SAGA Gap Analysis of STI Policies for Gender Equality in Latin America and the Caribbean

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SAGA (STEM and Gender Advancement)

- SAGA's aim is to contribute to reducing the gender gap in STEM fields in all countries at all levels of education and research, by determining, measuring and assessing sex-disaggregated data, as well as influencing policy based on creating an inventory and gap analysis of policy instruments that affect gender equality in STEM.

- In order to address the difficulties in the design, monitoring and evaluation of instruments and policies, the SAGA project has created a new approach implemented through the SAGA Toolkit and SAGA STI GOL.

The SAGA Toolkit

- Provides countries with a set of instruments for improved measurement of gender in STEM and to support the design of better STI policies.

- Provides practical tools to monitor and evaluate gender equality and to integrate gender aspects in STI policies in a field where solid information is still lacking and analysis is frequently based primarily on anecdotal evidence.

- Establishes a new basis for evidence-based policy making, including impact assessment and policy design.

SAGA STI Gender Objective List

- Tool for classifying STI policies and instruments and identifying gaps in the policy mix through the categorization of policies and instruments into different gender objectives.

- Aims at encompassing all aspects of gender equality in policy making, as identified through research conducted in the framework of SAGA.

SAGA STI GOL (cont.)

- Allows the mapping of existing indicators to gender objectives and facilitate identifying gaps.

- It is based on 7 gender objectives or policy impacts:
  1. Social norms and stereotypes
  2. Primary and secondary education
  3. Higher education
  4. Career progression
  5. Research content and practice
  6. Policy-making processes
  7. Entrepreneurship and innovation

Examples of gender-related policies and instruments in STI

- Ad hoc programs

- Programs to promote women's participation and recognition of women in STI

- Parental leave

- Extension of the duration of scholarships, grants and subsidies because of maternity and child care

- Monthly allowance for child care

- Special scholarships for women researchers

- Creation of ah hoc institutions and National Gender and STI Committees

- Among others

Good practices: some policies and instruments with a focus on gender in STI

- Ad hoc programs: "Programa Mulher e Ciência" (Brazil) or the "Mujeres jóvenes en la Sociedad del Conocimiento" Program (Paraguay)

- Programs to promote women's participation and recognition in STI

- Parental leave, extension of the duration of scholarships, grants and subsidies because of maternity and child care, monthly allowance for child care (especially in Argentina and Chile)

- Special scholarships for women researchers (Brazil, Colombia, Peru, Uruguay among others)

- Publications for the constant monitoring of activities and to promote awareness of the gender situation – National Survey on gender in Science and Technology (Argentina, Uruguay)

- Creation of Ad hoc institutions and National Gender and STI Committees (Bolivia, Uruguay and Venezuela among others)

- Fora, panels

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Methodology

- **Survey of STI Policy instruments**
- **Classification with SAGA STI Gender Objective List**
- **Gap analysis and drafting of SAGA STI Policy Report for LAC**
- **Database in SPIN LAC**

http://spin.unesco.org.uy/

Overview

Change perceptions, attitudes, behaviour, social norms and stereotypes towards women in STEM in Society	Engage girls and young women in STEM primary and secondary education, as well as in TVET	Attraction, access to and retention of women in STEM higher education at all levels	Gender equality in career progression for scientists and engineers (S&E)	Promote the gender dimension in research content, practice and agenda	Promote gender equality in STEM-related policy-making	Promote gender equality in science and technology-based entrepreneurship and innovation activities
Argentina	Brazil	Brazil	Argentina	Brazil		Guatemala
Brazil	Chile	Chile	Brazil			
Chile	Costa Rica	Mexico	Chile			
Colombia	Mexico		Colombia			
Costa Rica			Costa Rica			
Guatemala			Mexico			
Mexico			Peru			
Peru			Uruguay			
Uruguay						
Venezuela						

Change perceptions, attitudes, behaviour, social norms and stereotypes towards women in STEM in society

Total	Promote awareness of and overcome non conscious and cultural gender biases widely expressed as gender stereotypes, among scientists, educators, policy-makers, research organisations, the media, and the public at large	Promote visibility of women with STEM qualifications, and in STEM careers, especially in leadership positions in governments, business enterprises, universities, and research organisations	Mainstream gender perspectives in science communication and informal and non-formal STEM education activities, including in science centres and museums	
19	5	13	19	1

Engage girls and young women in STEM primary and secondary education, as well as in technical and vocational education and training

