The Research and Gender Committee of RAICEX (Spanish Network of Researchers Abroad): Advancing the Visibility of Women in Science

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Abstract: The RAICEX Research and Gender Commission (IgR) promotes the visibility and support of women in science through outreach, international cooperation, and gender-equality research, focusing especially on Spanish women researchers abroad. Its main objective is to reduce the gender gap and foster sustainable equality in science and technology. Using a qualitative case-study approach, the Commission gathers experiences from Spanish women scientists working in over 30 countries across five continents. Since 2019, it has organized videos, conferences, panel discussions, surveys, and thematic campaigns highlighting women's contributions to science. Key outcomes include the international roundtable Gender Equality Policies in Science: An International Perspective (2021), the 11F video campaign (2022), and the White Paper on Gender Policies in Science and Academia (2025). These initiatives address structural inequalities and career barriers through an intersectional and international perspective while strengthening global networks and promoting evidence-based policies for inclusive scientific environments.

Keywords: Gender equality; Women in Science; Intersectionality; Research policy; International collaboration.

Introduction

The Red de Asociaciones de Investigadores y Científicos Españoles en el Exterior (RAICEX) aims to foster the exchange of knowledge and experiences between Spanish researchers working abroad (see Fig. 1) and all stakeholders within the Spanish System of Science, Technology and Innovation. It serves as an advisory body, a channel for information, and a catalyst for international scientific collaboration, contributing to the advancement of science.

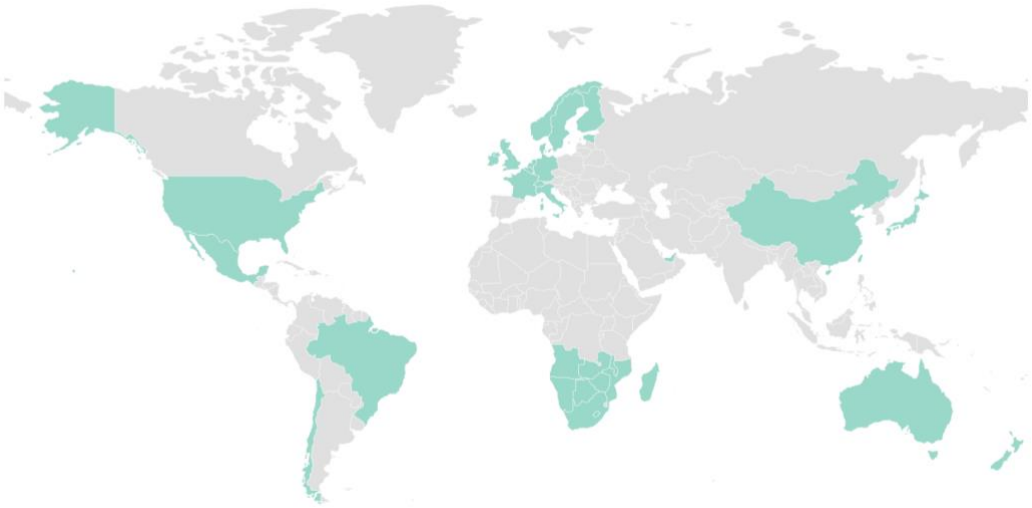


Fig. 1. Countries with an association member of RAICEX in 2026 (source: RAICEX website)

Since its foundation in 2018, RAICEX identified the need to establish a dedicated commission to promote the visibility and support of women in science and academia. This led to the creation of the Research and Gender Commission, hereinafter referred to as IgR. Its mission is to advance outreach, international cooperation, and research on the status of women scientists—particularly Spanish researchers abroad. Its primary goal is to reduce the gender gap and drive progress toward genuine equality in science and technology.

The IgR Commission was created in response to the persistent structural inequalities that continue to affect women and other underrepresented groups in science and academia worldwide. Despite the growing implementation of gender equality policies, important barriers remain embedded within academic and research systems, including unequal career progression, gendered care responsibilities, underrepresentation in leadership positions, and evaluation models that frequently reproduce structural bias. In many contexts, equality policies have prioritized formal compliance rather than transformative institutional change, revealing a significant gap between policy design and effective implementation.

