

Call for research proposals in the field of paleoclimates, sea level changes, CO₂ sequestration, reactive Nitrogen, phosphorus and carbon cycles, coral reefs and Ocean acidification with reference to climate Change

Deadline: 15.05.2015 17:30 IST

Messages:

Applicants are encouraged to read the text of the call carefully and to comply with the requirements stipulated for the relevant application type and the call for proposals. Grant to applications that do not comply with these requirements will be rejected.

A copy of the proposal in the [prescribed format](#) along with the **personal details** in pdf format may be submitted by Indian PIs, as per details mentioned below

Guidelines and important considerations relevant to all types of applications in this call for proposals:

The English-language call for proposals is the legally binding version.

This call aims at fostering research collaboration among various R & D institutions, academia and organizations in the country to adopt cross cutting multi-disciplinary, multi-organizational approach while addressing any scientific problem falling under overall mandate of the National programme.

Funding for approved / sanctioned research projects with duration up to 3 years, shall be made available depending upon budgetary provisions of the financial year/s.

Applicants are encouraged to incorporate own and/or additional funding. Applicants are also encouraged to demonstrate sustainable commitments from own institutions or other sources during and/or beyond the project period.

Broader Scientific themes and/or scientific issues to be addressed in the project proposals

The objectives of various science components are described below which includes various primary and secondary research under below mentioned fields.

a) Paleoclimates

The following major themes have been identified that the Indian palaeoclimate science community would like to address over the coming few years. These are specifically focused to meet the immediate needs of the paleo science and modeling community vis a vis monsoon variability. A close interaction with atmospheric modeling community is envisaged as such

interaction will help sharpen the paleo records towards quantitative interpretations and in the development of proxy transfer functions. These, however, do not exclude other interesting studies on palaeoclimatic changes over longer time scales and regions.

- Reconstruction of the special variability of climate state parameter (temperature and rainfall) on annual, decadal, centennial and millennial time scales
- Response of large fluvial dispersal systems to changes in the monsoon- sedimentation styles and fluxes and hydrological regimes.
- Changes in the monsoon wind proxies as deduced from marine records (coastal and deep sea) – their correlation with the rain fall on the land from terrestrial records.
- Identification of timing, duration and magnitude of extreme events.
- Humana response to environmental change.
- Initiation of synergistic model- data inter- comparison and the use of palaeodata in regional climate models, and
- Contact programmes on methodological aspects in palaeoclimate reconstruction.
- Any other aspect related to Palaeoclimatic research.

The time window of 20 ka was considered as most appropriate as it encompasses nearly the full amplitude of climate cycle; appropriate technology for this reconstruction now exists in India of can be obtained on a commercial basis. This time window also allows for sufficient precision in chronometry. The themes mentioned will have the basic emphasis on creation of a high and uniform quality of database with as much quantification as possible in terms of high – resolution chronology, and geochemical and isotopic characterization.

The platform to build on synergy between specialists with diverse interests in oceanic and terrestrial archives (tree, lakes, glaciers, geochemical, micropaleontological and other sedimentary archives) in urgently needed. The suggested activities would need an integrated Earth System Science based approach, rather than as a specialist approach with individual pursuits. Such a platform that facilitates ‘meeting of minds’ augurs well for the Indian Sciences in terms of scientific interaction, resource optimization and human resource development. This will be a rare opportunity for young minds to work in a larger ambience and see their work in a wider regional perspective. The suggested interdisciplinary will imply a closer interaction with modeling community from say IMD or MoES, ecological inputs from MoES, remote sensing inputs from Department of Space and its institution, hydrological inputs from NIH and the community of hydro geologists, archeological inputs, besides the geological inputs. This will truly be an interagency initiative for the National good and as such a project management and coordination team, lead by DST/ MoES is envisaged.

b) Past Sea Level Changes

- To understand sea level changes using various proxies/ observations and techniques.
- Preparation of Coastal vulnerability map due to proposed sea level changes.
- Coastal mapping for various sea level change scenario at different time scale.
- To understand impact of sea level changes on change on marine life coastal fauna/ flora, ground water salt water salt water intrusion and other allied aspect all along the Indian Coast.
- Any other aspect related to Past Sea level Changes research.

