

**MITIGASI PERUBAHAN GARIS PANTAI BERBASIS
INFRASTRUKTUR HIJAU PESISIR DALAM PERSPEKTIF
MASYARAKAT DI PESISIR UTARA PULAU RANGSANG, KABUPATEN
KEPULAUAN MERANTI**

INTISARI

Pulau-pulau kecil di Indonesia rentan terhadap perubahan garis pantai akibat aktivitas manusia dan faktor alam, termasuk pemanasan global. Pulau Rangsang mengalami perubahan garis pantai terus-menerus setiap tahunnya. Mitigasi penting dilakukan untuk mengurangi dampak perubahan ini. Studi ini bertujuan untuk mengidentifikasi dampak lingkungan dari perubahan garis pantai, mengidentifikasi upaya mitigasi masyarakat, dan menilai keselarasannya dengan prinsip infrastruktur hijau pesisir / *coastal green infrastructure* (CGI) di pesisir utara Pulau Rangsang. Metode deskriptif kualitatif digunakan untuk mengidentifikasi dampak lingkungan dan upaya mitigasi masyarakat, metode semantik diferensial digunakan mengevaluasi keselarasan dengan prinsip CGI. Penelitian ini diketahui dampak lingkungan dari perubahan garis pantai antara lain: hilangnya lahan perkebunan, pengikisan daratan, hilangnya vegetasi, rusaknya permukiman, erosi tanah, rusaknya infrastruktur, tantangan reboisasi, dan gelombang menghantam daratan. Mitigasi berbasis masyarakat antara lain: penanaman kembali mangrove, sosialisasi, ekowisata, kebijakan pelarangan pembangunan permukiman, penyusunan batu, menjaga mangrove, penyusunan kayu, pemecah gelombang, pembuatan tanggul, pintu air, kajian reboisasi, larangan penebangan hutan. Kemudian dikelompokkan menjadi lima kategori untuk dinilai kesesuaian mitigasi dengan konsep CGI, diketahui *Nature-based* sebagai strategi yang paling efektif, diikuti dengan *Enhanced soft engineering* dan *Engineered ecosystems* dan terakhir adalah *Enhanced hard infrastructure*. Studi ini menyoroti perlunya upaya mitigasi berkelanjutan dan pentingnya menyelaraskan upaya tersebut dengan kesiapan masyarakat dan prinsip-prinsip infrastruktur hijau.

Kata kunci: Mitigasi perubahan garis pantai, infrastruktur hijau pesisir, mitigasi berbasis masyarakat, kawasan pesisir, livelihood, strategi coping

***SHORELINE CHANGE MITIGATION BASED ON COASTAL GREEN
INFRASTRUCTURE: A COMMUNITY PERSPECTIVE IN THE
NORTHERN COAST OF RANGSANG ISLAND, MERANTI ISLANDS
REGENCY***

ABSTRACT

Small islands in Indonesia are highly vulnerable to shoreline changes caused by both human activities and natural factors, including global warming. Rangsang Island experiences continuous shoreline changes every year, making mitigation efforts crucial to reducing the impacts of these changes. This study aims to identify the environmental impacts of shoreline changes, examine community-led mitigation efforts, and assess their alignment with the principles of coastal green infrastructure (CGI) in the northern coastal area of Rangsang Island. A qualitative descriptive method was employed to identify environmental impacts and community mitigation efforts, while a semantic differential method was used to evaluate their alignment with CGI principles. The findings reveal that the environmental impacts of shoreline changes include the loss of agricultural land, land erosion, vegetation loss, damage to settlements, soil erosion, infrastructure degradation, challenges in mangrove reforestation, and direct wave impact on coastal areas. Community-based mitigation efforts include mangrove replanting, public awareness campaigns, ecotourism initiatives, restrictions on coastal settlement development, stone arrangements, mangrove conservation, wooden barriers, wave breakers, embankments, floodgates, reforestation studies, and deforestation restrictions. These mitigation measures were then classified into five categories to assess their alignment with CGI principles, revealing that nature-based strategies were the most effective, followed by enhanced soft engineering, engineered ecosystems, and, lastly, enhanced hard infrastructure. This study highlights the need for sustainable mitigation efforts and the importance of aligning these initiatives with community readiness and green infrastructure principles.

Keywords: *Shoreline change mitigation, coastal green infrastructure, community-based mitigation, coastal areas, livelihood, coping strategies.*