Ganga Delta – Bay of Bengal Interactions Sandpit Event

Call for Participants Expressions of Interest to attend Sandpit Event
11 – 13 September 2018, Kolkata, India

The deadline for applications is 16:00 (BST) 22 May 2018.
Invited participants will be notified in the week commencing 4 June 2018.

1. Summary

The Natural Environment Research Council (NERC) invite Expressions of Interest for UK participates to the Ganga Delta - Bay of Bengal Interactions three-day Sandpit Event on 11 – 13 September 2018.

The Ganga Delta – Bay of Bengal Programme is funded by NERC and India's Ministry of Earth Sciences (MoES), with support from the Newton-Bhabha Fund. The sandpit event will facilitate the formation of teams and the development of outline proposals that will be developed into full proposals for submission to the joint UK-India 'Ganga Delta – Bay of Bengal Interactions' research programme call. NERC and MoES will jointly fund successful proposals developed through the sandpit. As the Newton-Bhabha Fund forms part of the UK's Official Development Assistance (ODA) commitment the programme will focus research that will promote long-term sustainable growth and is administered with the promotion of the economic development and welfare of India as its main objective

This document explains the submission process for Expressions of Interest from UK-based researchers. MoES will lead on the process for Indian-based researchers' attendance at the sandpit.

The aims of the sandpit will be:

1. To build UK-Indian research collaborations to support the sustainable development of India's marine and coastal environments.

2. Develop joint UK-Indian outline research proposals that will contribute to an improved understanding of how the Ganga Delta and Bay of Bengal are being impacted by climate change and human activity and how the risks to the ecosystem services they provide can be mitigated.

Applications from deltaic, coastal and marine researchers with expertise in relevant disciplines, including ecosystem services, biogeochemical cycles, ecology, sedimentology, pollution, hydrological processes, sea-level rise and coastal processes. It is anticipated that approximately 20 UK researchers will be invited to attend the Sandpit Event. NERC will ensure a balance of different disciplines/expertise and the number of attendees from the same institution.

In order to participate, applicants must be available for the whole of the three-day Sandpit Event on the 11 – 13 September 2018 (one day either side will be needed for travel and might include travel at the weekend). They must also be able to obtain a visa and travel to India.

2. Scientific Scope

The Ganga-Brahmaputra deltaic system (abbreviated here to Ganga Delta for ease of reference) is the world's largest delta and discharges into the Bay of Bengal, the world's largest bay, creating a unique and complex range of habitats that includes fertile coastal plains, the Sundarbans, and biologically diverse estuaries and coastal seas. These environments provide essential ecosystem services; for example beaches and mangroves protect towns and cities from storms and coastal fisheries are an important food source. These ecosystem services are under threat as climate change, sea-level rise, land-use change and urbanisation are resulting in higher pollution levels, increased coastal erosion, habitat loss, salinization of aquifers and reduced oxygen levels in the water.

The aim of this proposed programme is to understand the interactions and interdependencies between the Ganga Delta and the Bay of Bengal and investigate how these are changing as a result of climate change and human activity. This new knowledge will be used to determine the risks to ecosystem services and explore how these can be mitigated to support the sustainable development of marine, deltaic and coastal ecosystem services and the delivery of the Oceans Global Goal targets on preventing and reducing marine pollution and managing and protecting marine and coastal ecosystems. The primary goal of the programme will be to support research that will enable the long-term sustainable growth of India's coastal regions, but the programme will also facilitate the development of both the UK and Indian research communities in the increasingly important area of marine and coastal ecosystem services, strengthening the international standing of both countries in this field.

Research challenges that could be addressed under the programme include:

- Determining how changes in climate, water management practices, land-use change, and urbanisation in the Indo-Gangetic Plain are affecting the Bay of Bengal, for example:
    - How sedimentation rates are changing and this impact on coastal and deltaic environments; and
    - How the type and quantity of pollutants discharged into the Bay is changing and the effect this has on biogeochemistry.

