

Summary records of the 2nd Meeting of the reconstituted Technical-cum-Financial Appraisal Committee (TFAC) on Environmental Research and Development Programme (ERDP) held on 4th – 5th January, 2024 under the Chairmanship of Dr. Rup Lal, Prof., (Retired), Acharya Narendra Dev College, University of Delhi, New Delhi-110019.

The 2st meeting of the reconstituted TFAC on ERDP was organized as per the schedule. Shri Ravindra Kumar Tiwari, Deputy Secretary(RE), MoEFCC gave a detailed introduction of the revamped ERDP. He also briefed that there are 29 new research proposals and 2 FTRs would be considered by the TFAC. Further, he said that under the new revamped programme, the main objective would be to promote Environmental Research on critical areas/gaps, as identified by the Ministry, through reputed institutions, Government funded Institutions and professional organizations (including NGOs) along with the existing thematic areas of R&D Scheme. This would facilitate decision making for policy and planning of the Ministry's programmes and activities.

List of participants is Annexed.

Agenda Item No. 1.0.

The Chairman welcomed the participants to the meeting and requested MS, TFAC to initiate the discussions on the Agenda Items.

Agenda Item No. 2.0.

2.1: Confirmation of Minutes of 1st TFAC meeting held on 12th – 13th October, 2023. The TFAC was informed that the minutes of the 1st meeting of the Technical-cum-Financial Appraisal Committee held on 12th– 13th October, 2023 were circulated to all the Members and two small typographically errors have been observed i.e. i) Extension of the project sanctioned to Dr. Babu tenure has been mentioned upto 31.03.2024, which had already been granted by the Ministry upto 30.06.2024 within the already approved outlay, and ii) the term **adjudged** may be replaced by **adjusted** of the progress of the ongoing / completed projects. The TFAC has agreed to correct the mistakes done and recirculate the minutes.

Decision Taken: After discussion, the TFAC decided to confirm the minutes of its 1st meeting held on 12th -13th October, 2023.

Agenda Item No. 3.0. New project proposals received through online on the MIS Portal.

3.1.1	<p>473/2023/RE - Biosystematics Status of Flies of Medical and Veterinary Importance in Guwahati, Assam.</p> <p>Dr. Abesh Chakraborty, The Assam Royal Global University, Guwahati</p> <p>Recommendations: The PI presented the proposal before the TFAC in detailed. The TFAC has observed that the proposal has been submitted under the wrong thematic area and that the objectives and the methodologies of the proposed study were not clear/focused. Further, the PI has no expertise in the relevant field. After detailed deliberations, the Committee did not recommend the project proposal for funding.</p>
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3.1.2	<p>527/2023/RE - Microbiota in fruit piercing moths from Marathwada region of Maharashtra.</p> <p>Dr. Ravindra Fakirrao Pathre, Arts, Science and Commerce College, Ambad Dist. Jalna, Maharashtra.</p> <p>Recommendations: The PI presented the detailed proposal before the TFAC. The TFAC has observed that the objectives of the proposed proposal are not clear and the methodologies are also not focused. After detailed deliberations, the Committee did not recommend the project proposals for funding.</p>
3.1.3	<p>450/2023/RE - Pilot study for development of microbe-based degradation technology for agro-waste.</p> <p>Dr. Pooja Parmar, Manav Rachna University, Faridabad.</p> <p>Recommendations: The PI presented the detailed proposal before the TFAC. The TFAC has observed that the proposal is on pilot scale and the PI did not study the baseline information regarding the isolation and characterization of fungal isolates. The objectives as well as the methodologies proposed are not focused. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.1.4	<p>364/2023/RE - Climate change adaptation model for water management and cropping practices in agro-climatic zone in the state of Gujarat.</p> <p>Dr. Geeta S. Joshi, The Maharaja Sayajirao University of Baroda, Vadodara</p> <p>Recommendations: Dr. Geeta S. Joshi, the PI could not attend the meeting. The Committee has decided that the PI may be requested to present her proposal before the TFAC in its next meeting.</p>
3.1.5	<p>547/2023/RE - Study of Traditional knowledge and Practices among Particularly Vulnerable Tribal Group in Madhya Pradesh.</p> <p>Prof. K.K. N. Sharma, Dr. Hari Singh Gour Vishwavidyalaya, Sagar, MP.</p> <p>Recommendations: The proposal has been jointly presented by the PI and Co-PI before the TFAC. The TFAC has observed that the objectives as well as the methodologies of the proposed research proposal are very broad and not focused. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.1.6	<p>562/2023/RE - Impact Analysis of integrated farming Approach including sustainable and efficient use of natural resources to conserve the ecosystem of Coastal forests in fringe areas of Sundarbans in West Bengal.</p> <p>Dr. Priyanka Naskar, Institute of Rural and Social Development, West Bengal.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives are too many and the methodologies are also scattered and vague. After detailed discussions, the</p>

