Misc.1/13/2019-CDN
Government of India
Ministry of Science and Technology
Department of Science and Technology
(CDN Section)
***
Technology Bhawan,
New Mehrauli Road,
New Delhi – 110016
14.04.2020

OFFICE MEMORANDUM

Subject: Monthly Summary to the Cabinet for the month of March, 2020.

The undersigned is directed to enclose herewith a copy of the Monthly Summary of important policy decisions taken and major achievements of the Department of Science & Technology for the month ending 31.03.2020 for information.

2. This has already been approved by Secretary, DST.

(Balram Goel)
Under Secretary to the Govt. of India

To,

All Members of the Council of Ministers (through email as per Annexure-I)

Copy with enclosures, forwarded through email to:-

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vi. Secretary to the President of India. (secy.president@rb.nic.in)
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ix. Secretaries to the Government of India (as per Annexure-II)
x. The Principal Director General, Press Information Bureau, Ministry of Information and Broadcasting. (pdg-pib@nic.in)
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Annexure-I

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Department of Science & Technology
Monthly Report
March, 2020

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

A. Various Measures taken by DST for COVID-19

1. Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum **established a COVID-19 testing laboratory in collaboration with the Department of Microbiology in the Institute.** ICMR approved this facility. Screening was started by collecting samples from institute staff in quarantine. Molecular Genetics and Neuroimmunology Unit and "In Vivo Evaluation Facility" were inaugurated.

2. Science and Engineering Research Board (SERB), New Delhi announced specific **call for COVID-19 and related respiratory viral infections** in the following areas:

   - New or repurposed antivirals against valid viral targets; viricidal coatings; etc.
   - Affordable diagnostics for symptomatic and asymptomatic respiratory viral infections.
   - Investigational vaccines against respiratory viruses.
   - Development of disease models for respiratory viral infections.
   - Studies on immune response and immunity during respiratory viral infections.
   - Epidemiology of COVID and other respiratory viral infections.

3. SERB also solicited one-year project proposals from Institutions for preventive chemical approaches as antivirals, repurposed drugs against COVID-19, and new methods to sanitize inanimate surfaces. It is also applicable to antivirals to be incorporated in cost-effective breathing masks. **Under Impacting Research Innovation and Technology (IMPRINT) programme a new theme "COVID-like epidemic prevention, management and treatment" has been added under Healthcare Technology domain**.

4. **Call for proposals for fighting against Covid 19:** Technology Development Board (TDB) has issued a call for proposals inviting applications from Indian companies and enterprises for **technologically innovative solutions towards "Fighting COVID-19" on 20.03.2020.** The aim of this call is to strengthen the nation's core capacities in surveillance, laboratory support, infection prevention and control, logistics, risk communication &, in particular, the preparedness in terms of isolation and ventilator management of critically ill patients for containing / preventing the spread of COVID-19. Such health care related technologies are in short supply world over, due to sudden spread of this pandemic globally. It is envisaged that products / technologies developed from this call may also help in containment of spread of COVID 19 virus especially in the vulnerable section of the community including SC/ST. TDB has therefore invited proposals for development of solutions under the following categories:-

a. Self-cleaning virus neutralizing mask

b. Cost effective Thermal Scanning

c. Large area sanitization and sterilization

d. Bioinformatics and Surveillance

e. Rapid and Accurate Diagnosis kit

f. AI and IOT based solution for touchless entry

g. Home Based ventilation system

h. Protective gears for health care professional

i. Or any other related technology

The response of this call has been good. As on 31st March, 2020, a total 318 companies/startups/LLPs have been registered with TDB. Out of 318 companies, TDB officials have reached out to nearly 90 companies for details of their products and thereafter helped these companies towards processing of applications. Further, a fast track process is being set for evaluation of these applications on priority basis.

