

LOCAL GOVERNANCE STRUCTURING IN
DISASTER RISK MANAGEMENT:
THE CASE STUDY OF KAJANG CITY, SELANGOR.

BY

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ABSTRACT

Flash flood issue is central to Malaysia as it impacted all of its major cities, including Kajang. Compared to monsoonal flood, flash flood event is unpredictable as climate change prolonged. Existing institutions which are in charge of Disaster Risk Management need to re-evaluate and advance their approach and efficiency in managing risk and hazard. Kajang City was selected due to its recurring flood events, high population, rapid development, vulnerabilities of the area, as well as the impact of the disasters on social and economic aspects. The (i) repetitive flood in Kajang; (ii) lack of prevention and preparedness actions; and (iii) low score on resiliency attributes were the main problem arguments of this study. A qualitative approach has been chosen as a method to analyse this issue. Six key persons in charge of Disaster Risk Management were interviewed. They were from the elected official office, Kajang Municipal Council Office, Land and District Office, Selangor Disaster Management Unit, as well as an experienced consultant. Next, the interview output was analysed using thematic mapping, and a few themes and sub-themes has been identified. Findings of this research found that Kajang City needed: (i) an organisational restructuring at Local Governance by establishing a Disaster Risk Management Committee and Relief at the Sub-district level, as well as Climate Change Division at Local Authority; (ii) develop a tailor-made Resilience Action Plan specifically for Kajang City; (iii) introduce a flood insurance programme at high-risk areas; (iv) increase more focus on risk management; (v) build social capital; and (vi) nurture a collaborative leadership across sectors and levels in governmental organisations. All of these will foster a resilience and collective culture while incorporating the Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) agenda in land use planning and development programmes; to achieve a timely response, proactive Disaster Risk Management and a comprehensive state of resilience. Proactive measures at the institutional level will set the tone for the whole process of the Disaster Management Cycle. This will not only minimise the government's and society's losses but also capable to build back better at a faster rate.

Keywords: resilience, disaster, disaster management, disaster risk management, flood

ملخص البحث

كانت قضية الفيضانات المفاجئة قضية مركزية لماليزيا حيث أثرت على جميع مدنها الرئيسية، بما في ذلك كاجانغ. مقارنة بالفيضانات الموسمية، كانت الفيضانات المفاجئة لا يمكن التنبؤ بها مع استمرار تغير المناخ. تحتاج المؤسسات الحالية التي كانت مسؤولة عن إدارة مخاطر الكوارث إلى إعادة تقييم وتطوير نهجها وكفاءتها في إدارة المخاطر والأخطار. تم اختيار مدينة كاجانغ بسبب أحداث فيضاناتها المتكررة، وكثافة سكانها العالية، والتطور السريع، ونقاط الضعف في المنطقة، فضلاً عن تأثير الكوارث على الجوانب الاجتماعية والاقتصادية. كانت (1) الفيضانات المتكررة في كاجانغ؛ (2) ونقص الوقاية وإجراءات التأهب و (3) الدرجات المنخفضة لسعات الصمود هي الحجج الرئيسية للمشكلة في هذه الدراسة. تم اختيار نهج نوعي كطريقة لتحليل هذه القضية. وتمت مقابلة ستة أشخاص رئيسيين مسؤولين عن إدارة مخاطر الكوارث وكانوا من المكتب الرسمي للمنتخب، مكتب مجلس بلدية كاجانغ، مكتب الأراضي والمقاطعات، لجنة إدارة الكوارث في سيلانجور، بالإضافة إلى مستشار متمرس. بعد ذلك، تم تحليل نتائج المقابلة باستخدام الخرائط المواضيعية و تحديد عدد قليل من الموضوعات والمواضيع الفرعية. وجدت نتائج هذا البحث أن مدينة كاجانغ كانت بحاجة إلى: (1) إعادة هيكلة تنظيمية في الإدارة المحلية من خلال إنشاء لجنة إدارة مخاطر الكوارث والإغاثة على مستوى المنطقة الفرعية، وكذلك قسم تغير المناخ في السلطة المحلية؛ (2) ووضع خطة عمل مخصصة للصمود خصيصاً لمدينة كاجانغ؛ (3) وإدخال برنامج تأمين ضد الفيضانات في المناطق عالية الخطورة؛ (4) وزيادة التركيز على إدارة المخاطر؛ (5) وبناء رأس المال

