# CERAMAH TEKNIK TECHNICAL TALK

## A multi-hazards coastal vulnerability index of the East Coast of Peninsular Malaysia

Effi Helmy Ariffin
Universiti Malaysia Terengganu
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The above talk was delivered by Associate Professor Dr. Effi Helmy Ariffin (Universiti Malaysia Terengganu) on 19th March, 2024 via Zoom. Some 80 members participated. An abstract of the talk is given below:

**Abstract:** In Southeast Asia, an increase of 20 million people in the coastal zone have accentuated the infrastructure risk. In Malaysia, littoral erosion due to seasonal monsoons can critically affect the coastal population and the country lacks practical plans to attenuate coastal erosion. In this study, a systematic coastal vulnerability assessment that covers 10 physical and 5 socio-economic variables has been conducted at 16 districts from 4 states. The aim is to highlight the most vulnerable districts with respect to a potential catastrophic event. Multivariate statistical analyses facilitated realistic and meaningful interpretations for optimal coastal zone planning. We show that socio-economic variables are extremely relevant in all states except in southern Terengganu because it faces a direct impact of monsoon waves. Gender composition was found to be the most dominant coastal vulnerability factor for two states: Kelantan and Terengganu (north) due to the abundance of women involved in coastal trade and commerce. Besides, agriculture indicates a primary concern in the district of Johor. The results were categorized from very low to very high of vulnerability. The northern states of the east coast of Peninsular Malaysia show very high to high vulnerability relative to the southern states, which reveal moderate to very low vulnerability. In statistical analysis, it is shown that there is a similarity of 81.25% between Coastal Vulnerability Index (CVI) and Hierarchical Agglomerative Cluster Analysis (HACA). The authorities could utilize the findings of this study to forecast potential shoreline recession and establish adaptation measures to their coastal erosion adaptation plan.

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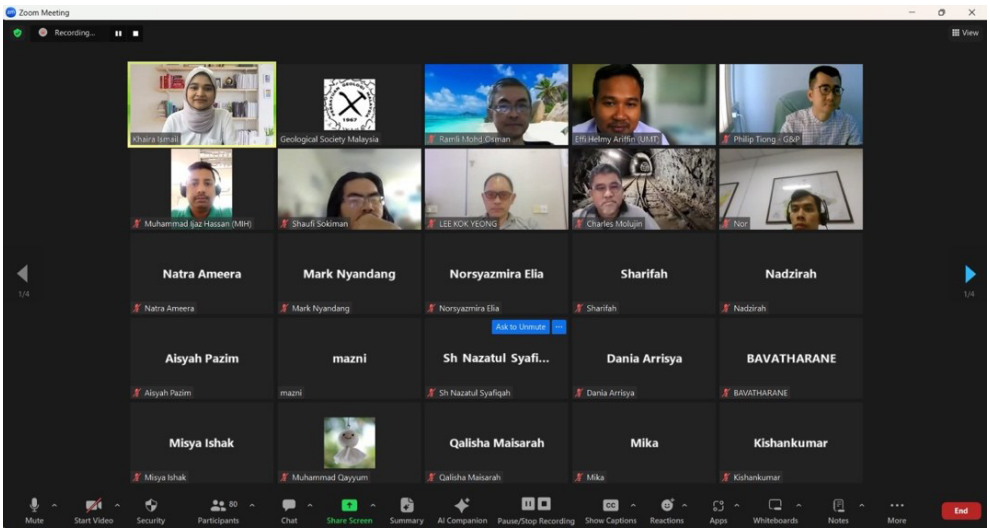


Prepared by,
Dr. Khaira Ismail
Chairman, Working Group on Quaternary & Marine Geology
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