5. As an immediate response to global pandemic of Covid 19, Policy decision was taken by DST for **Establishment of Centre for Augmenting WAR with COVID-19 Health Crisis (CAWACH).** CAWACH program is being supported by DST through Society of Innovation & Entrepreneurship (SINE) IIT Bombay, Mumbai at total cost of Rs. 56.23 crore and so far, Rs. 53 crore is already being released.

B. Science for Society

1. A **plenary session on 'Sustainable Livelihoods and Public Health'** was organized on 2 March 2020 at 64th Annual National Conference of Indian Public Health Association (IPHACON 2020), All India Institute of Medical Sciences (AIIMS), New Delhi. Public health specialists, doctors, sociologists and managers from across the country attended this session.

2. A review meeting regarding the implementation of Scheduled Caste Sub Plan (SCSP) by the Department of Science and Technology (DST) was held under the Chairmanship of Secretary, Ministry of Social Justice and Empowerment (MSJE) through Video Conferencing on 20 March, 2020. Secretary, MSJE appreciated the concerted efforts of DST for effective execution of SCSP and suggested **convergence of SCSP with existing schemes of Government of India (GoI) such as adoption of schools and villages under Pradhan Mantri Adarsh Gram Yojana and initiation of Fab labs (science labs) in these schools**.

3. Indian Institute of Public Health (IIPH), Gandhinagar had set up a **diagnostic laboratory for Toxoplasmosis, Rubella, Cytomegalovirus and Herpes simplex (TORCH)** infections during pregnancy for improving the women and child health in blocks Modasa and Bhiloda of Aravalli district in Gujarat.

4. A demonstration **model building was established** in Village Kamad of Distt. Uttarkashi, Uttarkhand by Development Alternatives, New Delhi in collaboration with HESCO, Dehradun. The building was **constructed with green construction technologies using value added local resources such as Pinewood shingle roofing on timber under-structure, Pre-cast RCC plank and joist roof system** thus enhancing disaster resilience. District

disaster management authority showed keen interest in such package for trainings related to disaster resilient construction in remote mountain areas.

5. Organized a stakeholder workshop to disseminate Community-scale Energy Demand Reduction in India (CEDRI)".

6. A virtual meeting was held with stakeholders of IRIS programme to discuss implementation especially the mentoring. Indo -US S&T Forum, DST representatives of Exemplar attended.

7. 10 New projects were sanctioned related to Outreach, STEMM Demonstrations, Low Cost Teaching Aids, Folk based science communication.

C. National Technology Mission

1. The National Mission on Interdisciplinary Cyber Physical System (NM-ICPS) was approved by the Cabinet was 6th December, 2018 and the sanction order was issued in March 2019 with a token budget of Rs. 1 Lakh for the year 2018-19. As per the Cabinet Decision, Mission Governing Board (MGB) and other Committees were constituted with the approval of Competent Authority. **MGB decided to set up 25 Technology Innovation Hubs (TIHs) throughout India under the Mission**. Accordingly, Call for Proposal (CFP) were invited and after scrutinizing, it was decided to established 17 TIHs in Academic Institute during the current Financial Year. To quick start the establishment of the 17 TIHs, initial installment of about Rs. 7.50 Crore each totaling to Rs 122.70 Crore has been released on 27th March, 2020 through Science and Engineering Research Board (SERB), DST. Process for setting up of remaining 8 TIHs is under process.

2. The Government has announced on 1st Feb, 2020 a National Mission on Quantum Technology & Application (NM-QTA) with a total Budget Outlay of Rs. 8000 Crore to be implemented by DST for a period of Five Years. Broad Objective of NM-QTA are to promote R&D, development and demonstration of Quantum Computing, Quantum Communication, Quantum Key Distribution (QKD), Quantum Devices, Human Resource Development, Strengthening International Collaborative Research, Nurture Innovation and Start ups. The **Mission NM-QTA is a pan India Mission to be implemented throughout the country with Academic and Research Institutes selected on a competitive basis by the subject Expert Committee.** A concept paper on NM-QTA has been prepared, Apex Committee for finalizing the Detail Project Report (DPR) has been constituted. The preparation of DPR is under Process in consultation with all the stake holders and Expert of the subject. After draft DPR is prepared, the same will be submitted for the approval before the Apex Committee.