الاجتماعي؛ (6) ورعاية القيادة التعاونية عبر القطاعات والمستويات في المنظمات الحكومية. كل هذا سيعزز القدرة على التكيف والثقافة الجماعية مع دمج الحد من مخاطر الكوارث (DRR) والتكيف مع تغير المناخ (CCA) في تخطيط استخدام الأراضي وبرامج التنمية؛ لتحقيق استجابة في الوقت المناسب، وإدارة استباقية لمخاطر الكوارث وحالة شاملة من الصمود. ستحدد الإجراءات الاستباقية على المستوى المؤسسي مسار العملية الكاملة لدورة إدارة الكوارث. لن تقلل فقط من خسائر الحكومة والمجتمع، ولكنها أيضًا قادرة على إعادة البناء بشكل أفضل بسرعة أكبر.

الكلمات المفتاحية: الصمود، الكوارث، إدارة الكوارث، إدارة مخاطر الكوارث، الفيضانات

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion, it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science (Built Environment).



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Syahriah Bt Bachok
Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science in (Built Environment).

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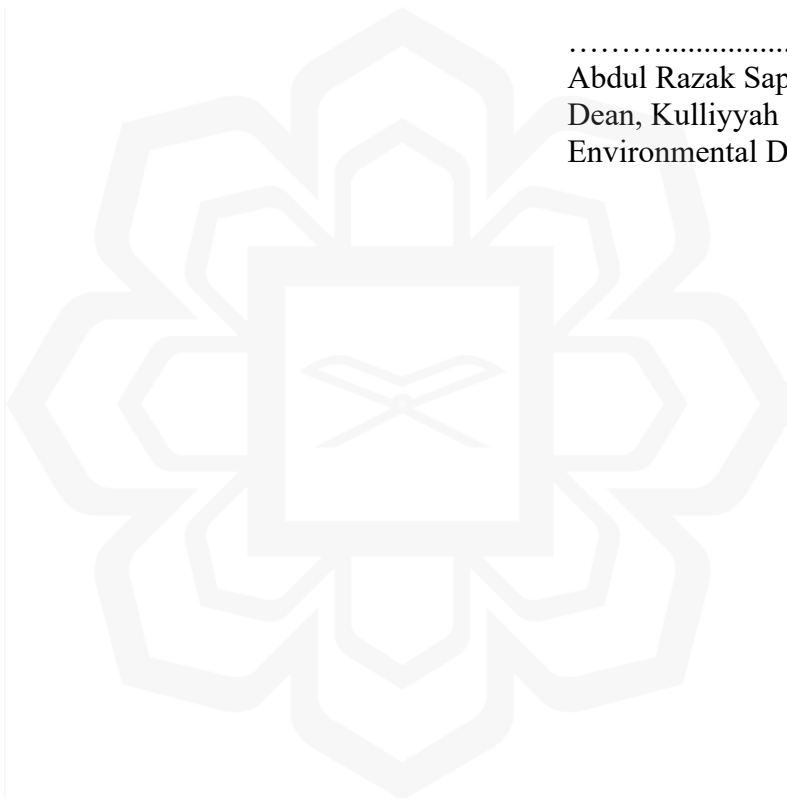
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DECLARATION

