UNIVERSITI TEKNOLOGI MARA
College of Built Environment

Poster Book

IIIDBEEX 2023

20 JANUARY 2023

International Invention, Innovation & Design Exposition for Built Environment and Engineering 2023

College of Built Environment
UiTM Puncak Alam
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CONTENTS

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Multi-criteria evaluation approach to coastal vulnerability index development in Port Klang, Selangor areas using Analytic Hierarchy Process (AHP).

Introduction

- The coastline of Malaysia is vulnerable to erosion because it is continually subjected to harm by the water, which is one of the factors that leads to shoreline erosion.
- Coastal vulnerability index is a commonly used tool to chart the sustainability of the coastal area.
- As part of the data analysis procedure, the coastal vulnerability measures will be analysed using the analytical hierarchy approach. Utilizing AHP will simplify the ranking method for the CVI

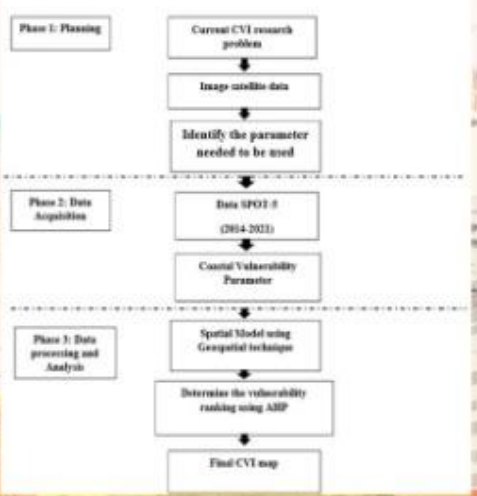
PROBLEM STATEMENT

- As a direct result of global warming, sea levels have been steadily increasing. Even a little increase in sea level might have major effects on the operation of natural coastal systems.
- The parameters of the coastal vulnerability index (CVI) vary depending on the nation.
- A variety of techniques are utilised to evaluate the CVI.

OBJECTIVES

- To identify the parameter used to assessing the coastal vulnerability along Port Klang, Selangor.
- To create spatial modeling of CVI using Geospatial technique of Port Klang, Selangor.
- To determine the ranking of coastal vulnerability using Analytical Hierarchy Process (AHP).

METHODOLOGY



NOVELTY

- Produce parameter map along Port Klang shoreline with vulnerability ranking.

CONCLUSION

- Index measures were utilised to analyse geomorphology, erosion rate, topography (elevation), coastal slope, geology, and mean tidal range. A value from a set of six parameters was needed to create a simulated vulnerability map of Port Klang.
- Six parameter maps exhibit high or low vulnerability in modelled CVI maps. These studies calculated Port Klang shoreline vulnerability using modelled CVI maps.

FINDINGS

Values of coastal vulnerability index for vulnerability levels

Vulnerability class	CVI	length (km) of coastal sectors	CVI	length (km) of coastal sectors
Very high	348–453.6	6	3.67–4.35	13.5
High	25.7–348.0	10	3.23–3.66	10
Moderate	18.1–25.7	20	2.80–3.22	28
Low	13.1–18.1	39.5	2.54–2.80	36.5
Very low	3.7–12.1	18.5	1.88–2.53	10

RECOGNITIONS

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