Against this background, the Commission emerged as a collaborative and international initiative aimed at fostering reflection, visibility, and collective action around gender equality in science. Through outreach, research, international cooperation, and community-building activities, the Commission seeks to contribute to more inclusive, equitable, and sustainable scientific environments. Its work is grounded in the belief that gender equality is not only a matter of social justice, but also a necessary condition for strengthening scientific excellence, diversity, and innovation.

This paper aims, first, to describe the creation, structure, and mission of the IgR Commission as an international initiative within a scientific association. Second, it seeks to present and analyze the Commission's program of activities designed to build community, encourage critical reflection, and promote transformative actions regarding gender equality in science and academia. Finally, the paper examines the Commission's most ambitious initiative to date, the White Paper on Gender Policies in Science and Academia, highlighting its objectives, methodological approach, and principal findings concerning international gender equality policies and practices in research and higher education institutions.

The IgR Commission

The IgR Commission is composed of more than 20 members—predominantly women—who have been volunteering their time since 2019 to carry out activities throughout the year. These efforts place particular emphasis on key dates such as the International Day of Women and Girls in Science (11 February) and International Women's Day (8 March), while also recognizing the importance of promoting gender equality every day of the year.

The IgR Commission adopts a qualitative case-study approach, drawing on the experiences of Spanish women scientists working in research centers and universities across more than 30 countries on five continents. The Commission considers that understanding the root causes of inequality is a fundamental first step toward achieving effective gender equality in science.

Activities are organized both in-person and virtually, ensuring broad engagement and maximizing their impact across members of all affiliated associations. The Commission has organized panel discussions featuring leading experts on each topic and has scripted and produced videos aimed at raising public awareness about the gender gap and the importance of gender equity in science and academia. Surveys have been designed and administered, with the results analyzed to highlight issues such as gender-based violence in healthcare. Additionally, a variety of materials have been created to showcase the diversity of women scientists within RAICEX, illustrating their research across different countries and fields of knowledge. Members have also participated in academic and scientific diplomacy events to share the Commission's findings and lessons learned, helping to guide and shape initiatives in subsequent years.

Activities carried out by the IgR Commission

Since 2019, the Commission has developed a wide range of initiatives, including videos, international conferences, panel discussions, surveys, and

thematic calendars highlighting the role of women in science worldwide. Many of these actions were carried out in connection with key international dates such as 11F and 8M. These initiatives are described in greater detail below.

In 2021, the IgR Commission organized the international roundtable Gender Equality Policies in Science: An International Perspective (see Fig. 2). The event brought together a panel of Spanish scientists working in five different countries—Mexico, Japan, Sweden, the Netherlands, and the United Arab Emirates—who discussed how these national contexts have approached the implementation of gender equality policies in science. The discussion also explored the lessons that could be applied to the Spanish context, promoting international comparative reflection on effective strategies, institutional challenges, and best practices for advancing gender equality in research and academia (Fig. 2).



Fig. 2. Gender Equality Policies in Science: An International Perspective (source: YouTube)

During 15–17 September 2021, the IgR Commission participated in the 11th European Conference on Gender Equality in Higher Education, held online and organized by the Spanish Ministry of Science and Innovation and the Spanish Ministry of Universities, in collaboration with Universidad Politécnica de Madrid as the hosting institution, with the support of the European Network on Gender Equality in Higher Education and other Spanish stakeholders. We presented the study entitled *Gender Equality Policies in Research and Innovation: A Comparative Analysis of Italy, Japan, Spain, Sweden, Switzerland, the United Kingdom and the Netherlands* (García-Martín et al., 2021), conducted by the IgR Commission. This comparative study

would later become the foundation for the development of the *White Paper on Gender Policies in Science and Academia*.

In 2022, on the occasion of the International Day of Women and Girls in Science (11 February), the Commission produced the video *Por la igualdad de género en la carrera investigadora* (see Fig. 3). The video explored how gender inequality affects women's scientific careers and examined the broader social consequences of these disparities, while also highlighting measures adopted by different countries to foster more equitable research environments.

