Intisari

Dinamika Luas Badan Air Rawa Pening Kabupaten Semarang untuk Perikanan Menggunakan Citra Sentinel-2 Periode 2017–2024

Rawa Pening merupakan danau alami di Kabupaten Semarang dan memiliki fungsi ekologi, sosial dan ekonomi bagi masyarakat sekitar. Variasi volume air Rawa Pening dipengaruhi curah hujan musiman dan anomali iklim El Niño-Southern Oscillation (ENSO) dan Indian Ocean Dipole (IOD) Penelitian ini bertujuan untuk mengetahui perubahan luas badan air Rawa Pening periode 2017-2024 dengan menganalisis data Sentinel-2, curah hujan, batimetri, dan wawancara. Hasil penelitian menunjukkan El Niño dan IOD yang terjadi tahun 2019 dan 2023 menyebabkan penurunan curah hujan dan luas badan air Rawa Pening. Sedangkan La Niña dan IOD negatif tahun 2020-2022 menyebabkan peningkatan intensitas curah hujan dan luas badan air. Perbedaan batimetri di Rawa Pening diduga disebabkan pendangkalan dan pengerukan akibat akumulasi eceng gondok mati di dasar perairan dan. Penelitian ini menunjukkan pentingnya memantau sumber daya air Rawa Pening secara rutin, agar kesehetan ekosistem akuatik Rawa Pening tetap terjaga.

KATA KUNCI: badan air, ENSO, IOD, Rawa Pening, Sentinel-2

Abstract

Dynamics of the Water Body Area of Rawa Pening Semarang Regency for Fishery Using Sentinel-2 Imagery (2017-2024)

Rawa Pening is a natural lake located in Semarang Regency, serving ecological, social, and economic functions for the local community. The water volume variation in Rawa Pening is affected by seasonal rainfall and climate anomalies, like the El Niño-Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD). This research aims to determine the alterations in the Rawa Pening area from 2017 to 2024 through the analysis of Sentinel-2 data, rainfall patterns, bathymetric measurements, and interview result. The research findings indicate that the positive El Niño and IOD events in 2019 and 2023 led to a reduction in rainfall and the extent of Rawa Pening. During the 2020-2022 period, negative La Niña and IOD events resulted in increased rainfall and an expansion of the water body area. The variation in bathymetry in Rawa Pening is attributed to sedimentation and dredging resulting from the accumulation of decomposed Pontederia aquatic plant at the bottom of the water body. This study emphasizes the necessity of regular monitoring of Rawa Pening's water resources to preserve the health of its aquatic ecosystem.

KEYWORDS: ENSO, IOD, Rawa Pening, Sentinel-2, water body