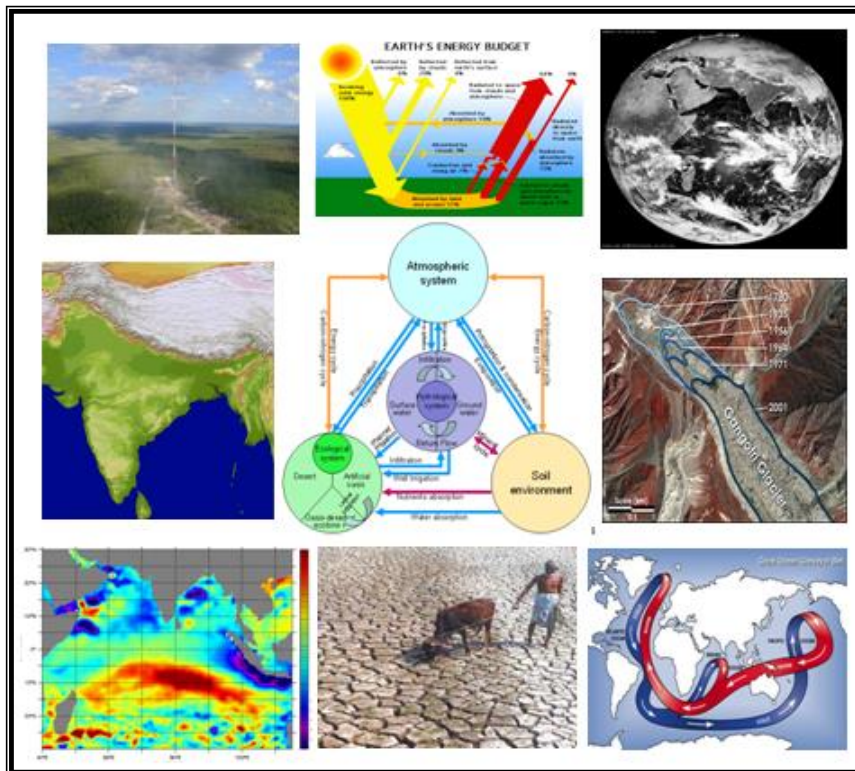


## NICES programme

### Announcement inviting project proposals from Indian researchers

(Deadline for submission of proposals: [30-April-2024](#))



National Remote Sensing Centre  
Indian Space Research Organisation  
March 2024

## Table of Content

Section	Title	Page
<i>NICES Programme</i>		
1.	<b>BACKGROUND</b>	3
2.	<b>DESCRIPTION OF THE NICES PROGRAM</b>	3
3.	<b>INVITATION FOR PROJECT PROPOSALS</b>	4
4.	<b>POTENTIAL AREAS FOR PROJECT SUBMISSION</b>	5
5.	<b>GUIDELINES FOR PROPOSAL PREPARATION</b>	6
	5.1 Instructions for Submission of Proposal	7
	5.2 Description of the Proposal	7
	5.3 Proposal Evaluation	7
	5.4 Personnel	8
	5.5 Facilities and Equipment	8
	5.6 Monitoring and Evaluation of Successful Projects	8
	5.7 Funding support for the selected proposals	9
6.	<b>TERMS AND CONDITIONS</b>	9
7.	<b>SCHEDULE</b>	10
<i>Annexure-1</i>	Existing NICES Geophysical variables Specification	11
<i>Annexure-2</i>	Format of Cover Page of the Proposal	16
<i>Annexure-3</i>	Format of the Proposal	17
<i>Annexure-4</i>	Format for Declaration: Declaration of Availing Institutional Support	21
<i>Annexure-5</i>	Format for Declaration: Declaration of Sharing Ground-Truth Data	22

## NICES program

### 1. BACKGROUND

The National Information system for Climate and Environment Studies (NICES) program is a joint undertaking of *ISRO/DOS, other Ministries and Institutions* under the framework of the *National Action Plan on Climate Change*. One of the main objectives of NICES programme is generation and dissemination of long-term Essential Climate Variables (ECVs), derived from Indian and other Earth Observation (EO) satellites that critically contributes to the characterization of Earth's climate. Since its inception in 2012, NICES has developed and made accessible so far more than 70 geophysical variables pertaining to Terrestrial, Ocean and Atmosphere, mainly derived from Indian and other EO satellites. In order to establish the product uncertainties and transforming the geophysical parameters to ECVs, ground-based *in-situ* data is being collected through NICES observational network pertaining to Ocean, Terrestrial and Atmosphere. A dedicated observational network for monitoring and dissemination of cloud-to-ground lightning strikes over India has also been established. Further, methodologies are also developed for generating daily-mean variables by merging the similar products from different multiple-satellites. The timespan of NICES data inventory ranges from 5 to 30-years across the domains. By linking the existing set of NICES geophysical products that meet the quality requirements have been utilised for documenting the climate change and its impacts. Further details about NICES program can be found in the NICES web portal ([nices.nrsc.gov.in](http://nices.nrsc.gov.in)).

