

FORMAT FOR EFC/SFC MEMORANDUM FOR APPRAISAL OF SCHEMES

1. Scheme Outline

1.1 Title of the scheme: International Training Centre for Operational Oceanography (ITCOcean)

1.2 Sponsoring Agency (Ministry/Department/ Autonomous Body or undertaking): Ministry of Earth Sciences (MoES)

1.3 Total Cost of the proposed scheme: Rs. 102.35 crores* (for three years) and Rs. 170 crores for 7 years

** As per the Administrative Order No. MoES/16/10/12/-INCOIS(ITCOcean) dated 24/12/2012, the total cost of the project is Rs. 100 Crores for the year 2012-2017. However, an amount of Rs. 22.66 crores is released till date and the balance of Rs.77.34 crores are yet to be received.*

1.4 Proposed duration of the scheme: Three years and Seven Years

1.5 Nature of the scheme: Central Sector scheme/ Centrally Sponsored Scheme: Centrally Sponsored Scheme

1.6 For central schemes, sub-schemes/components, if any, may be mentioned. For centrally sponsored schemes, central and state components, if any, may be mentioned

1.7 Whether a new/a continuing scheme? In case of continuing scheme, whether old scheme was evaluated and what were main findings:

It is a continuous Scheme. Old scheme was evaluated thoroughly and recommended for continuation by Independent Review Committee (IRC) constituted by Ministry of Earth Science (MoES).

1.8 Whether in principle approval is required? If yes has been obtained: Required

1.9 Whether a Concept paper or a detailed paper has been prepared and stake holders consulted? In case of new centrally Sponsored scheme, whether the state governments have been consulted? Yes

1.10 Which existing schemes/ sub-schemes are being dropped, merged or rationalised?

Not Applicable

1.11 Is there an overlap with an existing scheme/sub-scheme? If so, how duplication of effort and wastage of resources are being avoided: No

1.12 In case of an umbrella scheme (program) give the details of scheme and sub-schemes under along with the proposed outlay component-wise. No

Note: It may kindly be noted that the word scheme here is used in a generic sense. It includes programs, schemes and sub-schemes, which depend on need can be appraised and approved as stand-alone coast centres.

2 Outcomes and Deliverables

2.1 Stated aims and objectives of the schemes

2.1a. Being an R&D cum operational Institution in its own right as well as the Services arm of the Ministry, INCOIS, since inception has strived to develop a synergy with the research community as well as the stakeholders. Capacity development in the various facets of ocean science and services has been sought to be achieved through encouragement of the younger generation in being a part of the talent pool in the country. Many outreach programmes directed at popularizing the significance of the activities being pursued at INCOIS and the ways and means in which the stakeholders as well as students can contribute to and even form a part of, are conducted at several levels all throughout the year.

In response to 'The Ocean Call' from Intergovernmental Oceanographic Commission (IOC)/UNESCO in June 2010 to its Member States for contributions towards the IOC's efforts on capacity building, the Ministry of Earth Sciences (MoES) decided to establish an **International Training Centre for Operational Oceanography (ITCOocean)** at the INCOIS Hyderabad. Subsequently, on 4th July 2013, MoES signed a Memorandum of Agreement (MoA) with IOC/UNESCO to cooperate in the capacity development activities by organizing joint training programmes, especially in operational oceanography, for the benefit of African and IOR countries. Under this agreement, ITCOocean will organize national/international level training programmes independently or in collaboration with other organisations and IOC's IODE (International Oceanographic Data and Information Exchange).

2.1b. Major Objectives:

- Provide advanced training in operational oceanography for young scientists and technical (S&T) persons and decision makers/officials from India (including industries on payment basis), IOR countries and other developing nations (on sponsorship basis) enabling the creation of a large pool of young trained manpower with core skills.
- Provide training on generation of data from oceans using *in situ* and satellite platforms, transmission of data to operational centre, data reception, data processing in real-time, usage of data in models and generation of forecasts and dissemination of the same to end users within the shortest possible time.
- To provide ship board experience and training in observational oceanography using state-of-the-art instrumentation from all available sources and interaction with national and international pool of faculties to so as to widen the S&T base.
- To help the scientists to be in a state of preparedness for now-casting and forecasting the behavior of the oceans and also to address the role of ocean science and technology in delivering information critical to safety, commerce and environmental protection.

