

Misc.1/20/2018-CDN
Ministry of Science and Technology
Department of Science and Technology
(CDN Section)

Technology Bhawan,
New Mehrauli Road,
New Delhi-110016

Dated: 10.02.2020

OFFICE MEMORANDUM

Sub : Monthly Summary to the Cabinet for the month of January, 2020.

The undersigned is directed to enclose a copy of the Monthly Summary of Important policy decisions taken and major achievements of the Department of Science and Technology for the month ending 31.01.2020 for information.

This issue with the approval of Secretary, DST.



(P.K. Srivastava)
Deputy Secretary to the Govt. of India
Tel: 011-26590576

Encl: As above

To,

1. The Vice Chairman, NITI Aayog, NITI Bhawan, New Delhi
2. Chief Executive Officer, NITI Aayog, NITI Bhawan, New Delhi
3. The Chairman, UPSC, New Delhi
4. Secretary to the President of India
5. Secretary to the Vice-President of India
6. Principal Secretary to the Prime Minister, PMO, South Block, New Delhi
7. Secretaries to the Government of India (as per list)
8. The Principal Director General, Press Information Bureau, Ministry of Information and Broadcasting, New Delhi
9. The Director, Cabinet Secretariat, New Delhi
10. Shri Sanjay Kumar Mishra, Sc. "G", DST for uploading the monthly summary on DST's website.
11. Sr. PPS to Secretary, DST.

Department of Science & Technology
Monthly Report
January, 2020

I. Important policy decisions taken and major achievements during the month:

A. 107th Indian Science Congress

1. The Indian Science Congress Association (ISCA) organized 107th Indian Science Congress (ISC) during 3-7 January 2020, at University of Agricultural Sciences, Bangalore, inaugurated by Hon'ble Prime Minister of India on 3rd January 2020. Hon'ble Prime Minister also launched Indian Science Technology and Engineering Facilities Map (I-STEM) portal. This portal is designed to hold the database of all the major R&D infrastructure and instrument facilities established through public funding in various academic and R&D institutions across the country. The focal theme of 107th Science Congress was "Science and Technology: Rural Development". Children Science Congress, Women Science Congress and Science Communicators Meet were also organized.

2. Dr. Harsh Vardhan, Union Minister of Science and Technology, Ministry of Environment, Forest and Climate Change and Ministry of Earth Sciences also graced the inaugural session and inaugurated Pride of India Expo 2020. Shri Muppavarapu Venkaiah Naidu, the Hon'ble Vice-President of India, attended Valedictory programme as a Chief Guest.

B. Science for Society

1. An Expert Committee meeting of Scheme Technological Advancement for Rural Areas (TARA) was organized at Indian Institute of Technology (IIT), Bombay on 22 January, 2020 to evaluate 13 new proposals and 13 ongoing projects funded to S&T capable NGOs under Core Support grant.

2. A capacity augmentation workshop to enhance the capacities of supported Core Groups for promoting knowledge and innovation system was organized. Focus of the workshop was to improve productivity & livelihoods in rural production system(s) through technology up-scaling for wider social impact at the grassroots level.

3. A special session was conducted on smart village concept involving Ministry of Rural Development; Institute of Rural Management (IRMA), Anand; IIT, Bombay & other stakeholders to orient Core Support Groups and other developmental agencies for addressing upcoming challenges for rural transformation aligning with Sustainable Development Goals (SDGs) and national priorities.

4. The Department of Science & Technology (DST) has opened Phase-II of the Digital Gandhi GyanVigyan Exhibition at its Technology Bhawan premises on 30th January, 2020, showcasing Augmented Reality(AR) and Virtual Reality(VR) based exhibits on events related to the life of Mahtma Gandhi. The Digital Gandhi GyanVigyan Exhibition is open for school children, officers and staff of the Ministry and other visitors to the Department. DST, in collaboration with Gandhi Smriti and DarshanSamiti, New Delhi, arranged visit of 46 students from ten schools from the States of Bihar, Telangana and Uttar Pradesh on 31.1.2020.

C. National Technology Mission

1. First Meeting of the Expert Committee to formulate a mechanism and to come out with a complete framework for organization of India International Conference on Cyber-Physical Systems (IICCPS) was held on 17th January, 2020 at DST, Technology Bhawan, New Delhi under the Chairmanship of Dr. K.D. Nayak, Ex-DG, DRDO.

2. In order to scrutinize the proposals received against the Call For Proposals (CFP) for setting up of 25 Hubs under NM-ICPS, 2nd SAC Meeting of NM-ICPS was held on 18th January, 2020 at C-DAC, Hyderabad and finally, the Committee shortlisted 19 proposals.