NICES program now strives to strengthen the selected ECV information base with long-term normalized climate qualified data records (i.e., 30-years) and minimize the gap and discontinuities in coverage by assessing the consistency between variables across the platforms at all spatial/temporal scales relevant to climate. NICES also envisages to work towards development of procedures for delivering sector specific climate services using NICES data base.

### 2. DESCRIPTION OF THE NICES PROGRAM

NICES was conceptualised in 2012 in order to meet the continuing challenge of monitoring climate variability and climate change from space. NICES is intended to generate climate and environmental data archives, especially from Indian EO missions, with a provision for access and visualization to various ministries, academia and research institutions in the country.

NICES program was framed with the following specific objectives:

- Geophysical parameter retrieval and generation of methodologies for Essential Climate Variables (ECVs) from Indian EO missions.
- Acquisition and processing of international missions' data for other relevant parameters to support Indian EO ECVs and cal/val and generation of long term data records.
- Generation of spatial & temporal blended ECV products based on Indian and foreign satellites and *in situ* observations through multi-institutional participation.
- Establishment and development of linkages with appropriate observational networks, and calibration & validation sites.
- Development of methodologies to carry out scientific studies and partner with other national organisations in using ECV for impact assessment, adaptation, vulnerability and mitigation etc.
- Establish necessary infrastructure including hardware and software for NICES.
- Establishment of NICES web portal.
- Develop outreach and interaction mechanism for effective dissemination and utilization of NICES ECVs.
- Promote scientific utilization and collaboration in the area of climate and environment.

### 3. INVITATION FOR PROJECT PROPOSALS

Project proposals are invited from individuals or a group of scientists, academicians and researchers belonging to various Indian Government organisations and Government recognised institutions, universities and departments in India. The proposals must be forwarded through the Head of the Institution, with appropriate assurance for providing necessary facilities for carrying out the projects (formats at the end of this document). This call for proposal under NICES program is aimed towards strengthening the participation from academia and research institutions in addressing the climate change related challenges through dedicated multi-disciplinary scientific investigations. Towards this, the proposals received will be evaluated considering primarily the scientific/ technical merits. The principal elements considered in selecting the proposals, among other things, would be:

- The overall scientific or technical merit of the proposal, uniqueness and innovative methods, approaches or concepts planned to be demonstrated.
- The competence and relevant experience of the Principal Investigator (PI) and/or Co-Investigators (CIs) for achieving the proposed objectives.

- Potential for contributing to NICES Objectives
- Facilities available at the host institution for execution of the project
- A research proposal, which is beyond the scope of the NICES programme will not be considered. Therefore, it is important for the proposer to understand the NICES program and should clearly articulate its climate relevance with respect to intended science.

It is expected that the project will be completed within 3 years from the date of its sanction. PIs are required to present the results in review meetings / workshops to be conducted time to time, during the project period.

#### **4. POTENTIAL AREAS FOR PROJECT SUBMISSION**

As part of the NICES program, we encourage the research community to submit specific types of proposals to address NICES objectives and goals pertaining to Atmosphere, Ocean, Terrestrial and Cryospheric domains. NICES envisions these proposals will lay the foundation for disciplinary and interdisciplinary research and answer fundamental questions related to climate change. Proposed project descriptions should clearly articulate its climate relevance and contribution through new and innovative approaches that addresses any of following topics. Following, but not limited to, are the areas categorized into various science themes, suggested under NICES:

##### ***Theme 1: Space-based ECVs and Climate Indicators***

- Generation and dissimilation of long-term (i.e., 30 years) normalized climate qualified data records from satellite observations,
- Evaluation and validation of NICES products: transforming geophysical variables into ECVs and improving the consistency of climate data,
- Space-based monitoring of new Climate and Environmental Variables and assembling the information on ECVs,
- Linkage of space-based ECVs for climate model scenarios and projections

##### ***Theme 2: Climate Change Challenges***

- Remote Sensing of Essential Climate Variables and their applications,
- Utilization of NICES products in studies related to Climate Change impact, mitigation and adaptation,
- Impact of Climate Change on Coastal areas, Marine biodiversity and Fragile environments,
- Ocean warming and associated changes in sea level rise, ocean heat content, ocean acidification, ocean productivity and ocean circulation including deep ocean process studies,
- Impact of Climate Change on Cryosphere processes and feedbacks,

- Impacts of Climate Change on Terrestrial ecosystems and processes,
- Atmospheric composition, global warming and climate change,
- NICES data (and other Remote Sensing Observations) assimilation for climate research, including their use in land surface studies, oceanography, atmosphere, terrestrial, and reanalysis efforts.

