



IODP Proposal Nurturing Workshop - SPADE (Scientific Proposals for Andamans Drilling Endeavour)

Goa, India, 17-18 September 2018

1. Background

The International Ocean Discovery Program (IODP) is an international marine research collaboration that explores Earth's history and dynamics using ocean-going research platforms to recover data recorded in seafloor sediments and rocks and to monitor subseafloor environments. In 2011, an Indian Ocean IODP Workshop was hosted in Goa by The National Centre for Antarctic and Ocean Research (NCAOR) in association with IODP, aimed to build new drilling proposals. With six successful completions of IODP expeditions in Indian Ocean during 2015-2017, we feel it is time to nurture new scientific drilling proposals from Indian Ocean sector with special emphasis to the Andamans and surrounding seas.

Initial discussions were held through a joint workshop organized by ANZIC, IODP-India and other agencies on prospective scientific drilling proposals in Indian, Southern ocean and Antarctic Shelf region at Sydney, 2017. Successful drilling in the Sumatra Seismogenic Zone (IODP-362) in 2016 investigated the role of input sediments driving shallow seismogenic slip leading to mega thrusts led to scientific interests in the Andaman sector of the Andaman-Sumatra subduction zone. Considering the huge research interests among Indian as well as international geoscientists in the Indian Ocean sector, an international workshop prior to the IODP Forum meeting is planned to during. Such an opportunity would provide an ideal forum for in-depth discussions on the scientific issues related to this region. In addition, such a platform could cater to highlight the Indian geo-scientific contributions towards a better understanding of the Indian Ocean sector.

The goal of this workshop is to trigger development of new IODP proposals for Indian Ocean sector. The workshop will be an opportunity to entrain a new generation of young scientists to work collaboratively to plan a new phase of ocean drilling.

2. Importance of ocean drilling in Andamans:

The Andaman-Sumatra Subduction Zone is a convergent plate boundary, formed by subduction of the Indo-Australian plate under the Burmese and Sunda plates. In this perspective, the northern sector of this subduction zone, i.e., the Andaman Subduction Zone, and the adjacent backarc basin, i.e., the Andaman Basin, were formed by subduction of the Indian plate under the Burmese plate. A detailed understanding of geological setting of these areas is important to decipher the plate tectonic evolution of the Andaman Basin and the subduction process at the Andaman Subduction Zone. The distribution of the earthquake epicentres in the Andaman Basin and the forearc regions show that the entire Andaman Subduction Zone is active with abundance of seismicity. Accumulations of volumes of sediment at the trenchward edge of subduction zones (accretionary prisms) are important structures that control processes on the shallow portion of the megathrust. Deep sea drilling in the proximity of forearc high would render enhanced information about the uplift history and thereby allowing us to explore its evolution through the sediment feeding mechanisms besides seismogenic overview of the underlying plate boundary. Back-thrust is a dominant

tectonic structure in the forearc region which controls the surface expression of displacement and ridge-like structures. The spatial and temporal relationship of the back-thrust with respect to subduction will relate to the understanding of slip behaviour. Therefore the tectonics of forearc structure in the subduction zone will provide constraints regarding Seismogenic behaviour in the subduction thrust faults.

3. Scope of drilling:

Understanding the slip behaviour and associated earthquakes as well as creation of new oceanic crust through the back arc opening is a high priority challenge for IODP with important societal impacts. It investigates spatial and temporal aspects of physical, hydrological, and chemical properties of the fault zone to elucidate key factors that can control large (and small) slip on the mega-thrusts. These results may be used to explain the past tsunamigenic events along the Andaman sector and surrounding regions. The goal of this workshop is to review results of the recent scientific drilling expeditions in the region; to propose possible paths for an integrated understanding of the role and response of climate in regulating morphology, tectonics, sedimentation, and biogeochemistry. This will lead to building broad scientific teams and cooperative partners for the future. The workshop would provide stimulus for multi-lateral geo-scientific interactions among scientists in the region. It will enable us to discover new frontiers and build on future programs. The workshop would provide an opportunity to develop highly focussed proposals for ocean drilling.

Abstract Submission date: 31st July 2018 (through email to iodp.india@ncaor.gov.in)

4. Location and timing of workshop – NCAOR, Goa during 17th to 18th September, 2018

a) Travel access:

Goa is well connected by air, rail and bus. Distance to proposed venue (NCAOR) from Airport is around 10 km; and distance from main Railway Station (Madgaon) is around 30 km. Pick up from the Goa (Dabolim) Airport and dropping shall be arranged by the Hotel (free of cost). Goa (Dabolim) is a relatively small airport and has a single arrival gate. It will be coordinated as per your itinerary. In case of any difficulties, pre-paid taxis are available at the arrival.

b) Accommodation options:

Expecting around 70 scientists (40 from India, 30 international) to participate in the workshop, a combination of standard/deluxe/suites at hotels and guest houses will be made. There are several budget hotels available within periphery of NCAOR. Accommodation tariffs would range from USD 200 (5 star) to USD 70 (3 star) per day. Local transport will be arranged for the participants. Refreshments, including tea/coffee, snacks, and buffet lunches would be arranged during the meetings. There are plenty of restaurants in the surroundings that provide excellent Goan/ Indian/ International cuisines. A formal dinner shall be arranged during one of the meeting days. Possible list of hotels include:

1. <http://www.bogmallobeachresort.com/>
2. <http://www.majordabeachresort.com>
3. <http://www.cidadedegoa.com>
4. <http://thequeenly.com/>
5. <http://thehq.in/>
6. <http://hotellapazgardens.com/>

7. <http://www.thefloragrاند.com/>
8. <https://www.hyatt.com/en-US/hotel/india/park-hyatt-goa-resort-and-spa/goarg>

We advise you to please copy IODP-India (iodp.india@ncaor.gov.in) in your booking requests to the Hotel for Logistics reasons. Hotel Bookings can be done either directly (credit card etc) or through us (no pre-payment) before 10th August 2018.

c) Opportunities for field trips and 'places of interest'

Depending upon the fair weather forecast and interest, local field trip may be arranged after the workshop to the nearby Deccan exposures.

5. Map of Goa:



Goa

**Location &
Route Map**

**IODP-India Workshop
and Forum Meeting**

**NCAOR, Goa
17-22 Sept '18**