3. 1st Meeting of Working Group for NM-ICPS to provide a roadmap on issues related to Section-8 Company, IPR, licensing, CSR funding, public and private venture capital and fund management etc. was held under the Chairmanship of Shri Anurag Goyal, IAS (Retd.), Former Secretary, Ministry of Corporate Affairs on 21.01.2020 at DST, Technology Bhawan, New Delhi.

4. Third Scientific Advisory Committee (SAC) Meeting for “National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) was held on 30th January, 2020 at Technology Bhawan, DST, New Delhi. During the meeting, PI’s of the shortlisted proposals (19 nos) made the presentation on their individual proposal.

D. Technology Development

1. Science and Engineering Research Board (SERB) signed a Letter of Intent on January 22, 2020, with five semiconductor and chip making global giants to create a **Fund for Industrial Research Engagement (FIRE)**. Industry consortia comprises of industry partners, Intel Technology India Private Limited, Applied Materials India Private Limited, Texas Instruments (India) Private Limited, Mentor Graphics (Sales & Services) Private Limited, and NXP India Private Limited. **SERB-FIRE** is designed to create impact on industry-relevant R&D initiatives having high success rate for real life deployment.
2. The Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) synthesized a compound by conjugating an FDA- approved polymer with a naturally occurring amino acid. It is highly active against multidrug-resistant *Acinetobacter baumannii*, an organism responsible for a range of life-threatening infections such as pneumonia and meningitis.
3. The Bose Institute (BI) identified the role of isoaspartate in fibrillation and its prevention by Protein-L-isoaspartyl methyltransferase. Insights were gained into the mechanism of a rationally designed peptide against microbial infections. At Bose Institute, Prof. Joachim Frank, Nobel laureate in Chemistry 2017, delivered the special Centenary Lecture 2020 on Jan 22, 2020, on "Single particle cryo-EM: Visualization of biological molecules in their native states".
4. At Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), the Department of Neurosurgery (Spine team), performed surgery for a very rare vertebral bony tumor with intradural extension - radical resection and stabilisation of spine.
5. S. N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata demonstrated Si compatible MoO₃/MoS₂ core-shell quantum dots for wavelength tunable photo detection in wide visible range.
6. Medium temperature stable solar absorber coatings developed at International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad showed higher performance compared to imported absorber tubes as per laboratory tests.

7. One patent “A method of production of extracellular enzymes for efficient degradation of cellulose containing substrate” was granted to Institute of Advanced Study in Science and Technology (IASST), Guwahati.

8. New grape variety ARI 516 suitable for processing purpose was identified for cultivation in Maharashtra, Punjab, Telangana and Tamil Nadu in 7th Group Discussion Meeting of ICAR-All India Co-Ordinated Research Projection Fruit held at Punjab Agricultural University Ludhiana during 16th-19th January 2020.

9. Initial Screening Committees (ISCs): ISC meeting was held on 29th January, 2020 at Technology Development Board office for the project proposal titled “Commercial Development and Deployment of Clean Energy Based Aluminium –Air Battery for Electric Vehicles and Stationary Power Generation System” submitted by M/s Log9 Materials Scientific Private Limited, Bengaluru.

10. Project Monitoring Committees (PMCs): 2nd PMC Meeting was held by TDB on 21st-22nd January, 2020 at Punjab for the project titled ‘Development and Commercialization of Straw Utilization technology: In situ Accelerated and Sustainable Rice Straw Decomposition [ASRSD]’ in respect of the project of M/s Kanbiosys Private Limited.

11. PMC Meeting was held on 31st January, 2020 by TDB at Gujarat for the project titled ‘Birla Excel Solvent Spun Cellulosic Fibre Plant’ in respect of the project of M/s Grasim Industries Ltd., Mumbai.

E. International Cooperation

1. India-UNESCO S&T cooperation: Prior to the meeting of the Hon’ble Prime Minister of India with the DG UNESCO on February 4 2020, the first meeting of the reconstituted Indian National Commission for Cooperation with UNESCO (INCCU), under the chairmanship of the Hon’ble HRD Minister, was held in New Delhi on January 30, 2020. From the ‘Natural Sciences Sub-Commission (NSSC) of INCCU being coordinated by DST, Secretary DST, shared the existing India-UNESCO S&T cooperation that includes (i) hosting two UNESCO Category II Centres- a Regional Centre for Biotechnology(RCB) at Faridabad, NCR and International Training Centre for Operational Oceanography (ITCOcean) at Hyderabad, for Indian and International researchers (ii) partnering with UNESCO

in rewarding excellence in Mathematics by providing prize money for the Ramanujan Prize ; and in Popularization of Science by contributing to the UNESCO Kalinga Prize (iii) contributing to the implementation plan for the UN declared 'Decade of Ocean Science for Sustainability 2021-30' and in the UNESCO Institutes of Statistics meetings for the development and revision of standards/concepts/definitions.

