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Call to Action for Gender Diversity in Sci-Tech & Innovation

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Gender Diversity is critical for Science,Technology and Innovation (STI), as for nearly all other sectors. It is today well recognised that complete inclusivity and gender parity are essential to make economic progress and drive the developmental agenda. In recent years there has been a special focus on Women Empowerment and on women led development in our Policy and Programmes. Globally also there has been a special focus on trying to address the issues related to Women In STEM (science, technology, engineering and mathematics) and framing key policies which support the development of world class talent in STEM to reduce this Gender Gap.



The recent UNESCO Science Report 2021 has highlighted some very important matrices for assessing the progress countries make in mainstreaming policies and programmes on Gender Diversity, some key ones are - number of women researchers especially in future technology sectors, number of women inventors in Patent applications, number of women entrepreneurs, access to Venture funds by Women entrepreneurs, number of women in academics, number of women in Science academies, number of women in Corporate Boards etc.

Globally numbers are progressing, with women researchers moving to ~33 per cent in 2018 from ~28 per cent in 2015, in India the percentage of women investigators across sectors is approx 30 per cent. We also see more women entrepreneurs - in India, it is today over 35 per cent. Globally over 60 per cent of all patent applications in Biotech had women inventors, although in Engineering it was less than 15 per cent. There is however a major gap in the numbers when it comes to women in leadership positions especially in future technology sectors. The concern is the representation of women in National Academies - even in biological sciences which has a higher representation, globally it is just around 15 per cent.

In India it is heartening to note that we have had a fairly good representation and India has also had Women as Presidents of Academies. We are also seeing an increase in numbers of our Women achievers – from Nobel Prize globally to the Shanti Swarup Bhatnagar Awards in the country to other awards and fellowships, a marginal increase in numbers is being noted. It is however imperative, to see how these numbers translate to an increase in the number of women in leadership positions.

Key actions required

It is important to institutionalise Gender Equality Policies at organisational, national and international level.

We need to focus on Policy, Programmes and People. We need to frame the right policies to help us to implement the key strategic decisions. Once the policies are in place, we need to develop a strategy to implement these - for this a set of well designed programmes are a key to success. Then of course we need the right people to help us achieve our targets and goals.

What we need to do is create a level playing field for women and girls in research and entrepreneurship. The key to success is three-pronged:

The first is to build a strong base of women in science for the nation’s success, by providing access to science education for our girls at all levels specially focussing on the remote districts, tier 2 and 3 cities.

The second is to build a vibrant ecosystem that encourages the girl child and women scientists to constantly up-skill themselves, build their leadership skills, and evolve as leaders in driving scientific innovation and progress.

The third is to empower them financially and socially – we need to ensure that we have Policies which enable gender participation at the workplace and handle the socio - economic, cultural and behavioural aspects. This is imperative for sustained and long term careers of women in science.

We still have a significant distance to cover. We need to build a strong foundation and ensure equality in numbers at the base — we cannot have an inverted pyramid, a strong base is essential to tap the potential of our girls in science education, and this requires consistent and concerted effort from a variety of stakeholders - including families, school systems, the corporate sector, and of course, women themselves.

Government of India through Ministry of Science & Technology, (Department of Biotechnology (DBT), Department of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR) has created some very important enabling policies and programmes to attract young girls and women to science and empower them – special science education programmes for young girls – Vigyan Jyoti and Vigyan Pratibha which gives the girl students a level playing field to take examinations for engineering colleges and builds their skills to take up other educational options.

From KIRAN to BioCARE, a number of grant schemes provide opportunities to women scientists who have had a career break to come back into the mainstream. Alternate career options from Intellectual Property (IP) management to Science Communication to Legal affairs are opportunities which are made available through Technology Information Forecasting and Assessment Council (TIFAC) and other organisations. Women Entrepreneurship is promoted by DBT-Biotechnology Industry Research Assistance Council (BIRAC), DST-Technology Development Board (TDB), NITI Aayog-Atal Innovation Mission (AIM) and other agencies which provide access to mentorship, finances and technical resources, special incubators, awards etc. We have some very vibrant Women Incubators and Parks which are nurturing women startups and entrepreneurs.

Women scientists and entrepreneurs have demonstrated their strong presence, and we have many success stories. We should now work to

- Create policies and partnerships which harness the economic potential of women for sustainable and inclusive growth.
- Attract Women to Science Research and develop a sustainable framework to retain them for long term research.
- Scale up women entrepreneurial activities to take it from the informal to formal sector.
- Overcome internal and social barriers to market access to bring women entrepreneurs to the center stage of economic development.

As countries frame STI Policy, it is imperative that the issues of Gender Diversity continue to occupy centre stage, with National and International partnerships also explicitly including this in their agreements. It is imperative to continue this momentum to ensure that we succeed in this very important Global Challenge of Gender Equality.

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