

MagellanPlus Workshop Reports

:: Records of Geohazards and Monsoonal Changes in the Northern Bay of Bengal - Preparation of an IODP Drilling Proposal - October 8-10, 2012, Bremen, Germany Convenors: Volkhard Spiess, Hermann Kudrass and Tilmann Schwenck (MARUM, University of Bremen)

The first meeting of the new MagellanPlus Workshop Series Programme was held at MARUM Research Center on Marine Environmental Sciences from October 8 to 10. The meeting brought together 22 specialists from Bangladesh, China, Denmark, France, Germany, Spain, Switzerland, UK and United States (*below*) to discuss and prepare an ambitious drilling project in the Bay of Bengal of the Indian Ocean.

The Indian Ocean monsoon system dominates the climate and seasonality of Southeast Asia, and will become a major target for IODP drilling initiatives in upcoming years. The central Bay of Bengal and the Indian continent and Andaman Island margins are highly ranked drilling areas, but for the understanding of the monsoon system more drilling initiatives are required in focus regions. While active drilling proposals exist in the Japan Sea or in the northern Arabian Sea, which is currently not accessible, the Bay of Bengal remains a key region to access sediments and signals from the Himalayas and the Tibetan Plateau. Research during the last two decades has provided sufficient evidence and data to fully support a new drilling proposal and fill a crucial gap in the IODP drilling strategy for the monsoon system. The initiative was strongly supported by an IODP workshop in Goa in October 2011,

where strategic ideas for Indian Ocean drilling were discussed.

The Southeast Asian monsoon governs the seasonal heat and humidity transfer from sea to land, and precipitation drives huge sediment loads into the Bay of Bengal by the Ganges and Brahmaputra rivers. The rapidly accumulating sediments on shelf, slope and in a shelf canyon contain a high-resolution record of Anthropocene, Holocene and late Pleistocene paleoclimatic changes and cyclonic episodes. The sediments have also recorded subsidence, sea-level changes and subduction-related earthquakes. The multidisciplinary workshop aimed to develop and optimise an IODP drilling proposal.

The 3-day workshop programme was organised in three parts to lead to a concept for a drilling proposal, and to establish a strong group of proponents with broad expertise, willing to write a full drilling proposal during the upcoming 6 months.

The workshop started with overview presentations on four main themes: exhumation and Asian monsoon, erosion and river sediments, structural growth and earthquakes, and delta processes and source-to-sink aspects, followed by an introduction into the regional seismic database and sedimentation processes on delta, shelf, a major shelf canyon and the continental

slope. Each participant presented general and specific ideas, which could be realised as part of a drilling project.

After mutual information, work concentrated in the second part on developing scientific objectives and testable hypotheses in break-out groups on four themes: monsoon signals/paleoceanography, delta development/tectonics, canyon evolution/sea level and terrestrial processes/signals. The more practically oriented third part of the meeting promoted break-out group discussions on drilling strategies, proxies and the selection of potential drillsites.

In the course of the workshop and during longer breaks and joint evening activities, we developed the general view that a lot of mature ideas and approaches were put on the table that could be incorporated into a drilling proposal, which we intend to prepare before the drillship is going to the Indian Ocean. We decided to use the window of opportunity supposedly coming up after 2014 to drill in this important oceanic basin, which was for a long time under-represented in drilling activities.

<http://www.essac.ecord.org/index.php?mod=workshop&page=call-workshop>

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