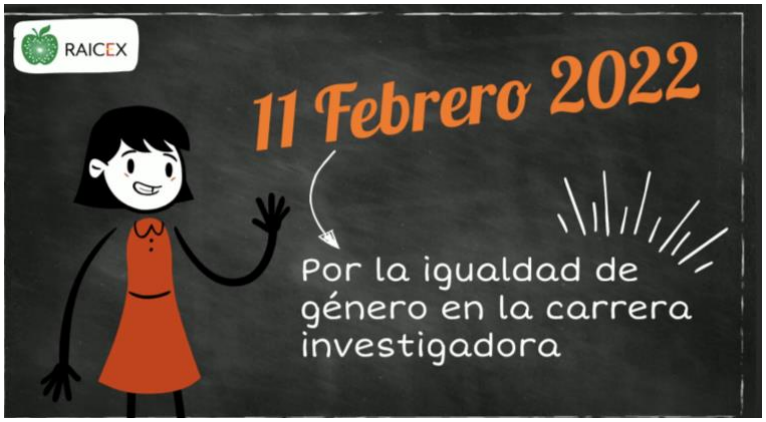


Fig. 3. Video "For gender equality in research careers" (source: RAICEX YouTube channel)

That same year, Eva Ortega Paíno, Secretary General for Research at the Spanish Ministry of Science, Innovation and Universities, participated in a discussion together with Soledad Murillo, former Spanish Secretary of State for Equality and professor of Sociology at the University of Salamanca; Marta Macho, mathematician and science communicator at the University of the Basque Country; and Patricia Fernández de Lis, journalist and head of science and technology at El País. The discussion focused on the need to move beyond gender equality legislation toward greater social and professional visibility of these issues (see Fig. 4).

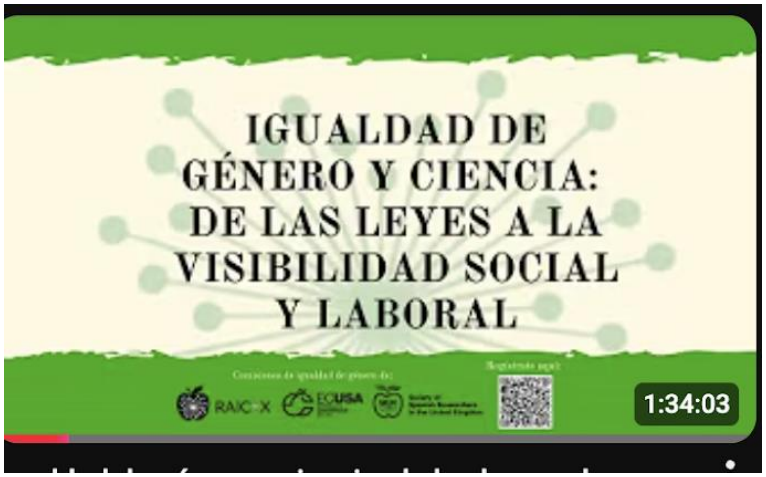


Fig. 4. Video "From gender equality laws to social and workplace visibility" (source: RAICEX YouTube channel)

In 2023, a calendar was produced with the participation of members from all RAICEX associations, who shared their research profiles together with personal reflections, concerns, and curiosities. The initiative served as a way to give visibility and voice to women scientists, highlighting both their professional trajectories and their perspectives on contemporary challenges in science and academia. The cover and the month of January can be seen in Fig. 5.



Fig. 5. RAICEX Women's Calendar. a) Front page; b) Example for the month of January

The year 2024 was one of the most productive periods for the IgR Commission, marked by a broad range of initiatives including videos, surveys, and webinars. To commemorate the International Day of Women and Girls in Science (11 February), the Commission released the video *11F 2024 – Comisión de*

Investigación y Género de RAICEX (IgR), featuring several scientists from the Commission who reflected on their motivations for participating in IgR and emphasized the importance of collective initiatives aimed at advancing gender equality in science. The video also highlighted the potential impact of these actions on present and future generations, particularly through awareness-raising campaigns linked to internationally significant dates.

For International Women's Day (8 March), the Commission conducted a survey exploring perceptions and experiences related to gender stereotypes, followed by the production of a visual report summarizing the principal findings. In May, coinciding with the International Day of Action for Women's Health, additional surveys addressing gender bias and discrimination in healthcare and research environments were launched (see Fig. 6). The results of these initiatives were subsequently disseminated on 25 November, the International Day for the Elimination of Violence against Women, reinforcing the Commission's commitment to raising awareness of structural inequalities and gender-based violence across scientific and academic contexts.



