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**The impact of climate change on coastal erosion in Southeast Asia and the compelling need to establish robust adaptation strategies**

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**Abstract**
Climate change alters the climate condition and ocean environment, leading to accelerated coastal erosion and a shift in the coastline shape. From previous studies, Southeast Asia's coastal region is suffering from severe coastal erosion. It is most sensitive and vulnerable to climate change, has broad and densely populated coastlines, and is under ecological pressure. Efforts to systematically review these studies are still insufficient despite many studies on the climate change linked to coastal erosion, the correlation between coastal erosion and coastal communities, and the adaptative measures to address these issues and their effectiveness in Southeast Asia. Therefore, by analyzing the existing literature, the purpose of this review was to bridge the knowledge gap and identify the link between climate change and coastal erosion in Southeast Asia in terms of sea-level rise, storm surge, and monsoon patterns. The RepOrting standards for Systematic Evidence Syntheses (ROSES) guided the study protocol, including articles from the Scopus and Dimension databases. There were five main themes considered: 1) climate change impact, 2) contributing factors to coastal erosion, 3) coastal erosion impact on coastal communities, 4) adaptation measure and 5) effectiveness of adaptation measure using thematical analysis. Subsequently, nine sub-themes were produced from the themes. Generally, in Southeast Asia, coastal erosion was reflected by the rising sea level. Throughout reviewing past literature, an interesting result was explored. Storm surges also had the potential to affect coastal erosion due to alterations of the atmospheric system and seasonal monsoon as the result of climate change. Meanwhile, an assessment of current erosion control strategies in relation to the relative hydrodynamic trend was required to avoid the failure of defence structures and the resulting danger to coastal communities. Systematically reviewing the existing literature was critical, hence it could significantly contribute to the body of knowledge. It provides valuable information for interested parties, such as authorities, the public, researchers, and environmentalists, while comprehending existing adaptation practices. This kind of review could strategize adaptation and natural resource management in line with coastal communities' needs, abilities, and capabilities in response to environmental and other change forms. © 2024

**Author Keywords**
Malaysia; Monsoon; Sea-level rise; Storm surge; Thailand; Vietnam

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