- Determining how changes in the Bay of Bengal, for example due to sea-level rise, will affect the Ganga delta and neighbouring coastal environments, for example:
    - How erosion rates are changing and the contribution of different variables (e.g. sea-level rise, development of coastal regions, etc.) to the rate of change; and
    - The impact of climate change on deltaic environments, including farmland and mangroves.

- Understanding how these interactions will impact on key marine and coastal ecosystem services, including fisheries, biodiversity and protection from natural hazards, for example:
    - Exploring how coastal flooding is affected by the combined impacts of sea-level rise, increased development of coastal regions and habitat loss;
    - Determining how fish stocks are being effecting by changes in the biogeochemistry, temperature and oxygen levels of the water, including identifying thresholds and tipping points; and
    - Exploring the impact climate change, sea level rise and habitat loss on surface water and groundwater resources in the Ganga Delta

- Exploring how to mitigate the risks to deltaic, marine and coastal ecosystem services in the Ganga Delta – Bay of Bengal region

The programme focus primarily will be based in Indian waters and the parts of the Ganga Delta that are in India. It is envisaged that the projects would encompass fieldwork, modelling and process studies. The programme would utilise existing observing networks in the Ganga Basin and Bay of Bengal and MoES' research ships. It is anticipated that the autonomous vehicles and novel autonomous sensors being developed by both India and the UK will be deployed as part of the programme to enhance the spatial and temporal observations of key physical, biogeochemical and biological parameters, such as salinity, nitrate, and oxygen.

To enable the programme to achieve its goal of supporting the sustainable development of marine and coastal environments user engagement will be a key element of the programme. Project teams will be expected to engage with users in government, business and local communities throughout the projects, including at the design stage (following the sandpit event) to ensure both that the projects are addressing their requirements and that the outputs of the projects are accessible to them. Project teams will also be required to demonstrate that their projects meet the requirements for ODA funding.

3. Funding – Newton Bhabha Fund

NERC has secured funding of £4.8m for the UK contribution to the Ganga Delta – Bay of Bengal Interactions programme from the Newton-Bhabha Fund. MoES will provide matched funding in terms of research effort. In order to align with the Newton-Bhabha funding timescale projects will start in January 2019 and be up to three years' duration.

The Newton Fund is an initiative intended to strengthen research and innovation partnerships between the UK and emerging knowledge economies. The Fund forms part of the UK's Official Development Assistance (ODA) commitment, which is monitored by the Organisation for Economic Cooperation and Development (OECD) and is managed by the Department for Business, Energy and Industrial Strategy (BEIS).

For India, Newton Fund activities are delivered through the Newton-Bhabha programme, which the UK and Indian governments launched in November 2014. The Newton-Bhabha Fund is now the major bilateral initiative for facilitating research and innovation collaborations between the UK and India. Under this partnership, the UK will contribute up to £104 million to Newton-Bhabha up to 2021, which is match-funded by India, to address key global challenges.

ODA funded activity focuses on outcomes that promote *long-term sustainable growth* and is administered with the promotion of the economic development and welfare of the partner country as its main objective. All funded projects will have to demonstrate that they comply with the requirements for ODA funding

The UK and India have established strong research collaborations, including three existing NERC-MoES co-funded programmes: the Changing Water Cycle, Drivers of Variability in the South Asian Monsoon, and the Newton-Bhabha activity on Sustainable Water Resources. NERC, EPSRC and India's Department of Science & Technology are also supporting the India-UK Water Quality Programme through the Newton-Bhabha Fund. This new programme

of activity provides an opportunity to further develop this successful partnership and lay the foundations for future joint activities.

4. Sandpit Event

The Ganga Delta - Bay of Bengal Interactions Sandpit Event will be an intensive workshop that will bring together approximately 40 academics from across the UK and India to facilitate the development of interdisciplinary research proposals, which will address challenges related to the Ganga Delta – Bay of Bengal Interactions'.

RCUK India has facilitated the development of this collaboration and will be assisting in the running of the workshop.

