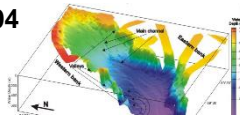
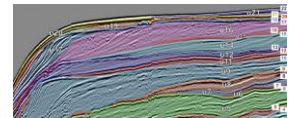


FS Sonne Reise **SO304**
 Bengal Schelf & Fan
 Colombo - Colombo



Wochenbericht Nr. 2
 26.2. - 3.3.2024

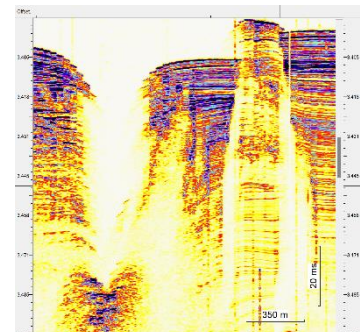


After the first two working days in the previous week, which we spent in the vicinity of the IODP Exp 354 drilling transect at 8°N, we used the transit from February 25 northwards towards Bangladesh to follow the 'active' channel connecting the northern fan with the drilling transect, surveying at a speed of 10 knots with multibeam swathsounder and sediment echosounder. However, turbidite sediments had been missing in the south for the last ~5000 years, so we assumed that there must be a breakthrough typical for such sedimentary fans further to the North. And after a journey of 500 nautical miles, including sections with multi-channel seismics, we reached our first working area at 16°30' N. A little to the south of this we were actually able to identify the region where the formerly active channel had been cut off from the inflow of fresh sediment.

Due to the very good coverage with echo sounder data from previous expeditions with FS Sonne (SO93-2/3, SO125, SO126 and SO188-1), we were able to start the station work, which consisted of a total of 6 multicorer stations, immediately on February 29th after 4 days of steaming. The sampling of the channel floor and flanks was aimed at obtaining the freshest possible sediment material. The hope was to be able to track the export of microplastics into the deep sea. The multicorers all had a high yield, surprisingly also at the bottom of the channel, where, according to the textbook, one would expect to find mostly coarse-grained material. Instead, individual turbidite deposits and a large amount of coarse plant debris were identified.

The recovery is promising, but the detection of microplastics will have to wait until the return and careful laboratory tests. However, since we were able to detect turbidite ages of only a few hundred years in earlier core sampling, we expect recent input.

During the night of March 1, we extended the bathymetry and sediment structure survey net in order to take a sediment core in the morning, which was specifically intended to provide glacial sediment sequences that we have not yet obtained from this region. The second sediment core was taken at the bottom of the transport channel and had an astonishing length of 150 centimetres, but the third gravity corer elsewhere in the channel remained empty.



Active transport channel, on the flank and bottom of which we took soil samples.

This completed our work in the working area at 16°30'N on the evening of March 1, and a seismic profile was started to take us close to the EEZ of Bangladesh. Our main working area is actually on the shelf and in the 'Swatch of No Ground' canyon off Bangladesh, where we wanted to spend several weeks.

Unfortunately, however, there were already signs of difficulties with our notification for Bangladesh before and after our departure from Colombo, because first there was no response to our application from July, then there was a very misleading response and confusion with the subsequent trip SO305, also lacking diplomatic support to resolve this, and at the moment we are in a situation in which the present document does not allow any or only minimal work in Bangladesh.

Therefore, at the end of the seismic survey on March 3, we took two sediment cores for planned paleoceanographic work, which also revealed the Toba ash from a volcanic eruption 75,000 years ago. The cores are currently being described and measured, while we have been returning to the working area at 16°30'N with seismics since last night.

However, as soon as we receive positive news from Bangladesh, we will be on our way.

Volkhard Spieß & Tilmann Schwenk