**Continuation - Studied area**

The Nicobar Fan is genetically connected to the Bengal Fan forming the largest submarine fan in the world (CURRAY AND MOORE, 1974; CLIFT et al. 2008). The fan feeder system of Bengal and Nicobar fans record mainly the denudated material of the Himalayas Mountains that they are result of the India-Asia collision onset ~50 Ma (HINSBERGEN et al., 2012). The sediments transport occurred through the Ganges and Brahmaputra rivers, from northeastern India and the Central-Eastern Tibetan-Himalayan Orogen. The large contribution occurs since the hard continent-continent collision at begin of Miocene (HINSBERGERN et al., 2012) and supply the system with an enormous amount of clastic material (1\*109 t/yr.; MILLIMAN AND SYVITSKI, 1992).

In this study, we used material provided during the IODP-Expedition 362 - Sumatra Seismogenic Zone: Two sites drilled by the IODP-Expeditions record the pre-Nicobar Fan and the Nicobar Fan rocks. The pre-Nicobar rocks consist, from base to the top, of Late Cretaceous MORB basalts lava (67 Ma), pelagic sedimentation and Plume-related volcanic and intrusive alkaline rock. They record the drifting process of the Indian Ocean and plume-related Kergeulen hot spot during the Cretaceous through Paleocene (MCNEIL et al., 2017, GIRELLI et al., 2021b). Overlying units, represented by Nicobar Fan unconsolidated sediments and sedimentary rocks with intercalation of ash/tuff layers, is directed connected to Himalayas-Tibet orogenic system. The Facies Association (FA) here follows the description of PICKERING et al. 2019 who described eight facies associations for the Nicobar Submarine Fan sediments.

Based on drilling of two sites, U1480 and U1481 (MCNEIL et al., 2017) divided the Nicobar, from base to top, in Units IIIB, IIIA, IIC, IIB, IIA, I, which they are summarized in the Fig. 1.

The basal sedimentary package overlies in unconformity the Late Cretaceous to Paleocene pre-Fan volcano-sedimentary units and corresponds to the Unit IIIB containing chalk and tuffaceous mudstones siliciclastic sediments deposited between early Oligocene to early Miocene (MCNEIL et al., 2017, PICKERING et al., 2019).

The Unit IIIA (middle Miocene) comprises interlayered thin to medium bedded, gray-green or brown mudstone and siltstones deposited in low-concentration turbidity currents.

The Unit II is the thickest section of the Nicobar Fan, reaching up to 1250 m in the site U1480. The basal unit, the Unit IIC (Upper Miocene), overlies in conformity the Unit IIIA. It consists of siliciclastic sandstone/siltstone and mudstone interlayers with structureless muddy sandstones and subordinate hemipelagic sediments. They are interpreted as structureless mud hemipelagites (FA2) deposited in low-concentration turbidity currents, sediment gravity flows (SGF, FA3) and turbidity sediments (FA1a). Hemipelagites deposited in low turbidite currents occur a common facies association (FA4).

The Unit IIB deposited between Upper Miocene and early Pliocene contains alternating very thin- to thin-bedded siliciclastics sands and muds represented by muddy turbidites (FA2), SGF`s (FA3), and sandy turbidites (FA1A). Structureless muds (hemipelagites, FA4)) are also present in the unit IIB.

The upper unit, the Pliocene-Pleistocene Unit IIA, consists of alternating thin to medium bedded siliciclastics sands and muds represented by the turbidites of Facies Associations FA2-FA1a (FA4).

The upper most unit, 26-m thick Quaternary Unit I, comprises biogenic calcareous mud with ash beds and siliciclastic fine-grained sand and muds.





Figure 1 Simplified lithostratigraphic columns of cores at IODP-Expedition 362, sites U1480 and U1481, with the division between units, Facies Association (FA), age and composite recovery. Composite recovery represents the recovery of samples per lithological unit and describes an organization of the structure taken from the seabed. (after MCNEIL et al., 2017 in PICKERING et al., 2019).

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