2.2 Indicate year-wise deliverable in tabular formation

Details are provided under **Annexure-1**

2.3 Indicate outcomes of the schemes in the form of measurable indices which can be used to evaluate the proposal periodically. Baseline data or survey against which such outcome bench marked also should be mentioned.

Outcomes of the scheme can be measured based on the no of training courses conducted, no of trainees trained and participation by the international collaborative agencies.

2.4 Indicate other schemes/sub- schemes being undertaken by the Ministries/Departments which has significant outcome overlap with the proposed scheme. What converges framework have been evolved to consolidate out comes and save public resources

No overlap of schemes.

3. Target Beneficiaries

3.1 If the scheme is specific to any location, area and segment of population, please give the details and basis for selection

The proposed project involve Capacity Building Programmes aimed at generating knowledge through creation of a large pool of trained manpower in India, Indian Ocean Rim countries and other developing nations which will help enhancing the R&D base and capability. The Training Centre will contribute to the capacity building requirements of several IOC programmes such as IOGOOS, Tsunami warning and mitigation and IODE.

The specialized manpower generated by ITCOOcean could be pooled for absorption in various positions in earth system science institutions and other establishments in the country.

Therefore, technological and socio-economic benefits are the expected outcome. ITCOOcean with the supportive role played by the UNESCO/IOC/IODE would help contribute India to expand the scope of its understanding with the emerging economies for meaningful collaboration in S&T areas.

3.2 Please bring out specific interventions directed in favour of social groups, namely SC, ST, differently able, minorities and other vulnerable groups.

Not applicable

3.3 Please bring out special interventions if any, in northeast, Himalayan, LWE, Island territories and other backward areas

Not applicable

3.4 In case of beneficiary oriented schemes, indicate the mechanism for identification of target beneficiaries and the linkage with Aadhar/ UID numbers

Not applicable

3.5 Whether possible, the mode of delivery should involve the Panchayat Raj institutions and Urban local bodies. Whether this is indented, the preparedness and ability of the local bodies for executing the proposal may also be examined

Not applicable.

4. Cost Analysis

4.1 Cost estimate for the Scheme duration: both year-wise, component-wise, segregated into non-recurring and recurring expenses.

Sl No.	Budget Item	Outlay (Rs. Crores)							
		2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Total (7 Years)
1	Salaries	4.40	4.80	5.40	5.90	6.50	7.10	7.80	41.90
2	Domestic Travel Expenses	0.10	0.10	0.10	0.20	0.20	0.20	0.20	1.10
3	Foreign Travel Expenses	0.40	0.40	0.40	0.40	0.40	0.40	0.40	2.80
4	Office Expenses (Stationery, Furniture, Meeting expenses)	0.50	9.50	0.50	0.50	0.50	0.50	0.50	12.50
5	Publications	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.35
6	Other Administrative Expenses	0.50	0.50	0.50	0.50	0.50	0.50	0.50	3.50
7	Supplies & Materials (Operations and Maintenance of Academic and Hostel Blocks, AMC of Equipment, Spares, Systems etc.)	0.00	5.20	5.40	5.55	5.80	6.00	6.25	34.20
8	Advertising & Publicity (Outreach programs, publicity materials - brochures, palm plates, short films etc)	0.05	0.05	0.05	0.50	0.50	0.50	0.50	2.15
9	Minor Works (Minor civil and electrical works)	0.00	0.00	0.00	0.05	0.05	0.05	0.05	0.20
10	Professional Services (Facility Management -Outsourced House Keeping, Security, Landscaping, Training expenses)	0.15	1.05	1.15	1.25	1.40	1.60	1.70	8.30
	Total (Recurring)	6.15	21.65	13.55	14.90	15.90	16.90	17.95	107.00