***Theme 3: Weather Extremes***

- Application of Space-based observations for weather extremes,
- Decoupling anthropogenic and natural forcings through space-based observations,
- Modeling and Forecasting of weather extremes in the backdrop of Climate change,
- Generation of improved projections of changes in extreme climate and weather,
- Prediction of extreme weather events using AI/ML approaches,

***Theme 4: Climate Services***

- identification of vulnerability hotspots and sensitivity to climate change impacts,
- development of decision-support tools about risk from climate-related natural hazards and integration of the same within the NICES web portal,
- Climate services on climate risk/preparedness, resilience, adaptation planning and actions,
- 

***Theme 5: Capacity Building, Education, and Technical Assistance***

- Development of climate services to support any institution/organization/community,
- Training and workforce development needs: Educational material,
- Capacity development in support of Integrated GHG emission inventory applying guidelines and tools,
- Data archival and dissemination through NICES web portal: Indigenous data/knowledge, local/place-based data/knowledge, etc. to be included meaningfully into the climate and environment services

NICES seeks focused proposals spanning for a period of 2-3 years duration.

**5. GUIDELINES FOR PROPOSAL PREPARATION**

The PI should submit the proposal in a format described in the following sections. The format for the cover page of the proposal is given in Annexure 2 and the format

for the detailed proposal is given in Annexure 3. The formats for the declarations to be provided by the PI and PI institution are given in Annexures 4 & 5.

### **5.1 Instructions for Submission of Proposal**

Proposals have to be complete in all respects. Incomplete proposals and proposals with missing information will NOT be accepted. Proposals should be short and concise, written in the 'Times New Roman' 12 pt. font on standard A4 size paper, typed single-spaced in the prescribed format (see Annexures 2 & 3). Duly signed scanned soft copies of the proposal prepared in the prescribed formats should be e-mailed to [nices@nrsc.gov.in](mailto:nices@nrsc.gov.in) and the original hard copy of the document should be mailed to:

Address:

**NICES Programme Office,  
Earth and Climate Sciences Area (ECSA)  
National Remote Sensing Centre (NRSC)  
Dept. of Space, Govt. Of India,  
Jeedimetla, Hyderabad - 500015,  
Near Dulapally Cross Road,  
Telangana State**

**Telephone: +91 - 40 – 2691 4891/4833**

**E-mail: [nices@nrsc.gov.in](mailto:nices@nrsc.gov.in)**

### **5.2 Description of the Proposal**

The initial part of the proposal should contain a summary (briefing the objectives, methodology, deliverables of the project and the time schedule), followed by a detailed description of the objectives, methodology and the scientific rationale being addressed. The data requirement and the analysis methods should be highlighted. Targeted schedule for various stages of the project must be indicated (including the completion date) by Gantt chart. Criteria for assessing the success of the project should also be projected.

### **5.3 Proposal Evaluation**

The project proposals will be evaluated for selection by a committee consisting of subject experts and NICES program office. The major criteria for selection of proposals are described in section 3 of this document. Proposals that lack scientific merit and unreasonable commitments will be rejected. If multiple proposals with similar objectives are received, the evaluation committee will select the best proposal for funding as per the criteria described in section 3. The evaluation committee may send back a proposal to the proposer(s) for revision, wherever necessary. The decision of the evaluation committee regarding acceptance or rejection of a project proposal will be considered final.

#### **5.4 Personnel**

An investigator of a proposed project need to be a regular employee of an institution or department under the Govt. of India or an institution or department recognized by the Govt. of India, with minimum of 3 years of service remaining for superannuation. Persons from private organizations or NGOs are not eligible to carry out a project under the NICES Programme.

One or many individuals belonging to the same institution or different institutions may jointly submit a project proposal. However, only one investigator will be recognized as the “Principal Investigator (PI)” and the other investigators would be designated as "Co-Investigators (CI)". The PI, through the PI institution is responsible for handling project fund (if any) and is responsible for ensuring timely completion of the project. PI/CI shall provide Curriculum Vitae clearly stating their educational qualifications, the work carried out in the related areas and list of recent publications. The assurance of necessary administrative and financial support to the PI from the Head of the Institution must be provided by filling out the declaration form.

