

Minutes of the 3rd meeting of the Prime Minister's Science Technology and Innovation Advisory Council (PM-STIAC)

Date: 11th December, 2018

***Venue: Vigyan Bhavan Annexe
Maulana Azad Road
New Delhi-110011***

The 3rd meeting of the Prime Minister's Science Technology and Innovation Advisory Council (PM-STIAC) was held on the 11th of December 2018 under the chairmanship of Prof. K. VijayRaghavan, Principal Scientific Adviser to the Government of India. The agenda of the meeting is at **Annexure I** and the list of participants is at **Annexure II**.

In his opening remarks, the Chairman recapitulated the Prime Minister's meeting with the Council members on 13 Nov 2018 wherein it was emphasised the need to mount closer inter-ministerial cooperation towards the effective planning and execution of all major national S&T missions identified by the PM-STIAC. Further, the need to promote vibrant research ecosystem in state universities and teaching institutions was required to expand the scientific base in the country and to provide local solutions to societal problems. To this end, a presentation was made by Shri R. Subrahmanyam, Secretary, Department of Higher Education highlighting the various research and education initiatives of the MHRD.

Overview of MHRD initiatives in the field of Research and Innovation

India's educational institutions, with more than 900 universities and 100 institutes of national importance, are some of the largest in the world which offers vast potential and opportunities in the field of research and innovation. Various new and ongoing initiatives of MHRD was highlighted which targets at doubling quality research productivity of HEIs by 2022 including emphasis to scale-up social sciences research. The moot strategy in achieving this would target towards improving overall quality of PhD research programmes in academic institutions and creating a vibrant innovation culture for which corporate affiliation and industrial collaboration are much required. It was informed that necessary enabling policy interventions and financial outlays will be provided through the new initiatives of MHRD for incentivising education, research and innovation in academic set-up.

The Council lauded the efforts of MHRD, following which the discussions led to some salient **recommendations** as enumerated below:

1. Strategy for improving quality and impact of research can be achieved by identifying both thrust areas (top-down approach) as well as curiosity driven fundamental research (bottom-up approach) along with allocation of fellowships. Institutions would bid to win fellowships under a strict selection entry parameter. There could be national level

monitoring of the progress made. Amongst other criteria, the increase in full time equivalent researchers (FTE) in each area could be an indicator to monitor.

2. Since 95 % of research students are from state universities, there needs to be a broader impact with research and training supported by conducive inclusive policies in terms of diversity and gender parity as an affirmative action. There is also a need to promote Indian languages in research. This can be in the form of automatic machine translation (for translation between English and ILs and between ILs) and speech processing (for text-to-speech and speech-to-text conversion).
3. Apart from concerted efforts to promote social science research, there is also a need to consider per capita contribution from various disciplines. For example, mathematical sciences which is currently weak can be build and strengthened.
4. A scrupulous admission process for PhD students with well-defined guidelines and selection criteria should be adopted. In order to improve the quality of PhD research, foundational training such as research methodology and global benchmark trends and practices will be beneficial.
5. A demarcation between research and teaching roles and ensuring the value of both are essential to ensure quality research output and achieving desired objectives. It will be equally critical to ensure that PhD research guides are qualified and capable to guide students.
6. The need to address the issue of fake journals by having appropriate filters, checks and balances is imperative in order to ensure both quality and impact of research outcome, that can be measured through carefully chosen, sensible, output metrics. These matrices will need to be dynamic.
7. There is a need to connect academic and technology institutes to MSMEs and private enterprises to promote academia-industry collaboration. In addition to so-called Tier I institutions, other institutions such as NITs, and state universities must encourage doctoral students to undertake industry/society relevant projects and also projects under various national missions. List of PhD projects in various institutions should be available on their websites.
8. Mechanisms that would enable institutional responsibility of Tier I institutions to work with Tier II institutions through mentorship, internship and industry engagements should be put in place to enhance the quality of research output across the spectrum of institutions.
9. Government schemes such as PMRF and IMPRINT can be extended to cover more institutions and to include clinical research that could be supported by ICMR and DBT.

