policy approaches.

1.13 Good practices for promoting gender equality in STI documents

Stronger focus to context specific gender and inclusiveness: General gender equality clauses in STI agreements and policies are common practice in STI field but leave substance aside. Therefore, to add concrete objectives and targets to advance gender equality and inclusiveness should be added to Memorandum of Understandings which are more flexible to alterations and additions than bilateral and multilateral agreements between nations.

It is important to improve context specificity of the gender equality and inclusiveness actions to address specific challenges and barriers related to different fields and disciplines within STI.

Improve STI policy incentives and agreements related to the integration of gender in research, development and innovation activities: It is time to move from 'add women and stir' approaches to actions that integrate sex and gender and inclusiveness in the research and innovation contents. Although important for transition towards more gender equal STI, increasing the number of women, and empowering women in STI are not sufficient but more focus needs to be laid on adding gender in actual research contents in different disciplines, technologies and thematic areas. Adding intersectionality aspects instead of general clauses of 'gender equality' improves STI culture and structures by making more STI professionals, starting from researchers and scientists to be more sensitive to inclusiveness, gender and diversity aspects of their work.

Holistic policy framework that navigates gender issues holistically, however considering the underrepresentation of policies directed to address the integration of the gender dimension in R&I contents needs stronger attention in future design of STI policies.

Adjust gender language in STI: Gender related language should be revised from gender equality to inclusiveness to better reach different groups. Terminology that emphasises strongly gender only does not resonate with some groups working in science and technology research, or STI decision-makers. Given that more field specific STI agreements are suggested, the language should also be better adjusted to specific groups in policies and all practical level initiatives taking place in STI domains, like universities and research organisations.

Also, intersectionality aspects should be better integrated both in STI agreements and STI policies. Currently, intersectionality is not a strong topic of neither STI policies, nor STI agreements.

APPENDIX 1: CATEGORISATION OF THE STI AGREEMENTS

| STI agreement category | Examples of content |
|--|---|
| Formal Bilateral Agreement | |
| Formal Multilateral Agreement | |
| STI implementation activities | <i>Joint action plans; grant agreements</i> |
| Dissemination and promotion of the results | |
| MoU | |
| Other | <i>Declaration of intent; joint statement; joint declaration; Exchange Program, Grant Program</i> |

APPENDIX 2: GROUPING OF THE STI INSTITUTIONS

| | Institution code | 3rd countries | EU |
|---|------------------|---|---|
| Ministry of Foreign Affairs | 1 | | |
| Ministry of Science and Technology | 2 | e.g. CONICYT/CL; CONACYT/MX | |
| Other government level organization | 3 | e.g. government agencies, federal government | e.g. European Community; AECID/ES (for international cooperation); Eurostat |
| STI Funding Organization | 4 | | |
| Research and Technology Organisations (RTOs) | 5 | | |
| University | 6 | | |
| Non-governmental organization | 7 | | |
| STI related association | 8 | | e.g. STI promotion agencies (DWIH/DE; DAAD/DE) |
| Other (Non Profit Organization; Company) | 9 | | |
| Intergovernmental Organization (Incl. Research and Technology Councils & Commissions & Foundations) | 10 | e.g. CONICET/AR | e.g. European Research Council |
| International Organizations and Funding Agencies Partnership | 11 | Multinational actors (e.g. CIAM (Inter-American Materials Collaboration)) | Multinational actors (e.g. Trans-Atlantic Platform) |
| Nations | 31 | Nations and governments | |
| Other Ministries | 32 | Other Ministries | |

APPENDIX 4: COUNTS OF STI AGREEMENTS WITH GENDER CONTENTS IN DIFFERENT COUNTRIES (AGREEMENTS WITH GENDER CONTENT)

| Europe | count | Africa | count | AC | count | Asia | count | Middle and South | count | Other | count | North America | count |
|----------------|-------|--------------|-------|-------------|-------|-------|-------|------------------|-------|--------------------|-------|---------------|-------|
| Finland | 11 | South Africa | 13 | Israel | 2 | India | 19 | Chile | 5 | transnational | 19 | Canada | 18 |
| Spain | 11 | Botswana | 1 | Georgia | 1 | China | 2 | Brazil | 4 | EU Third Countries | 6 | USA | 2 |
| Austria | 7 | Swaziland | 1 | Tunisia | 1 | Japan | 1 | Mexico | 3 | | 4 | | |
| Netherlands | 4 | Tanzania | 1 | Turkey | 1 | Korea | 1 | Argentina | 2 | Russia | 1 | | |
| Sweden | 4 | | | Switzerland | 1 | | | Cuba | 1 | MULTINATIONAL | 1 | | |
| United Kingdom | 4 | | | | | | | | | | | | |
| France | 2 | | | | | | | | | | | | |
| Germany | 2 | | | | | | | | | | | | |
| Denmark | 1 | | | | | | | | | | | | |
| Italy | 1 | | | | | | | | | | | | |
| Portugal | 1 | | | | | | | | | | | | |