PIs may recruit research scholars in the project as per need and subject to the justification for the same. The eligibility criteria and stipend of the personnel employed in the projects as research scholars, research associates or project fellows will be governed by the prevailing rules stipulated by the UGC/ CSIR and endorsed by DOS/ISRO.

#### **5.5 Facilities and Equipment**

Proposers will clearly state in the proposals the availability of computer facilities, software, field instruments and other related facilities required to run the project in either the host institution or collaborating institutions and its accessibility for the project. The NICES programme has provision for financial grant only for minor field equipment and a computer system, subject to strong justification for the same.

#### **5.6 Monitoring and Evaluation of Successful Projects**

A set of subject/domain experts from NICES Programme office or ISRO will be identified to mentor the qualified projects. The mentors will coordinate with the principal investigators to provide technical as well as management support to the projects and monitor the progress. The progress of the projects will be periodically evaluated by an NICES / ISRO expert committee. Project review meetings/ workshops will be conducted at the end of every year and the PIs of each project are required to participate in these meetings /workshops. It may be noted that there will be stringent review criteria for the projects and NICES / ISRO reserves the right to short close or terminate a nonperforming project based on the recommendation of the review committee.



### **5.7 Funding support for the selected proposals**

The selected project proposals through this announcement will be provided limited financial support towards meeting the salary of a research student, computational facility, contingencies, data collection for cal-val, travel support to attend project meetings and workshops within India. The project duration is for 3-years starting from the release of the fund. In addition, in specific cases where the recruitment process of a research scholar takes longer or a research scholar leaves a project midway, the PIs of the selected proposals are allowed to recruit student interns to learn and contribute to the project activities for a period not exceeding 6 months per financial year. The interns should be selected based on merit from the final year students of the M.Sc./M.Tech programme and they should only work in the designated project. ISRO shall provide funding support (fixed amount of Rs 10,000/- per month) to the project intern as stipend under this NICES programme.

## **6. TERMS AND CONDITIONS**

All proposals will be reviewed by a review committee constituted by NICES Programme office / ISRO. PIs and their team shall cooperate with the members of the review committee, where needed. NICES / ISRO reserves the right, depending upon the need or lack of novelty of intended applications, innovative science, suitability, delivery and merits to revoke in part or in whole its support for a proposal at any time without assigning any reason. The decision of NICES / ISRO shall be treated as final.

NICES data is open and free of cost. However, any ancillary data and ground validation data, if specifically provided, must be used only for the purpose specified in the proposal. The project personnel do not have the right to share, lease or loan the ground validation data to persons or entities outside the project, without the prior permission of the NICES Programme Office at NRSC, ISRO. Also, this data should not be used for any commercial purpose.

Scientific results obtained as part of the project proposal by PIs or any other, shall not be allowed to be used for marketing/business purposes without prior permission from NICES/ISRO. NICES/ISRO reserves the right to accord permission on such cases, considering the overall national interests.

Any / all Intellectual Property (IP) Rights such as patents, copyrights, design rights etc. acquired by the research academic/institute or the PI, through this project proposal, shall be jointly owned by ISRO and the concerned research institute. Any commercialization of such IP rights shall be done by the research institute only with the consent / permission of ISRO, on specific terms and conditions, which shall be determined on a case by case basis mutually as per its standard practices for such activities.

The user will make available to the scientific community the ground validation data collected through the project (where applicable) and salient results through publication in appropriate journals or other established channels. Acknowledgement of NICES/ISRO support must be made in all reports and publications arising out of this project. Copies of all publications resulting from these research projects must be submitted to NICES/ISRO to the address mentioned under paragraph 5.1. NICES/ISRO reserves the right to use the published results in its reports and publications with due reference to the publication. If the reports or publications are copyrighted, NICES/ISRO will have a royalty-free right under the copyright to reproduce, distribute, and use the copyrighted works for their purposes.

All those who use NICES geophysical data are expected to register and download the data from NICES web portal with due acknowledgement.

The procedure/methodology arising from the project would be made available to NICES/ISRO for their operational use.

The PI is required to submit yearly progress report and fund utilization certificate in a prescribed format (for funded projects) during the project to the Programme Office, mentioned in Section 5.1. A detailed report is to be submitted during the mid-term and final reviews in soft copy.

**The declaration contained in the proposal format must be signed by the PI and Head of the Institution (Annexure 4). Otherwise, the proposal will not be considered valid and is liable to be rejected.**

## 7. SCHEDULE

Announcement for proposal submission:	25-03-2024
Deadline for submission of proposals:	30-04-2024
Notification of evaluation results to Principal Investigators:	30-05-2024
Execution of selected projects:	15-06-2024

**Note:** Proposals will be accepted at any time, but they should be submitted by [30-04-2024](#), for full consideration for FY 2024-25 funding.