11	Machinery & Equipment (E-Class Room Equipment, Apparatus, Computers, Hardware/Software, Desktops, Laptop, storage, peripherals etc)	1.00	19.00	1.00	0.50	0.50	0.50	0.50	23.00
12	Major Works (Academic and Hostel Buildings construction)	40.00	0.00	0.00	0.00	0.00	0.00	0.00	40.00
13	Total (Non-Recurring)	41.00	19.00	1.00	0.50	0.50	0.50	0.50	63.00
14	Total (Recurring + Non-Recurring)	47.15	40.65	14.55	15.40	16.40	17.40	18.45	170.00

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4.2 The basis of these cost estimate along with the reference dates for normative coasting

As per current market prices and current salaries of temporary scientific staff.

4.3 In case of land is to be acquired, the details of cost of land cost of rehabilitation/Resettlement, if any

4.4 In case of pre-investment activities or pilot studies are being carried out, how much has been spent on this.

Not applicable

4.5 In the case of the scheme involves play out subsidy, the year wise and component wise expected out go may be indicated

Not applicable

4.6 In case committed liabilities are created, who will or has agreed to bear the legacy burden? In case assets are created, arrangements for their maintenance and upkeep?

Not created.

5 Scheme Financing

5.1 Indicate the source of finance for the scheme: budget support, extra-budgetary sources, external aid, state share etc.

It is central budget support scheme

5.2 If external sources are intended, the sponsoring agency may indicate, as also whether such funds have been tied up?

5.3 Indicate the components of the coast that will be shared by the state governments, local bodies, user beneficiaries or private parties?

Not applicable

6 Approvals and Clearances

Requirement of mandatory approvals and clearances from various local, state and national bodies and their availability may be indicated in a tabular form (land acquisition, environment, forestry, wildlife etc.)

7 Human Resources

7.1 Indicate the administrative structure for implementing the scheme. Usually creation of new structures, entities etc should be avoided.

The present administrative structure in INCOIS/MoES will be utilised

7.2 Manpower requirement, if any. In the case posts, permanent or temporary, are intended to be created, a separate proposal may be sent on file to personal division of department of expenditure (such proposals may be sent only after the main proposal is recommended by the appraisal body)

Total manpower requirement is provided hereunder.

Year	Requirement in each year		Cumulative strength	
	Scientists/ Project scientists	Research Fellows/ Project Assistants	Scientists/ Project scientists	Research Fellows/ Project Assistants
2017-18*	Scientist-G (1) Scientist-F (1) Scientist-D (6) Scientist-C (5) Senior Assistants (Admin, Finance, Purchase) (3) Lab Attendant(2)/ Driver(1) Skill Technical Assistant (1)	--	Scientist-G (1) Scientist-F (1) Scientist-D (6) Scientist-C (5) Senior Assistants (Admin, Finance, Purchase) (3) Lab Attendant(2)/ Driver(1) Skill Technical Assistant (1)	--
2018-19	--	--	20	--

2019-20	--	--	20	--
2020-21	--	--	20	--
2021-22	--	--	20	--
2022-23	--	--	20	--
2023-24	--	--	20	--

** The posts mentioned in the above table are as per the Administrative Order No. MoES/16/10/12/- INCOIS(ITCOcean) dated 24/12/2012. Lab Attendants(2) and Driver (1) added in this proposal.*

7.3 In case outsourcing of services on hiring of consultants is intended, brief details of the same may be provided.

8. Monitoring and Evaluation

8.1 Please indicate the monitoring framework for the scheme and the arrangements for satutory and social audit (if any)

8.2 Please indicate the arrangements of third party/independent evaluation? Please note that evaluation is necessary for extension of schemes from one period to another

9. Comments of Finance advisor, Niti Aayog, department of expenditure and other ministries/Department may be summarised in tabular form along with how they are being internalised and used to improve this proposal

10 Approval sought

Please attach an executive summary along with the concept/detailed paper outlining the main elements and overall architecture of proposed scheme.