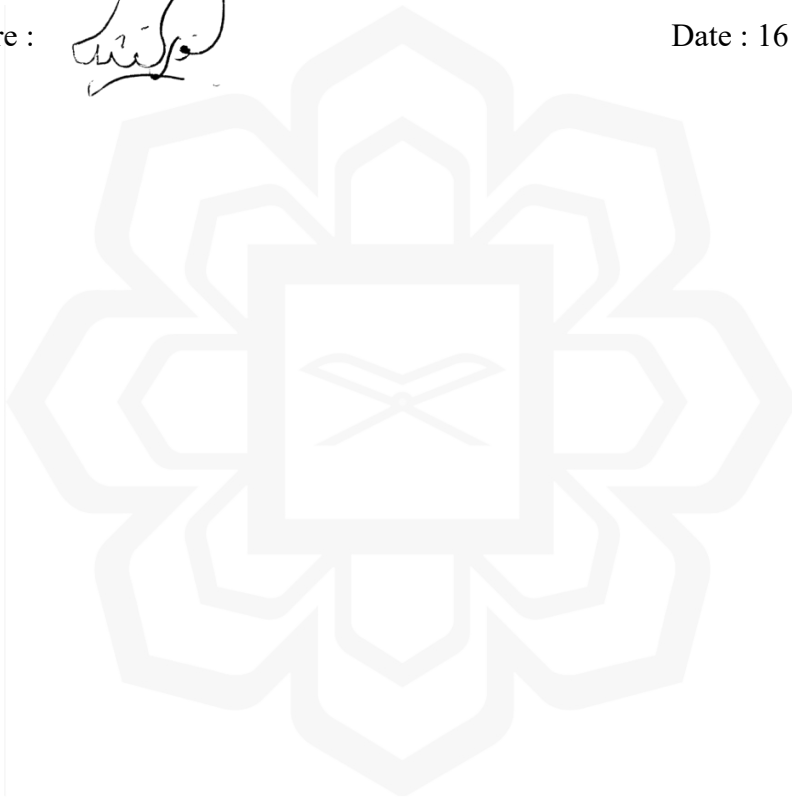
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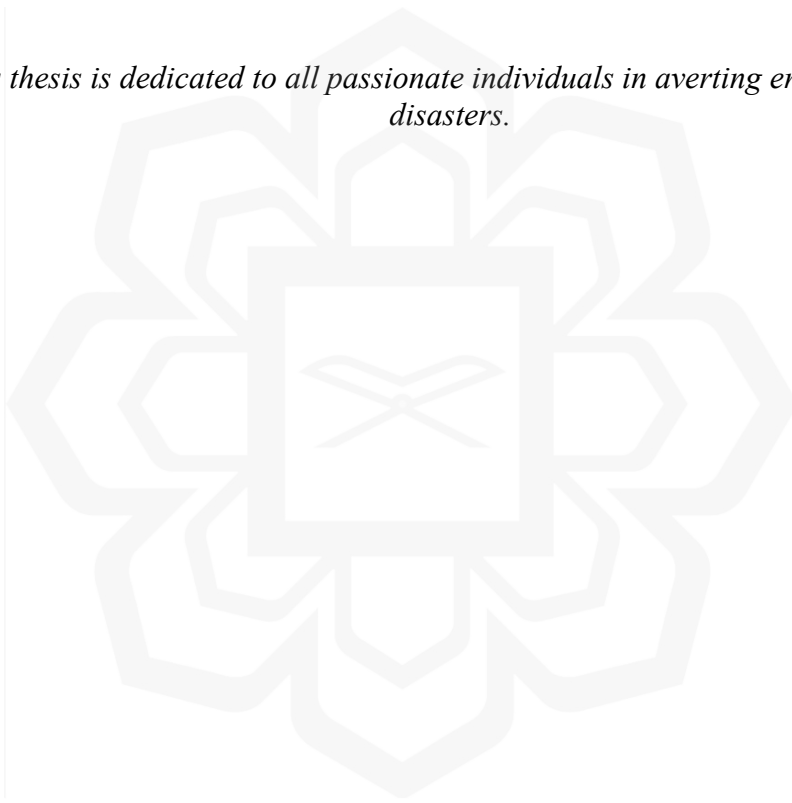
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This thesis is dedicated to all passionate individuals in averting environmental disasters.



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While I was about to finish writing this thesis, Malaysia has been ranked 51st out of 53 countries in The Economist's return to normalcy index in COVID-19 resilience studies. Our Public Health was collapsing, the infection rate had surpassed one million cases, death numbers kept rising, new-born babies lost their mothers, families were mourning, suicidal news became the new normal, and businesses barely survived. Ironically just one year ago, Malaysia was recognized as one of the countries in the world which successfully handled this global pandemic. Indeed managing a disaster was an underrated mission.

Throughout this study, I personally experienced several big disasters. There were: the 2018 Lombok Earthquake, the big flood in Muar after 40 years, and currently the COVID-19 global pandemic. Humbled by this research journey, it was intellectually stimulating and maturing, yet challenged my tenacity.