APPENDIX 5: STI POLICIES BY COUNTRY

| EU27 | AC | | other | | |
|----------------------|-----------|------------------------------|--------------|---------------|-----------|
| Austria | 37 | | | Australia | 25 |
| Spain | 21 | United Kingdom | 10 | Canada | 19 |
| European Union | 17 | Norway | 9 | Switzerland | 11 |
| Belgium | 14 | Turkey | 3 | United States | 10 |
| Lithuania | 12 | Ukraine | 3 | South Africa | 9 |
| Ireland | 11 | Iceland | 2 | Argentina | 8 |
| Germany | 10 | Israel | 3 | Peru | 6 |
| France | 10 | Morocco | 1 | Costa Rica | 6 |
| Malta | 9 | | 31 | Korea | 6 |
| Netherlands | 8 | | | Chile | 4 |
| Hungary | 7 | FFP country | | Malaysia | 4 |
| Czech Republic | 6 | | | Japan | 3 |
| Finland | 5 | | | Mexico | 3 |
| Portugal | 5 | | | Brazil | 2 |
| Cyprus | 5 | | | Colombia | 1 |
| Greece | 5 | | | Kazakhstan | 1 |
| Sweden | 4 | | | | |
| Slovenia | 4 | | | | 118 |
| Estonia | 4 | | | | |
| Poland | 3 | | | | |
| Denmark | 3 | Missing consortium countries | | | |
| Luxembourg | 2 | India | | | |
| Italy | 1 | China | | | |
| Croatia | 1 | | | | |
| Romania | 1 | | | | |
| | 205 | | | | |
| Missing EU countries | | | | | |
| Bulgaria | | | | | |
| Slovakia | | | | | |

APPENDIX 6: COUNT OF STI POLICIES BY OBJECTIVE

| Country | Count of STI policies | | | | |
|----------------|--|----------------|---|----------------|---|
| | Gender equality in scientific careers (Priority 1) | Country | Gender balance in decision making bodies and positions (Priority 2) | Country | Integration of the gender dimension in research and innovation content (Priority 3) |
| Austria | 33 | Austria | 35 | Spain | 17 |
| Australia | 25 | Spain | 21 | Austria | 14 |
| Spain | 20 | Australia | 21 | European Union | 12 |
| European Union | 16 | Canada | 17 | Australia | 9 |
| Canada | 16 | European Union | 17 | Norway | 7 |
| Belgium | 11 | Belgium | 13 | France | 7 |
| Lithuania | 11 | Lithuania | 12 | United Kingdom | 6 |
| Ireland | 10 | Ireland | 11 | Belgium | 6 |
| France | 10 | United States | 10 | Hungary | 6 |
| Switzerland | 10 | Switzerland | 10 | Malta | 5 |
| United Kingdom | 10 | France | 10 | Lithuania | 5 |
| Malta | 9 | Germany | 10 | Canada | 5 |
| United States | 9 | Norway | 9 | Germany | 5 |
| Norway | 9 | South Africa | 9 | Ireland | 5 |
| South Africa | 8 | Netherlands | 8 | Cyprus | 4 |
| Germany | 8 | United Kingdom | 8 | Slovenia | 4 |
| Argentina | 8 | Argentina | 8 | Argentina | 4 |
| Hungary | 7 | Malta | 7 | Chile | 3 |
| Netherlands | 7 | Peru | 6 | Peru | 3 |
| Peru | 6 | Hungary | 6 | South Africa | 3 |
| Costa Rica | 6 | Greece | 5 | Czech Republic | 3 |
| Czech Republic | 5 | Czech Republic | 5 | Denmark | 3 |
| Portugal | 5 | Portugal | 5 | Greece | 2 |
| Korea | 5 | Costa Rica | 5 | Switzerland | 2 |
| Cyprus | 5 | Cyprus | 5 | Sweden | 2 |
| Slovenia | 4 | Korea | 4 | United States | 2 |

| Country | Count of STI policies | | | | |
|-------------|--|-------------|---|-------------|---|
| | Gender equality in scientific careers (Priority 1) | Country | Gender balance in decision making bodies and positions (Priority 2) | Country | Integration of the gender dimension in research and innovation content (Priority 3) |
| Estonia | 4 | Slovenia | 4 | Ukraine | 2 |
| Sweden | 4 | Finland | 4 | Korea | 2 |
| Japan | 3 | Chile | 4 | Costa Rica | 2 |
| Israel | 3 | Japan | 3 | Turkey | 1 |
| Chile | 3 | Estonia | 3 | Iceland | 1 |
| Finland | 3 | Turkey | 3 | Croatia | 1 |
| Malaysia | 3 | Denmark | 3 | Israel | 1 |
| Denmark | 3 | Sweden | 3 | Brazil | 1 |
| Turkey | 2 | Israel | 3 | Morocco | 1 |
| Brazil | 2 | Poland | 3 | Luxembourg | 1 |
| Ukraine | 2 | Ukraine | 3 | Netherlands | 1 |
| Poland | 2 | Iceland | 2 | Portugal | 1 |
| Greece | 2 | Luxembourg | 2 | Malaysia | |
| Mexico | 2 | Malaysia | 2 | Colombia | |
| Iceland | 1 | Mexico | 2 | Estonia | |
| Romania | 1 | Romania | 1 | Japan | |
| Colombia | 1 | Colombia | 1 | Poland | |
| Luxembourg | 1 | Croatia | 1 | Kazakhstan | |
| Morocco | 1 | Morocco | 1 | Romania | |
| Kazakhstan | 1 | Brazil | 1 | Finland | |
| Croatia | 1 | Kazakhstan | 1 | Mexico | |
| Italy | | Italy | 1 | Italy | |
| Grand Total | 318 | Grand Total | 328 | Grand Total | 159 |

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