10. Academic institutions can be restructured in a format that promotes interdisciplinary research framework rather than in departmental silos. This can get embedded into an ecosystem of incubation and start ups as 'Value-addition Centres' in these institutions.
11. Promotion of young researchers on the lines of Friedrich Miescher Institute in Germany can work a long way in creation of melting pot of ideas and promote inter-disciplinary research and innovation.
12. City based 'Knowledge Clusters' to provide a platform for leveraging complementary strengths and best practices amongst academic institutions, R&D laboratories and industries located in selected cities should be promoted through O/o PSA.

Conclusion:

The Chairman summed up the discussions and highlighted the salient action points and recommendations that emerged from the discussions during the meeting. This was followed by a review of the action taken, and the progress made on the decisions taken in the past meetings. It was then decided to hold the next (4th) meeting of the PM-STIAC on the 16th of January, 2019.

The meeting ended with a vote of thanks to the Chair, all Council Members and special invitees.

Annexure I

3rd MEETING OF THE PRIME MINISTER'S SCIENCE, TECHNOLOGY AND INNOVATION ADVISORY COUNCIL (PM-STIAC).Date : 11th of December, 2018

Time : 1000 hr – 1330 hr

Venue : Committee Room 'A', Vigyan Bhawan Annexe,
Maulana Azad Road, New Delhi - 110011***List of Participants***

| S.No. | Name, Designation and Organization | Status |
|-------|---|---|
| 1. | Dr. K. VijayRaghavan , Principal Scientific Adviser to the Government of India, 318, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi- 110 011. | Chairman |
| 2. | Dr. V. K. Saraswat , Member, NITI Aayog & former Secretary, Department of Defence R&D, South Block, New Delhi - 110011. | Member |
| 3. | Shri A. S. Kiran Kumar , former Secretary, Department of Space and former Chairman, Indian Space Research Organisation, Department of Space, Government of India, Antariksh Bhavan, New BEL Road, Bangalore - 560 231. | Member |
| 4. | Dr. A. K. Sood , Honorary Professor, Department of Physics, Indian Institute of Science, CV Raman Rd, Bengaluru, Karnataka - 560012. | Member |
| 5. | Maj. Gen. Madhuri Kanitkar , Dean, Armed Forces Medical College (AFMC), Southern Command, Near Race Course, Solapur Road, Wanowrie, Pune, Maharashtra- 411040. | Member |
| 6. | Dr. Sanghamitra Bandyopadhyay , Director, Indian Statistical Institute, Plot No. 203, Barrackpore Trunk Road, Baranagar, Kolkata, West Bengal - 700108. | Member |
| 7. | Dr. Manjul Bhargava , Fields Medal, Professor, Department of Mathematics, Princeton University, New Jersey, USA. | Member (Through Video Conference) |
| 8. | Shri Babasaheb N. Kalyani , Chief Executive Officer and Managing Director, Bharat Forge Limited, State Highway 5, Mundhwa Industrial Area, Mundhwa, Pune, Maharashtra - 411036. | Member |
| 9. | Dr. Ashutosh Sharma , Secretary, Department of Science & Technology, Room No. 14-B, Technology Bhawan, S&T Block I, New Mehrauli Road, Block C, Adchini, New Delhi - 110016. | Special Invitee |
| 10. | Dr. Renu Swarup , Secretary, Department of Biotechnology, Ministry of Science and Technology, C.G.O Complex, Lodhi Road | Special Invitee |