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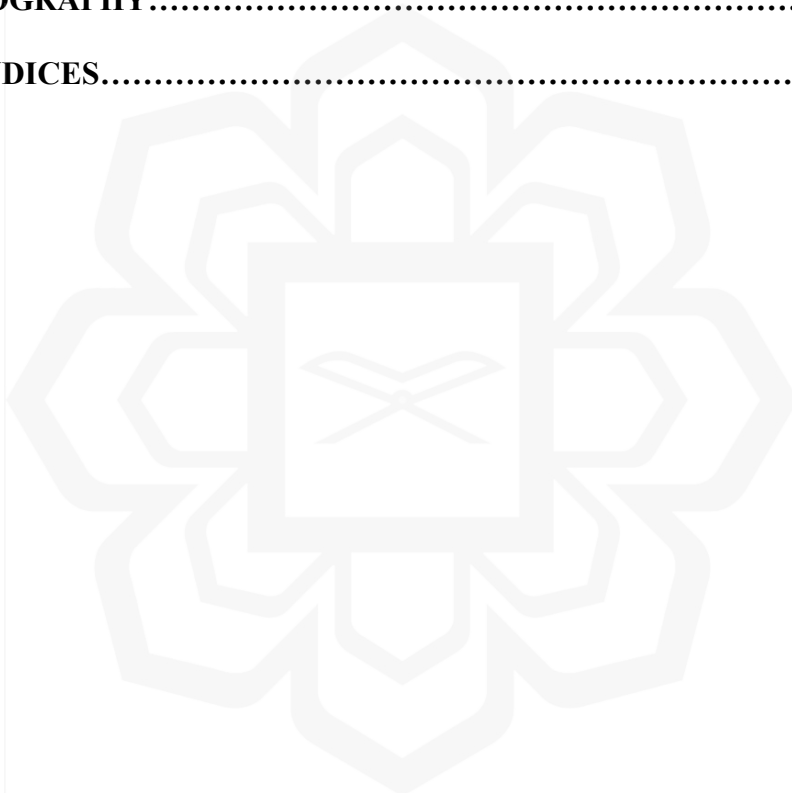
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LIST OF ABBREVIATIONS

URP	Urban and Regional Planning
KAED	Kulliyyah of Architecture and Environmental Design
IIUM	International Islamic University
DRR	Disaster Risk Reduction
DRM	Disaster Risk Management
DRRM	Disaster Risk Reduction Management
DMC	Disaster Management Cycle
CCA	Climate Change Adaptation
CBDRM	Community Based Disaster Risk Management
CBDM	Community Based Disaster Management
DID	Drainage and Irrigation Department
RM	Ringgit Malaysia
NGOs	Non-Governmental Organizations
EM-DAT	Emergency Events Database
FAO	Food and Agricultural Organization of the United Nations
HFA	Hyogo Framework for Action 2005-2015
IPCC	Intergovernmental Panel on Climate Change
UNDAC	United Nations Disaster Assessment and Coordination
UNFCCC	United Nations Framework Convention on Climate Change
NDMRC	National Disaster Management and Relief Committee
SDMRC	State Disaster Management and Relief Committee
DDMRC	District Disaster Management and Relief Committee
CADO	Chief Assistant District Officer
ADO	Assistant District Officer
PANTAS	Immediate Action Force
IDNDR	International Decade for Natural Disaster Reduction
IFRC	International Federation of Red Cross and Red Crescent Societies
SDG	Sustainable Development Goals
UNISDR	United Nations Office for Disaster Risk Reduction
WHO	World Health Organization