Total	Promote S&E vocations to girls and young women, including by stimulating interest, fostering in-depth knowledge about S&E career issues, and presenting role models	Mainstream the gender perspective in educational content (teacher training, curricula, pedagogical methods, and teaching material)	Promote gender-sensitive pedagogical approaches to STEM teaching, including encouraging hands-on training and experiments	Promote gender balance among STEM teachers	Promote gender equality in STEM school-to-work transitions
12	9	2	1	0	0

Attraction, access to and retention of women in STEM higher education at all levels

Total	Promote access of and attract women to STEM higher education (including Masters and PhD), including through specific scholarships and awards	Prevent gender bias in the student admission process	Promote retention of women in STEM higher education at all levels, including through gender-sensitive mentonring, workshops and networks	Prevent gender-based discrimination and sexual harassment particularly at graduate level, including Masters and PhD	Promote gender equality in international mobility of students	Promote day care/child care facilities for students, particularly at STEM higher education institutions
14	10	0	1	1	2	0

Gender equality in career progression for scientists and engineers (S&E) (1)

Total	Ensure gender equality in access to job opportunities, recruitment criteria and processes	Promote equal work conditions	Ensure gender equality in access to opportunities in the workplace	Promote work-life balance
23	4	8	1	3

Gender equality in career progression for scientists and engineers (S&E) (2)

Total	Promote gender equality in in international mobility of post-docs and researchers, and facilitate women's return	Promote gender balance in leadership positions in S&E occupations (including decision making and research)	Promote transformations of STI institutions and organizations (structure, governance, policies, norms and values) aimed at achieving gender equality	Ensure gender equality in S&E professional certifications, in particular engineering accreditation
23	2	2	1	2

Promote the gender dimension in research content, practice and agendas

Total	Establish specific gender-oriented R&D programmes, including research on gender in STEM and on the gender dimension of the country's research agenda and portfolio	Incorporate gender dimensions into the evaluation of R&D projects	Promote gender-sensitive analysis in research hypothesis and consideration of sex of research subjects	Promote gender responsive and gender sensitive research dissemination and science communication, including through science centres and museums, science journalism, specific conferences, workshops and publications
2	2	0	0	0

Promote gender equality in STEM-related policy-making

Total	Ensure gender balance in STEM-related policy design (decision makers, consultative committees, expert groups, etc.)	Ensure gender mainstreaming and prioritization of gender equality in STEM-related policy design, monitoring and evaluation
0	0	0

Promote gender equality in science and technology-based entrepreneurship and innovation activities (1)

Total	Promote gender equality in access to seed capital, angel investors, venture capital, and similar start-up financing	Ensure equal access to public support for innovation for women-owned firms	Ensure visibility of women entrepreneurs as role models	Ensure women's access to mentorship and participation in the design and implementation of gender-sensitive training in entrepreneurship, innovation management, and intellectual Property Rights	Promote networks of women entrepreneurs and women's participation in entrepreneurship networks
7	0	1	1	1	1

Promote gender equality in science and technology-based entrepreneurship and innovation activities (2)

Total	Promote gendered innovation approaches	Promote external incentives and recognition for women-led innovation and acceptance of women innovators in society	Promote gender equality in the access and use of enabling technology, in particular information and communication technology	Promote a gender balanced workforce and equal opportunities in start-up companies
7	1	1	1	0

Conclusions

- The methodology, using the SAGA STI Gender Objectives List is useful to analyse the policy mix and could be used in other regions to understand and relate different situations in terms of Gender Equality in STEM.

- The resulting database (spin.unesco.org.uy) provides countries with examples of STI policy instruments devoted to different aspects of Gender Equality in STEM.

- The gap analysis in LAC shows that there is a generalized gap of policy instruments in the areas of "Promote the gender dimension in research content, practice and agenda", "Promote gender equality in STEM-related policy-making" and "Promote gender equality in science and technology-based entrepreneurship and innovation activities".

- Other Gender objectives have a few instruments in some countries, but the density is very low.

- Further studies, using appropriate indicators, to analyse the quality and impact of the instruments in place.

Thank you!

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Argentina
- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"
- Maternity leave and Application for scholarship extension

Bolivia
- Module: Gender, Economy and Investigation in Bolivia

Brazil
- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"
- Building Gender Equality Award
- Women in Science Award
- Thousand Women
- Women and Science Program
- National Meeting Women Science and Technology

Chile
- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"
- Competition of Aid for Financing Actions of Promotion of Women in Science, Technology and Innovation
- Competition: Portraits of Women in Engineering and Sciences
- Women: Protagonists of Science. Today's Girls, Tomorrow´s Scientists
- Extension during pre- and postnatal period and parental permission

Colombia

- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"

Costa Rica

- Science and Gender Program
- Science and Technology Month

Guatemala

- National Award for Innovation in Guatemala

Mexico

- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"
- Support to Mothers Heads of Family
- Academic Strengthening for Indigenous People Program
- Postgraduate Fellowship Program for Indigenous Women
- CONACYT-OEA-AMEXCID scholarships
- Incorporation of Indigenous Women for Regional Strengthening

Peru

- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"

Uruguay

- L'Oréal-UNESCO Premio Nacional "Por Las Mujeres En La Ciencia"

Venezuela

- Women in Sciences Award
- Women and Free Information Technologies Forum

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Be part of SAGA!

Contact us at:

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http://www.unesco.org/new/en/saga

Gender equality is still one of UNESCO's priorities

The underrepresentation of gender constitutes a violation to the general principle of justice and equality.
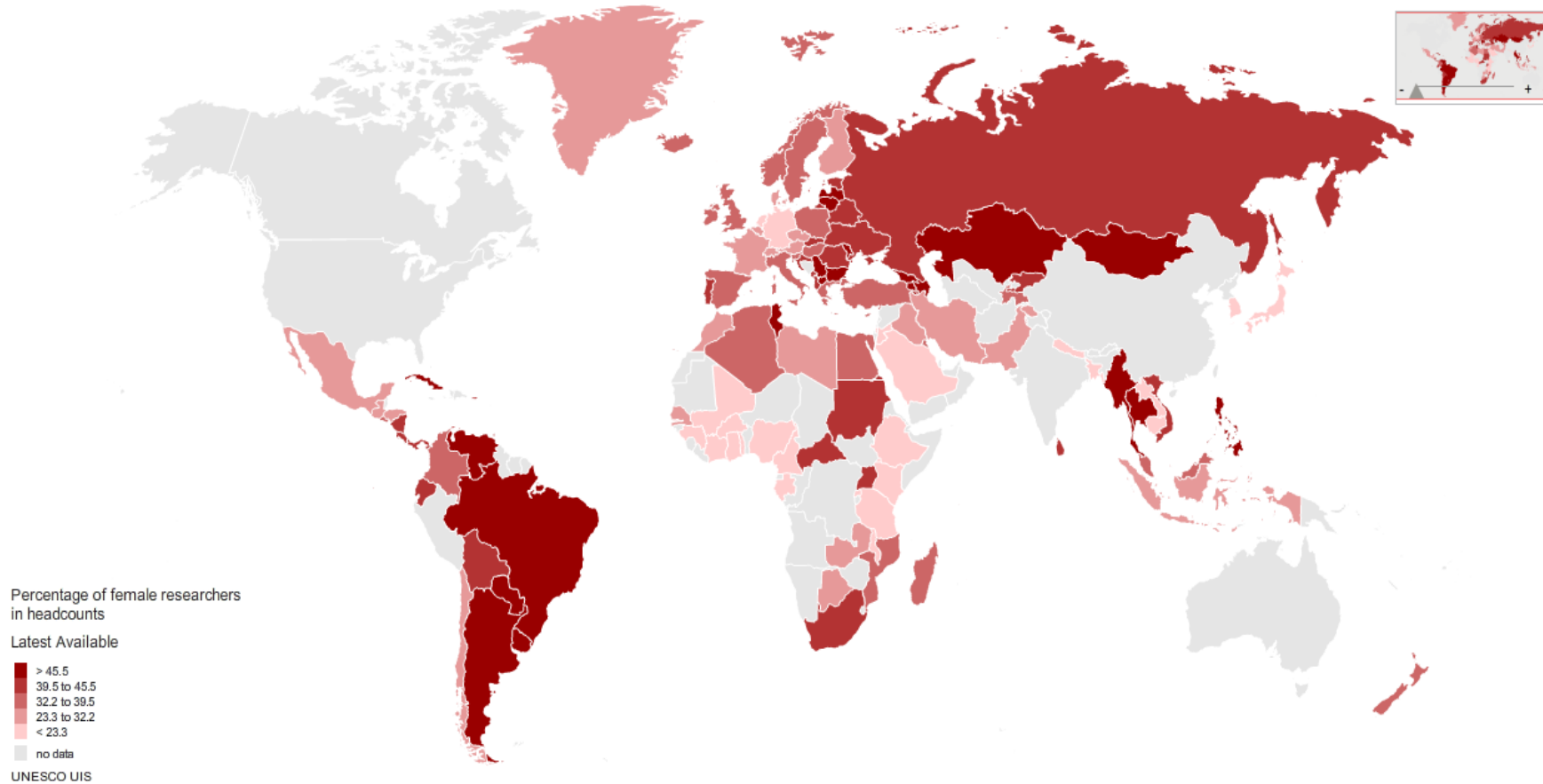
Additionally, it provokes a sub-optimal functioning of society, because it wastes an important part of potential resources for science.