3. The Government has launched the **Technology Fusion & Applications Research Programme (TFAR) to address the ever increasing technological requirements of the society** and taking into account the International Trends of next generation technologies. TFAR Programme is a National with pan India applicability to be implemented by the Department of Science & Technology (DST) at a total Outlay of Rs.250 Crore for a period of 3 Years. There are 51 projects executed under Quantum enabled Science & Technology (QUeST), under the Umbrella Scheme, TFAR. The findings from QUeST Project will work as pilot scale project for the Mission NM-QTA.

4. Suggestions made for effective implementation of Small Hydro Power Development Scheme of MNRE.

D. Technology Development

1. At Bose Intitute, Kolkata, **a promising material for high-performance supercapacitor electrodes, one of the most efficient green energy storage devices, was developed.** The performance of the electrode is superior compared to other graphene or MoS_2 based compounds. The practical applicability of the electrode material has been examined by lightning four LED bulbs in series showing longer discharge time.

2. Researchers at Raman Research Institute, Bengaluru along with collaborators from University of Ljubljana, Slovenia, have **synthesized a novel form of self-assembled toron-like structures in inverse nematic gels** and have deduced the liquid crystal director configurations that could lead to the formation of such structures.

3. Jawaharlal Nehru Centre for Advance Scientific Research **(JNCASR), Bengaluru fabricated a working prototype of eco-friendly Zn-air battery** uses MOF derived core-shell nanocomposite as a cathode material which is trifunctional in nature. The fabricated Zn-air battery is safe, light weight and be recharged electrically as well as mechanically.

4. MACS-Agharkar Research **Institute identified new grape variety ARI 516 suitable for processing purpose for cultivation in Maharashtra, Punjab, Telangana and Tamil Nadu.** Also, AGS 25 - a soybean germplasm line, has been identified for long juvenile trait and has been granted registration for the character by Plant Germplasm Registration Committee of Indian Council of Agricultural Research, New Delhi.

5. Institute of Advance Study in Science and Technology (IASST), Guwahati scientists **synthesized narrow bandgap tungsten trioxide nanoparticles in an indigenously developed in-liquid plasma reactor.** The bandgap energy tuning is found to be related to electron-rich oxygen vacancies on the crystal planes and grain boundary defects. The photo-catalytic efficiency of the plasma synthesize nanoparticles is found to be higher than that of commercial bulk and nano WO3 particles and therefore has many potential applications.

6. IASST scientists **developed an electrochemical sensing platform using carbon dots for detecting toxic chemicals N-nitrosodimethylamine (NDMA) and N-nitrosodiethanolamine (NDEA).** These toxic chemicals may alter the chemical composition of our DNA leading to cancer. Cured meats, bacon, some cheese, low fat dry milk are some sources which may contain these chemicals of Nitrosamine family.

7. International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad **synthesized Aluminum Hydride (also known Alane) at lab-scale by electrochemical methods and direct hydrogenation approach for hydrogen storage applications.** Also, developed Glucose sensors, at lab scale, as a value-added application of recycled Pt catalysts from end of life PEMFC electrodes.

8. The rice varieties by grassroots innovators (farmers), upon their technical evaluation by National Innovation Foundation, the **rice varieties Kudrat-1 (39.13q/ha) and Kudrat-5 (33.91q/ha) were found suited for production under low input organic conditions.**, Aswathi black pepper recorded maximum essential oil (4.8%), piperine (5.67%) and oleoresin (13.74%) content and two varieties of grapes - Nanasaheb Purple Seedless and Danka

Seedless were found unique and uniform for its morphological traits with higher market potential due to earliness and high yield.