CFE-DM	Center for Excellence in Disaster Management and Humanitarian Assistance
ITU	International Telecommunication Union
OECD	Organisation for Economic Co-operation and Development
NTS	Center for Non-Traditional Security
RSIS	S. Rajaratnam School of International Studies
ASEAN	Association of Southeast Asian Nations
SF	Sendai Framework for Disaster Risk Reduction 2015-2030
HAZMAT	Hazardous Material Unit Team
UN	United Nations
SMART	Special Malaysia Disaster Assistance and Rescue Team
NADMA	National Disaster Management Agency
SOP	Standard Operating Procedure
APM	Malaysia Civil Defence Force
CDERT	Civil Defence Emergency Response Team
MPKK	<i>Majlis Pengurusan Komuniti Kampung (MPKK)</i> or Management Council of Village Community
ATM	Brigade Commander
RELA	Malaysian People Voluntary Alliance
STMB	Malaysia National Telecommunication Agency
TNB	Malaysia Electrical Power Agency
BKN	National Security Division
DO	District Officer
SDMU	Selangor Disaster Management Unit
SSCC	Smart Selangor Command Center
MPKj	Kajang Municipal Council
PWD	Public Works Department
MERCY	Malaysian Medical Relief Society
PKOB	Disaster Operation Control Center
JKM	Department of Social Welfare Malaysia
MKN	National Security Council (NSC)
MSMA	<i>Manual Saliran Mesra Alam</i>
IoT	Internet of Things
ICS	Incident Command System

FEMA	Federal Emergency Management Agency
US	United States of America
OMA	Orlando Metropolitan Areas
OCOEM	Orange County Office of Management
EOC	Emergency Operation Center
CEMP	Comprehensive Emergency Management Plan
UNDP	United Nations Development Programme
CDRI	Climate and Disaster Resilience Index
ESA/ KSAS	Environmentally Sensitive Area
CITYNET	The Regional Network of Local Authorities for the Management of Human Settlement
PTD	Administrative and Diplomatic Officer
NAHRIM	National Water Research Institute of Malaysia
JUPEM	Department of Survey and Mapping Malaysia
UTM	University of Technology Malaysia
KRT	Neighbourhood Pillars Community
JMM	Malaysia Meteorological Department

CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

With the global climate change and highly unpredictable weather system, there is an urgency to advance disaster preparedness in Malaysia. Recent years have shown that the annual monsoon season not only impacted the east coast area (Example: Kelantan, Pahang, and Terengganu) but also had been widespread to the north and the south Peninsular of Malaysia like Johor, Kedah, and Perlis.

This study aimed to discuss the governance of Disaster Risk Management at the local level, particularly at the sub-district level (*Mukim* level), with Kajang Town as a case study. This research had referred to a few guiding frameworks on Disaster Risk Management such as Hyogo Framework for Action 2005-2015, Sendai Framework for Disaster Risk Reduction 2015-2030, and Malaysia National Security Council (Directive No. 20).

As a city that experienced rapid urbanisation and urban development, the government and its people need to be aware of their roles in ensuring a better execution of Disaster Risk Management policies. Since 2011, National Security Council had outlined the goal for the Malaysian Government in advancing the efficiency of multi-stakeholder mobilisation and pushing for a more proactive and wide-ranging multi-hazard methods in detecting, avoiding, mitigating, and planning for disaster.

This chapter would provide insights on the current governance approach at Kajang City from the aspect of Disaster Risk Management, identifying issues and problems, raising the research questions, formulating aim and objectives, setting the boundaries and scopes, the weight, expected discoveries, articulating the arguments and ended with the gap of study.

1.2 RESEARCH BACKGROUND

Disasters on earth have already been happening for a hundred thousand years ago. It was nature's way of keeping the environment in equilibrium and responding to ever-changing surroundings, hence creating the environment and nature itself (Nomor, 2007). However, disasters may be caused by both environmental and human factors. This calamity could threaten human life, damage properties, and give impact on man's survival.

Pereira & Komoo (2003) revealed that science has been neglected in the formation and execution of good governance policies. Integrative scholarship including multidisciplinary, interdisciplinary, and transdisciplinary approaches was necessary to link the science-governance divide (Nordin, 2004). Such approaches will be useful in arriving at an informed decision making (Pereira et. al, 2010).

The increased precipitation that led to flooding had moved many developed countries to commit to research activities to tackle the issues. The findings will be the basis for all levels of the adaptation plan. Areas that were susceptible to risks should be identified, especially if it was dense with human settlements. Researchers and practitioners should come together: identify the gap in scientific knowledge, establish the systems, monitor, provide early warning and take action (Pereira, 2013).