He suggested a transparent, fair and level playing in ranking and judging the contributions of institutions of higher education and offered to partner with UNESCO in evolving such a framework. He also sought enhanced engagements with UNESCO's organizations such as the ICTP, and the 'World Academy of Sciences (TWAS) for the Developing Countries' both located in Italy. Cooperation with UNESCO, in the area of cultural heritage with India offering its expertise in preserving, and experiencing world heritage sites, art, architecture using scientific tools and emerging technologies was suggested

2. Shanghai Cooperation Organisation(SCO) Science, Technology and Innovation Cooperation: During the fifth session of Heads of Ministries and Department of Science &Technology the SCO Member States held at Moscow during 20-21 November 2019, India proposed to host the first SCO Young Scientist & Innovators Forum meeting in 2020. In this regard, Department of Science and Technology organized two consultation meetings with the stakeholders at Hyderabad and Ahmedabad to organize this signature event. A total of over 50 experts from IIT-Hyderabad, IIT-Gandhinagar, Indian Institute of Chemical Technology, National Innovation Foundation, IIM Ahmedabad, CCMB, CDFD, NIN, IISER Mohali, IISER Kolkata, ICT Mumbai, GGS-Indraprastha University Delhi, Mumbai University and NCBS Bangalore took part in these meetings.

About 150-200 participants, including young scientists, experts and entrepreneurs from SCO members states will be invited The meetings identified the theme of event and thematic areas such as Environment technology, Healthcare, Agriculture technology, Energy saving and energy efficiency.. Focus on grass-root innovations and capacity building programmes with focus on talent mobility and sharing of research infrastructure could be the key deliverable of the SCO-YS conclave. India could take the leadership role in the handholding of various member states such as Tajikistan, Kyrgyzstan, Kazakhstan and Uzbekistan in setting up strong STI and start-up policies and programmes.

3. **A New Programme of Cooperation concluded with Brazil during visit of the Brazilian President to India**

A new Programme of Cooperation for 2020-23 in the field of Renewable energy including low carbon technologies; Earth system sciences including ocean sciences and climate change; Innovation and entrepreneurship; Information and communications technologies; Sustainable use of biodiversity; Biotechnology and human health and Agriculture was concluded and exchanged between the Ms. Vijay Thakur Singh, Secretary (East), Ministry of External Affairs of India and H.E. Mr. Marcos Pontes, Minister of Science, Technology, Innovation and Communication of Brazil in presence of the Hon'ble Prime minister of India and Brazilian President on January 25, 2020. Being the implementing Parties: on the Indian side, the Department of Science and Technology (DST); on the Brazilian side, the Ministry of Science, Technology, Innovation and Communications (MCTIC); aim to complement and deepen the ongoing bilateral cooperation between scientists, researchers and funding institutions, based on the principles of reciprocity, mutual benefits, mutual respect and sustainability.

F. Human Capacity Building

1. The Expert Committee meeting to scrutinize/consider the new proposals received against the Call For Proposals (CFP) under Schedule Caste Sub-Plan (SCSP)/Tribal Sub-Plan (TSP) was organized on 4th& 6th January, 2020 at DST, New Delhi.

2. INSPIRE Internship:

One meeting of the Expert Committee for considering the INSPIRE Internship Proposals under the INSPIRE Program was organized. In this meeting, Committee considered 14 INSPIRE Internship proposals for organizing the INSPIRE Internship camps from all across the country. Out of 14 proposals, only 6 proposals covering 1100 INSPIRE interns were recommended for support.

3. Scholarship For Higher Education (SHE): 4072 SHE scholars received their scholarship for pursuing B.Sc./M.Sc. Degree course in basic and natural sciences. 56 INSPIRE Scholars/visitor's queries were responded.

4. INSPIRE Fellowship: 137 INSPIRE Fellows received their fellowship for pursuing their doctoral degree program.

5. INSPIRE Faculty Fellowship: 89 INSPIRE Faculty Fellow's grant was released for pursuing their Post-doctoral program.

6. Expert Discussion on "Bibliometrics: Contemporary issues and options" was held during 17-18th January 2020 at Mar Athanasios College for Advanced Studies, Tiruvalla, Kerala.

