KERALA STATE COUNCIL FOR SCIENCE, TECHNOLOGY AND ENVIRONMENT (KSCSTE)

Environment & Ecology Programme (E&EP)

Guidelines

1. Introduction

Environment & Ecology Programme is scheme for providing assistance in the form of grants to scientists and technologists for scientific/research work with particular relevance to the state of Kerala on the environmental problems like waste management, environmental pollution, environmental health, biodiversity conservation, conservation of natural resources and environment management issues. Faculties of Colleges and Scientists from Research Institutions/Research Laboratories can apply under the scheme. The scheme supports research projects in any of the identified domain themes/sub themes which will be notified from time to time. Based on the recommendations of the Programme Advisory Committee of E&EP and as approved by the Executive committee of KSCSTE, maximum research grant of Rs.30 lakh will be provided to the selected projects for a maximum duration of 3 years. The following guidelines assist for smooth implementation of the project in conformity with those terms and conditions.

2. Who can apply?

- Principal Investigator (PI) shall be a full time Scientist of R&D Institutions /Regular Faculty of Research Centres/Departments of Universities, Government/ Aided Colleges in the State of Kerala
- The PI shall have more than five years of service period left for superannuation at the time of submission of project proposal.
- Ph.D. is mandatory for the Principal Investigator (PI).
- In the case of research proposals from Centrally funded Institutions, it is desirable that there may be a State Institution as a collaborator.
- For interdisciplinary subjects, at least one of the Co-Investigators should be an Expert with commendable experience in the specialized field. However, first Co-I shall be a scientist/faculty from the same Institution of PI with a minimum of 5 years period left for superannuation.
- Only full-time scientists/regular faculty can apply under the scheme as PI / Co-I.
- Research Scholars/students cannot apply and cannot be included under the scheme as Investigators.

3. Time slot to apply

Project Proposals will be invited through notification in the website of KSCSTE, once in a year. The Proposals can be submitted through online only on notification and during the active time.

4. How to apply?

Proposals under this scheme shall be submitted online only through. Proposals submitted in any other mode will not be considered and summarily rejected. The Principal Investigator shall also submit Endorsement from the Implementing Institution, Certificate from the Investigator/s, along with the project proposal. General Format of documents is available in the website https://kscste.kerala.gov.on

5. Domain Themes/Sub Themes

The PI can submit the research proposal fitting in to any of the following domain themes/ sub themes.

Sl No	Domain Themes	Sub Themes
i.	Natural Hazards: Mitigation & Management	Drought, Floods, Landslides, Earthquake, Cyclone, Sea Erosion, Lightning, Spatial temporal dynamics of climatic parameters, Carbon Sequestration, Mitigation of climate changes
ii.	Water Resources Conservation and Management	Water Quality, Wetlands, Studies on water relations to forests
iii.	Advanced Methods of Waste Management	Solids & Liquids Waste Treatment and Disposal
iv.	E-mobility and High-Speed Transportation Systems	Biofuel, Fuel cell, Solar energy, Energy Storage
v.	Health Sector& Biotechnological Developments	Epidemiological Studies, Development of Medical devices, Standardisation of Ayurvedic Medicines and Traditional Knowledge, Vaccine & Drug Development, Viral Studies, Nutraceuticals, Disease Diagnostic kit Development, Vector borne diseases, Translational research, Medical Biotechnology
vi.	Resource Mapping & Management	Biodiversity Conservation, Value Addition of Heavy Minerals, Wood Technology
vii.	Agriculture	Development of Improved & High Yield Varieties, New IOT based irrigation Technologies, Integrated Pest Management, Precision Agriculture, Micronutrient Development, Modern Harvesting Technologies, Post-Harvest Technologies, Land use land cover dynamics, Climate change resilient crops
viii.	Data Science	Spatial decision support systems, MIS, Expert systems, Geo-informatics, Bigdata with AI, Machine Learning
ix.	Solution Oriented Research for Location Specific Problems of Kerala State.	River bank stabilization, Salinity ingression, radiation issues, implication of large-scale sand mining, groundwater status

Sl. No	Item	Guidelines

x.	Other relevant themes	Biological invasions, Natural capital accounting, Devices based on Micro-Electro-Mechanical Systems and Nano Technologies, Higher Research in Mathematical Sciences, Veterinary science and fisheries