9. At Indian Institute of Astrophysics (IIA), Bengaluru high resolution spectra of the metal poor stars SDSS J0646+4116 and SDSS J1937+5024 was studied which indicates that these stars have typical nucleosynthesis signatures expected from the so-called second-generation stars of globular clusters. The light-element anti-correlation of Mg-Al is detected, along with elevated abundances of Na. These bright escapees provide a unique opportunity to study the nucleosynthesis events of globular clusters in great detail, and shed light on their chemical-enrichment histories. **A 'Resource Search Engine' website hosted and maintained at the Indian Astronomical Observatory (IAO)**, Hanle was also developed and deployed. **The website can be used to search the repository which includes operation manuals, network configurations, software, etc. of various instruments and telescopes at IAO**.

10. At S. N. Bose National Centre for Basic Sciences, Kolkata, **strong light-matter interactions between resonantly coupled metal plasmons and spin-orbit coupled bright excitons from two dimensional WS2 producing plexcitons have been demonstrated**, which are attractive for futuristic applications in quantum photonics operating at room temperature. A prestigious biennial International Conference on Nano Science and Technology (ICONAST 2020) has been organized during March 5-7, 2020 under the aegis of Nano Mission, Department of Science and Technology.

11. 14 new proposals for water technologies initiated.

12. Under MI-India Smart Grids following notable outcomes emerged :

    a. A blockchain prototype model has been developed using IBM Hyperledger.

    b. A 3kW Topology based converter designed, built and tested.

    c. Notable progress made for smart, secure, scalable, resilient and adaptive cyber-physical power system (S3RA-CPPS)".

13. Successful Demonstration of grid supportive EV charger and charging infrastructure at LT level (D-EVCI).

14. Development of engine for use of Liquefied Natural Gas (LNG) in Heavy Duty Commercial Vehicle nearing completion for demonstration.

15. Meeting was held on 2nd-3rd March, 2020 for the project titled 'Development & Commercialization of bio CNG from Sewage based Biogas plant at Sewage Treatment Plant Jagjeetpur, Haridwar' in respect of the project of M/s Anarobic Energy Pvt Ltd., Bijnor, Haridwar.

16. Meeting was held on 16th &17th March 2020 at Malur, Karnataka for the project titled 'Commercialization & setting up of Manufacturing Line for Indigenous Medical LINAC' in respect of the project of M/s Panacea Medical Technologies Pvt. Ltd., Bangalore.

17. Meeting was held on 16th-17th March, 2020 at Bhubaneswar for the project titled 'in Philia-Solutions for Parenthood - Comprehensive genetic screening for optimized parenting' in respect of the project of M/s In DNA Life Sciences Pvt. Ltd., Bhubaneswar.

E. International Cooperation

1. **India-Portugal Call for Joint Proposals:** Within the framework of the Memorandum of Understanding signed in 2019 between the Department of Science and Technology (DST) of the Ministry of Science and Technology of the Government of India, and the Foundation for Science and Technology (FCT) of the Ministry of Science, Technology and Higher Education of the Portuguese Republic, a **call for joint scientific research and technological development projects is launched in the following areas: Biotechnology; Energy, Environment; Infrastructure Sustainability; Climate Change; Disaster Management; Marine Science & Technology**.

2. **India-Serbia Call for Joint Proposals:** The Department of Science and Technology, Govt. of India invites to participate against **'Joint Call for Proposals - 2020' under the India-Serbia Scientific and Technological Cooperation Program** between the Department of Science and Technology (DST), Ministry of Science and Technology of the Republic of India and the Ministry of Education, Science and Technological Development (MESTD) of the Republic of Serbia in the following areas: New Materials and Nanotechnology; Energy and Energy Efficiency; Information and communication technologies; Human Health; Biotechnology including food technology and food security

3. **India-Slovenia Call for Joint Proposals:** The Department of Science and Technology, Govt. of India invites to participate against **'Joint Call for Proposals - 2020' under the India-Slovenia Scientific and Technological Cooperation Program** between the Department of Science and Technology (DST), Ministry of Science and Technology of the Republic of India and the Ministry of Education, Science and Sport of the Republic of Slovenia and the Slovenian Research Agency of the Republic of Slovenia in the following areas: Health, biomedicine and biotechnology; New materials, including polymers; Information and communication technologies; Renewable energy sources; Urban areas (smart cities); Artificial intelligence; Other areas could be added by mutual consent between the coordinating agencies.