## Annexure - 1

## NICES DATA PRODUCT SPECIFICATION

NICES web portal contains information on various geophysical datasets and available instrument facilities ([nices.nrsc.gov.in](http://nices.nrsc.gov.in)) that may be leveraged in these proposals.

### Terrestrial Products

Sl. No.	Geophysical Products	Satellite/Sensor	Coverage	Availability	Resolution	
					Spatial	Temporal
<b>ECV</b>						
1.1	Land Use Land Cover ( MM5Compatible)	Resourcesat -2 / AWiFS	Global	2004-2005 to 2018-2019	30"/2'5'	Yearly
1.2	Land Use Land Cover ( WRF Compatible )	Resourcesat -2 / AWiFS	Global	2004-2005 to 2018-2019	30 "/2'5'	Yearly
2	Mean Organic Soil Carbon density	Resourcesat -2 / AWiFS	India		5 km	Once
3	Surface Soil Moisture	AQUA AMSR-E & GCOM-W1 / AMSR2	India	Jul 2002- till date	0.25°	2 days
4	Snow Cover Fraction	Resourcesat -2 / AWiFS	Himalayans	Mar 2014 – till date	3'x3'	Fortnight
5	Average Annual Forest Fire Density	AQUA and TERRA/MODIS	India	Jan 2003 – 2016	5 km	Year Average
6	Surface water bodies fraction	Resourcesat-2,2A/ AWiFS	India	Jan 2014 - till date	3'x3'	Fortnightly
<b>Geophysical Products</b>						
1	Albedo	Oceansat - 2 / OCM-II	India	Jan 2013 - Dec 2021	1 Km	Fortnightly
2 Normalized Difference Vegetation Index (NDVI)						
2.1	NDVI	Oceansat - 2 / OCM-II	Global	Jun 2013 - Sep 2019	8 Km	Monthly
2.2	NDVI	Oceansat - 2 / OCM-II	India	Jan 2011 - Dec 2021	1 Km	Fortnightly
2.3	Filtered NDVI	Oceansat - 2 / OCM-II	India	Jan 2012 - Jun 2021	1 Km	Fortnightly
3	Vegetation Fraction	Oceansat - 2 / OCM-II	India	Jan 2011 – Dec 2021	1 km	Fortnightly
4 Soil						
4.1	Mean Inorganic Soil Carbon density	Resourcesat -2 / AWiFS	India		5 km	Once
4.2	Fraction Soil Depth	Resourcesat -2 / AWiFS	India		5 km	Once
4.3	Fraction Soil Textural Class	Resourcesat -2 / AWiFS	India		5 km	Once

5	Land Degradation (3 Layers)					
5.1	Fraction Water Erosion	Resourcesat -2 / LISS-III	India	2005-2006	5 km	10 years
5.2	Fraction Wind Erosion	Resourcesat -2 / LISS-III	India	2005-2006	5 km	10 years
5.3	Fraction Salt-affected	Resourcesat -2 / LISS-III	India	2005-2006	5 km	10 years
6	Forest fire					
6.1	Standard Deviation of Average Annual Forest Fire Density	AQUA and TERRA/MODIS	India	Jan 2003 – 2016	5 km	Year Average
6.2	Length of Fire Period	AQUA and TERRA/MODIS	India	Jan 2003 – 2016	5 km	Year Average
7	Forest Cover Fraction	SOI/Landsat-MMS&TM/ Resourcesat -2 / AWiFS	India	1930, 1975, 2013	5 km	Yearly
8	Forest Types	Resourcesat -2 / AWiFS	India	2013	5 Km	Yearly
9	Net Sown Area					
9.1	Fractional Net Sown Area	Resourcesat -2/ AWiFS	India	2005 – 2016	5 km	Yearly
9.2	Fractional Kharif Sown Area	Resourcesat -2/ AWiFS	India	2005 – 2016	5 km	Yearly
9.3	Fractional Rabi Sown Area	Resourcesat -2 / AWiFS	India	2005 – 2016	5 km	Yearly
9.4	Fractional Fallow Area	Resourcesat -2/ AWiFS	India	2005 – 2016	5 km	Yearly
10	Snow Melt and Freeze	Oceansat - 2 / OSCAT	Indian Himalayas	Jan 2000 - Dec 2018	2.225 km	Daily
11	Himalayan Glacial Lakes & Water Bodies	Resourcesat -2 / AWiFS	Himalayan region of Indian river basins	Jun 2011 - Oct 2016	1:250,000 scale	Monthly
12	Snow Melt and Freeze	Oceansat - 2 / OSCAT	Antarctica	Jan 2001 - Feb 2021	2.225 km	Daily
13	Snow Albedo	Resourcesat -2 / AWiFS	India	Jan 2015 - Nov 2023	250 m	-
14	Distributed Hydrology Model (VIC)					
14.1	Soil Moisture	Model Derived	India	Jun 2013 – Jan 2022 Jan 1976 - Dec 2015	9' x 9'	Daily
14.2	Evapo-transpiration	Model Derived	India	Jun 2013 - Jan 2022 Jan 1976 - Dec 2015	9' x 9'	Daily
14.3	Surface Runoff	Model Derived	India	Jun 2013 - Jan 2022 Jan 1976 - Dec 2015	9' x 9'	Daily
15	Net Ecosystem Productivity	Model Derived	India	1981- 2018	2' x 2'	Monthly
16	Net Primary Productivity	Model Derived	India	1981- 2018	2' x 2'	Monthly

