

Project Endorsement Form

1. PROJECT TITLE

Full title	Biogeochemistry of carbon and nitrogen in the Arabian Sea: a contribution to the International Indian Ocean Expedition 2
Acronym	BIOCAN-IIOE2
Website	https://www.geo.uni-hamburg.de/geologie/forschung/biogeochemie/biocan.html
Keywords (up to 10, describing the project research)	Arabian Sea, nitrogen cycle, oxygen minimum zone, paleoceanography
New initiative or continuing programme?	New Initiative

2. APPLICANTS

Lead applicant / Project Leader / key research contact person:

First name	Birgit
Last name	Gaye
Affiliation	Institute for Geology, University of Hamburg
Postal address	Bundesstraße 55, D-20146 Hamburg
Country	Germany
Telephone	+49 40 42838 7088
Email address	Birgit.gaye@uni-hamburg.de
Institutional or personal website	https://www.geo.uni-hamburg.de/geologie/personen/gaye-birgit.html

Other key participants / research team leaders: (repeat as needed)

First name	Samina
Last name	Kidwai
Role in the project	Co-Project leader
Affiliation	Director General National Institute of Oceanography, Karachi
Country	Pakistan
Email address	niopk.gov.pk@gmail.com
Institutional or personal website	https://niopk.gov.pk/

N.B.: Please note that all these names and contact details will be added to the IIOE-2 membership database.

3. ABSTRACT– Brief description of the project: (1/4 page maximum)

This will be placed on the IIOE-2 Website after endorsement.

On the research cruise of R/V SONNE 303 to the Arabian Sea, the strength of the oxygen minimum zone and nitrogen cycling processes will be investigated on different time scales. The stable nitrogen isotope ratios in water and suspended matter samples along with incubation experiments will be used to quantify nitrogen cycling processes. Comparison with archived data will allow to detect recent trends within the oxygen minimum zone. The

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variability of the oxygen minimum zone and nitrogen cycling in the recent geological history will be reconstructed based on sediment cores.

The aim is to understand the impact of climate change and the anthropogenic disturbances on biogeochemistry and ecosystems and to improve the representation of the region in earth system models and thereby climate predictions in the monsoon region.

The work is related to the cruise R/V SONNE 305 BIOCAN-IIOE2 to the Bay of Bengal led by Hermann Bange (Geomar).

4. LINKS TO IIOE-2 SCIENCE PLAN: (1/2 page maximum)

How do you anticipate your project to contribute to the IIOE-2 strategy and science delivery, with reference to which (either one or more) of the six IIOE-2 Science Plan themes that your project responds. Please state the specific issues and questions addressed by your project in the context of the IIOE-2 Science Plan themes and key issues.

The project will contribute to science themes 2 (monsoon variability and ecosystem response), 3 (Circulation, climate variability and change) and 6 (Unique geological, geophysical, biogeochemical and ecological features of the Indian Ocean). The project is based on a collaboration between the National Institute of Oceanography in Karachi and Institutions in Germany.

5. INTERNATIONAL COLLABORATION(S):

Is the project part of a related multi-national activity? **YES**

If No, would you welcome international collaboration in your project? **YES**

6. REGION(S) OF STUDY

Provide a description of 'where' the research is to be conducted (for field based activities) and/or the region or regions to which the research pertains (you are encouraged to consider providing either the coordinates of the area of studies or the coordinates of the planned cruise tracks, as well as a figure as an addendum to your proposal).

Arabian Sea and Pakistan margin

6. TIMETABLE OF THE PROJECT

Start date: 15.09. 2023

End date:28.02.2026

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7. LINKAGES WITH OTHER PROJECTS / PROGRAMMES / INITIATIVES

Is the project part of a related national or multi-national activity?

If yes, provide the related activity title and website for reference, if available:

Research cruises with the research vessel RV SONNE: <https://www.lfd.uni-hamburg.de/en/sonne.html>

Is your project part of, or affiliated to, another SCOR, IOC or IOGOOS activity or project?

If “yes”, please indicate which activity or project:

SIBER

8. DATA MANAGEMENT AND SHARING

1. Will new data be collected as part of this project (yes or no?)

Yes. All data will be published on PANGAEA.

2. Contact information if any, of the person in charge of the data management from whom the metadata can be accessed by interested IIOE-2 stakeholders. C

Please note that for all IIOE-2-endorsed projects, IIOE-2 will have developed its own metadata portal. Once the project is endorsed, the project leader will be asked to provide the metadata information of the project.

3. Recognizing the need for an initial period of exclusive data use, would you be willing to provide timely access to all data generated under this project and associated metadata in accordance with relevant national and funding agency data sharing policies? **YES/NO**

9. FUNDING

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Perth Australia Node
IOC Perth Programme Office
c/o Commonwealth Bureau of Meteorology
3rd Floor, 1 Ord Street
West Perth, Western Australia, 6005, Australia.
Phone: +61-8-92262899
Email: iioe-2@bom.gov.au

<https://iioe-2.incois.gov.in/>

Hyderabad India Node
Indian National Centre for Ocean Information Services
(INCOIS)
Pragathi Nagar
Hyderabad, Telangana 500 090, India.
Phone: +91-40-2388 6142
Email: iioe-2@incois.gov.in

Please note that IIOE-2 strongly encourages funded/resourced projects. However, IIOE-2 may endorse projects yet to receive funding/resourcing if IIOE-2 endorsement can be clearly shown to significantly aid in prospects for funding/resourcing.

Has funding and resources to successfully achieve and undertake the project been obtained? Indicate the sources of funding and resources that have been approached and/or secured.

Funded by BMBF (Federal Ministry of Education and Research, Germany)

10. BENEFITS FROM IIOE-2 ENDORSEMENT (1/4 page maximum)

Specify why you are seeking endorsement and how the activity would benefit from endorsement, and how the IIOE-2 SC could assist in the implementation of your project.

International outreach and visibility.

11. OPTIONAL: OTHER COMMENTS/INFORMATION/MATERIAL (length and detail may be at the discretion of and as deemed necessary by the applicant)

Please feel free to provide any other comments, information or materials that you feel relevant to your proposal for the IIOE-2 Steering Committee's information and benefit. You may provide this as general information or provide the additional comments/information/materials as relevant to any of the specific Sections above.

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2nd International
Indian Ocean
Expedition
2015-2020



Bingil Gaye

(Signature of the PI)

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