4. **India-Korea Call for Joint Proposals:** DST along with Korean the Ministry of Science and ICT launched a **joint call for research proposals on March 20, 2020 in the areas of (i) Green Mobility, (ii) Engineering Sciences, (iii) Materials Science & Technology, and (iv) Renewable Energy**. Last date for receipt of proposals is 8th May 2020.

   A joint call for inviting proposals for India-Korea Joint Network Centre in Cyber Physical Centre was launched on March 25, 2020. This Call for Proposals is to **enable Indian and Korean scientists from academia and laboratories to carry out joint research activity by leveraging already existing infrastructure and funding available with the partners at both sides through a linkage established by a Joint Network Centre (JNC).** Joint Network Centre aims to encourage joint project implementation on focal areas of thematic and knowledge research through networking thus, paving way to sustainable interactions by promoting excellence and developing long term relationship based on synergy of activities. Network Centre may also provide opportunities for integrating research with education.

5. Surveyor General of India attended the meeting at Dhaka from 07-08 March, 2020 to hold discussions with Bangladesh side regarding the issue of **implementation of the protocol to the line boundary agreement in 2011 in the part of the riverine stretch of Muhuri river**.

6. Secretary, DST and, EU Ambassador to India, **launched 18 M Euro Indo-EU programme on Integrated Local Energy Systems to provide novel solutions across all energy vectors, namely electricity, heating, cooling, waste, water etc**.

7. An industry led India- Sweden programme on Smart Grids was also launched.

8. Mission Innovation 2.0 Expert Panel Committee and Mission Innovation Steering Committee conducted with participation of top energy experts.

9. Mission Innovation Impact report of challenges on Smart Grids and off Grid to Electricity.

F. Human Capacity Building

1. **INSPIRE Internship**:

One meeting of the Expert Committee for considering the INSPIRE Internship proposals under the INSPIRE Programme was organized. In this meeting, Committee considered **23 INSPIRE Internship proposals for organizing the INSPIRE Internship camps from all across the country**. Out of 23 proposals, only 4 proposals covering 700 INSPIRE interns were recommended for support.

2. **Scholarship For Higher Education (SHE)**:

2934 SHE scholars received their scholarship for pursing B.Sc./M.Sc. Degree course in basic and natural sciences.

3. **INSPIRE Fellowship:**

- 243 INSPIRE Fellows received their fellowship for pursuing their doctoral degree program.
- 182 INSPIRE Fellows got promoted from JRF to SRF.

4. **INSPIRE Faculty Fellowship:**

- 60 INSPIRE Faculty Fellow's grant was released for pursing their Post-doctoral programme.

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

- The proposals are invited online for consideration of support to provide basic infrastructure and enabling facilities for promoting R&D activities and for scientific infrastructure building in new and emerging areas under the Scheme "Fund for Improvement of S&T Infrastructure (FIST)". The Advertisement of FIST 2020 is released in March 2020.
- Fresh and ongoing projects were supported for the release of funds.

6. **"Sophisticated Analytical and Technical Help Institutes"- (SATHI)**

The 5th meeting of Sophisticated Analytical and Technical Help Institutes (SATHI) "SATHI Ki Baat" held on 19th March 2020 at DST (3rd Thursday) by involving IIT Delhi, IIT Kharagpur and BHU- Varanasi to review the work progress of recently supported SATHI centres.