The Sandpit Event will run over 3 days. At the outset, the participants will work collaboratively to identify and define the scope of the challenges relating to the Ganga Delta – Bay of Bengal interactions.

As the sandpit progresses, participants will work together to determine how best to address the goals of the Ganga Delta – Bay of Bengal Interactions programme and develop these innovative ideas and activities into outline research proposals. The outline proposals generated at the Sandpit Event will undergo assessment immediately following the event. Successful outline proposals will be invited to submit full proposals to NERC via the Research Councils' Joint Electronic Submission system (Je-S). An independent, interdisciplinary UK-India Assessment Panel will assess all full proposals and provide NERC and MoES with funding recommendations.

The Principal Investigators of proposals will be researchers participating in the workshop. It is expected that researchers not in attendance at the workshop will be named as Co-Is and Researcher Co-Is on the full proposals where their expertise is needed to deliver the project.

4.1 How will the sandpit work?

A sandpit is an intensive, interactive workshop designed to produce highly innovative research proposals. The nature of the sandpit requires the participants to allow an open exchange of ideas, some being in the very early stages of development. The aim of the sandpit is not to discuss ideas that are already well developed but not published, rather the goal is to bring individuals together to interact and engage, to learn from one another, and create an integrated vision for future research projects. While the sharing of these ideas is strongly encouraged within the sandpit, participants are asked to respect confidentiality outside of the sandpit.

A Director or Directors (depending on participant conflicts of interest) will have the role of assisting in defining the topics and will lead the sandpit and aid facilitated discussions at the event. A small number of mentors will join the director/s. NERC and MoES will select the Mentors for their intellectual standing, impartiality, objectivity, and their broad understanding of, and enthusiasm for, the subject area. The Director/s and Mentors will take full part in the sandpit, but will not be eligible to receive research funding under this programme. They will therefore act as impartial peer reviewers in the outline process and may become members of the Assessment Panel at the full proposal stage.

4.2 Who should apply to participate?

Having the right mix of participants influences the success or failure of such an event. Contributions to the challenges could be made by researchers working in a variety of disciplines or research areas. This could include researchers working in a broad range of fields including, biogeochemistry, sea-level rise, pollution, ecosystem services,

sedimentology, hydrogeology, ecology and other related disciplines in deltaic, coastal and marine environments. Potential participants are invited to indicate how their expertise can address the challenges of the Ganga Delta – Bay of Bengal interactions programme.

Applicants will need to demonstrate an enthusiasm for cross-disciplinary research, as the future of this research area will require input from many disciplines. Working internationally in partnership is key to addressing the challenges and experience of international collaborations, ideally with India or other middle and low-income countries, is beneficial.

The ability and willingness to develop and pursue a new ideas and approaches is essential. Expertise is required from a broad range of disciplines: the sandpit approach is about bringing people together who would not normally interact. This is an opportunity to share ideas and develop future collaborations.

5. Eligibility

Expressions of Interest are invited from individual researchers who can contribute to the sandpit and the resulting research projects. Applications are welcome from participants at any stage of their research career, **provided they meet the NERC eligibility criteria to lead an application for funding from NERC**. Normal individual eligibility applies and is detailed in Section C of the NERC research grant and fellowships handbook. NERC research grants may be held at approved UK Higher Education Institutions (HEIs) approved Research Council Institutes (RCIs) and approved Independent Research Organisations (IROs). The Research Councils have agreed that to help remove potential barriers to interdisciplinary research, all RCIs are eligible for grant funding from all Research Councils. Full details of approved RCIs and IROs can be found on the RCUK website.

MoES will lead on the process for Indian-based researchers' attendance at the sandpit.

6. Location and date

This sandpit will be held over three days in Kolkata, India on 11 – 13 September 2018.

Submission of an application will be taken as confirmation that the applicant is available to attend on the specified dates, and will make a commitment to attend if selected.