Fig. 6. Results of surveys on gender bias in medicine

Finally, on 3 October 2024, in collaboration with PRISMA, the Commission organized the webinar LGBTQIA+ Diversity in Science, Technology and Innovation (see Fig. 7). The event created a space for reflection on diversity, inclusion, and the challenges faced by LGBTQIA+ individuals within scientific and technological environments. In addition, the Commission coordinated a working group composed of experts as part of the IX Scientific Diplomacy Conference, held in Madrid, Spain, on 18 December 2024.



Fig. 7. Poster for the webinar "LGBTQIA+ Diversity in Science, Technology and Innovation"

On 14 February 2025, on the occasion of the 11F celebrations of this year, one of the most important works carried out by the IgR Commission, initiated in 2021, was presented: *The White Paper on Gender Policies in Science and Academia* (García-Martín et al., 2024) (see Fig. 8). The book provides a comparative analysis of gender policies in fourteen countries across Europe, the Americas, Asia, and Oceania. The aim of this study is to identify structural barriers, evaluate existing policy frameworks, and highlight effective practices that may contribute to more inclusive academic environments.



Fig. 8: Presentation of The White Paper on Gender Policies in Science and Academia: coordinators, authors and the president of RAICEX (14 February 2025, Madrid, Spain)

The White Paper on Gender Policies in Science and Academia

Building on the presentation of a communication at the XI European Conference on Gender Equality in Higher Education (2021) and the success of the comparative analysis of gender policies in science and academia across seven countries, the Commission launched its most ambitious project to date: the *White Paper on Gender Policies in Science and Academia* (García Martín et al., 2024). This initiative represents a strategic effort to consolidate knowledge, identify best practices, and propose actionable recommendations for advancing gender equality in scientific and academic careers globally.

It is based on a qualitative comparative analysis of gender equality policies in science and academia across fourteen countries included. The authors compiled information collected by researchers located in different national contexts.

The research follows a descriptive and comparative methodology. First, national reports were prepared for each country using publicly available sources, including government policies, equality legislation, institutional frameworks, and statistical data on gender representation in academia and research. These reports were then analyzed to identify common patterns, differences between countries, and key policy measures aimed at promoting gender equality in science.

The comparative analysis focused on several dimensions: the existence of gender equality legislation, institutional equality plans, initiatives promoting women in STEM disciplines, mechanisms for monitoring gender

representation, and policies supporting work–life balance. Special attention was given to structural barriers affecting women's career progression, such as promotion systems, leadership representation, and cultural norms within academic institutions. The comparative analysis includes fourteen countries across Europe, the Americas, Asia, and Oceania.

Next, we will summarize some of the most relevant findings of the book, given their importance. The analysis identifies common patterns across countries in gender representation and policy approaches in science. A persistent gender gap exists: although women are well represented among graduates and early-career researchers, their presence declines at senior levels. Figure 9 illustrates this generalized decline across the countries analyzed in women's representation as their careers progress, from postdoctoral (Grade D) to Full Professor (Grade A). On average, women make up 37.9% of researchers, but only 28% of full professors and about 10% of leadership roles.

Both horizontal and vertical segregation remain evident. Women are underrepresented in STEM fields and progressively less present at higher academic ranks. While many countries have implemented gender equality policies—such as mandatory equality plans, data collection, and work–life balance measures—these do not always lead to substantial improvements.

Policy approaches vary: some countries rely on legislation, while others use targeted programs. Examples include Sweden's gender mainstreaming, the Netherlands' Aspasia Program, and Australia's SAGE initiative. Despite these efforts, structural and cultural barriers—such as caregiving responsibilities, productivity-based evaluation systems, and implicit bias—continue to hinder women's advancement. Overall, policy effectiveness depends on addressing systemic barriers and ensuring institutional accountability.

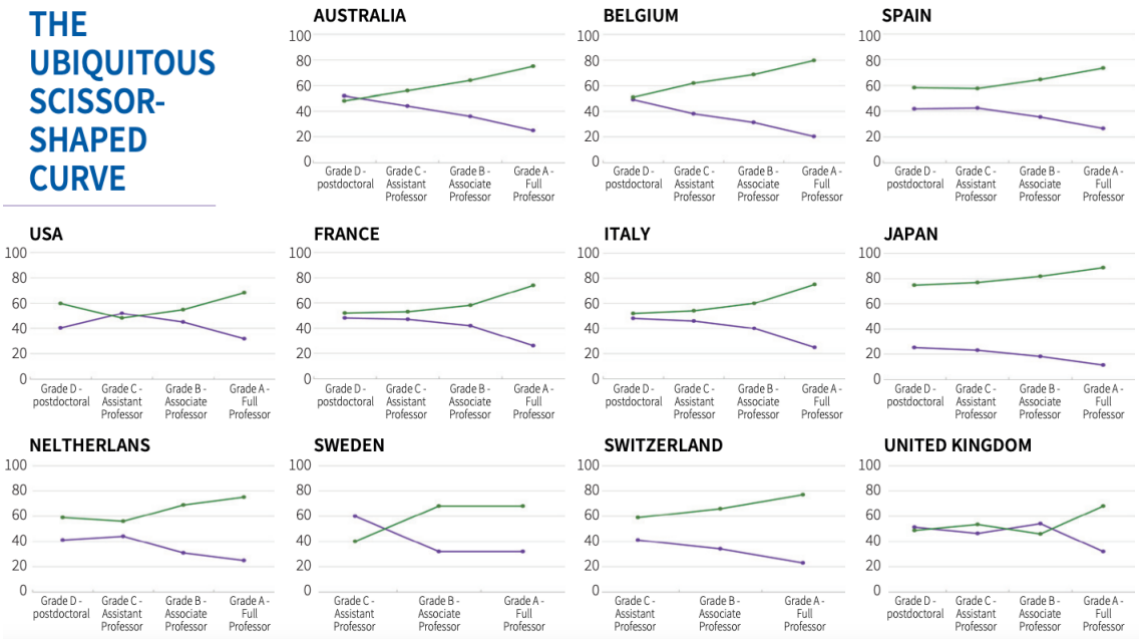


Fig. 9. The "Scissor-Shaped Curve" in Academic Careers: Gender Representation Across Countries (created by the authors based on García-Martín et al., 2024)

Figure 9 provides an overview of the main trends identified in the White Paper on Gender Policies in Science and Academia, illustrating gender representation across academic career stages in selected countries. The figure highlights the well-known "scissor-shaped curve," in which the proportion of women progressively decreases at higher academic ranks. It was developed by the authors using national statistical data compiled and comparatively analyzed within the framework of the White Paper.

Discussion

The discussion of this study is primarily grounded in the key findings of the *White Paper on Gender Policies in Science and Academia*, which provide a robust comparative perspective on gender inequality across diverse national contexts.

While the study offers a comprehensive international overview, certain limitations must be acknowledged. The analysis relies largely on secondary data and national reports, whose availability, quality, and level of detail vary across countries. Moreover, important differences may exist within countries—particularly in decentralized or federal systems—where institutional practices are not uniform. Despite these constraints, the comparative approach remains valuable for identifying both shared structural challenges and transferable policy practices.

One of the most significant findings is that gender inequality in science and academia is a global and systemic phenomenon, largely independent of geographical, cultural, or economic context. Across all countries analyzed, similar patterns emerge: women are well represented in early academic stages but remain underrepresented in senior and leadership positions. This reinforces the idea that the issue is not simply one of access, but of progression and retention within academic systems.

A central insight of the analysis is the persistent gap between formal policy frameworks and their effective implementation. Although most countries have adopted gender equality legislation and institutional plans, these often function as compliance mechanisms rather than drivers of structural change. Monitoring systems are frequently weak, indicators are not always standardized, and accountability mechanisms remain insufficient. As a result, the transformative potential of these policies is limited.

The study also highlights the continued influence of structural and cultural barriers. Academic career models are still largely based on uninterrupted productivity and linear progression, which disproportionately disadvantage women, particularly due to caregiving responsibilities. These gendered career patterns contribute significantly to vertical segregation and help explain the "scissor-shaped curve" observed across countries. Furthermore, implicit biases

in recruitment, evaluation, and promotion processes continue to affect decision-making, often in subtle but cumulative ways.

Importantly, the comparative perspective allows the identification of more effective policy approaches. The results suggest that isolated or symbolic measures are insufficient. Instead, policies that combine several elements—such as institutional accountability, measurable targets, transparent evaluation criteria, and structural reforms—tend to produce more meaningful outcomes. Initiatives that integrate gender mainstreaming, targeted funding programs, and accreditation or certification systems appear particularly promising, as they incentivize institutional change rather than mere formal adherence.