7. **Sophisticated Analytical Instrument Facilities (SAIF):** SAIF Centres at Karnataka University, Dharwad and Shivaji University, Kolhapur were reviewed for performance and output by an Expert Committee. Upon the review, these two centres were granted extension till September, 2020 for

effective utilization of the facility. The committee also recommended financial extension till March, 2020 for utilization of balance funds.

8. Vigyan Samagam, a flagship, multi-venue Mega Science exhibition, showcasing Indian **Participation in 8 Mega Science projects completed its 8-month long very successful journey in its last leg at National Science Centre, New Delhi during the month.** Large number of participants including school and college students, faculty, researchers, scientists, engineers, industry persons and general public attended the event. The total footfall of all the four events of Vigyan Samagam at Mumbai, Bengaluru, Kolkata and New Delhi crossed 6 lakh.

9. **International Women's Day has been celebrated on 8th March wherein Mrs Pratibha Singh, Honb'le Justice of Delhi High Court was Chief Guest.** A panel discussion, lectures by young women scientists and certificate distribution to the IPR interns of 10th batch of WOS-C were the main activities of the day.

10. Call for proposal submission has been open under Women Scientist Scheme-B (WOS-B) during March. Last date of proposal submission at online-wosa.gov.in is 30th April, 2020.

11. An Advisory Committee meeting has been held to finalise GATI working group.

12. The publication entitled **Research and Development Statistics At a Glance 2019-20** presenting the latest R&D Indicators for evidence based policy formulation in S&T sector was brought out.

13. 4th Review Committee Meeting of DST Sponsored network mode Project **"Evaluation of Impact of DST-FIST Program**" was held at JSS Academy of Technical Education, Bengaluru during 7th-8th March 2020**.**

14. Six months training course on GIS conducted jointly by NATMO and SAIARD Completed. Four Officials of NATMO were deputed for this training.

G. Scientific Infrastructure Building

1. 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, 36 Power Converters shipped to FAIR, Germany during the month. Also, 2 Gas Electron Multiplier (GEM) chambers supplied earlier to FAIR took data successfully in mini-Compact Baryonic Matter (CBM) set-up at FAIR, Germany.** For TMT project, design and development of in-kind items from the country continued in full swing during the month.

   For Indian participation in A Large Ion Collider Experiment (ALICE) at the Large Hadron Collider (LHC), European Organization for Nuclear Research (CERN), Geneva, refurbishing of Muon Station of ALICE detector completed during the month during the ongoing Long Shutdown of LHC.

2. An Inter-ministerial meeting/ brainstorming **session on activities related to United Nation- Group of Geospatial Information Management (UNGGIM) was organised on 6th March 2020 at New Delhi**. The main focus of the meeting was **to catalyze and integrate the Country's activities in the UNGGIM/ UNGGIM-AP (Asia -Pacific) long with promoting Indian Geospatial Capacity**. The officials from Survey of India (SOI), National Spatial Data Infrastructure (NSDI), National Security Council Secretariat (NSCS), *Ministry of Statistics and Programme Implementation (MoSPI), Ministry of External Affairs (MEA) etc. participated in the meeting and deliberated the*

issue. DST may support few R&D projects as test beds (2-3 districts) for calculation of SDGs indicators. A Roadmap/ Strategy for augmenting National activities in alignment with UN-GGIM may also be developed.

3. **KIRAN Division extended CURIE (Consolidation of University Research for Innovation and Excellence in Women Universities) Programme support to 9th women university of the country i.e. Bhagat Phool Singh Mahila Vishvavidyalaya, Sonipat, Haryana.** Different departments of Science and Engineering and Pharma of this university have been supported for development of research infrastructure and facilities which will be beneficial for more than 1500 girls' studying in STEM fields. Further, major grant has been given to Banasthali Vidyapith, Banasthali, Rajasthan for establishment of advanced research facility on Artificial Intelligence.