Additional details on the agenda, location, venue, visa, travel and the accommodation arrangements will be provided to those invited to participate. It should be noted that all travel to the sandpit, visa costs, overseas accommodation, refreshments, breakfast, lunch and dinner costs will be paid by NERC and RCUK India. All other incidental costs incurred whilst at the event must be covered by the participant.

7. How to apply

Applicants should complete an online Expression of Interest form. The deadline for applications is **16:00 BST on 22 May 2018.**

In order to participate, applicants must be available for the whole of the three-day Sandpit Event on 11 – 13 September (one day either side will be needed for travel and

might include travel at the weekend). They must also be able to obtain a visa and travel to India.

Expressions of Interest received after the deadline for applications will not be considered.

Applicants will be notified of the outcome of their application to attend the sandpit event in the week commencing 4 June 2018.

Only the information provided on the Expression of Interest form will be used to assess your application, any additional information provided will not be considered.

If successful, information provided in the background and expertise section of the Expression of Interest form will be made available to everyone invited to attend the sandpit to facilitate networking and collaboration at the event.

8. Assessment Criteria: Expression of Interest

Expressions of Interest to attend the sandpit will be considered by NERC. NERC will share the details of the successful applicants with MoES to ensure a balance of expertise at the workshop.

The assessment will be based on:

- Strength of research expertise relevant to the Ganga Delta – Bay of Bengal Interactions programme;
- The ability to develop new and highly original research ideas;
- The potential to contribute to cross-disciplinary research;
- The ability to work successfully contribute to international collaborations; and
- The ability to explain research to non-experts.

Please note that the total number of participants from the UK is limited and the selection panel **will ensure a balance of different disciplines/expertise and the number of attendees from the same institution**. It is expected that approximately 20 UK participants will be invited.

Please ensure you fully complete all sections of the Expression of Interest form, as this is the only information on which potential sandpit attendees will be selected. It is therefore important that you give evidence of the expertise that you will bring in your application. Please note that NERC will not be able to give individual feedback to unsuccessful applicants.

9. Submission of full proposals

Attendance at the sandpit does not guarantee funding. Immediately after the sandpit has ended, a number of the outline applications developed during the sandpit will be shortlisted. Shortlisted applicants will then be invited to submit full proposals. Further guidance on the process for submitting full proposals will be provided at the sandpit.

The following is a summary:

- All full proposals will have both a UK and an Indian principal investigator (PI), as well as co-investigators from both countries as appropriate to the research proposed.
- Proposals will include novel, multidisciplinary research to be undertaken jointly by UK-India research teams
- Only attendees present at the Ganga Delta – Bay of Bengal interactions Sandpit Event will be eligible to be a PI on full proposals.

- Additional Co-Is, including researchers not present at the workshop, will be added at the full bid stage to ensure that the project teams have the resources and expertise needed to successfully deliver the research.
- As the initiative is supported by the Newton-Bhabha Fund, proposals will need to comply with ODA funding requirements and timescales.

Participants involved in the projects developed during the sandpit will be tasked with writing full proposals covering their intended activities as identified at the sandpit. The deadline for submission of proposals generated at the sandpit will be in the week commencing 5 November 2018. Applicants to the sandpit should therefore plan in the possibility of time needed to work on full proposals following the event. The UK PI will be responsible for submitting the joint UK-Indian full proposal through the UK Research Councils' Joint Electronic Submission system (Je-S).

10. Timetable

Activity	Date
Expression of Interest for sandpit published	w/c 9 April 2018
Expression of Interest for UK applicants closes	22 May 2018
Notify applicants outcome from selection panel	w/c 4 June 2018
Full proposal AO published	11 September 2018
Sandpit Event	11 – 13 September 2018
Full proposal submission via Je-S	w/c 5 November 2018
Assessment Panel	December 2018
Projects start	1 April 2019

11. Further information

For any enquiries from UK researchers regarding eligibility, scientific remit, the sandpit event, or the application process please contact:

- Nicky Lewis
- Email: GangaBoB@nerc.ac.uk
- Tel: 01793 411739