7. 21st Core National S&T Survey meeting for the development of latest statistics and indicators on Science & Technology was held at TERI, New Delhi.

8. VigyanSamagam, a multi-venue mega science exhibition started its journey in its last leg at National Science Centre, New Delhi during the month. School Outreach activities for VigyanSamagam conducted in three schools of Delhi.

G. Scientific Infrastructure Building

1. "Fund for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)

a) Award letters to 95 Departments recommended by FIST Advisory Board (FISTAB) 2019 were communicated to various academic institutions, Universities Development and PG College for support under FIST Programme for Scientific Infrastructure Building.

b) The result of FIST 2019 Program were declared and displayed in the DST website.

2. Promotion of University Research and Scientific Excellence (PURSE)

The Ninth Meeting of Programme Management Board on PURSE was organized in January, 2020. A total of Thirty two Universities presented the progress in terms of activities in the PURSE Project, research highlights, publication output and Impact of PURSE in two days meeting.

3. “Sophisticated Analytical and Technical Help Institutes”- (SATHI)

a) The 3rd meeting of Sophisticated Analytical and Technical Help Institutes (SATHI) –“SATHI kibaat” was held in January, 2020 at IIT Delhi by involving IIT Delhi, IIT Kharagpur and BHU-Varanasi to review the work progress of recently supported SATHI centres.

b) I-STEM Meeting with I-STEM team was organized by R&D Infrastructure Division of DST to discuss different features of dashboard along with different modalities necessary for schemes like FIST, SAIF, PURSE & SATHI through I-STEM portal.

4. Sophisticated Analytical Instrument Facilities (SAIF)

The Facility Management Committee were held in January, 2020 at Shivaji University, Kolhapur, Karnataka University, Dharwad and IIT Mumbai to monitor the performance of the SAIF Centre, to consider its requirement for the ensuing year and to discuss for its future course.

5. The design and development of in-kind items for Facility for Antiproton and Ion Research (FAIR) and Thirty Meter Telescope (TMT) projects is in progress. For FAIR project, 2 Prototype Ultra High Vacuum Chambers shipped to FAIR, Germany received acceptance from FAIR after testing. Another batch of 42 Power Converters received shipping clearance from FAIR after successful Factory Acceptance Test. For TMT project, Inspection of 18 Mirror Blanks received from Japan as their in-kind contribution to TMT completed after receiving them successfully. The Coordinate Measuring Machine, successfully installed for Mirror metrology.

6. **R & D Priorities for NSDI** have been identified in the Workshop on “Geospatial Data Science” organised on the side-lines of the ACM Joint Conference on ‘Data Science’ and ‘Management of Data’ held at the Indian School of Business (ISB), Hyderabad on 06 January 2020. Indicative priorities include ‘**Autonomous Spatial Data Platforms**’, ‘**Cloud-, Edge-, and Fog-Computing**’; ‘**Big- and Spatio-temporal Data Analytics**’; and ‘**Geo-AI and Machine Learning**’.

7. **Activities of the NATMO Geoportal** currently under development has been reviewed at Kolkata on 16 January 2020. **Capable of providing on-line access to the National School Atlas (NSA)** that contains authoritative international

boundaries and other thematic data resources, the Geo portal will be useful for the study of Geography in schools and research in academic institutions nationwide.

8. Lessons learnt in implementing NSDI applications over the past years have been shared with the participants of the International Workshop on “Advanced Spatial Analytics and Deep Learning” held at the **National Institute of Advanced Studies (NIAS), Bengaluru** on 27 January 2020. National Data Registry (NDR), Geospatial Cloud Platform, On-line access to High Resolution Foundation Data Sets; and Training hold the key to successful utilisation of Geospatial Technologies in governance and decision-making.

9. Linkage with NDMA - NSDI participated in the deliberations of the **National Disaster Management Authority (NDMA)** Meeting on “GIS Layers for Natural Hazards” on 15 January 2020 and provided inputs to **streamlining the data sharing platform** and **standardisation of the data content** in line with the specifications from International Standardisation Organisation (ISO), Open Geospatial Consortium (OGC) and Bureau of Indian Standards (BIS)’s Sectional Committee LITD-22.

10. Linkage with GSDL - On the advice of the Annual General Body of the Geo-Spatial Delhi Limited (GSDL) of the **Govt. of NCT of Delhi (GNCTD)** in its 11th meeting held on 30 December 2019, NSDI participated in GSDL’s technical meeting on 29 January 2020 at BikashBhawan – II, Civil Lines, Delhi. In order to improve the performance of the geospatial application services of the Delhi State Geo portal, strategies like **geospatial data and process standardisation, improvement in the Data Life Cycle Management with the help of UAVs**; and **installation of Geospatial Cloud-based Platforms** have been proposed.