The executive summary of the scheme is provided as **Annexure-2**

2.2 Indicate year-wise deliverable in tabular formation

The 3 years and 7 years wise deliverables are provided below :

Year	Deliverables
2017-20	<ul style="list-style-type: none"> • Conduct of short term courses (6-8 per year) • To conduct a 4-6 months long duration course on pilot basis subjected to the availability of the proposed manpower. Long duration course should consist of field visit (involving ship cruise) of 10 days to provide exposure to the onboard observational equipments, data etc. • Follow up the efforts to obtain approvals for filling up of the approved manpower at ITCOcean. • Conduct two courses per year under the OTGA/IOC as per the MOA. (RTC Mandate) • Pursue with obtaining UNESCO Category -2 status for the Centre • Liaison with international funding organisations such as POGO to seek funding and promote Capacity Building Programmes under Operational Oceanography. • Development of infrastructural facilities (academic and hostel blocks) by Oct 2017 • Procurement of equipment (E-Class Rooms, Computers, Laptops, Projectors, Demo Lab etc.), procurement of required important s/w licenses (arc info, Matlab etc) and furnishing of Academic and Hostel Blocks. • Operations and maintenance of facilities and equipment
2020-24	<ul style="list-style-type: none"> • Prepare course curriculum for Long Term Course (6- 9 months duration) identifying all the elements (theory, practical, onboard training etc.) of Operational Oceanography. • MoU with a reputed University for approval of curriculum and award of PG Diploma, M.Tech. Degree to students. • Conduct long duration courses (9 months-two semesters) in operational oceanography leading to a Post Graduate diploma. • To encourage the successful trainees to pursue a career in operational oceanography, provide internship for a few potential scholars from IOR region at ITCOcean for 1 year duration, entitling to a Masters' Degree in operational oceanography from the University. • Operations and maintenance of facilities and equipment

Executive summary and benefits of the scheme

Operational oceanography is an emerging branch in the ocean sciences which deals with the forecast/now-cast of the state of the ocean parameters such as waves, tides, circulation, water quality, availability of marine resources etc. Presently a wide spectrum of users spanning from traditional fishermen to high-tech off-shore industries are the beneficiaries of these services. Qualified human capital is an important pre-requisite to ensure that the best of our knowledge is converted to the ocean services and these services are used for the benefit of the society. ESSO-INCOIS is leading the operational oceanography services among the Indian Ocean rim countries with a variety of services including ocean state forecasts, potential fishing zone advisories, tsunami and storm surge warnings and extensively contribute to build the ocean observations necessary to collect data. Realising the importance of operational oceanography and lack of facilities for capacity building and responding to the request from Intergovernmental Oceanographic Commission (IOC/UNESCO) to contribute towards providing training in operational oceanography, Ministry of Earth Sciences (MoES), Government of India established the International Training Centre for Operational Oceanography (ITCOocean) at ESSO-INCOIS. ESSO-INCOIS signed a Memorandum of Agreement with IOC/UNESCO on 4 July, 2013 in Paris during the 27th session of the IOC Assembly to mutually cooperate in capacity building for operational oceanography.

Since 2013, ITCOocean has been conducting a series of short term training programmes in different fields of operational oceanography. These courses can be broadly categorized into two:

- i. aimed at increasing the capability in our basic understandings on oceanography and
- ii. aimed at building the capacity of the users of operational oceanography services.

Till date, the Centre has conducted 22 training courses (11 International and 11 National) and trained 633 researchers, university students, State and Central Govt. officials, including 98 foreign nationals from 33 countries - Australia, Bangladesh, Belgium, Cambodia, Cameroon, Comoros, Egypt, France, Ghana, Iran, Indonesia, Italy, Kenya, Madagascar, Maldives, Malaysia, Mauritius, Morocco, Mozambique, Myanmar, Nigeria, Norway, Oman, Romania, Russia, Saudi Arabia, Seychelles, South Africa, Sri Lanka, Tanzania, Togo, Vietnam and Yemen.