% of women researchers

Percentage of female researchers
in headcounts

Latest Available

> 45.5
39.5 to 45.5
32.2 to 39.5
23.3 to 32.2
< 23.3
no data

UNESCO UIS

Source: UNESCO Institute for Statistics

% of women researchers in LAC

Latin America is the second region with the highest proportion
of women researchers in the world (44%)
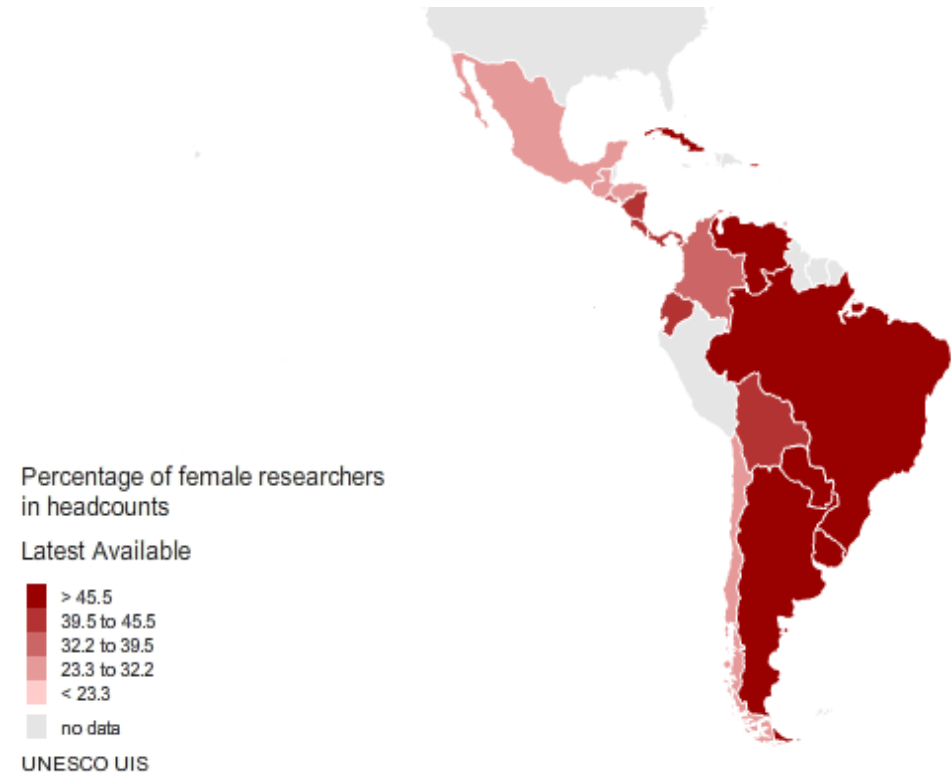
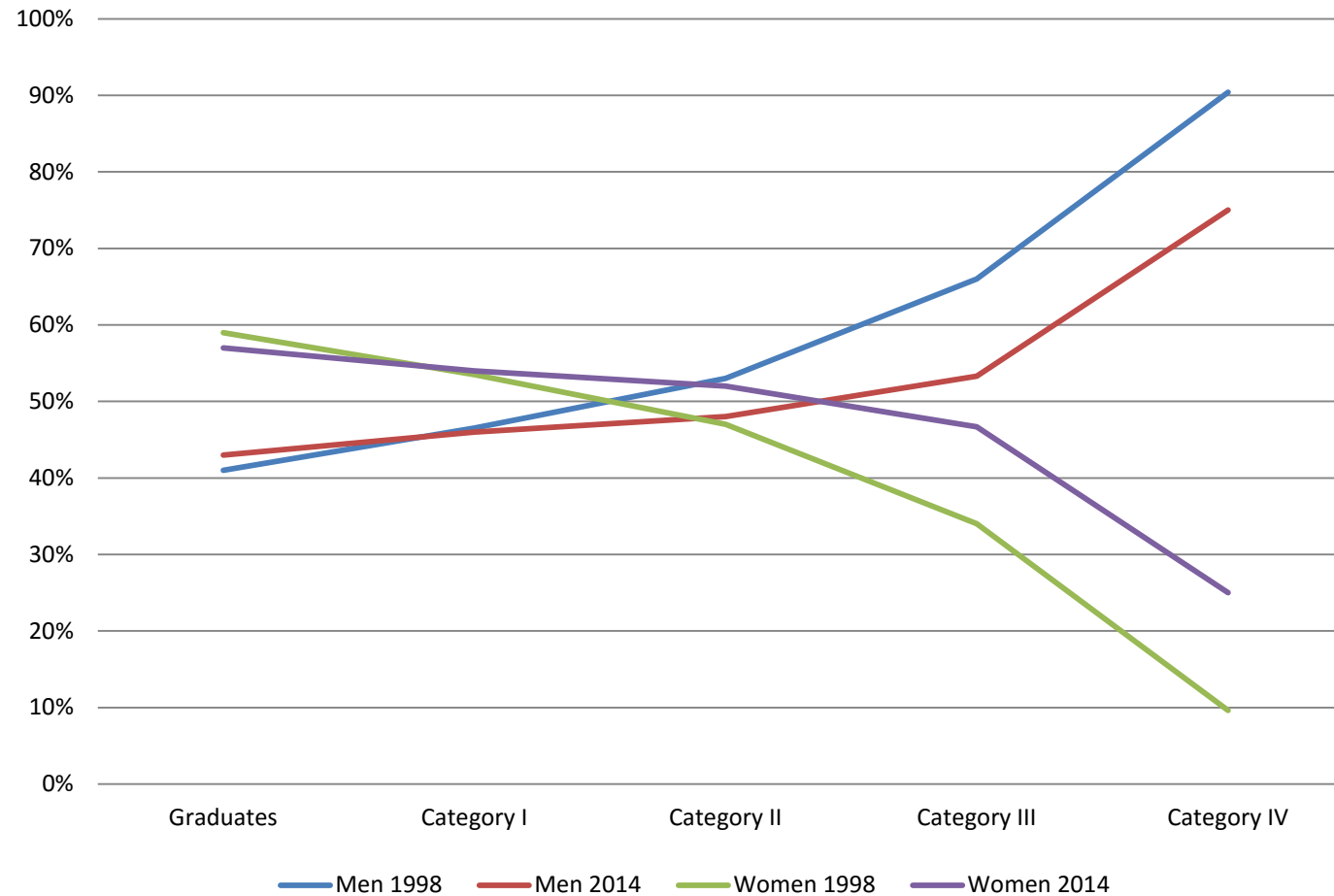Percentage of female researchers
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32.2 to 39.5
23.3 to 32.2
< 23.3
no data