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| | New Delhi - 110 003. | |
| 11. | Dr. Madhavan Nair Rajeevan , Secretary, Ministry of Earth Sciences, Prithvi Bhavan, Lodhi Road, Opp. India Habitat Centre, New Delhi - 110003. | Special Invitee |
| 12. | Dr. Trilochan Mohapatra , Secretary, Department of Agricultural Research & Education, and DG, Indian Council of Agricultural Research, Krishi Bhavan, Raisina Road, Opp Rail Bhavan, New Delhi - 110001. | Special Invitee |
| 13. | Shri R. Subrahmanyam , Secretary, Department of Higher Education, Lal Bahadur Sastri Smriti, Maulana Azad Rd, Bal Bhawan, Man Singh Road Area, New Delhi – 110001. | Special Invitee and Invited Speaker |
| 14. | Dr. G. Satheesh Reddy , Secretary, Department of Defence Research & Development, South Block, New Delhi – 110011. | Special Invitee |
| 15. | Shri Ajay Prakash Sawhney , Secretary, Ministry of Electronics & Information Technology (Meity), Electronics Niketan, 6, CGO Complex, Lodhi Road, New Delhi - 110003. | Special Invitee |
| 16. | Dr. Shekhar C. Mande , Secretary, Department of Scientific and Industrial Research, Anusandhan Bhawan, 2 Rafi Marg, New Delhi, Delhi 110001 | Special Invitee |
| 17. | Dr. K. Sivan , Secretary, Department of Space, ISRO Headquarters, Antariksh Bhavan, New BEL Road, Bengaluru – 560231 | Special Invitee |
| 18. | Dr. Arabinda Mitra , Scientific Secretary, Office of Principal Scientific Adviser to the Government of India, 324, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi- 110 011. | Secretary, PM-STIAC |
| | Other Attendees | |
| 19. | Ms. Saloni Malhotra , Vice-President, Invest India, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi – 110 011. | |
| 20. | Ms. Malyaj Varmani , Assistant Vice-President, Invest India, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi – 110 011. | PM-STIAC Sectt. |
| 21. | Shri Nithin Chakki , Manager, Invest India, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi – 110 011. | PM-STIAC Sectt. |
| 22. | Shri Phani Koundinya , Assistant Vice President, Bharat Forge Limited, State Highway 5, Mundhwa Industrial Area, Mundhwa, Pune, Maharashtra - 411036. | |
| | From O/o PSA | |
| 23. | Shri Neeraj Sinha , Scientist 'G' / Adviser, Office of the Principal | PM-STIAC |

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| | Scientific Adviser to the Government of India, 326, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110 011. | Sectt. |
| 24. | Shri J.B. Mohapatra , Adviser, Office of the Principal Scientific Adviser to the Government of India, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110 011. | |
| 25. | Dr. Ketaki Bapat , Scientist 'F', Office of the Principal Scientific Adviser to the Government of India, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110 011. | |
| 26. | Shri Suresh Kumar K. , Scientist 'F', Office of the Principal Scientific Adviser to the Government of India, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110 011. | |
| 27. | Dr. Arun Bhardwaj , Scientist 'E', Office of the Principal Scientific Adviser to the Government of India, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi - 110 011. | |
| 28. | Shri Shirish Panda , Scientist 'D', Office of the Principal Scientific Adviser to the Government of India, 324A, Vigyan Bhavan Annexe, Maulana Azad Road, New Delhi – 110 011. | PM-STIAC Sectt. |
| 29. | Ms. Remya Haridasan , Scientist 'D', Office of the Principal Scientific Adviser to the Government of India, 324A, Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi – 110 011. | PM-STIAC Sectt. |

Annexure II

3rd meeting of the Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC)

Date: 11th December, 2018

Time: 1000 -1330 hr

Venue: Committee Room 'A', Vigyan Bhawan Annexe, Maulana Azad Road, New Delhi - 110011

AGENDA

0930 – 1000 : Tea/Coffee at the venue

1000 – 1015 : Welcome address by the **Chairman, Prof. K. VijayRaghavan**

1015 – 1030 : A presentation by **Shri R. Subrahmanyam, Secretary, Department of Higher Education, Government of India**

1030 – 1045 : Discussion, leading to recommendations, with action points

1045 – 1315 : Reporting and discussion on the action taken based on the recommendations of the 1st and the 2nd meetings of the PM STIAC

1315 – 1325 : Summing up by the **Chairman**

1325 – 1330 : Vote of thanks by the **Scientific Secretary**, Office of the Principal Scientific Adviser to the Government of India

1330 : Lunch