'Resilience' has been highlighted by United Nations Office for Disaster Risk Reduction (UNISDR, 2017) as the central focus under the global Disaster Risk Management framework: the "Hyogo Framework for Action 2005–2015" and the "Sendai Framework for Risk Reduction 2015–2030". At the local level, it is the Local Authority and District Office that will deal directly with the victims, and execute and monitor the success of policy implementation. Hence, to improve disaster resilience, the competency of Disaster Risk Management in Local Government must be reinforced (Mayunga, 2007; S. Cutter, 2008).

In Malaysia's context, there are three (3) layers of government: (i) Federal Government; (ii) State Government; (iii) Local Government. Hence, the lowest level of government in this writing will refer to the Local Government or City Council.

The local government acted as the key actor in managing and improving the resiliency of an area. The complexities of Disaster Risk Management were added by its unpredictable magnitude and occurrence. Some challenges that were faced by the government bodies were: the bigger distinction between supply and demand, uncertain situations, volatile conditions, and limited time for decision making (Boin et al., 2005, p. 11; Kapucu, Arslan, and Demiroz, 2010, p. 453).

Some scopes of studies on disaster resilience that were placed under the duty of Local Authority were: (i) the disaster resilience of place model (DROP) (Cutter et al., 2008); (ii) the capital-based model (Mayunga, 2007); and (iii) the flood resilience framework (Keating et al., 2017). The organisational approach focused on the structure used by public and private agencies such as government agencies, NGOs, voluntary bodies, and private companies in dealing with hazards. Chan (1996) stated that in Malaysia, the vulnerability of the community to the flood event was not mainly due to poverty, but awareness, perception, attitude, familiarity and practicality, residence length, and social relations (Jamaluddin, 1985).

Based on history, disaster events in Malaysia were deemed as government role and extensively handled through top-down government-focused agencies (Chan, 1995). The National Disaster Management and Relief Committee (NDMRC) was accountable for regulating all relief actions before, during, and post-disaster. Despite the massive number of initiatives and allocations, flood risks were still rising in Malaysia (Chan, 1997b).

In Malaysia, the highest top organization that was responsible for the direction and coordination of Disaster Risk Management was National Security Council (NSC) which was placed directly under the Prime Minister's Office. Concurrently, a joint committee was formed at the State and District level, consisting of all government agencies, departments, and appointed leader and sub-district officers such as the Head

of Village and *Penghulu* (the leader of the sub-district level). This showed that the effort to reduce the Disaster Risk demanded a wide commitment and dedication from all sectors, disciplines, levels, and individuals.

In 2015, Malaysia had leaped Disaster Risk Reduction when agreed to implement the global disaster blueprint; the Hyogo Framework for Action 2005–2015. The challenges remained at the governmental level, social and financial capacity in executing the published policies into reality.

Chong, O. & Kamarudin, H. (2018) highlighted a few issues in Disaster Risk Management in Malaysia. There were: (i) an imbalanced approach between top-down and bottom-up; (ii) a lack of coordination in the Disaster Management Cycle; and (iii) less improvement at the post-disaster stage which led to low resiliency among the community. Seven services themes have been identified under the Malaysia Disaster Management Structure which was: (i) search and rescue; (ii) health and medical services; (iii) media; (iv) support; (v) security control; (vi) welfare; and (vii) warning alerts.

In achieving the betterment of the entire system, resilience cannot be treated as an end, but as a learning process (Davoudi, 2012; Eraydin et al., 2013). Development patterns had showed that planning practice can either be the reason for disaster or a driver of resilience (Eraydin et al., 2013). Marzukhi et al. (2017) emphasized that a neoliberal and capitalistic development principle may result in uncontrolled rapid urbanisation, improper land use development, and disruptions of anthropogenic activities.

Previous disaster events provided a reference for Malaysia to learn from. Malaysia received a massive rainfall with high intensities due to its high humidity equatorial climate. Thus, landslide and flood issues were common. Furthermore, Malaysia was also faced with disasters which accounted for the abundance of impairment to property and life loss. That included fires, the collapse of structures and buildings, and accidents. (Hussin, 2005).

History showed that Malaysia was seldomly hit by severe disasters. Mainly, environmental disasters were caused by over-exploitation, extreme weather, and