## Ocean Products

Sl. No.	Geophysical Products	Satellite/Sensor	Coverage	Availability	Resolution	
					Spatial	Temporal
<b>ECV</b>						
1. Ocean Surface Winds						
1.1	Ocean Surface Winds	OSCAT/ScatSAT-1/EOS-06	Global Ocean	Jan 2010 – Till date	0.5°/0.25°/0.125°	Daily
2.1	Wind Stress	OSCAT/ScatSAT-1//EOS-06	Global Ocean	Jan 2010 – Till date	0.5°/0.25°/0.125°	Daily
3	Ocean Surface Currents	AVISO/SARAL ALTIKA & OSCAT/ScatSAT-1/EOS-06	Global Ocean	Mar 2013 – Sep 2020	0.25°	Daily
4. Ocean Chlorophyll						
4.1	Chlorophyll Concentration (using OC2 algorithm)	Oceansat - 2/ OCM II	North Indian Ocean	2010 – Mar 2020	1Km	2 Days, 8 Days & Monthly
4.2	Chlorophyll Concentration (using OC4 algorithm)	Oceansat -2/ OCM II	North Indian Ocean	2010 - Mar 2020	1 Km	2 Days, 8 Days & Monthly
4.3	Chlorophyll Concentration (using OC2 algorithm)	Oceansat - 2/ OCM II	Global	2011- Dec 2020	4 Km	8 Days & Monthly
4.4	Chlorophyll Concentration (using OC4 algorithm)	Oceansat - 2/ OCM II	Global	2011 - Dec 2020	4 Km	8 Days & Monthly
4.5	Chlorophyll Concentration (using OC4 algorithm)	EOS-06 / OCM III	Global	Apr 2023 – till date	4 Km	Daily, 8 Days & Monthly
<b>Geophysical Products</b>						
1 Wind curl						
1.1	Wind Curl	OSCAT/ScatSAT-1/EOS-06	Global Ocean	Jan 2010 – Till date	0.5°/0.25°/0.125°	Daily
2	Sea Level Pressure	Oceansat - 2/OSCAT & ScatSAT-1	Global	Jan 2010 - Feb 2021	0.5°	Daily
3	Ekman Currents	OSCAT/ScatSAT-1	Global Ocean	Mar 2013 – Sep 2020	0.25°	Daily
4	Sea Surface Height Anomaly	SARAL ALTIKA	Global Ocean	Mar 2013 – Sep 2020	0.25°	Daily
5	Geostrophic Currents	SARAL ALTIKA	Global Ocean	Mar 2013 – Sep 2020	0.25°	Daily
6	Eddy Kinetic energy (EKE)	Altimeter SSHA (AVISO)	Indian Ocean	Jan 1993 – Jun 2023	0.25°	Daily Monthly