	Committee did not recommend the project proposals for financial support from the Ministry.
3.1.7	<p>410/2023/RE - Molecular Taxonomy and Phylogeny of Terebrantia (Thysanoptera: Insecta) from India.</p> <p>Dr. Vikas Kumar, Zoological Survey of India, M Block, New Alipore, Kolkata</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the proposal is good and well written. Objectives are clear and the methodology is appropriate. The Committee suggested that the proposal may be recommended for funding after exclusion of the last objective 'development of web-portal for species page including morphological and molecular data'. The PI may submit the revised proposal to the Ministry. The Chairman, TFAC has been authorized by the Committee to take final decision on the revised proposal.</p>
3.1.8	<p>557/2023/RE - Devising eco-friendly redox-active nanocomposites micro-reactors with enhanced contaminant selectivity for continuous water purification.</p> <p>Dr. Nitin Kumar Khandelwal, Indian Institute of Technology, Roorkee.</p> <p>Recommendations: There are many objectives and sometime repetitive also. So objectives should be reframed as per the methodology (maximum 03 objectives). The methodology section needs elaboration. If possible the activities in three work packages (as given by PI) should be shown through a bar diagram. The expected deliverables are highly ambitious, needs further clarifications. The budget is also higher side. The PI may submit the revised proposal to Ministry after incorporating the above suggestions with a revised budget. The Chairman, TFAC has been authorized by the Committee to take final decision on the revised project proposal.</p>
3.1.9	<p>548/2023/RE - Standardization and Demonstration Organic Technique System (OTS) for Sustainable Development of the Coastal Ecosystem in West Bengal on the Basis of Socioeconomic & Environmental Impact.</p> <p>Dr. Somnath Saha, Community for Social Work, West Bengal.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives are not focused and too many. The methodology proposed is also not clear/focused. The proposal did not have any focused science based objectives and was more like a welfare scheme. The proposal needs focussed approach regarding outcomes. It needs to demonstrate the uniqueness of the work being proposed and should not replicate ongoing developmental schemes of the Central or State Governments. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.1.10	<p>583/2023/RE - Cadmium induced cardiotoxicity with environmental electronic Waste pollutant in soils from Delhi, NCR, India.</p> <p>Dr. Kamna Srivastava, University of Delhi, Delhi.</p>

	<p>Recommendations: Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the site selection of the study areas may be revisited along-with their co-ordinates. Base line data may be collected and studied. A bio-technology expert may also be involved in the project to achieve the envisaged objectives. The Committee suggest that the proposal may be referred to the followings experts for their comments:</p> <ul style="list-style-type: none"> i. Director, Central Soil Salinity Research Institute, Karnal ii. Director, Indian Institute of Soil and Water Conservation, Dehradun iii. Dr. Pammi Gauba, Prof. JPIIT, NOIDA iv. Dr. Anand Kumar Scientist F, CPCB v. Dr. V. K. Singh Scientist E, HSM, MoEFCC
3.1.11	<p>576/2023/RE - Impact of Urban Air quality and Heat stress on Urban Quality of Life.</p> <p>Dr. Arindam Biswas, IIT, Roorkee.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the proposed objectives are too many and It is also suggested that the PI should reduce the objectives from 7 to 4 and accordingly revisit the methodology part. The PI may focus on economic component and heat stress on pilot scale for implementation of NCR Delhi area. Dedicated work station may be established. The PI may submit the revised proposal to the Ministry. The Chairman, TFAC has been authorized by the Committee to take final decision on the revised proposal.</p>
3.1.12	<p>555/2023/RE - Forest Ecosystem Assessment in the Indian Himalayan Region: Integrated Approach for Sustainable Conservation and Management of Ecosystem Services.</p> <p>Prof. Sumit Sen, IIT Roorkee.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has suggested that the proposed study should be focused on soil and hydrology components. Study area may be fire prone districts i.e. Chamoli (Uttarakhand) and Bilaspur (H.P.) and adjoining areas. The revised proposal should include 'control sites' where there was no or minimal fire incidence (to be determined by the recorded past fire incidences) for better comparison of the impact. The PI may submit the revised proposal to the Ministry. Dr. R. Vasudeva, Member, TFAC has been authorized by the Committee to take final decision on the revised proposal.</p>
3.1.13	<p>590/2023/RE - Development of novel biodegradable multifunctional mulching film for sustainable and environmentally friendly agriculture practices.</p> <p>Dr. Bhanu Prakash Vellanki, IIT, Roorkee.</p>

