



Making Science Women-Inclusive

This editorial is based on [“A More Inclusive Science”](#) which was published in Indian Express on 24/02/2022. It talks about the under-representation of women in the field of science and technology.

For Prelims: Vigyan Jyoti Programme, Science Technology Engineering and Mathematics (STEM), KIRAN scheme, WISTEMM program, CURIE programme, GATI program.

For Mains: Representation of Women in Science - Associated Government Initiatives, Challenges and Way Forward.

The [underrepresentation of women in the sciences](#) exists across the entire career trajectory — in recruitment and promotion, in awards, in selection to science academies as members/fellows and in leadership positions in scientific institutions.

The status of women’s representation in science academies reflects their overall position in the scientific community. The problem needs to be addressed at two levels – at **societal level** which **requires long term effort** and the **policy and institutional level**, which can be **started with immediate effect**.

Representation of Women in Science

What are the Global Trends?

- The early part of the **20th century witnessed the acceptance of women scientists** as members in many of the European academies.
- A recent study done jointly by **GenderInSITE** (Gender in Science, Innovation, Technology and Engineering), the **InterAcademy Partnership (IAP)** and the **International Science Council (ISC)** shows that elected membership of women in senior academies increased marginally from 13% in 2015 to 16% in 2020.
 - In the case of **young academies**, although the position is better, there is under-representation as the **average share is 42%**.
 - Among the senior academies, the **Academy of Sciences of Cuba leads with 33%**.

What are India-Specific Stats?

- A survey conducted in 2020 showed that out of **1,044 members of the Indian National Science Academy (INSA)**, only 89 are women, amounting to 9%. In 2015, it was worse with **6% women scientist members out of 864 members**.
- Similarly, the governing body of INSA had seven women out of 31 members in 2020, while there were no women members in 2015.
- The three academies, the Indian National Science Academies (INSA), the Indian Academy of Sciences (IAS) and the National Academies (NAS) are striving to enhance the representation of women in science, including in professional bodies and related institutions.

What Initiatives have been Launched to Promote Women in Science?

- **Vigyan Jyoti Programme** was launched to address the underrepresentation of women in different fields of **Science Technology Engineering and Mathematics (STEM)** in the country.
 - Initially, it was **introduced at the school level** wherein meritorious girl students of Class 9-12 were being encouraged to pursue higher education and career in the STEM field.
 - Recently, the programme was **extended to 100 districts in its 2nd phase**.
- **KIRAN scheme** was launched in 2014-15 to provide opportunities for women scientists in moving up the academic and administrative ladder.
 - One of the programmes under the scheme — **'Women Scientist Scheme'** — provides **career opportunities to unemployed women scientists** and technologists, especially those who had a break in their career.
- The DST (**Department of Science & Technology**) has also additionally **established Artificial Intelligence (AI) labs in women universities** with the goal to foster AI innovations and to prepare skilled manpower for AI-based jobs in future.
- Under the **Indo-US Fellowship for Women in STEMM (WISTEMM) program**, women scientists can work in research labs in the US.
- The Consolidation of University Research for Innovation and Excellence in Women Universities (**CURIE**) programme aims at **improving R&D infrastructure** and establishing state-of-the-art research facilities in order to **create excellence in S&T in women universities**.
- The **Gender Advancement for Transforming Institutions (GATI) program** was launched to develop a comprehensive Charter and a framework for **assessing Gender Equality in STEM**.

What are the Causes for Under-representation?

- **Stereotypes:** The paucity of women in STEM is not merely due to skill inadequacy, but also a result of assigned stereotypical gender roles.
 - It is still considered okay to **judge the parental or life-partner status of a woman scientist** while deciding to hire her or give her a leadership position, **overlooking her merit**.
 - A common norm, it has become that women spouses of already hired faculty, however meritorious, will not be hired.
- **Patriarchal and Societal Causes:** There are patriarchal attitudes in hiring practices or awarding fellowships and grants etc.
 - **Stressors related to marriage** and childbirth, **pressures to conform to societal norms and trappings of domesticity** - responsibility related to running of households and elder care further hinder the representation of women in these 'non-conventional' fields.
- **Lack of Role Models:** Organisational factors have also played a big role in preventing gender parity. Lack of women leaders and women role models may be preventing more women from entering these fields.
- **Absence of Supportive Institutional Structure:** Women leave the workforce, due to the absence of supportive institutional structures **during pregnancy, safety issues in fieldwork and workplace**.
 - Not just societal norms but issues related to poor education and healthcare access are responsible for a lesser number of women in these fields.

What Steps Can Be Taken?

- **Role of Science Academies:** While the given issue emanates from the larger problem of the underrepresentation of women in all spheres of life, its persistence in science shows that scientists and science academies need to **develop policies and strategies to enhance the representation of women**.
 - More importantly, science academies have to **reflect upon their role and contributions to promote and retain women in science**, thereby **making science inclusive and sensitive**.
- **Bringing Behavioural Changes:** Subdued gender participation emanates from social-economic issues, which can be treated by bringing behavioural change.
 - This can be changed if **more women are given leadership positions**.

- Contributions of **women in the STEM sector should be highlighted in textbooks** thus **making them the role models** for the next generation of girls to be leaders in the STEM sector.
- It is imperative that we understand and **remove the sexism and institutional obstacles** that prevent more women from entering the scientific field.
- **Realising Manifold Significance of Higher Representation:** Women's representation in science and technology is **essential to design inclusive and sustainable societies**.
 - Gender equality is not just an **ethical imperative**, but also a **business priority**. Organisations with greater **diversity among their executive teams tend to have higher profits** and **greater innovation capability**.
 - We all must increase efforts to rapidly change the status quo. This fight against gender disparity must be fought by all — families, educational institutions, companies and governments.

Drishti Mains Question

“Gender inequality in STEM can only become a thing of the past if collective efforts, from the society, families, educational institutions and government, are given to fight against it”. Comment.