Another relevant contribution of this work lies in its international and network-based perspective. By drawing on the experiences of researchers across multiple countries, the study highlights the importance of transnational knowledge exchange and scientific diaspora networks in advancing gender equality. Organizations such as RAICEX play a key role in this regard, acting as bridges between different systems and facilitating the transfer of successful practices and policy innovations.

Finally, the findings reinforce the need to move beyond descriptive analyses toward more action-oriented and evidence-based policy design. Future efforts should focus not only on identifying barriers, but also on systematically evaluating the impact of existing measures. Strengthening data collection, harmonizing indicators, and promoting longitudinal studies will be essential to better understand what works, under which conditions, and why.

In this context, the work of the IgR Commission contributes to a broader agenda that seeks to transform scientific systems into more inclusive, equitable, and sustainable environments. Addressing gender inequality in science is not only a matter of social justice, but also a strategic priority for enhancing the quality, diversity, and impact of research at a global scale.

Conclusions

Gender inequality in science and academia remains a persistent and global structural issue despite the widespread implementation of equality policies.

First, although many countries have developed legal frameworks and institutional gender equality plans, these measures often prioritize formal compliance over substantive structural change.

Second, systemic barriers—including gendered career patterns, caregiving responsibilities, and productivity-based evaluation systems—continue to hinder women's progression, particularly at senior and leadership levels.

Third, a significant gap persists between policy design and effective implementation, with limited monitoring, accountability, and measurable outcomes in many institutional contexts.

Effective advancement toward gender equality in science requires comprehensive and systemic approaches.

First, policies must integrate institutional accountability, transparent recruitment and promotion processes, and continuous monitoring of gender indicators.

Second, successful strategies are those that combine legislative frameworks with targeted programs and structural reforms addressing implicit bias and organizational culture.

Third, international comparative analyses, such as the White Paper on Gender Policies in Science and Academia, provide valuable evidence to identify best practices and support their transfer across contexts.

Promoting gender equality in science is essential not only for fairness but also for enhancing innovation, diversity, and excellence in research systems.

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The work referenced in this publication is the result of the collective efforts of the volunteers of the IgR Commission of RAICEX and all the authors of the White Paper.

Author Contribution

Author 1: Conceptualization; Data curation; Investigation; Methodology; Visualization; Writing – original draft.

Author 2: Formal analysis; Validation; Writing – review & editing.

Tools of Artificial Intelligence

ChatGPT was used for language editing.

References

Scientific research

1. García-Martín, F., Ramos Moreno, T., Fuente Pérez, R., Nogués, I., Martínez-Bravo, M.-J., Lozano Vidal, N., & Ortega Paíno, E. (2021). Gender Equality Policies in Research and Innovation: A Comparative Analysis of Italy, Japan, Spain, Sweden, Switzerland, the United Kingdom and the Netherlands. In Proceedings of the XI European Conference on Gender Equality in Higher Education (pp. 229–230). https://www.juristconcep.com/wp-content/uploads/2021/12/Book-of-Abstracts_GEHE.pdf
2. García Martín, F., Barrasa García, S., Fuente Pérez, R., & Samper Carro, S. C. (Coords.). (2024). Libro blanco de las políticas de género en ciencia y academia. Fundación Ramón Areces. https://raicex.org/wp-content/uploads/2026/01/LIBRO-BLANCO-DE-LAS-POLITICAS-DE-GENERO-EN-CIENCIA-Y-ACADEMIA_2024.pdf

Other sources

3. RAICEX. (n.d.). RAICEX. https://raicex.org/](https://raicex.org/
4. RAICEX. (2021, October 15). Mesa redonda - Políticas de igualdad de género en ciencia: una perspectiva internacional [Video]. YouTube. https://www.youtube.com/watch?v=AEllPDNOLcs
5. RAICEX. (2022, February 11). 11 de febrero de 2022: Por la igualdad de género en la carrera investigadora [Video]. YouTube. https://www.youtube.com/watch?v=syJrivZiq7E
6. RAICEX. (2022). Igualdad de género y ciencia: De las leyes a la visibilidad social y laboral [Video]. YouTube. https://www.youtube.com/watch?v=liuyOfxrR_E
7. RAICEX. (2024). 11F 2024 - Comisión de Investigación y Género de RAICEX (IgR) [Video]. YouTube. https://www.youtube.com/watch?v=S9dgdecAXFI