UNESCO UIS

Source: UNESCO Institute for Statistics

Vertical gap "scissors diagram", Argentina

Horizontal gap

- Women are underrepresented in areas such as engineering, physics and mathematics.

- Argentina
  - Agronomy, Engineering and Mathematics 37%

- Brazil
  - Engineering, Physics and Mathematics 20%

- Colombia
  - Engineering and Technology 22%

- Uruguay
  - Engineering and Technology 32%

% women graduated and PhDs in LAC by level and field

Country	Graduated in Science	Graduated in Engineering	PhD Science	PhD Engineering
Argentina	52%	35%	57%	38%
Brazil	31%	28%		
Chile	23%	18%	46%	19%
Colombia	47%	31%	36%	17%
Costa Rica	29%	29%	57%	
Ecuador	41%	25%		
El Salvador	36%	19%		
Guatemala	75%	26%		
Guyana	42%	9%		
Mexico	47%	29%	45%	38%
Panama	49%	36%		
Puerto Rico	53%	29%	38%	17%
Uruguay	45%	43%	67%	33%

Barriers to gender equality in STI

- Institutional barriers
- Sociocultural barriers
- Glass ceiling and leaky pipeline
- Role-models shortage, masculinization of some careers' image, socialization processes and lack of previous incentives
- Difficulty to achieve work-life balance
- Research evaluation methods can be gender bias
- Lack of explicit references to this situation in STI laws and STI national plans
- A combination of these factors

Difficulties for the design, monitoring and evaluation of policies

Lack of:

- Data and indicators
- Available analytical studies
- Information
- Political priority