	<p>Recommendations: Dr. Bhanu Prakash Vellanki, the PI could not attend the meeting. The Committee advised the PI to present his proposal before the TFAC in its next meeting.</p>
3.1.14	<p>559/2023/RE - Exploration, conservation and characterization of wild Brassica species for the development of genetic and genomic resources to uncover climate-resilient traits through integrated approaches.</p> <p>Dr. Ashish Kumar, ICAR-National Institute for Plant Biotechnology, New Delhi</p> <p>Recommendations: The PI has present the proposal before the TFAC in detailed. Based on the presentation the Committee suggest that the PI to focus the objectives and select either one or two species (prefer species for which data is not readily available), conduct ecological and population surveys as one of the components for the defined study area and include the North East area also for study. Develop nursery techniques for cultivation on private lands (ex-situ). Further, tissue culture and seed germplasm may also be investigated. Baseline data and the data deficit and population mapping may also be studied. It was recommended to avoid reintroduction of identified and lab propagated species to the protected areas such as National Parks. The Chairman, TFAC has been authorized by the Committee to take final decision on the revised / modified research project proposal.</p>
1	<p>594/2023/RE - Vehicular pollution (exhaust and road-wheel dust) reduction; on road charging of electric vehicles; and overall energy saving.</p> <p>Dr. Atul Babbar, Shree Guru Gobind Singh Tricentenary University, Gurugram.</p> <p>Recommendations: The PI has present the proposal before the TFAC in detailed. The PI should consider the road safety issues raised by the members of the committee while implementing the project proposal. The PI should choose a dedicated site within the campus of the University of the PI for the implementation of the project proposal. The PI is suggested to submit the revised proposal to the Ministry. The Chairman, TFAC is authorised by the Committee to take a final decision for the funding on the modified research proposal.</p>
3.1.16	<p>558/2023/RE - Full solar spectrum stimulated smart nanomaterials for direct reduction of CO₂ to valuable light weight gas phase hydrocarbon.</p> <p>Dr. Saravanan Pichiah, Indian Institute of Technology (ISM), Dhanbad.</p> <p>Recommendation: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the proposal is good and well written. Objectives are clear and the methodology is focused. The Committee suggested that the proposal may be recommended for funding from the Ministry subject to the procurement of proposed Gas Chromatography as per norms of the Government of India.</p>
3.1.17	<p>595/2023/RE - Genetic Diversity and Risk assessment of Invasive South American Armoured Catfish <i>Pterygoplichthys</i> sp. in the Indian Freshwater Systems: A way forward for Sustainable Native Fish Diversity.</p>

	<p>Dr. Annam Pavan Kumar, ICAR-Central Institute of Fisheries Education, Mumbai</p> <p>Recommendation: The proposal has been presented by the PI before the TFAC. The TFAC has suggested to focus on the baseline data wrt demographic analysis. The committee recognized that there may be large scale environmental impact because of uncontrolled spread of the species to un-targeted areas. Hence it was recommended to focus on risk assessment and development of baseline data of invasion and future spread, considering larger geographic area and large number of sampling sites as well as robust prediction models. The evaluation of genetic diversity part may kindly be dropped. The PI may submit the revised proposal to the Ministry. Dr. R Vasudeva, Member TFAC has been authorized by the Committee to take final decision on the revised proposal.</p>
3.1.18	<p>506/2023/RE - Performance studies on Solar dryer for Domestic and agricultural farm use with thermal energy storage materials.</p> <p>Dr. S. Muthuvel, Kalasalingam Academy of Research and Education, Madurai.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives as well as the methodology both are not focused/clear. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.1.19	<p>550/2023/RE - Advancement of bioplastic production from agro waste using nanotechnology.</p> <p>Dr. Renu Singh, ICAR- Indian Agricultural Research Institute, Pusa, Delhi</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the title of the proposal is vague and the objectives as well as the methodology both are not focused/clear. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.2	<p>Consideration of project proposals which were referred to experts for their comments.</p>
3.2.1	<p>41/2020/RE - Production of sustainable high impact strength and self-healing paver blocks using industrial waste as a green concrete.</p> <p>Dr. Muthukannan, Deptt. of Civil Engg., Kailashlingam Academy of Research and Education, Madurai.</p> <p>Background: This project was considered in 1st meeting of reconstituted TFAC meeting. The observation of TFAC is as follows:</p> <p>As decided by the TFAC in its 1st meeting held on 12th -13th October, 2023, revised proposal has been sent to the suggested experts (i.e. i. Dr. Rajesh Kumar, CBRI; and ii. Dr. R Mohana, Mepco Schlenk Engg. College) for their comments. The referees have observed that the project does not propose a new</p>

	<p>or innovative approach to address in the problem it aims to solve. The proposed outcomes are not clearly defined and a lot of work has been done in the proposed field of study. The objective and methodology are not clear.</p> <p>Recommendations: PI has present the proposal before the TFAC in detailed. Based on the presentation and the comment received from the experts/referees, the Committee did not recommend the project proposal for financial support from the Ministry.</p>
3.2.2	<p>70/2021/RE - Converting waste cooking oil to Biodiesel Using Green Catalyst and Catalyst Regeneration Studies.</p> <p>Prof. A. Geetha Bhavani, Dean, Chemistry, Noida International University, Noida.</p> <p>Background: This project was considered in 1st meeting of reconstituted TFAC meeting. As decided by the TFAC in its 1st meeting held on 12th -13th October, 2023, revised proposal has been sent to the five suggested experts (i.e. i.)Dr. P. Shanmugam, CLRI, ii) Head, CES, Anna University, iii) Director, IICT, iv)Dr. Tara Prasad, Prof, Barkatullah University and, v) Dr. P. Ramana, Prof and HOD Forest, Products and Utilization, College of Forestry, Sirsi) for their comments. The referees have suggested that the proposal may be revised as per observations given by them.</p> <p>Recommendations: The PI has present the proposal before the TFAC in detailed. Based on the presentation and the comment of the referees, the Committee suggested that the comments of the experts/referees may be sent to the PI for revision/modification of the project proposal. In order to avoid delay, the Committee authorized the Chairman, TFAC to take final decision on the revised / modified project proposal.</p>
3.2.3	<p>62/2021/RE - Application of arsenic and chromium tolerant bacteria isolated from Gangetic plains of Bihar for environment cleaning and testing its bioremediation potential for welfare of human health.</p> <p>Prof. Akhileshwari Nath, S.S. Hospital and Research Institute, Patna.</p> <p>Background: As decided by the TFAC in its 1st meeting held on 12th -13th October, 2023, revised proposal has been sent to the five suggested experts (i.e. i) Director, ITRC, Lucknow, ii) Head, Civil, IIT, Roorkee, iii) Director, IICT and iv. MS, CPCB) for their comments. The Ministry has received 3 comments out of four experts and all three experts did not support the project proposal for funding.</p> <p>Recommendations: Dr. Amrita Srivastava, Co-PI has present the proposal before the TFAC in detailed. Based on the presentation and the comment received from the referees, the Committee observed that the plan of the proposal is scientifically unsound, no information was provided for environmental cleaning and exploitation of the bacteria for metal bioremediation. The Committee also observed that the objectives are very weak and not in coherence with each other and the methodology is also not clear and focused. Hence, the Committee did not recommend the proposal for financial support from the Ministry.</p>