11. WORLD BANK RATED SURVEY OF INDIA NO. 1 PERFORMER IN NATIONAL HYDROLOGY PROJECT

Survey of India (SoI) under Deptt of Science & Technology, Ministry of Science & Technology is involved for “**Generation of High-resolution Geo-spatial data**” under National Hydrology project (NHP) by Deptt of Water Resources as central implementation agency.

The task of SoI consists of preparation of 0.5 metre *DEM (Digital Elevation Model)* for 58,469 km² area & 3-5 metre *DEM* for 8 lakh km² area, creation of *Geo-database* for 8 lakh km² area, establishment of CORS network in Uttar Pradesh & Uttarakhand, Geoid modelling for Uttar Pradesh & Bihar and Hydromet stations connectivity all over the country using High Precision levelling.

The above mentioned technical activities by SoI are pivotal to improve the extent and accessibility of water resources information and strengthen institutional capacity to enable improved water resources planning and management across India which is aimed under the NHP project.

The SoI is one of the seven central implementation agencies involved in execution of NHP project which started in Feb 2017. The World Bank in its latest performance audit or Mid-term review of NHP project conducted in September, 2019 has rated the performance of SoI as no. 1 based on performance indicators viz Role based performance, Finance, trainings, Updating information in MIS and Procurement. Last year also SoI had drawn accolades & appreciation for its performance as No 1 as central implementation agency in performance review by World Bank. The consistent display of lead performance once again establishes the capability and maintenance of high standards by SoI in execution of Geo-spatial projects.

12. Quality education in Science and Technology (S&T) in small cities is a major challenge for girls to take up science as career prospective. CURIE (Consolidation of University Research for Innovation and Excellence in Women Universities) Programme of KIRAN Division is addressing this issue and providing financial support to develop S&T infrastructure and research facilities in women universities. Division conducted Expert Committee Meeting and departmental visit under CURIE on 27th January, 2020 to support Bhagat Phool Singh Mahila Vishvavidyalaya which is situated in small town Sonipet of Haryana State. CURIE support will be pivotal in accelerating STEM education and research in this University and will be beneficial for more than 1500 girls' studying in STEM fields.

13. Thematic maps of National School Atlas prepared in web enabled format to provide in NATMO Geoportal

Admin Boundary Base Layer (1:250000 Scale) is completed.

Drainage Base Layer(1:250000 Scale) Rajasihan ,Tripura, 60% complete

H. Swachhata Related Activities :-

1. In view of the enhanced focus of the Government for providing energy security and tapping the renewable energy sources, a roof top solar plant (350 KWp) was commissioned on 07 January, 2019 in Technology Bhavan premises of Department of Science & Technology. During the period 01 Jan., 2019 to 10 Jan., 2020, the solar plant had generated a total of 3,50,671 electrical units (KWH) with corresponding savings of Rs.27,64,933/- + Applicable taxes & other charges.

2. Towards implementation of the Swachh Bharat Abhiyan, a compost pit of size 17'x15'x8.5' with four compartments, was constructed in the Department of Science & Technology (DST) in April 2019 for composting the wet, biodegradable and horticultural waste generated in the Technology Bhawan premises. Compost manure has been prepared in one compartment of the pit which will be distributed to CPWD (Horticulture) for use in the gardens of the Technology Bhawan.

II. Important policy matters held up on account of prolonged inter-ministerial consultations: NIL

III. Compliance of CoS Decisions:

No. of CoS decisions pending for compliance	Proposed action plan/ time lines for compliance of CoS decisions
<p>Department of S&T circulated a draft cabinet note on 'Financial and Administrative reforms for efficient functioning and delivery of science and technology in India' on 17.01.2017. Subsequently on the advice of PMO the matter was referred to the Committee of Secretaries which met on 26.05.2017.</p> <p>As desired by Committee of Secretaries following main issue is being considered in consultation with Department of Expenditure, Department of Economic Affairs and Department of Personnel and Training:</p> <p>1. Revival of posts in scientific Departments / Ministries.</p>	<p>This Department has already taken up these issues with the concerned Departments i.e. Department of Expenditure, Department of Economic Affairs and Department of Personnel and Training. Present status of this issues is as under:</p> <p>1. Department of Expenditure has exempted 07 scientific Ministries / Departments from seeking revival of scientific posts lying vacant for more than 02 years. Regarding similar powers to autonomous bodies under Department of Science and Technology, DoE has sought data on posts with autonomous bodies, which is being compiled.</p>