Dinamika Spasial dan Temporal Laju Migrasi Perubahan Alur Sungai Batanghari = Spatial and Temporal Dynamics of Migration Rate Changes in the Channel of the Batanghari River

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Abstrak

Pemahaman terhadap alur sungai dan dinamikanya sangat diperlukan sebagai salah satu agen perubahan bentang alam. Studi tentang migrasi alur sungai salah satunya dapat diterapkan pada jenis sungai yang berkelok-kelok (meander) seperti Sungai Batanghari. Saat ini, keseimbangan ekosistem Sungai Batanghari terganggu akibat aktivitas pertambangan dan perkebunan di sepanjang aliran sungai yang mengakibatkan perubahan pada beberapa alur sungai. Perubahan alur sungai dapat menyebabkan berbagai masalah sosial, ekonomi, dan lingkungan. Oleh karena itu, penelitian ini dilakukan dengan tujuan untuk menganalisis variasi spasial dan temporal dari laju migrasi perubahan alur Sungai Batanghari serta menganalisis kaitannya dengan faktor pendorong di wilayah hilir DAS Batanghari pada periode 1985 – 2020. Citra Landsat digunakan untuk menganalisis migrasi perubahan alur Sungai Batanghari wilayah hilir berdasarkan indikator migrasi garis sentral sungai (MGSS), migrasi garis tepi sungai (MGTS), dan sinuousity index. Hasil penelitian menyebutkan bahwa hampir seluruh indikator laju migrasi perubahan alur Sungai Batanghari cenderung terjadi peningkatan di sepanjang periode 1985-2020. MGSS mengalami penurunan pada periode 1985-2013 dan peningkatan pada periode 2013-2020. MGTS menunjukkan terjadi peningkatan tren dimana laju erosi lateral tahunan (LELT) dan total luas erosi lateral (TLEL) juga meningkat. Hal sebaliknya terjadi dimana adanya penurunan tren pada laju pengendapan lateral tahunan (LPLT) dan total luas pengendapan lateral (TLPL). Diketahui pula bahwa terdapat hubungan yang signifikan antara laju migrasi perubahan alur Sungai Batanghari dengan faktor pendorongnya yaitu debit sungai, vegetasi riparian, litologi, dan gradien sungai.

.....An understanding of river channels and their dynamics is needed as an agent of landscape change. One of the studies on river channel migration can be applied to meandering rivers such as the Batanghari River. Currently, the Batanghari River ecosystem is disrupted due to mining and plantation activities along the river basin, which have resulted in changes to several river channels. Changes in river flow can cause various social, economic, and environmental problems. Therefore, this study was conducted with the aim of analyzing the spatial and temporal variations of the migration rate of changes in the Batanghari River channel and analyzing its relation to driving factors in the downstream region of the Batanghari Watershed in the period 1985 – 2020. Landsat imagery was used to analyze the migration of changes in the downstream of Batanghari River channel based on indicators of centerline migration (MGSS), bankline migration (MGTS), and sinuousity index. The results of the study stated that almost all indicators of the migration rate of changes in the flow of the Batanghari River tended to increase throughout the 1985-2020 period. MGSS experienced a decrease in the 1985-2013 period and an increase in the 2013-2020 period. MGTS shows an increasing trend where the annual lateral erosion rate (LELT) and total lateral erosion area (TLEL) also increase. The opposite occurs where there is a decreasing trend in the annual lateral deposition rate (LPLT) and the total lateral deposition area (TLPL). It is also known that there is a significant relationship between the migration rate of changes in the Batanghari River channel and the driving factors, namely river

discharge, riparian vegetation, lithology, and river gradient.