6. Nature of Financial Support:

The financial support from KSCSTE will be in the form of research grant which will be released on project year basis after reviewing the progress of the project in the previous year. Maximum grant of Rs.30 lakh will be provided which will be spread on a span of three years. The grant is exclusively for the stipulated research and does not include any civil construction or moveable or immovable properties. In addition, the implementing institution is eligible for an overhead @ 10% of total expenditure subject to a ceiling of Rs.1 lakh, on successful completion of the project and after settlement of the SE and UC. The budget heads covered in the research grant are as follows:

Sl. No	Item	Guidelines
1.	Man Power –Salaries / Wages i. Project Fellow ii. Technical Assistant	Project Fellow: @ Rs.22,000/- per month for the candidates having 1st class MSc in Basic or applied sciences/BTech/MCA. (Please note that neither the PI nor the Co-I is eligible for any salary or honorarium from the project.) Technical Assistant: @Rs. 19,000/- per month for candidates with 1st class graduation in any branch of science /1st class diploma in Engineering
2.	Equipment	Generally, no major equipment for research is granted to Central Government Institutions in the Kerala unless the proposal is in collaboration with an Institute in the state, in which case the equipment support will be provided to the State institute. In exceptional cases, the PAC-E&EP can recommend equipment to Central Government Institutions, subjected to approval from EVP. PI shall submit budgetary quotation for the equipment to be purchased under the project.
3.	Consumables	Testing charges and lab charges, fabrication charges and laboratory chemicals.
4.	Travel Expenses	Maximum Rs.30,000/- per year, relaxable in exceptional cases where the study involves extensive travel.
5.	Contingencies	Maximum Rs.50,000/- per year, relaxable in exceptional cases.
6	Institutional Overhead	10% of total expenditure, subject to a ceiling of Rs.1 lakh

7. **Social Relevance and tangible output**

Research Proposals having social relevance pertaining to the State are desired. The proposals that enable inter-institutional collaborative and inter-disciplinary research are encouraged. The applied research proposals will be given preference which address problems that are of generic concern/ interest to the Kerala State, while fundamental research projects are also considered. The proposal shall fit into the Sustainable Development Goal (SDG) Framework with details of SDG Goals & Indicators.

8. **Commercialisation Efforts**

Tangible Research output with a new product/technology/process having potential for commercialisation are expected. The efforts which will be made for commercialising the research output shall be clearly mentioned in the proposal. The other research output indicators are publications/patents/Ph.Ds.

9. **Procedure of Operation of the scheme:**

The Research proposals in the scheme are to be submitted in Two Stages. In the first stage, only pre-proposals will be invited through online submission. The detailed proposals need to be submitted on intimation after the review and evaluation of the pre-proposals.

The pre-proposals under the scheme will be reviewed and evaluated as per following guidelines.

<u>**Stage 1**</u>**: Submission and Evaluation of Pre – Proposal**

➢ **Submission of Pre-Proposal**
Invite pre-proposals with a form simplified with 2 pages of synopsis and total not more than 5 pages including basic information and brief Bio-data of PI.
Format for Pre-proposals :
1. Title of the Proposal
2. Brief outline of the proposed project (Max. 200 words)
3. Objectives of the project (Max.100 words)
4. Experimental/Data requirement (Max. 100 words)
5. Methodology for each objective (Max. 100 words in Bullet points)
6. Schedule of work (in Steps, Max. 100 words)
7. Deliverables (Max. 100 words)
8. Financial requirement (Item wise and Total)
9. Role of each personnel (PI and Co-Is)
10. Novelty

➢ **Short listing of Pre – Proposals**
Short listing of the pre-proposals shall be done by a Preliminary Screening Committee (Ad Hoc) comprised of subject experts from major domain areas from reputed Institutions and Members of the PAC. The pre-proposals will be sent to the Members well in advance. A centralised evaluation will be carried out by the committee and decide whether the proposals are Recommended or Not Recommended to the next

stage. Only shortlisted proposals will be considered for the next stage for submission of full proposals.

Stage 2: Submission and Evaluation of Detailed Proposal

The detailed Project Proposals will be scrutinized and sent to the referees for peer review. The proposals will be sent to three subject experts (including reviewers from outside Kerala) in the concerned field for peer review. Based on the review reports from referees and if at least 2 reviewers Recommend, then the proposals will be placed in the Programme Advisory Committee for ETP (PAC-ETP) for final decision.

The full proposals may be evaluated based on an Evaluation Metrics containing 7 criteria (scores from 5 to 0)
1. Clarity and relevance of the objectives
2. Soundness/dependability of the concept
3. Extent for potential beyond the state of the art
4. Coherence and effectiveness of work plan, appropriateness of allocation of the tasks and resources
5. Complementarities of participants
6. Environmental and socially important impact (where relevant)
7. Suitability of the budget