ANALYZING FLOOD-AFFECTED TRENDS (2017-2021) IN KELANTAN AND TERENGGANU THROUGH GIS DASHBOARD

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ABSTRACT

Analyzing Flood-Affected Trends (2017-2021) In Kelantan and Terengganu Through GIS Dashboard

Floods are one of the ongoing challenges in Malaysia, especially in the state of Kelantan and Terengganu, where annual monsoon rains often cause significant disruption to flood in the country. The study aims to analyze flood-affected trends in Kelantan and Terengganu from 2017 to 2021 through GIS Dashboard. Using spatial analysis techniques and data visualization, the project provides an in-depth study of the patterns of flood effects on the local trends involved with the floods from 2017 to 2021.

In this project, among the data that have been used are data on the number of cases for the state of Kelantan and Terengganu from 2017 to 2021. This data has been obtained from a special disaster portal that shows data for flood disasters. Lastly, this methodology can collect and preprocess data from a variety of sources, including government agencies, and data from media portals. Geospatial analysis techniques such as geographic information systems (GIS) maps and space interpolation have been used to identify high cases and low cases for the state of Kelantan and Terengganu from 2017 to 2021.

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TABLE OF CONTENT

ABSTRACT	ii
ABSTRAK	iii
ACKNOWLEDGEMENTS	iv
TABLE OF CONTENT	V
LIST OF TABLES	vii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	xiv

CHAPTER 1 INTRODUCTION

1.1 Background of study	1	
1.2 Problem statement	3	
1.3 Significance of study	5	
1.4 Objectives of study	6	

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction	7
2.2 Flood cases in Malaysia	7
2.3 Flood analysis using Geographic Information System (GIS)	9
2.4 Trend flood	10
2.5 ArcGIS Dashboard	11

CHAPTER 3 METHODOLOGY

3.0 Introduction	12
3.1 Preliminary Study	13
3.1.1 Software Used	13
3.1.2 Selection of Study Area	15
3.2 Data Collection	15
3.2.1 Vector Data Model	16
3.2.2 Non-Spatial [Table]	17

CHAPTER 1

INTRODUCTION

1.1 Background of study

Floods are a common natural disaster that occur when an excessive amount of water inundates dry land. They can be triggered by heavy rainfall, rapid snowmelt, storm surges from tropical cyclones, or tsunamis in coastal areas. In the northeastern part of Peninsular Malaysia, in the states of Kelantan and Terengganu, flooding is an important and recurring problem. Due to their location, which is prone to powerful monsoon rains, particularly during the Northeast Monsoon season, which normally lasts from November to March, these states are especially vulnerable. Massive downpours brought on by the monsoon frequently result in severe and extensive flooding that affect both urban and rural areas.

The effects of the floods in Kelantan and Terengganu are diverse, covering economic, social and environmental dimensions. Economically, flooding disrupts local areas, damages infrastructure, and imposes high costs on disaster response and recovery. Socially speaking, floods have driven out thousands of people, causing temporary shelter, health risks, and disruption of education. Environmentally, floods frequently alter the landscape, affect agriculture, and can lead to long-term ecological changes. Historically, these countries have experienced some of the most devastating floods in Malaysia, such as the disastrous flooding in December 2014, which caused widespread destruction and highlighted the need to improve flood management and preparedness. The recurring nature of these flooding incidents emphasizes the need for sustainable solutions, including better urban planning, improved early warning systems, and effective disaster response strategies.