c) CO₂ Sequestration

- Capacity building in ocean CO₂ sequestration research.
- Studies on CO₂ capture technology and carbonation techniques from the industrial wastes
- Technology development for the impact of CO₂ disposal in Deep Ocean.
- Identification of feasible CO₂ transportation technology for ocean sequestration.
- Environmental Impact Assessment for CO₂ ocean sequestration in deep ocean basins.
- Feasibility study on Ocean CO₂ sequestration technologies.
- Research on Bio energy with Carbon Capture and Storage (BECCS)
- Research on Biochar.
- Any other aspect related to CO₂ Sequestration research

d) Nitrogen, phosphorus and carbon cycles, Coral reef, Ocean acidification with reference to climate change

- To assess all possible sources and sinks of reactive N to develop inventory and budget at national scale.
- To identify the gaps in the current knowledge and few key indicators for optimum use and monitoring of reactive N for prioritizing research, socio-economic interventions and the policy planning.
- To sensitize the researchers, planners, farmers and other stakeholders on the current state of N use efficiency and possible ways of improvement.
- To understand various facets of Nitrogen cycle covering land, ocean atmosphere and coastal regions using multidisciplinary, cross cutting approach.
- To understand various facets of Phosphorus cycle covering land, ocean atmosphere (to some extent if possible) and coastal regions using multidisciplinary, cross cutting approach.
- To understand coral reef system with reference to changing climate.
- To understand the carbon and nitrogen biogeochemistry of coralline and coastal ecosystems of Andaman under the changing climate conditions and increasing anthropogenic activities.
- To construct a model for predicting the health of coral reef areas for sustainable coral growth with respect to climate variability and anthropogenic stress.

- To quantify the material sources (point and non-point sources) and their loading impact to coral reef regions.
- To estimate the trophic status through metabolic balance of carbon and nitrogen.
- Finding the historic events that influenced Lakshadweep reef areas i.e. past-productivity (at varying turbidity/ suspended solid, CO₂ and pH condition), sea level change, precipitation and temperature and density effects in the environment.
- Any other aspect related to Nitrogen, phosphorus and carbon cycles, coral reef, Ocean acidification research.

Administrative part

Who can apply

Any Indian Citizen who is a permanent serving employee of any R & D Institution, academia and organization with established scientific experience in related field can apply as PI. However inter-disciplinary and multi-institutional research projects adopting cross cutting scientific approach shall be preferred. Joint project proposals must be carried out by established research groups across the country. The PI and Co-PIs must belong to an eligible institution and detailed Bio-data of all PIs and Co-PIs and their specific role and responsibility needs to be submitted. With regard to manpower projections standard approved positions by MoES purely on project mode shall be entertained. It is important to understand that proposals towards establishing major infrastructural facility shall not necessarily be entertained under this programme due to budgetary constraints.

Cooperation between / among participating institutions should be outlined in the project description. To ensure adequate participation of all project partners and encourage long-term cooperation, the project description should also clearly describe specific in-kind and financial contributions by each partner (participating institution) as well as their role in the joint project.

Application requirements

- All grant applications are to be submitted in English
- The project description must have a maximum of 10 pages , including footnotes and references , following the attached format.
- Activities, including dissemination and networking activities, should be clearly described in the project description and according to timeline. Plans for access to data and data storage should be described.
- The work should be organized in well-defined work packages with corresponding responsibility.
- Milestones should be identified that can be used to easily follow the progress of the project.
- Budget information should be detailed and clearly presented, specifying all relevant expenses such as travel costs, and should be specified in the project description.
- Management structure and partner roles must be described.
- Three year research project duration is set as a maximum.
- CV's including publications list must not exceed 4 pages.

- Communication and dissemination of research results to key decision-makers, the public administration and the public at large is of particular importance and will be emphasized.
- Funding agency i.e. Ministry of Earth Sciences shall be acknowledged for financial support in all publication arisen out of approved project under this programme.
- MoES may at an appropriate time ask for data generated by PIs for data archive / repository and the same shall be binding for PIs/ Co-PIs. Each PI shall provide an undertaking to share the data with MoES following set approvals and shall be made available for repository purpose. IPR of PIS/Co-PIs shall be taken care of.

Submission of Proposal

All proposals in prescribed format duly filled in through proper channel need to be submitted at following address supersizing “Research Proposal under Paleoclimate Programme”.

The Secretary,
Ministry of Earth Sciences,
Prithvi Bhawan, Lodhi Road,
New Delhi- 110 003.

Additional information

Undertaking and Endorsement:

The Indian PI has to give [undertaking and endorsement](#)  from the Head of the Institution

Contact:

Dr. N. Khare, Scientist, Prithvi Bhavan, Ministry of Earth Sciences, Lodi Road, New Delhi: 110003. email: Neloy.khare@nic.in