4. The mapping of startups under incubation and convergence of following leads was done:

   - **ScitechIoniser , SciTech Park, Pune** : Seed Supported with One crore to ramp up manufacturing of negative iron generator reducing viral load by 99.7 % in quarantine areas, installed in Naidu Hospital , Pune and 1000 orders received.
   - **7 Startups** supported by Incubators in protective gears, sanitisers , IVDs, Oxygen generator.

5. Sanctioned Centre of Excellence at KIIT, Bhubaneshwar at cost of Rs. 22.58 crore and release of Rs. 8.95 crore.

6. Review meeting of Large Scale Mapping Project of Haryana State: SGI attended the review meeting under the **Chairmanship of Hon'ble CM, Haryana at Chandigarh on to review the Large scale mapping of Haryana Project being carried out by SOI**.

7. Large Scale Mapping (LSM) of all Village habited areas proposal for Ministry of Panchayati Raj (MoPR): MoPR had requested to submit the **proposal for carrying out drone based LSM of all villages in habited areas in country with objective to provide the property ownership rights to the people in these areas.** SoI has submitted the proposal and MoPR has received in principle approval from Deptt of Expenditure for the project to be executed in next 3-4 years across the country.

8. Government Instant Messaging System (GIMS): NIC has developed and launched a new messaging system, GIMS which is cloud based platform for inter and intra communication of Govt. Organizations at various levels. SoI has on boarded officers on GIMS for secure and fast communication within SoI.

9. Survey of India, Chandigarh Office located in composite zone has been **awarded a BEE 5 Star label by Bureau of Energy Efficiency** (Govt. of India, Ministry of Power).

10. Preparation of Maps

    - DPMS one district- 1:250000 Scale
    - GMS one town- 1:10000 Scale
    - India-River Basin 1:6 Million Scale
    - Brahmani-Baitarani River Basin- 1:650000 Scale
    - Subarnrekha River Basin – 1:500000 Scale

- Tapi Basin – 1:650000 Scale
- Resource Maps of Mahishmari Village (West Bengal) – 16 maps in 1:4000 Scale

11. Processing of data sets for uploading in geoportal and related activities
    - Mandsaur DPMS all main theme layers uploaded
    - National Highway Layer Modification and uploaded as part of National School Atlas.
    - Few write-ups of National School Atlas uploaded.
    - Design development related activities in process.
    - Binding of geoportal.natmo.gov.in with Public IP done.
    - UAT (User Acceptance Test) is in process along with implementation of observations.
    - Drainage Base completed in 1:250000 scale and QA/QC in progress.

H. Following new projects under the (HICAB) were supported during the month for duration of three years:

1. **Climate change impact mitigation for a climate resilient habitat** to be implemented at Department of Environmental Science, Tezpur University, Tezpur, Assam.
2. **Sustainable Water Resources in Eastern Himalaya** to be implemented at Indian Institute of Technology Guwahati, Assam.
3. **DST's Centre of Excellence on Water resources, Cryosphere and Climate Change** studies to be implemented at Sikkim University, Gangtok, Sikkim.
4. **Impact of climatic and anthropogenic forcing's on geodiversity and ecosystem services of Uttarakhand Himalayas**: **Implication for sustainable policy development** to be implemented at Department of Geology, HNBGU, Srinagar Garhwal, Uttarakhand.
5. **Climate Change and Sustainability of Agricultural Practices and Livelihoods in Eastern Himalayas: Case Studies in Northeastern Region, India** to be implemented at Department of Economics, Gauhati University, Guwahati, Assam.
6. **Long-term ecological monitoring of forest plots in Mizoram, Northeast India** to be implemented at *Mizoram University, Aizawl.*
7. **Strengthening of MP State Knowledge Management Centre on Climate Cell** to be implemented at Environmental Planning and Coordination Organization, Environment Department, Government of Madhya Pradesh, Bhopal, MP.