7	Monthly Mean Sea Level Anomaly (MMSLA)	Altimeter SSHA (AVISO)	Indian Ocean	Jan1993 - Dec 2011	1°	Monthly
8 Diffuse Attenuation Coefficient						
8.1	Diffuse Attenuation Coefficient at 490 nm (KD <sub>490</sub> )	Oceansat - 2/ OCM II	North Indian Ocean	2010 - Mar 2020	1 Km	2 Days, 8 Days and Monthly
8.2	Diffuse Attenuation Coefficient at 490 nm (KD <sub>490</sub> )	Oceansat - 2/ OCM II	Global	2011 - Dec 2020	4 Km	8Days & Monthly
9	Total Alkalinity (TA)	Aquarius & MODIS	Global	1992 – 2018	0.25°	Weekly
10	Dissolved Inorganic Carbon (DIC)	Aquarius & MODIS	Global	2014 – May 2018	0.25°	Weekly
11 Co-Tidal Map						
11.1	K1O1 Co-Tidal Map	Model	68°E to 5.5°N to 24°N 89.5°E	One map	2'	–
11.2	M2S2 Co-Tidal Map	Model	5.5°N to 24°N 68°E to 89.5°E	One map	2'	–
12	Ocean Heat Content (OHC) and Ocean Mean Temperature (OMT) at different Depths	TMI/AMSR-2 SST & Altimeter SSHA	Indian Ocean	Jan 1998 – till date	0.25°	Daily
13	Tropical Cyclone Heat Potential	TMI/AMSR-2 SST & Altimeter SSHA	Indian Ocean	Jan 1998 – till date	0.25°	Daily
14	Ocean Heat Content of 700m Layer	TMI/AMSR-2 SST & Altimeter SSHA	Indian Ocean	Jan 2002 – till date	0.25°	Daily
15	Tropical Cyclone Heat Potential Forecast	Model Derived	30°S to 30°N 30°E to 120°E	Jul 2013 – Jun 2022	0.5°	Daily
16	Depth of 26 Degree Isotherm	Model Derived	30°S to 30°N 30°E to 120°E	Jul 2013 – Apr 2019	0.5°	Daily

## Atmospheric Products

S. No.	Geo Physical Dataset	Satellite/Sensor	Coverage	Availability	Resolution	
					Spatial	Temporal
<b>ECV</b>						
1	Cloud Cover	INSAT 3D/Imager	-10° to 45.5°N 44.5° to 105.5°E	Oct 2013 till date	0.04°x0.04°	Half Hourly
2	Cloud Top Temperature	INSAT-3D	-10° to 45.5°N 44.5° to 105.5°E	Jan 2018 to Jun 2022	0.5°x0.5°	Half Hourly
3	Lightning	Ground Network	Indian region	Sep 2019 to Till date	0.1° x 0.1°	Daily
<b>Geophysical Products</b>						
1	Derived Tropospheric Ozone	OMI& MLS / AURA	Indian region	Jan 2010 to Mar 2022	1° x 1°	Daily
2	Planetary Boundary Layer Height	SNPP / CrIS	05°N to 40°N 50°E to 110°E	Sep., 2014 to Aug 2021	0.25° x 0.25°	Daily 7 Days Monthly

Format of Cover Page of the Proposal

Title of the Proposal

Name and Designation of PI  
Telephone and E-mail Address  
Name of Institution with full Address

Signature of PI

Signature of Head of Institution Seal of Institution

Proposal submitted on (date)



## Format of the Proposal

(Please read the guidelines for preparing project proposals provided in the section 6)

### 1. Title of the Proposal:

### 2. Name of the Principal Investigator:

Designation:

Institution;

Mailing Address:

Telephone:

E-mail:

### 2.1 Name and affiliation of Co-Investigator(s)

### 3. Summary of the proposed work (limited to one page)

The summary must include three separate sections:

**Overview:** Describe the activity that would result if the proposal were funded and state the objectives and methods to be employed.

**Intellectual Merit:** Describe the potential of the proposed activity to advance knowledge.

**Broader Impacts:** Describe the potential of the proposed activity to benefit NICES program.

### 4. Description of the project (limited to 15 pages)

4.1 Theme: Atmosphere/Ocean/Terrestrial/Cryosphere/interdisciplinary/Model/...

4.2 Title:

4.3 Introduction:

4.4 Objectives:

4.5 Scientific Rationale / Relevance

4.6 Significant Contribution including Innovation

4.7 Methodology

4.7.1 Study Area (where applicable)

4.7.2 Data requirement (all including ancillary, other missions etc.)

4.8 Anticipated results and significance

4.9 Potential End User (in case of applications/products/services, if any)

4.10 Schedule and Milestones (Quarterly schedule using a Gantt chart)

4.11 Deliverables with delivery schedule with timeline

The Project Description should provide a clear statement of the work to be undertaken and must include the objectives for the period of the proposed work and expected significance; the relationship of this work to the present state of knowledge in the field, as well as to work in progress by the PI under other support. Visual materials,

including charts, graphs, maps, photographs and other pictorial presentations are included in the 15-page limitation. Should this project involve collaboration with other institutions/organizations, describe the roles to be played by the other entities, specify the managerial arrangements, and explain the advantages of the multi-organizational effort.

The Project Description should outline the general plan of work, duration and deliverables, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.