3.3	Proposals were could not be considered due to connectivity issues
3.3.1	<p>201/2020/RE - Green Production of Nano- Concrete from Fly Ash and Construction Waste: Experimental studies, modelling through Artificial Intelligence and in-situ application.</p> <p>Dr. Jagannath Roy, Central University of South Bihar, Gaya.</p> <p>Recommendations: Dr. Geeta S. Joshi, the PI could not attend the meeting. The Committee advised the PI to present his proposal before the TFAC in its next meeting.</p>
3.3.2	<p>228/2018/RE - An innovative eco-friendly recycling process for recovery of precious metals and other rare metals from e-waste.</p> <p>Dr. K. Jayasankar, CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives as well as the methodologies of the proposed research proposal are not focused. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.3.3	<p>123/2020/RE - Some studies on usage of Phase Change Material on Thermal Comfort of buildings.</p> <p>Dr. S. Muthuvel, Kalasalingam Academy of Research and Education Krishnankoil, Tamil Nadu.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives as well as the methodologies of the proposed research proposal are not focused. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
3.3.4	<p>337/2020/RE - Plausible role of Bacteriophages present in the High Altitude Himalayan River Waters.</p> <p>Dr. Angayarkanni J, Bharathiar University, Coimbatore.</p> <p>Recommendations: Dr. Angayarkanni J, the PI could not attend the meeting. The Committee advised the PI to present his proposal before the TFAC in its next meeting.</p>
3.3.5	<p>307/2020/RE - Restoration of the Upper Reaches of River Teirei under the Dampa Tiger Reserve/Sanctuary using Bio-systems Engineering.</p>

	<p>Dr. R Zonunsanga, Mizoram University, Tanhril, Aizawl.</p> <p>Recommendations: Dr. R Zonunsanga, the PI could not attend the meeting. The Committee advised the PI to present his proposal before the TFAC in its next meeting.</p>
3.3.6	<p>276/2020/RE - Natural distribution, ecological niche modelling, selection of CPTs, its evaluation and nursery production of sandal (<i>Santalum album</i> Linn.)</p> <p>Dr. Binu N. Kamalobhavan, College of Forestry, Kerala.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has suggested that the objectives should be re-farmed and accordingly methodology may be revisited. A molecular bio-technologist may be involved and an appropriate marker may be used. The Committee has suggested the PI to revise the proposal accordingly and submit it to the Ministry. Dr. R. Vasudeva, Member, TFAC has been authorized by the Committee to take final decision on the revised proposal.</p>
3.3.7	<p>153/2020/RE - Exploration of avifaunal diversity nexus with biotic and abiotic environment of Karaivetti Bird Sanctuary, Tamil Nadu towards developing of ecological resilience concepts for Conservation.</p> <p>Dr. M. Selvamurugan, Agricultural College and Research Institute, Eacha.</p> <p>Recommendations: The proposal has been presented by the PI before the TFAC. The TFAC has observed that the objectives as well as the methodologies of the proposed research proposal are not focused. After detailed discussions, the Committee did not recommend the project proposals for financial support from the Ministry.</p>
<p>3.4 Review of the progress of the completed projects for acceptance of the Final Technical Report (FTR) under ERDP.</p>	
3.4.1	<p>F. No. 22018/45/2010-CS(TAX) - Hymenoptera: Apoidea, Part-I Meliponinae (Stingless bees), Bombinae (Bumble bees) and Xylocopinae (Carpenter bees) from North-East and North-Western Himalaya.</p> <p>Dr. M.S. Saini, Asian Educational Institute, Patiala</p> <p>Decision taken: The PI could not attend the said meeting. The Committee advised the PI to present the findings before the Committee in its next meeting which will enabling the Ministry to settle the project account finally.</p>
3.4.2	<p>19-112/2010-RE - Sequential production of bio-diesel, hydrogen and methane as a Bio-refinery Concept using Leather Solid waste and effluent Treatment Sludge's.</p> <p>Dr. P. Shanmugam, Pr. Scientist, CLRI, Chennai.</p>

	<p>Recommendations: The findings of the research project entitled “Sequential production of bio-diesel, hydrogen and methane as a Bio-refinery Concept using Leather Solid waste and effluent Treatment Sludge’s.” has been presented by the PI before the TFAC. Based on the detailed presentations and discussions, the TFAC has adjudged the findings of the project as satisfactory and agreed to accept the FTR of the project. The Committee has also agreed to release next instalment, if due for final settlement of the project account.</p>
4.0	<p>Any other item with permission of the Chair. Dr. T. Ramanathan, member of TFAC has requested the Committee to hold next TFAC meeting in Annamalai University, Annamalainagar. As per the clause of the OM related, the Committee has agreed to hold next meeting in Annamalai University, Annamalainagar.</p>
	<p>The meeting ended with a vote of thanks to the Chair.</p>

