Gender STI

Mapping on gender equality in STI bilateral and multilateral agreements. Interim Version.

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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 interim report of Mapping on gender equality in STI bilateral and multilateral agreements introduces two consecutive studies, the pilot study and the main mapping study, aiming to explore how gender equality is addressed in STI related bilateral and multilateral agreements, Memorandum of Understandings (MoUs) and STI implementation activities. These agreements are a formal part of international STI dialogues which is in the main interest of Gender STI project.

Who participates in STI dialogues that promote gender equality?

The mapping study, which concentrated on the international STI dialogues from the perspective of STI agreements (incl. MoUs and STI implementation activities), answers questions like which actors are involved in the STI dialogues that promote gender equality and what kind of gender-related content was found in the STI agreements. Like other Gender STI project activities, this mapping study also focused on dialogues between EU (incl. AC) and third countries.

Gender content in the STI agreements was found in 15 percent of the identified agreements. The sample consisted of 528 STI agreements from 50 countries.

Interestingly, the results indicate that universities do not excel in having gender content in the STI agreements, although they dominate in the sample. Most of the gender content is found in government level dialogues, for instance those dialogues in which the European Commission participates, but also in dialogues with Research and Technology Organisations (RTOs) especially in the third country context. In turn, the role of STI funding organizations is rather limited.

Another observation is that most of the gender content is included in Memorandum of Understandings or STI implementation activities like joint action plans and grant agreements between countries. Reason for this can be that bi- and multilateral STI agreements offer less room for modifications because these agreements contain often standardised text with less details on the context, whereas MoUs relate to collaboration on specific fields of science.

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

In summary, it can be said that the two largest gender themes in the data are clearly gender equality and women empowerment. The former concentrates on gender equality based on national gender equality articles for example, while the latter often promotes women participation or places women as targets of the intervention. Increasing themes in the data are also inclusion which does not always specify gender but relates to equality in education, and intersectionality showing in phrases of non-discrimination on the basis of race, ethnicity, colour, religion, sex, for instance.

1 GENDER EQUALITY AND STI AGREEMENTS

This study was interested in STI related bilateral and multilateral agreements and Memorandum of Understandings (MoUs) as these two, with STI implementation-related documents, form indication of formal international STI dialogue which is focus of 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 comprehends also 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) (**Error! Reference source not found.**) 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.

Gender STI⫛

EU member states (incl. UK)

GenderSTI consortium third country partners

Canada		Argentina
USA		Mexico
China		India
Brazil		South Africa
Chile		South Korea

Belgium	Lithuania
Bulgaria	Luxembourg
Czechia	Hungary
Denmark	Malta
Germany	Netherlands
Estonia	Austria
Ireland	Poland
Greece	Portugal
Spain	Romania
France	Slovenia
Croatia	Slovakia
Italy	Finland
Cyprus	Sweden
Latvia	

The protocol order of the member states is based on the alphabetical order of their geographical names in the original language.

EU associated countries

Albania
Armenia
Bosnia and Herzegovina
Faroe Islands
Georgia
Iceland
Israel
Kosovo
Moldova
Montenegro
North Macedonia
Norway
Serbia
Tunisia
Turkey
Ukraine

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.

2 PILOT STUDY ON GENDER EQUALITY IN STI AGREEMENTS

2.1 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 (**Error! Reference source not found.**). 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 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.

2.2 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 (**Error! Reference source not found.**). Majority 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

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

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 **Error! Reference source not found.** reveals the government level STI bi- and multilateral agreements were practically the only category that contained this information. See Section 2.3 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.
Science and innovation funding organizations	Finland: 2	5%	Gender content was found in Spanish and Brazilian materials
	Brazil: 33		
	Spain: 21		
Multinational organisations	Brazil: 21 South Africa: 1	5%	E.g. CERN, EUREKA, Joint Research Centre (JRC)

2.2.1 The STI agreements in the government level

According to findings (Figure 2), bilateral agreements and MoUs are the preferred forms in 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.

GOVERNMENT LEVEL

■ before 2014　■ After 2015

	BILATERAL AGREEMENTS	MULTILATERAL AGREEMENTS	MOUS	STI IMPLEMENTATION ACTIVITIES	OTHER
before 2014	16	1	13		1
After 2015	8	1	10	3	
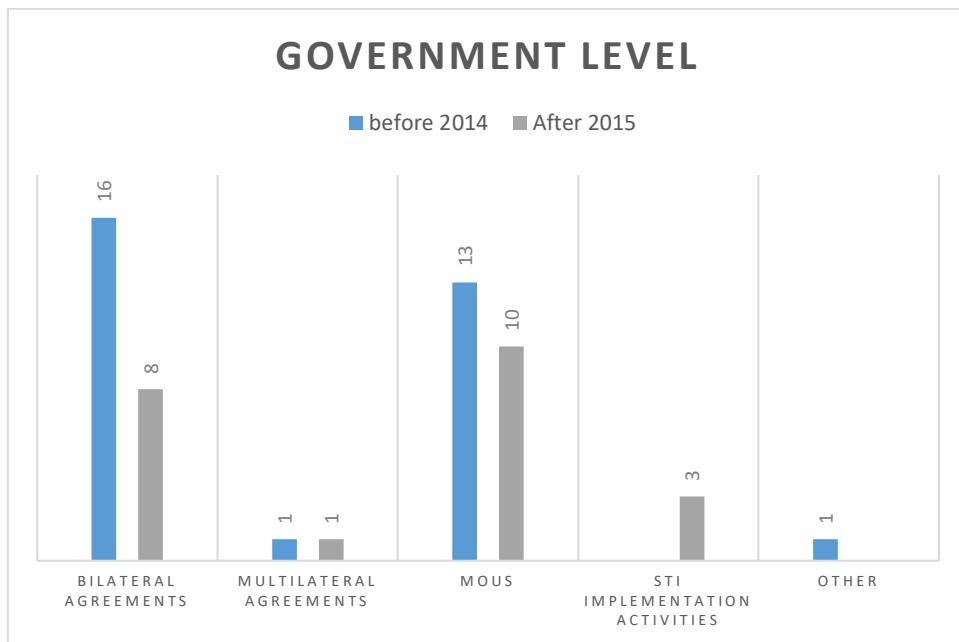
Figure 2. Number of different STI agreements in the government level

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. **Error! Reference source not found.** 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.

Gender STI

Table 3. STI cooperation and EU Delegations

Argentina

- 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

  Coordination of STI cooperative activities in Argentina: Ministry of Science, Technology and Innovation.

- 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

Brazil

- International STI cooperation between EU and Brazil:
  https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/brazil_en

  Coordination of STI cooperative activities in Brazil: The Ministry of Foreign Affairs, Brazil

- 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

Chile

- EU Chile Science & Technology Cooperation Agreement signed in 2002:
  https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1599466931318&uri=CELEX:22003A0807(01)
  Coordination of cooperative activities: the National Research and Development Agency (ANID) (previously CONICYT)

- 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

Mexico

- 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

  Coordination of STI cooperative activities in Mexico: National Science and Technology Council (CONACYT)

- 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

- 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

- 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	• 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	• 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 Cooperation in Science and Technology (COST) organisation since 2019. • 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	• 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 Coordination of STI cooperative activities in Canada: Government of Canada • International STI cooperation between EU and Canada: https://ec.europa.eu/info/research-and-innovation/strategy/international-cooperation/canada_en
US	• 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

2.2.2 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 3).

RTO LEVEL

before 2014   After 2015
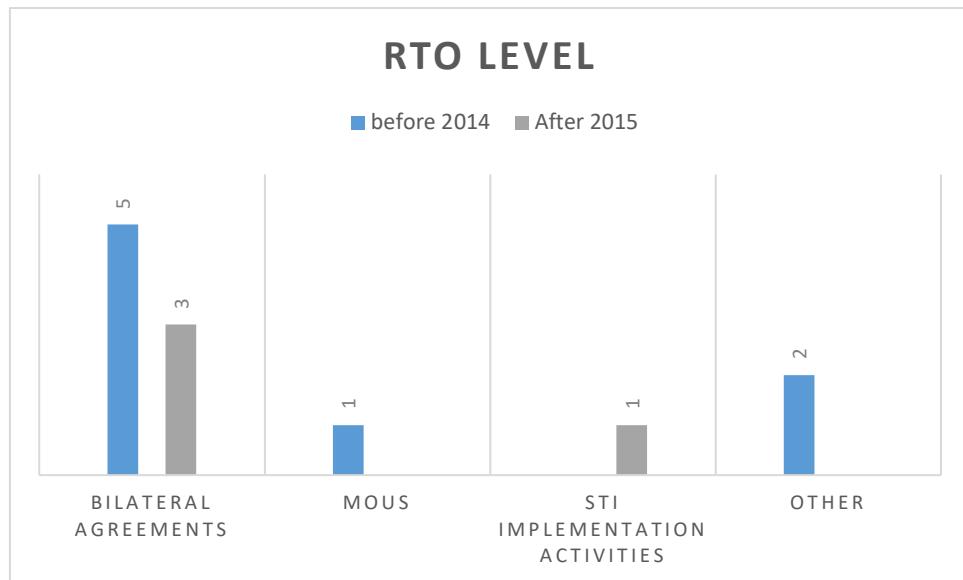
Figure 3. Number of different STI agreements in RTOs

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.

2.2.3 The STI agreements in the universities

In the university category (Figure 4), 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.

UNIVERSITY LEVEL

before 2014   After 2015
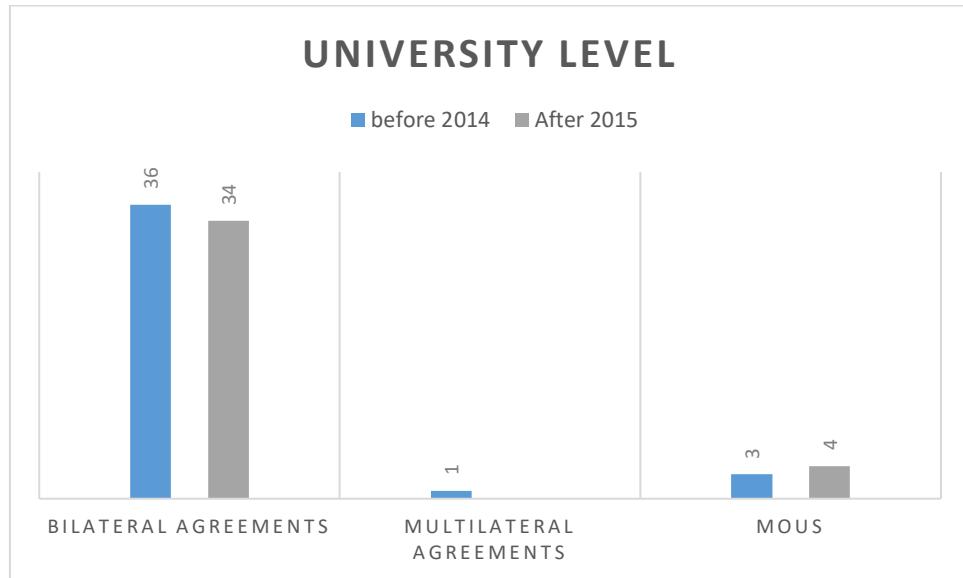
Figure 4. Number of STI agreements in universities

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.

2.2.4 The STI agreements in the funding agencies

The STI agreements found in the research funding organisations (RFOs) were mostly signed before 2014 (Figure 5), but had some reference to gender.
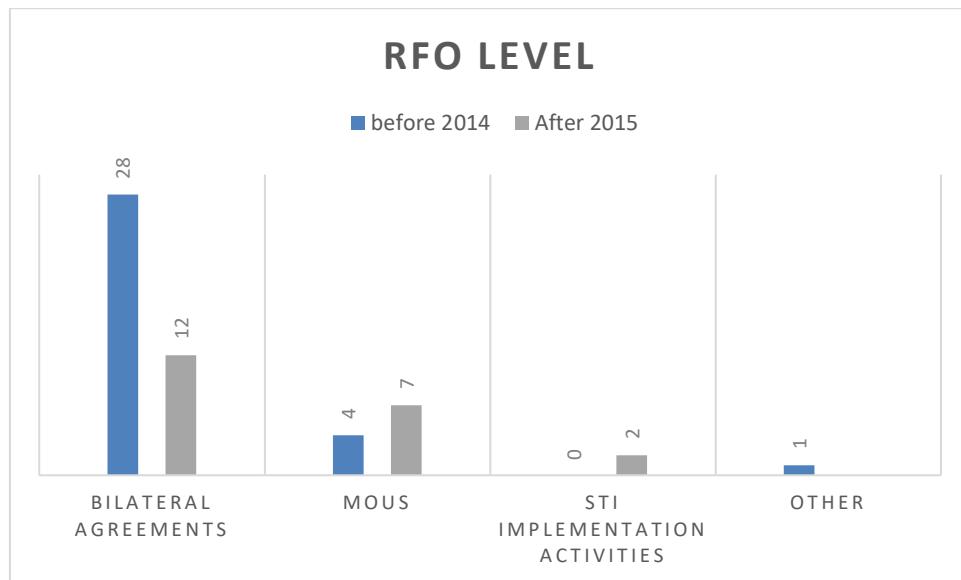
Figure 5. Number of STI agreements in RFOs

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.

2.2.5 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.

2.3 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 2015[2], 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

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

example in India's and EU's commitment to human rights which includes 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, 2020[3] 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 3.4 that introduces the findings of the main mapping study.

2.4 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 **Error! Reference source not found.**.

Table 4. 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)

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

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[3]Source: https://mea.gov.in/bilateral-documents.htm?dtl/33171/IndiaItaly_Joint_Statement_and_Plan_of_Action_20202024 (accessed 22.10.2022)

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.
   o NGOs are excluded from the study
   o Polytechnics are included into the same class with universities. They might have specific MoUs.
   o 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).

3 THE MAPPING OF BI- AND MULTILATERAL STI AGREEMENTS

3.1 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 current 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.

3.2 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 6). Furthermore, the study followed the same geographical focus introduced in section 1 than the pilot study.
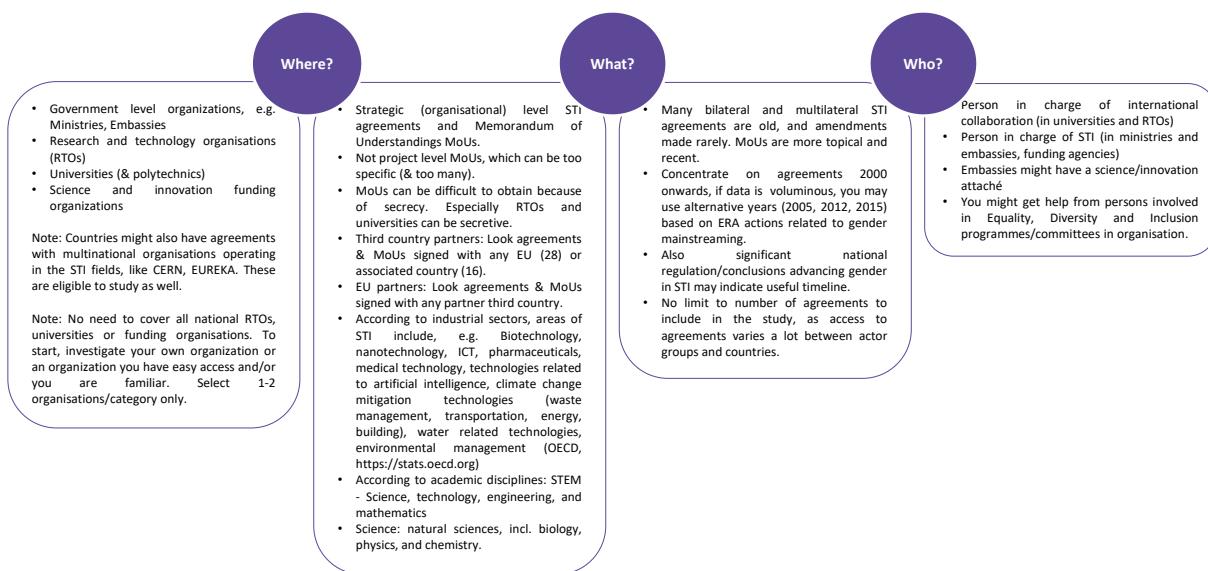

Figure 6. Research design for mapping the STI agreements

The central tool for mapping agreements was an excel template that partners filled in (Figure 7). The template helped to collect comparative information from all countries and aided later to analyse the data.

Figure 7. 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.

3.3 Findings of the mapping study

A total 528 STI agreements was included in the study, 81 agreements (15%) had gender-related content (Figure 8) which will be further discussed in section 3.4. This means that gender content in the STI agreements is not yet mainstream.
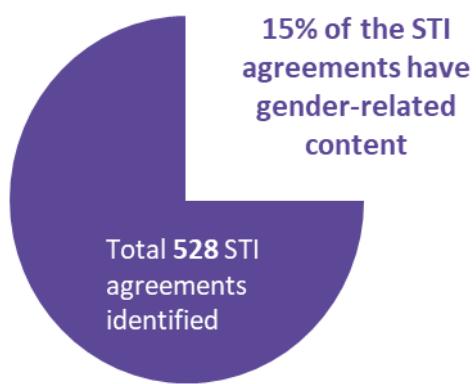
Figure 8. Share of the STI agreements with gender content.

Majority of the identified STI agreements (43%) were formal bilateral agreements (Figure 9). 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.

Gender STI
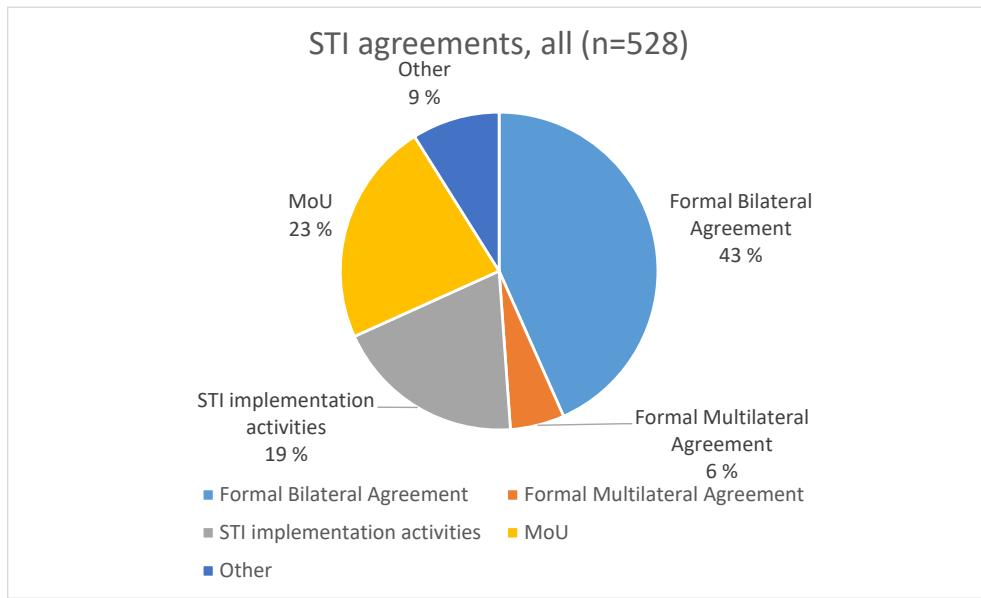
Figure 9. Types of STI agreements in the sample (n=528)

Universities are the main actor group in the data, both in EU countries and third countries (Figure 10). 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.
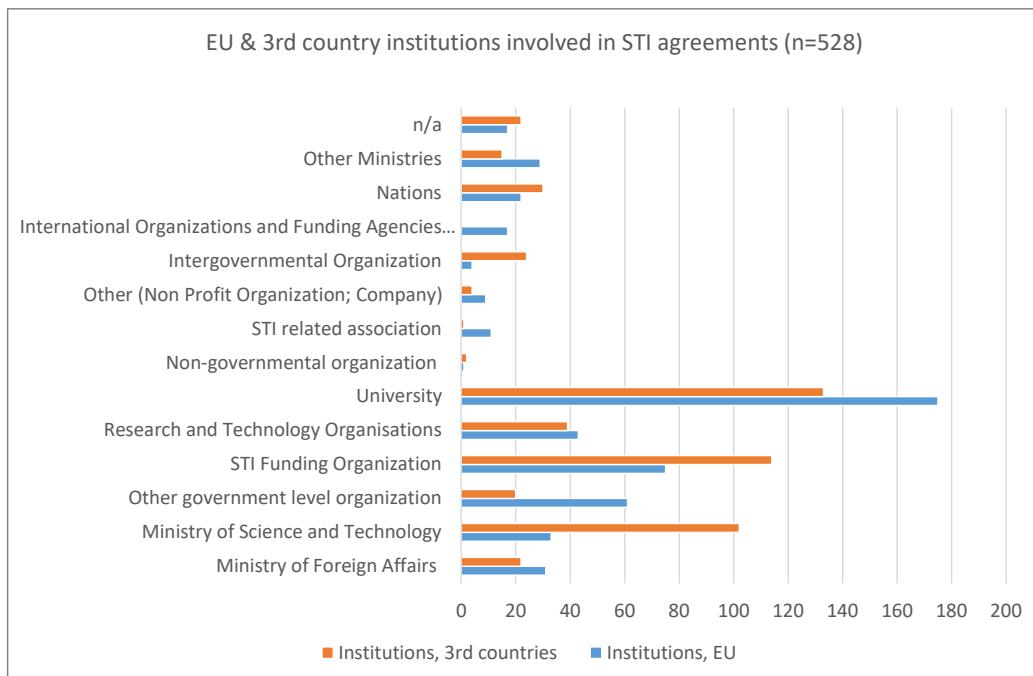
Gender STI

Figure 10. EU and third country institutions involved in the STI agreements

Initially, we collected STI agreements from the countries involved in Gender STI consortium[4], 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 11 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.
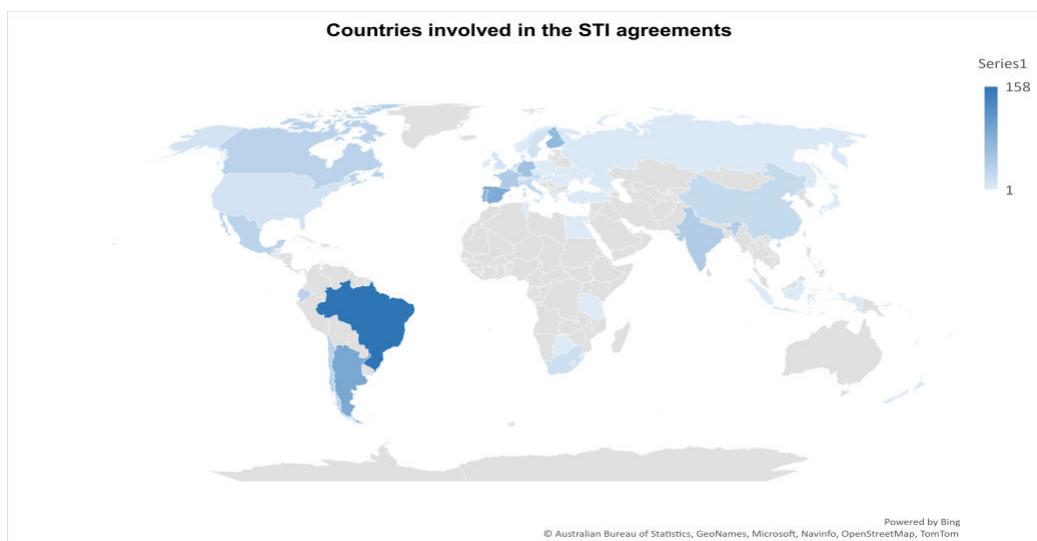
Figure 11. Countries involved in the STI agreements in the data

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[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.

In addition to countries shown in

Figure 11, 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 our data. The data includes also some purely national STI agreements.

3.3.1   Gender equality in STI agreements over time

It was observed that gender-related content is present in the STI dialogues in the 2000s (Figure 12). 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.
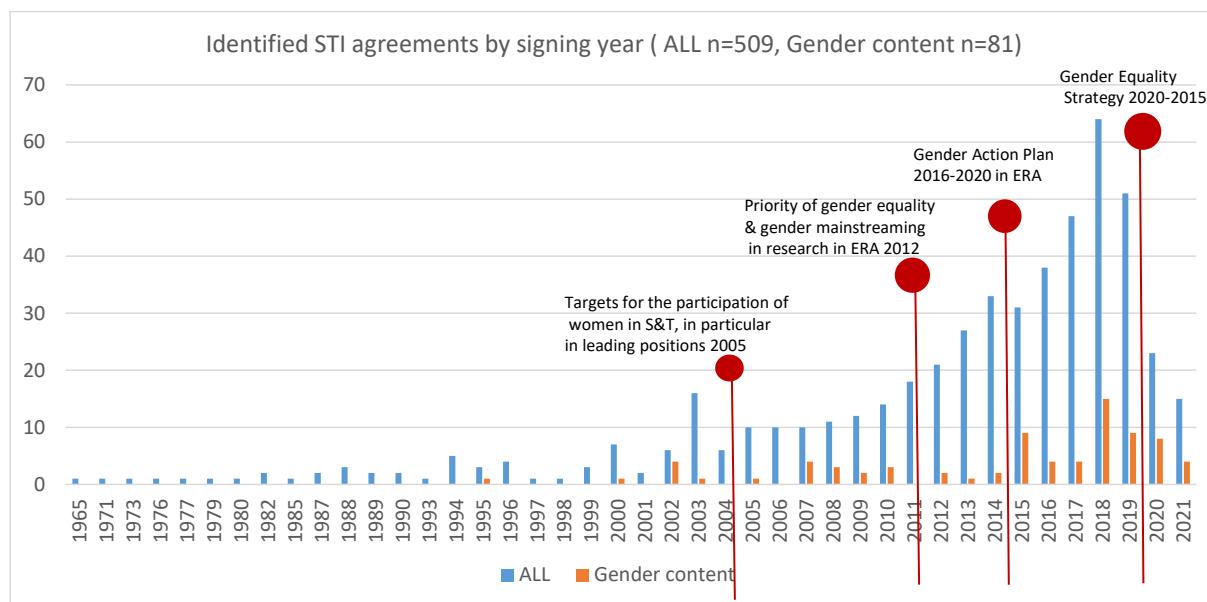
Figure 12. Identified STI agreements by signing year

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.

3.4 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

Gender STI

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 2.

Figure 13 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 11), we see that Brazil, Argentina, Portugal and Germany have limited amount of gender content in their STI agreements considering their representation in the sample.
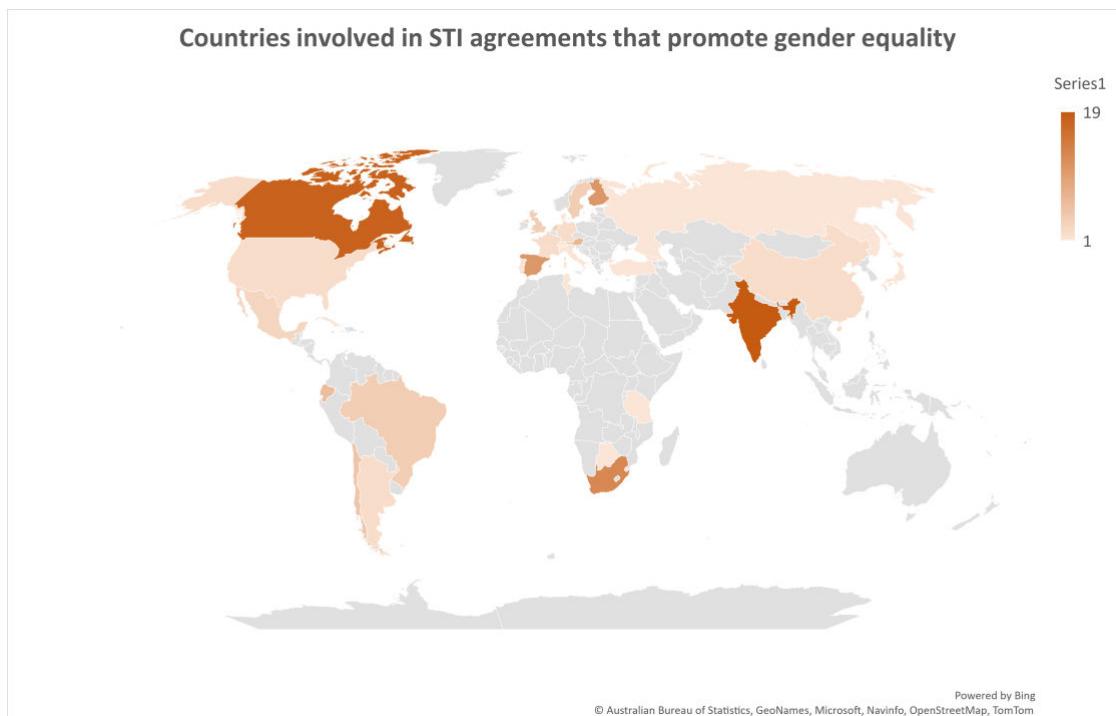
Figure 13. Countries involved in STI agreements that promote gender equality

Nevertheless, as it has been pointed out, one of the main findings of 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 14 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 10). 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.
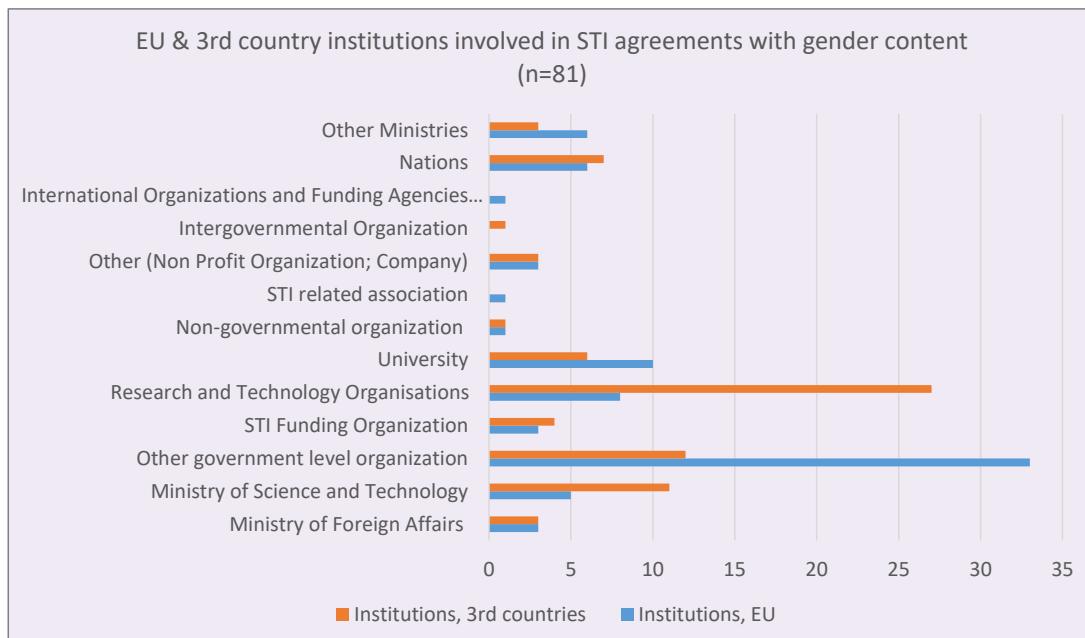
Figure 14. Institutions involved in the STI agreements with gender content

Figure 15 confirms our pilot study findings that gender content is not strongly present in formal agreements but in MoUs and STI implementation related agreements.
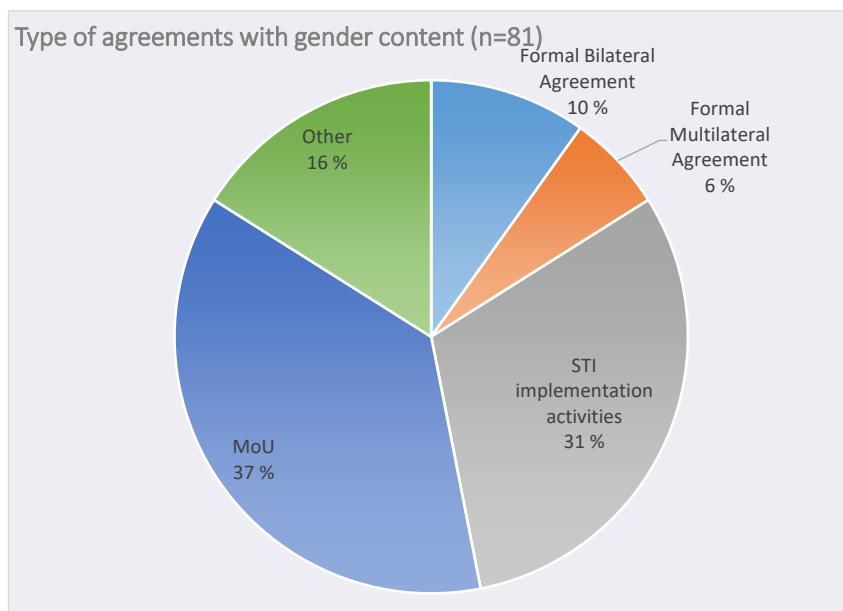
Figure 15. Types of STI agreements with gender content

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 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.

3.4.1 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 5 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 5. 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
	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
	Inclusion; women & girls' participation
1 %	**Inequality**
10 %	**Intersectionality**
	Intersectional; gender balance
	Intersectionality; research
	Intersectionality; women
1 %	**Non-discrimination**
9 %	**Social cohesion /inclusion**
	Social cohesion /inclusion; SDGs
	Social cohesion /inclusion; women & girls empowerment; gender equality; cooperation development; SDGs
	Social diversity
	Social empowerment
20 %	**Women**
	Women as target of intervention
	Women empowerment
	Women participation
	Women supporting
6 %	**n/a**

Regardless of the limitations in the data collection, two gender themes stand up, namely gender equality and women empowerment (Table 5). 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)

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]

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[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)

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 biomedicals 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 agreement[8], 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]

3.4.2 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 6 illustrates which fields of science promote gender content in the sample.

Table 6. Science fields that promote gender content in the STI agreements

(n=74)	Science Fields	Count	%
Applied Sciences	Life science, biomedicals	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	
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

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

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]

3.4.3 Gender content in institutional dialogues

Moreover, according to the data, different institutional dialogues seem to favour certain gender themes. See Table 7 and Table 8 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 pilot study).

Table 7. 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 %
Number of agreements	*48*	*17*	*5*	*0*	*3*

Table 8. 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.

3.5 Concluding comments

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).

Furthermore, the final version (D1.4, due in M36) of this interim report will be complemented with concrete recommendations of how gender equality can be addressed in different types of agreements promoted by different STI institutions. To formulate recommendations, we explore an additional data source for STI policies, OECD STIP Compass database (https://stip.oecd.org/stip/). It is hoped to reveal how gender equality is present in national STI policies.

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.

APPENDIX 1: CATEGORISATION OF THE STI AGREEMENTS

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

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 3: COUNTS OF STI AGREEMENTS

Count of STI Agreements in different countries (all agreements)

Europe	Count	Africa	Count	Associated countries	Count	Asia	Count	Middle and South America	Count	Other	Count	North America	Count
Spain	86	South Africa	16	Israel	9	India	42	Brazil	15	Trans-national	23	Canada	33
Portugal	76	Swaziland	1	Switzerland	6	China	24	Argentina	90	N/a	13	USA	11
Finland	68	Tanzania	1	Tunisia	3	Korea	8	Chile	31	MULTINA-TIONAL	12		
Germany	56	Botswana	1	Norway	2	Japan	2	Mexico	31	Russia	4		
France	43			Turkey	1	Indonesia	1	Cuba	1	Egypt	1		
EC	33			Georgia	1	Taiwan	1	Guatemala	1	New Zealand	1		
Italy	25			Ukraine	1								
Austria	22			Armenia	1								
Netherlands	16			Romania	1								
Sweden	13												
United Kingdom	13												
Belgium	9												
Denmark	7												
Czech Republic	4												
Greece	3												
Ireland	2												
Croatia	1												
Poland	1												
Slovakia	1												
Cyprus	1												
Hungary	1												

Gender STI

APPENDIX 4: COUNTS OF STI AGREEMENTS WITH GENDER CONTENTS

Counts of STI Agreements 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	6	USA	2
Austria	7	Swaziland	1	Tunisia	1	Japan	1	Mexico	3	Third Countries	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												

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