### 5. Budget requirements (Item description and year-wise break-ups)

Sl. No.	Item Description	FY (2024-25)	FY (2025-26)	FY (2026-27)	Total Value
1	Material				
2	Manpower (JRF/SRF/RA/Interns)				
3	Field work / Travel				
4	Contingency				
5	Other, if any				
6	Institutional charges				
7	TOTAL				

#### 5.1 Budget justification (limited to 2 pages)

- The amounts for each budget line item requested must be documented and justified in the budget justification. The budget justification should provide a more detailed breakdown of proposed spending in each category as well as a justification supporting the numbers provided in each budget category. For collaborative proposals submitted by multiple organizations, each organization must include a separate budget justification.

### 6. Details of the relevant experience of the PI and Co-I in the discipline (Please include brief bio-data of all investigators)[Limited to 2 pages each]

#### 6.1 List (with brief summary) of sponsored project(s) the PI and CI are currently involved in, if any

- This section of the proposal calls for required information on recently/newly completed and on-going projects/proposals support from whatever source (e.g.

Central, State, private/public foundations, foreign government agencies, industrial or other commercial organizations, or internal funds allocated toward specific projects) must be listed.

- Results may be summarized in fewer than 5-pages [Proposal/project title, funding amount received, period of support, summary of results and/or accomplishments supported by the funding, listing of the publications].

## 6.2 List of publications in the related field, if any

- Evidence of research products and their availability, if any: data, publications, samples, physical collections, software, and models, etc.

## 7. Available facilities, equipment and other resources at PI's institution

This section of the proposal is used to assess the adequacy of the resources available to perform the effort proposed (the description should be narrative and must not include any quantifiable financial information).

**Major Equipment:** *List the most important equipment available for this project and, as appropriate, identify the location and pertinent capabilities of the equipment.*

**Other Resources:** *Provide any information describing the other resources available for the project. Identify support services such as consultant, secretarial, machine/electronic shop, Ships/UAVs/feasibility of hiring boats/etc. and the extent to which they will be available for the project. Include an explanation of any consortium/contractual arrangements with other organizations.*

**Facilities:**

**Laboratory:**

**Computer:**

**Other:**

## 8. Special Information and Supplementary Documentation

- *Students/Research Scholars Mentoring Plan* (Limited to half-page)
- *Data Management Plan* (limited to 1-page)

The Data Management Plan should describe how the proposal will conform to NICES policy on the dissemination and sharing of research results and may include.

- The types of data, samples, physical collections, software, and other materials to be produced during the project; Access and sharing
- The standards to be used for data and metadata format and content;

- Provisions for re-use, re-distribution, and the production of derivatives; and
  - Plans for archiving data, samples, and other research products, and for preservation of access to them.
- *Documentation of Collaborative Arrangements through letters of collaboration*

### **9. Declarations as per format provided in Annexures 4 & 5**

I certify that the information provided above, is true to the best of my knowledge and belief. I also declare that I meet the eligibility criteria specified in Section 5.4 in the document to submit project proposal for the NICES and I have a remaining service of 3 years or more before superannuation, from the date of this application. I understand that if any of the information provided by me is found incorrect, my project proposal will be rejected / project will be terminated, with immediate effect.

(Name and signature of the PI)

Date:

**Annexure – 4**

[Format for Declaration]

**Declaration of Availing Institutional Support**

We have carefully read the terms and conditions of NICES Programme and agree to abide by them.

It is certified that if the proposal is accepted and supported by the NICES, the facilities as identified in the proposal and administrative support available at our institution and needed to execute the project will be extended to the Principal Investigator and other Co-investigators.

We certify that any ancillary data, ground-truth data or value-added products provided during the project would be used only for the intended project. It is also certified that, if the proposal is accepted and funded by NICES, the same proposal shall not be submitted for funding support from other agencies.

We also certify that the fund availed for the project (in case of funded projects) will be spent for the intended purpose only and fund utilization certificates will be provided to the UP Programme Office at the end of each financial year during the project and a consolidated fund utilization certificate will be provided at the end of the project.

Signature of PI with Name and Designation

Signature of Head of Institution with Name and Designation

Date:

Seal of Head of Institution

**Annexure - 5**

[Format for Declaration of sharing ground-truth / in-situ data]

**Declaration of Sharing Ground-Truth Data**

I declare to share any ground truth data or in-situ data collected during the project with the NICES, in near real time for development of a centralized repository of ground-truth data.

I understand that the database of ground truth / in-situ information will be accessible to all investigators of the NICES and the data will be utilized for the calibration/validation of NICES data products, science products or algorithms developed for various applications.

Signature of PI with Name and Designation

Date: