ANALISIS PERUBAHAN GARIS PANTAI TERHADAP SEKTOR EKONOMI DI SEPANJANG PANTAI KULONPROGO DIY TAHUN 2018, 2020, 2022 DAN 2024

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INTISARI

Wilayah pesisir Kabupaten Kulonprogo, Daerah Istimewa Yogyakarta, merupakan kawasan yang rentan terhadap abrasi akibat gelombang tinggi Samudra Hindia. Perubahan garis pantai yang terus berlangsung berdampak pada kerusakan lahan, penurunan produktivitas, serta pergeseran mata pencaharian masyarakat pesisir. Penelitian ini bertujuan untuk menganalisis dinamika perubahan garis pantai di pesisir Kulonprogo dalam rentang tahun 2018 hingga 2024 serta menilai dampaknya terhadap sektor ekonomi masyarakat setempat.

Metode penelitian menggunakan citra satelit Sentinel-2A tahun 2018, 2020, 2022, dan 2024 yang diambil pada bulan Maret saat kondisi pasang maksimum. Garis pantai hasil digitasi dianalisis dengan perangkat lunak Digital Shoreline Analysis System (DSAS) menggunakan parameter Net Shoreline Movement (NSM), End Point Rate (EPR), dan Shoreline Change Envelope (SCE). Selain itu, dilakukan pengumpulan data lapangan melalui survei dan wawancara untuk mengetahui kondisi sosial ekonomi masyarakat pesisir yang terdampak.

Hasil penelitian menunjukkan bahwa beberapa segmen pantai, khususnya di Pantai Trisik, mengalami abrasi signifikan dengan kemunduran garis pantai hingga puluhan meter setiap periode dua tahunan. Abrasi ini menyebabkan berkurangnya lahan tambak, penurunan produktivitas pertanian akibat intrusi air laut, serta hilangnya aset ekonomi masyarakat. Kondisi tersebut mendorong perubahan mata pencaharian dari sektor perikanan tambak ke pertanian lahan kering, meskipun produktivitasnya relatif rendah. Analisis kerentanan ekonomi menunjukkan bahwa sebagian wilayah pesisir Kulonprogo memiliki tingkat risiko sedang hingga tinggi terhadap keberlanjutan ekonomi.

Kata kunci: Perubahan garis pantai, Abrasi, DSAS, Ekonomi pesisir, Kulonprogo, Sentinel-2A

ANALYSIS OF COASTLINE CHANGES ON THE ECONOMIC SECTOR ALONG THE KULONPROGO COAST OF DIY IN 2018, 2020, 2022, AND 2024

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ABSTRAC

The coastal area of Kulonprogo Regency, Yogyakarta Special Region, is highly vulnerable to abrasion caused by strong waves from the Indian Ocean. Continuous shoreline changes have led to land degradation, reduced productivity, and shifts in the livelihoods of coastal communities. This study aims to analyze the dynamics of shoreline changes along the Kulonprogo coast from 2018 to 2024 and to assess their impact on the local economic sector.

The research utilized Sentinel-2A satellite imagery from 2018, 2020, 2022, and 2024, captured in March during the high-tide period. The extracted shorelines were analyzed using the Digital Shoreline Analysis System (DSAS) with the parameters Net Shoreline Movement (NSM), End Point Rate (EPR), and Shoreline Change Envelope (SCE). In addition, field surveys and interviews were conducted to collect socio-economic data from the affected coastal communities.

The results show that several coastal segments, particularly in Trisik Beach, experienced significant abrasion, with shoreline retreat reaching tens of meters in each two-year period. This abrasion has led to the loss of pond areas, decreased agricultural productivity due to seawater intrusion, and the destruction of local economic assets. These conditions have driven livelihood shifts from aquaculture to dryland farming, which generally provides lower productivity. The economic vulnerability analysis indicates that several areas along the Kulonprogo coast fall into the moderate to high-risk category concerning economic sustainability.

Keywords: Shoreline change, Abrasion, DSAS, Coastal economy, Kulonprogo, Sentinel-2A