Annexure

List of the participants

SI	Members /Experts	Remarks
1.	Prof. Rup Lal	Chairman
2.	Dr. I.P. Pandey	Member
3.	Shri SushilGupta (Online)	Member
4.	Dr. R. Vasudeva (Online)	Member
5.	Dr.Yogesh Gokhale, (Online/Physical)	Member
6.	Prof. H. C. Nainwal	Member
7.	Dr. T. Ramanathan	Member
8.	Sh. Ravindra Kumar Tiwari, DS(RE), MoEFCC	Special Invitee
9.	Dr.Veenu Joon, Scientist 'E', MoEFCC	Special Invitee
10.	Dr. Sandeep Chauhan, Representative of BSI	Special Invitee
11.	Dr. Lalit Kumar Sharma, Representative of ZSI	Special Invitee
12.	R. Ramila, US, IFD, MoEFCC	Special Invitee
13.	Shailendra Yadav, SO, IFD, MoEFCC	Special Invitee
14.	Mr. Vishal, ASO, IFD, MoEFCC	Special Invitee
15.	Dr. Rajendra Kumar, Scientist 'C', MoEFCC	Member-Secretary

SI.	Name /address of the participant
1.	Dr. Abesh Chakraborty, The Assam Royal Global University, Betkuchi, Guwahati
2.	Dr.Ravindra Fakirrao Pathre, Arts Science and Commerce College, Ahmadabad, Maharashtra
3.	Dr. Pooja Parmar, Manav Rachna University Sector-43, Gurugram.
4.	Dr. Vikas Kumar, Zoological Survey of India, M Block, New Alipore, Kolkata
5.	Dr. Nitin Kumar Khandelwal, Indian Institute of Technology Roorkee.
6.	Dr. Somnath Saha, Community For Social Work, West Bengal.
7.	Dr. Kamna Srivastava, Dr. B. R. Ambedkar Centre for Biomedical Research, University of Delhi, Delhi.
8.	Prof. Sumit Sen, Indian Institute of Technology, Roorkee.
9.	Dr. Ashish Kumar, National Institute for Plant Biotechnology, New Delhi.
10.	Dr. Atul Babbar, Shree Guru Gobind Singh Tricentenary University, Gurugram.
11.	Prof. Sujoy Guha, Shree Guru Gobind Singh Tricentenary University, Gurugram.
12.	Dr. Annam Pavan Kumar, Division of Fish Genetics and Biotechnology, Central Institute of Fisheries Education, Mumbai.
13.	Dr. S. Muthuvel, Kalasalingam Academy of Research and Education, Anand Nagar, Krishnankoil, Tamil Nadu.
14.	Dr. Renu Singh, ICAR- IARI, Pusa, New Delhi.
15.	Dr. Ashutosh Sharma, Co-PI.

16.	K. Jayasankar, CSIR-National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram
17.	Prof. A. Geetha Bhavani, Prof & Head, Chemistry, Noida International University, NOIDA.
18.	Dr. Priyanka Naskar, Institute of Rural and Social Development, West Bengal
19.	Prof. K.K. N. Sharma, Dr. Hari Singh Gour Vishwavidyalaya, Sagar (M.P)
20.	Dr. Shatrughan Prasad, Dr. Hari Singh Gour Vishwavidyalaya, Sagar (M.P)
21.	Dr. Arindam Biswas, IIT Roorkee.
22.	Dr. Binu N., Kamalobhavan, College of Forestry, Kerala.
23.	Dr. P. Shanmugam, Principal Scientist, CLRI, Chennai.
24.	Dr. M. Selvamurugan, Agricultural College and Research Institute, Eacha.
25.	Dr. Saravanan Pichiah, Indian Institute of Technology (ISM), Dhanbad.
26.	Dr. Prakhar Mishra, IIT, Rorkee
27.	Dr. Amrita Srivastava, Central University of South Bihar, Gaya.
28.	Dr. M. Muthukannan, Department of Civil Engineering, Kalasalingam Academy of Research and Education, Madurai.
