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Subdued Gender Participation In STEM

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This article is based on **“Closing the gender gap in science”** which was published in The Hindu on 17/03/2020. It talks about the gender gap in Indian society, especially in the fields of STEM (Science, Technology, Engineering, Mathematics).

Countries globally, including India, have agreed to fulfil the **Sustainable Development Goals** (SDGs) - a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity. Bringing **gender equality** (SDG 5) is seen as a key goal, both in itself and for achieving other goals.

India has taken many strides in bringing gender empowerment, however, increasing gender participation in **STEM (Science, Technology, Engineering, Mathematics) fields, remains the Achilles heel for India.**

Fact Sheet of Gender Inequality in India

- According to the **Global Gender Gap Index 2020**, a study covering 153 economies, India has slipped to the 112th spot from its 108th position in 2018.
The report also says it would take nearly a hundred years to close the gender gap in various fields in India compared to the time it would take in other countries.
- According to the **WEF's Gender Gap Index**, India ranks 147th out of 149 countries on the health and survival of women and 142nd out of 149 in terms of economic participation of women.
- According to the **World Bank**, India ranks 163rd out of 181 countries in **female labour force participation.**
- Also, India is one of the few countries in the world where women's work participation rates have fallen sharply — from 29% in 2004-5 to 22% in 2011-12 and to 17 % in 2017-18.

- According to the **Centre for Monitoring Indian Economy (CMIE)**, a large percentage of all the jobs lost last year were held by women.
Out of the 11 million jobs lost in 2018, women accounted for 8.8 million.
- **Indian women receive 34% fewer wages** than men for equivalent work, spend around five hours a day on unpaid care work compared to a mere half an hour for men and are primarily engaged in low-paying, informal sector work.

Reasons for this Problem

- **Incomplete Reform:**
 - Inclusive nationalism propounded by Mahatma Gandhi, Rabindranath Tagore, Jawaharlal Nehru and others during the struggle for Independence encouraged women to break the familial and cultural shackles and enter the freedom struggle.
 - However, after independence, this wave of social transformation got fizzled out, and women again got confined to the household work.
 - This restricted the prospects of higher education for girls.
- **Imbued Sexism:**
 - The cultural and gender norms that engendered discrimination is a major reason why India lost out on an important opportunity to build a culture of including women in STEM fields
 - For example, India celebrates National Science Day on February 28 every year to mark C.V. Raman's discovery of the scattering of light. However, for some time, the women candidates were refused admission to the Indian Institute of Science in the 1930s, during Raman's tenure as director.
 - Apart from this, 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.
- **Leaky Pipeline Problem:**
 - Women across the world face the **'leaky pipeline' problem**.
 - The **leaky pipeline** is a metaphor for the way that women disappear from some careers especially pertaining to STEM fields.
 - 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.
 - Also, 23 million girls drop out of school each year because of the economic stress faced by their families or because of inadequate sanitation or improper menstrual hygiene capabilities in schools.

Instances of Gender Equality in India

- After independence, there has been an exponential growth in the participation of women in the undergraduate and graduate levels.
- Though STEM was once seen as a 'men only' domain, recent instances show that social shackles pertaining to women are loosening and women participation is on the rise. For example,
 - The role of women engineers in the launch of the Indian Space Research Organisation's second moon mission, Chandrayaan-2.
 - In India, more than 40% of PhD-holders (in academics) in India are women.
- Despite India's well-known biological imbalance — one of the world's worst sex ratios — it boasts a top 20 ranking (19th out of 149 countries) in terms of political empowerment of women, according to the World Economic Forum.
- With the launch of Digital India, there has been a dramatic rise in terms of increased access to the internet across the country.

According to the GSMA, some of the most significant beneficiaries of this surge are women. More than 40% of Indian women are now aware of the mobile internet.

Way Forward

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**.
- For this, the Indian scientific community should act as a **pressure group** to build greater focus on the issue and push for concrete measures to address the problem.
- Contributions of women in the STEM sector should be **highlighted in textbooks**. This may motivate the next generation of girls to be leaders in the STEM sector.
- In India, we have many examples of women researchers who are involved in exciting scientific experiments. It is imperative that we understand and remove the sexism and institutional obstacles that prevent more women from entering the scientific field.
- Women-oriented government initiatives such as **Beti Bachao Beti Padhao**, **Knowledge Involvement in Research Advancement through Nurturing (KIRAN) Scheme**, represent steps in the right direction.

Drishti Mains Question

Including more women in science and applied technologies is critical for the advancement of society. Discuss.