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FACIES STUDY TO DETERMINE ENVIRONMENTAL DEPOSITION OF ANCIENT LIMBOTO LAKE: AS IDENTIFICATION OF CURRENT LIMBOTO LAKE SILTING PROBLEM AGAINST EXTINCTION

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Limboto Lake is located in Gorontalo Province, Indonesia included into low basin type or shallow lake. Existence of Limboto Lake starts from the Neogen extension exactly from slab rollback extension of the Banda Embayment in Early Miocene and rapid uplift and subsidence near Gorontalo Basin in Late Miocene. Various problems that occur in Lake Limboto, both silting and susceptibility to lake water flows allegedly related to tectonic activity that ever happened even today. This study reports new determination about ancient environment of Limboto Lake. The purpose of this research is to know the cause of high sedimentation in Limboto Lake based on environmental depositional interpretation of Ancient Limboto Lake which has the potential to cause the lake extinct. The environment identified in the Limboto Lake is marine deltaic facies and shallow marine carbonate facies (carbonate rimmed shelf). Several evidences have found by stratigraphical features such as: marine deltaic environment: lithologies-mainly sandstones (compositionally immature, commonly lithic) through muddy sandstones, sandy mudrocks to mudrocks; also the presence of lignite; texture: not diagnostic, average sorting and rounding sand grains; structure: cross lamination and wave lamination of various types in the sandstones, flat-bedding and channel common. Finer sediment show flasher and wavy bedding and are heterolithic. Some sediment contains rootlets; shallow-marine carbonate facies: lithologies-skeletal packstone wackestone and mudstone, texture-diverse, structure-cross lamination, parallel lamination, wave lamination, desiccation crack; reef limestone: massive and unbedded, bioturbation intense. Based on field data, sedimentation in Limboto Lake which led to the rapid rise of lake levels due is not compactly outcrop, so easily eroded with sediment composition dominated by clay and very fine to medium sand.

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