SARI

Sungai Cisaat yang terletak dalam situs Bumiayu – Tonjong, Brebes, Jawa Tengah termasuk ke dalam kawasan penemuan fosil vertebrata dan manusia purba yang terbesar di Pulau Jawa. Formasi-formasi pembawa fosil tersebut yaitu Formasi Kalibiuk, Kaliglagah, Mengger, dan Gintung berdasarkan penanggalan relatif memiliki rentang umur Pliosen Akhir – Pleistosen Tengah. Penelitian ini bertujuan untuk mengetahui karakteristik litofasies, elemen arsitektural, asosiasi fasies, dan interpretasi lingkungan pengendapan dan dinamika sedimentasi dari kawasan Bumiayu- Tonjong, khususnya pada formasi-formasi pembawa fosil.

Metode yang digunakan dalam penelitian ini adalah pembuatan kolom stratigrafi terukur dari pengukuran stratigrafi dan pengamatan singkapan di lapangan untuk mendeterminasi litofasies, serta analisis petrografi untuk mengetahui lebih lanjut tekstur, struktur, dan komposisi litologi yang diamati.

Penampang stratigrafi terukur lintasan Sungai Cisaat terbagi ke dalam 15 litofasies, yaitu konglomerat *clast-supported* masif (Gcm), konglomerat *matrix-supported* gradasi (Gmg), konglomerat silang siur planar (Gp), konglomerat silang siur *trough* (Gt), konglomerat stratifikasi horizontal (Gh), batupasir silang siur planar (Sp), batupasir silang siur *trough* (St), batupasir silang siur sudut rendah (Sl), batupasir gelembur riak (Sr), batupasir stratifikasi horizontal (Sh), batupasir masif (Sm), batupasir *scours* (Ss), batulempung-lanau-pasir laminasi (Fl), batulempung-lanau masif (Fm), dan batulempung-lanau karbonan (C). Asosiasi fasies yang teridentifikasi yaitu *sediment gravity flows* (SG), *sand bedforms* (SB), *gravel bars and bedforms* (GB), *crevasse splay deposits* (CS), *levee deposits* (LV), *overbank fines* (FF), dan *cone apron* (CA). Berdasarkan asosiasi fasies tersebut, terdapat 4 fasies pengendapan yang teridentifikasi, yaitu *river dominated delta front* (FP1), *meandering fluvial* (FP2), *volcanogenic sedimentary deposits* (FP3), dan *braided fluvial* (FP4). Dinamika sedimentasi daerah penelitian diawali dari pengendapan Formasi Kalibiuk pada lingkungan laut dangkal dan transisi secara progradasi. Kemudian lingkungan semakin mendangkal menuju darat tepatnya sistem fluvial *meandering* pada Formasi Kaliglagah. Setelahnya pada Formasi Mengger terjadi aktivitas vulkanik bersamaan dengan sedimentasi sistem fluvial yang sedang berlangsung. Kemudian pada Formasi Gintung pengaruh vulkanisme berhenti dan sedimentasi menjadi sistem fluvial *braided*.

Kata kunci: Sungai Cisaat, penampang stratigrafi terukur, litofasies, asosiasi fasies, fasies pengendapan, dinamika sedimentasi.

ABSTRACT

The Cisaat River, situated in the Bumiayu – Tonjong site, Brebes, Central Java, is one of the largest early vertebrate and human fossils excavation site on the Java Island. The fossil-bearing geological formations namely Kalibiuk, Kaliglagah, Mengger, and Gintung Formation, based on the relative dating method have an age range of Late Pliocene – Middle Pleistocene. This study aims to determine the characteristics of the lithofacies, architectural elements, facies associations, and interpretation of the depositional environment and sedimentation dynamics of the Bumiayu-Tonjong area, especially in the fossil-bearing formations.

The methods used in this research are the analysis of measured stratigraphic section from field observations of outcrops to determine lithofacies, and petrographic analysis to further determine the texture, structure, and composition of the observed lithology.

The measured stratigraphy section of the Cisaat River Channel is divided into 15 lithofacies: massive clast-supported conglomerate (Gcm), gradation matrix-supported conglomerate (Gmg), planar cross-bedded conglomerate (Gp), trough cross-bedded conglomerate (Gt), horizontally stratified conglomerate (Gt). Gh), planar cross-bedded sandstone (Sp), trough cross-bedded sandstone (St), low angle cross-bedded sandstone (Sl), ripple cross-laminated sandstone (Sr), horizontally stratified sandstone (Sh), massive sandstone (Sm), scours sandstone (Ss), laminated sandstone-siltstone-mudstone (Fl), massive mudstone-siltstone (Fm) and carbonaceous mudstone-siltstone (C). The facies association identified are sediment gravity flows (SG), sand bedforms (SB), gravel bars and bedforms (GB), crevasse splay deposits (CS), levee deposits (LV), overbank fines (FF) and cone apron (CA). Based on facies association, there are 4 depositional facies identified, namely the river dominated delta front (FP1), meandering fluvial (FP2), volcanogenic sedimentary deposits (FP3) and braided fluvial (FP4). The dynamics of sedimentation in the study area begins with the deposition of the Kalibiuk Formation in shallow marine environment and a progradational transition of river-dominated delta front. Then the environment is getting shallower towards the land, precisely the meandering fluvial system in the Kaliglagah Formation. After that, in the Mengger Formation, volcanic activity occurred along with sedimentation of the existing fluvial system. Then in the Gintung Formation the volcanic influence ceased and the sedimentation turned to braided fluvial system.

Keywords: *Cisaat river, measured stratigraphy section, lithofacies, facies association, depositional facies, dynamics of sedimentation.*